UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE, INC.,
Petitioner

v.

APEX BEAM TECHNOLOGIES LLC,
Patent Owner.

U.S. Patent No. 10,965,434

Case No. IPR2025-00906

DECLARATION OF FRIEDHELM RODERMUND IN SUPPORT OF A PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 10,965,434

TABLE OF CONTENTS

Page

I. INTRODUCTION AND ENGAGEMENT 1

II. BACKGROUND AND QUALIFICATIONS 3

III. SUMMARY OF MY OPINIONS 7

IV. PUBLICATION OF 3GPP SPECIFICATIONS AND RELATED DOCUMENTS 8

A. General Practices 8

B. Specific Documents 34

1. CR 38.213 “Samsung” 34

2. CR 38.212 “Huawei” 40

3. CR 38.331 “Ericsson” 46

4. TS 38.213 V15.7.0 51

5. TDoc R2-1913143 57

V. AVAILABILITY FOR CROSS-EXAMINATION 62

A. Right To Supplement 63

B. Signature 63

I, Friedhelm Rodermund, do hereby declare as follows:

I. INTRODUCTION AND ENGAGEMENT

1. I have been retained in this matter by the Petitioner to provide testimony regarding the standard business practices of 3rd Generation Partnership Project ("3GPP") for record keeping and publishing technical specifications, change request proposals, reports, and other documents developed during the course of standards activities carried out by 3GPP and the European Telecommunications Standards Institute ("ETSI").

2. I have been asked to provide my opinions regarding the authenticity and dates of public accessibility of the following 3GPP documents:

- 3GPP CR 38.213 from Samsung with the title "Introduction of Industrial IoT" (hereinafter "Samsung") (APPLE-1006)
- 3GPP CR 38.212 from Huawei with the title "Introduction of Physical Layer Enhancements for NR URLLC" (hereinafter "Huawei") (APPLE-1007)
- 3GPP CR 38.331 from Ericsson with the title "RRC running CR for NR IIoT" (hereinafter "Ericsson") (APPLE-1012)

- Version 15.7.0 of technical specification 3GPP TS 38.213 ("Technical Specification Group Radio Access Network; NR; Physical layer procedures for control (Release 15)") (hereinafter "TS 38.213 v15.7.0") (APPLE-1005)
- TDoc R2-1913143, which represents a 3GPP document with the title "Confirmation MAC CE for multiple CG configurations" (hereinafter "R2-1913143") (APPLE-1011)

3. As an ETSI Project Manager and Secretary, from June 1998 to December 2004, I have personal knowledge of 3GPP's standard business and records keeping practices. I continued following 3GPP's work ever since. Thus, based on my experience, personal knowledge, and review of 3GPP's business records, I am able to testify regarding the authenticity of certain documents published by 3GPP and the timing of their publication.

4. I am being compensated for my time spent on this matter at my usual rate of €500 per hour. My fee is not contingent on the outcome of this or any matter, or on the content of any of the testimony I give in this declaration. I have no financial interest in the Petitioner.

5. I have been informed that Apex Beam Technologies, LLC ("Apex Beam Technologies" or "Patent Owner") is the current assignee of U.S. Patent No.

10,965,434 ("the '434 Patent") (Ex. 1001). I have no financial interest in the Patent Owner or the '434 patent.

6. In forming my opinions, I have considered the cited exhibits, including the exhibits identified in Appendix B, and my academic and professional training and experience in the field of wireless communications and standards development as described herein.

II. BACKGROUND AND QUALIFICATIONS

7. I have more than 20 years of experience working with standards development organizations including 3GPP, ETSI, and the Open Mobile Alliance ("OMA"). I have particular experience with the development of standards related to cellular telecommunications, including the standards for the Universal Mobile Telecommunications System ("UMTS"), Long Term Evolution ("LTE"), and 5G, which are all standards developed by the 3GPP.

8. I attended the University of Technology Aachen in Aachen, Germany, where I performed graduate studies in Electrical Engineering with a focus on telecommunications technologies ("Dipl.-Ing. TH" degree). I also attended the University of Technology Trondheim in Trondheim, Norway, and completed my Diploma thesis, "Design of a dual processor computer for digital signal processing in power electronics," in 1993.

9. From December 1993 to June 1998, I worked at Mannesmann Mobilfunk as a System Engineer and Project Manager in Quality Assurance and Technical Standards. One of my responsibilities was to ensure by managing and performing related test activities that cellular network equipment was compatible with the Global System for Mobile Communications ("GSM") standard developed by ETSI. During that time, I also started working as a standards delegate. I attended my first ETSI meeting in 1996 (although I was already following ETSI developments from 1992 during my studies).

10. From June 1998 to December 2004, I worked at ETSI as a project manager for various ETSI Special Mobile Group ("SMG") and 3GPP working groups. First, I served as a secretary of SMG4 "Data Services" and SMG8 "Base Stations Testing." Then, as a project manager with the ETSI Mobile Competence Center ("MCC"), I supported establishing 3GPP as the new international standards development organization for cellular telecommunications. One of my roles was acting as Secretary for 3GPP's Technical Specifications Group Terminals, Working Group ("T2"), the group which played a leading role in the creation of standards for Multimedia such as the Multimedia Messaging Service ("MMS").

11. Later, I was a secretary of the highest-level Technical Specifications Group Terminals which was besides other things responsible for the development of test specifications including tests for the radio interface.

12. I edited all technical specifications produced by my working groups and presented results to the parent body for approval. I attended all meetings (apart from some sub-working group meetings) and was also responsible for compiling meeting reports, for handling all the meeting documents, and managing the work plan. It was also my role to guide the groups and to advise the chairmen regarding 3GPP working methods and procedures including document handling, and to make sure delegates were aware of their company's obligations under the 3GPP Intellectual Property Rights policy.

13. As part of my responsibilities at ETSI, I acted as a 3GPP custodian of records by personally managing 3GPP's public File Transfer Protocol (FTP) folders, which I used to make publicly accessible various 3GPP documents, including versions of 3GPP specifications, technical reports, liaison statements, change requests, contributions, agendas, meeting reports, and other 3GPP documents from my working groups. I am also knowledgeable about document management practices used in other working groups and within 3GPP in general with regard to making documents publicly accessible through the same public FTP server of 3GPP.

14. Since I left ETSI as a staff member in 2005, I have been continuously involved in standardization activities, including with OMA, ETSI, and 3GPP. Since 2017, I also have been attending the ETSI Intellectual Property Rights ("IPR")

Special Committee, which is responsible for the maintenance of the ETSI IPR Policy.

15. After I left ETSI, I worked from January 2005 to October 2014 at Vodafone, first as a Project Manager for Mobile Broadcast Standards, and then as Vice Chairman of the Device Management working group of the Open Mobile Alliance, and then as a Senior Standards Strategist, all with responsibilities as described on my curriculum vitae. At Vodafone, I was deeply involved in standards work with ETSI and 3GPP and other standards setting organizations, including as a delegate to 3GPP SA1 "Services." As part of my responsibilities, I attended selected 3GPP meetings, submitted documents to 3GPP, used 3GPP resources (including 3GPP's FTP server) extensively, and remained knowledgeable about 3GPP policies and procedures with regard to document management and public accessibility. I was also involved in the creation of patents, defense activities related to patent litigations, and patent evaluation, mostly in the context of standards development.

16. Since leaving Vodafone in 2014, I have performed consulting work regarding Internet of Things (IoT) and Machine to Machine (M2M) technology and standards, first at Friedhelm Rodermund Consulting and then as the Founder and Director of IOTECC GmbH. In connection with my work, I regularly deal with standards such as OMA's Lightweight M2M (LwM2M) and 3GPP's LTE, Narrowband IoT (NB-IoT) and 5G standards. And I have extensively used 3GPP

resources and have remained knowledgeable about 3GPP policies and procedures with regard to document management and public accessibility.

17. I also provide consulting services related to patents, in particular around 3GPP Standard Essential Patents ("SEPs"), and I have worked as an expert witness on a number of occasions. I continue to closely follow the maintenance of the ETSI IPR Policy as a delegate to the ETSI IPR Special Committee. Furthermore, I am conducting a seminar on SEPs and the Internet of Things at the Technical University of Ilmenau, Germany.

18. At the time of writing this declaration, I am following – including attending selected meetings – the following standards committees: ETSI oneM2M, ETSI IPR Special Committee, OMA, and 3GPP.

19. A copy of my curriculum vitae, which includes a detailed description of my experience and education, is attached as Appendix A. A list of litigation matters on which I have worked over the last five years is also included in my curriculum vitae.

III. SUMMARY OF MY OPINIONS

20. It is my opinion that APPLE-1006 is an authentic copy of "Samsung" that was uploaded and made available via the 3GPP email exploder and email archive to 3GPP delegates and the general public by November 3, 2019, at the latest.

21. It is my opinion that APPLE-1007 is an authentic copy of "Huawei" that was uploaded and made available via the 3GPP email exploder and email archive to 3GPP delegates and the general public by November 1, 2019, at the latest.

22. It is my opinion that APPLE-1012 is an authentic copy of "Ericsson" that was uploaded and made available via the 3GPP email exploder and email archive to 3GPP delegates and the general public by November 1, 2019, at the latest.

23. It is my opinion that APPLE-1005 is an authentic copy of technical specification TS 38.213 V15.7.0 published by 3GPP and would have been publicly accessible through ftp.3gpp.org as of September 28, 2019.

24. It is my opinion that APPLE-1011 is an authentic copy of 3GPP TDoc R2-1913143 that was uploaded and made available via the 3GPP FTP server to 3GPP delegates and the general public by October 4, 2019, at the latest.

IV. PUBLICATION OF 3GPP SPECIFICATIONS AND RELATED DOCUMENTS

A. General Practices

25. Unless otherwise noted, the foregoing and following is an accurate description of 3GPP general practices from 1998 to the present, including in 2019, regardless of whether I use the present or past tense to describe those practices.

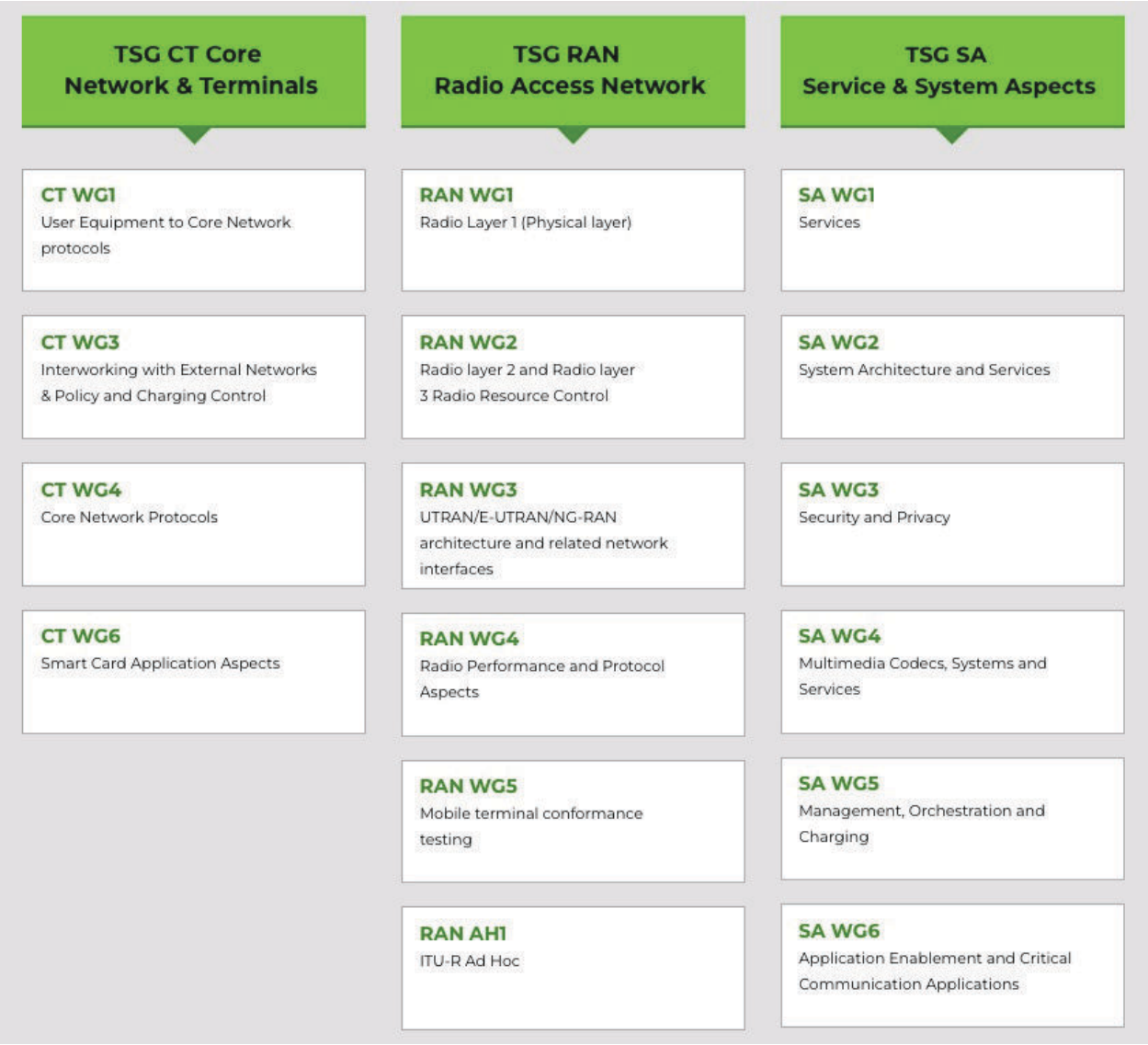
26. 3GPP was established in 1998 by a group of telecommunications standard development organizations from Japan, Korea, China, Europe, and the United States to jointly develop worldwide standards for mobile telecommunications. Today, 3GPP consists of seven partners: Association of Radio Industries and Businesses, Japan ("ARIB"), Alliance for Telecommunications Industry Solutions, USA ("ATIS"), China Communications Standards Association ("CCSA"), European Telecommunications Standards Institute ("ETSI"), Telecommunications Standards Development Society, India ("TSDSI"), Telecommunications Technology Association, Korea ("TTA"), and Telecommunication Technology Committee, Japan ("TTC"). In addition to being one of the founding partners, ETSI hosts the Mobile Competence Centre ("MCC"), which provides administrative and technical support for the day-to-day work of 3GPP. Furthermore, ETSI manages 3GPP's IT services such as the 3GPP website, FTP server, and email exploders.

27. 3GPP is the world's leading organization for developing and maintaining cellular telecommunications standards, which it has done since its foundation in 1998. As noted above and in my curriculum vitae, I began working for 3GPP, as part of my work at ETSI, the European-based organizational partner of 3GPP.

28. In the ordinary course of its regularly conducted business activities, and pursuant to its standard business practices, 3GPP publishes technical specifications, proposals, reports, and other documents related to the development of cellular telecommunications standards. Such documents are published for the purposes of discussion and establishment of industry standards for cellular telecommunications. This has been 3GPP's ordinary course of business since when I began working at ETSI in 1998.

29. In the ordinary course of 3GPP's regularly conducted business activities, and pursuant to its standard business practices, all draft technical specifications, proposals, reports, and other temporary documents to be discussed or considered in relation to 3GPP's telecommunications standards activities were, and continue to be, assigned a temporary document number and made publicly available, including on the FTP server associated with the 3GPP website, currently residing at ftp.3gpp.org. Such documents are referred to as "TDocs." Final versions of the technical specifications also were, and continue to be, publicly available from that same FTP server.

30. The names and the structure of 3GPP working groups, as of today, can be found at https://www.3gpp.org/3gpp-groups (reproduced below):



31. Each Technical Specification Group (TSG) or Working Group adopts a structured numbering system for the documents associated with their meetings, and those systems typically follow a consistent numbering system as shown in the following example: xminnzzzz. The numbering system normally comprises five logical elements: (1) x: a single letter corresponding to the TSG; wherein in 2019 x was one of R (Radio Access Network), C (Core and Terminals), or S (Service and

System Aspects); (2) m: a single character corresponding to the Working Group identity (typically 1, 2, 3, etc.) or, in the case of the TSG itself, the letter "P"; (3) i: normally the hyphen character "-"; (4) nn: the calendar year of the meeting to which the document was submitted; and (5) zzzz: a running number (some working groups use 5 digits).

32. In the ordinary course of 3GPP's regularly conducted business activities, and pursuant to its standard business practices, from December 1998 onwards, 3GPP published all of its TDocs and all final versions of its technical specifications on its FTP server, which has always been easily and publicly accessible from its website and currently resides at ftp.3gpp.org.

33. As early as December 1998, including in 2017, 3GPP's FTP server was freely accessible to the general public with no login, password, or membership requirement.

34. By 1999, at least 100 companies were members of 3GPP (719 companies by December 2020), ranging from Bosch to Ericsson to Nokia to Samsung and generally including those interested in the discussion, creation, and adoption of cellular telecommunications standards, including UMTS. Each of these companies typically delegated multiple individuals to regularly participate in 3GPP meetings. Further, pursuant to 3GPP's standard business practices, 3GPP working groups sent emails notifying these individuals as soon as new or additional

documents had been uploaded to 3GPP's FTP server. Thus, not only did the general public have access to the documents on the FTP server, but some of the most interested members of the public—those working to develop standards for cellular telecommunication or working to implement the standards—were personally informed of their availability by email.

35. Based on my experience with 3GPP and the telecommunications industry, I would expect any person implementing a cellular network or device, e.g., an LTE or 5G network, to consult the corresponding specifications on the 3GPP FTP server, as well as other related documents. The whole purpose of 3GPP creating and making these specifications available was so that engineers and other individuals would have ready access to them when developing and implementing cellular networks and devices.

36. By June 1999, 3GPP's FTP server was well-known to persons in the cellular telecommunications industry as a source of public information regarding industry standards and technological advances.

37. 3GPP specifications bear a specification number consisting of four or five digits, e.g., 09.02 or 29.002. The first two digits define the specification series which are defined to group the different aspects of the 3GPP system into, e.g., requirements, service aspects, radio aspects codecs, security aspects, and test specifications. The series digits are followed by two additional digits for the 01 to

13 series or three further digits for the 21 to 55 series. The subjects of the individual specification series are explained on 3GPP's website at https://www.3gpp.org/specifications-technologies/specifications-by-series, and reproduced below.

Subject of specification series	3G and beyond / GSM (R99 and later)	GSM only (Rel-4 and later)	GSM only (before Rel-4)
Requirements	21 series	41 series	01 series
Service aspects ("stage 1")	22 series	42 series	02 series
Technical realization ("stage 2")	23 series	43 series	03 series
Signalling protocols ("stage 3") - user equipment to network	24 series	44 series	04 series
Radio aspects	25 series	45 series	05 series
CODECs	26 series	46 series	06 series
Data	27 series	47 series (none exists)	07 series
Signalling protocols ("stage 3") -(RSS-CN) and OAM&P and Charging (overflow from 32.- range)	28 series	48 series	08 series
Signalling protocols ("stage 3") - intra-fixed-network	29 series	49 series	09 series
Programme management	30 series	50 series	10 series
Subscriber Identity Module (SIM / USIM), IC Cards. Test specs.	31 series	51 series	11 series
OAM&P and Charging	32 series	52 series	12 series
Access requirements and test specifications		13 series [1]	13 series [1]
Security aspects	33 series	(2)	(2)
UE and (U)SIM test specifications	34 series	(2)	11 series
Security algorithms [3]	35 series	55 series	(4)
LTE (Evolved UTRA), LTE-Advanced, LTE-Advanced Pro radio technology	36 series		
Multiple radio access technology aspects	37 series		
Radio technology beyond LTE	38 series		

38. Following a link for a series (e.g., "23 series" link) leads to a 3GPP web page providing access to all specifications in a series, as shown by the screenshot below:



39. As another example of a series, the LTE radio standard is covered in the "36 series" and is further subdivided into separate sections or specifications. The LTE radio specification series starts at TS 36.101 and ends at TR 36.978. Excluding withdrawn specifications, the LTE standard consists of more than 250 specifications.

40. As another example of a series, the 5G New Radio (NR) standard is covered in the "38 series" and is further subdivided into separate sections or specifications. Selecting the "38 series" link on website shown in paragraph 33 leads to the 3GPP portal (portal.3gpp.org) page for all of the 38 series technical specifications.[1] These 5G NR specifications start at TS 38.101 and end at TR 38.922. Excluding withdrawn specifications, the 5G NR standard consists of more than 140 specifications.

41. Each LTE or 5G specification can span from a few pages to hundreds of pages. One full version of the LTE or 5G standard is massive, spanning tens of thousands of pages across the particular series of technical specifications.

42. In the ordinary course of 3GPP's regularly conducted business activities, and pursuant to its standard business practices, TDocs are usually uploaded to 3GPP's FTP server and website before the meeting where they are to be discussed. Documents created or revised during the course of a meeting are normally uploaded at the latest during the week following the meeting (e.g., the meeting report of the meeting is usually published for review during the week following the meeting).

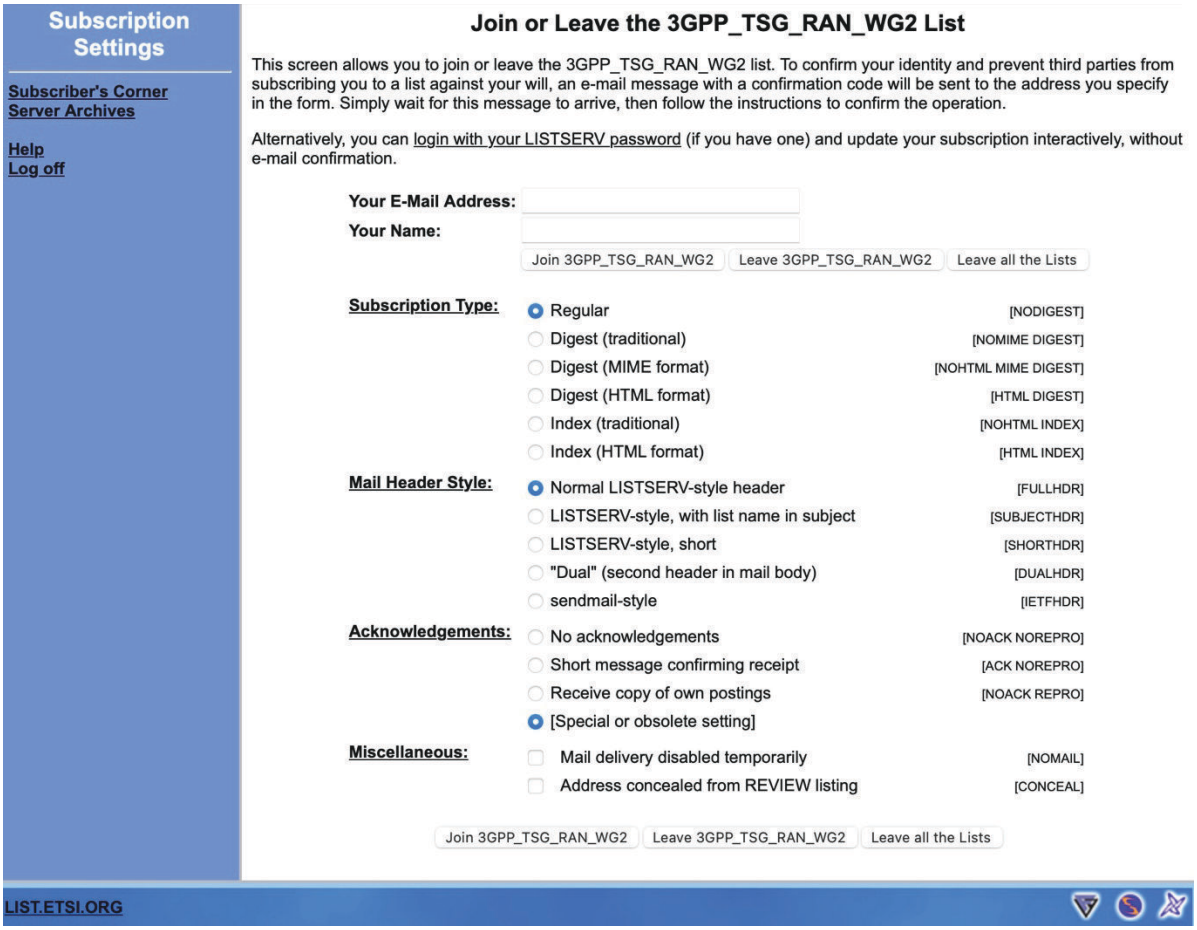
---

1 https://portal.3gpp.org/Specifications.aspx?q=1&series=45&releases=all&draft=False&underCC=False&withACC=False&withBCC=False&numberNYA=False

43. In the ordinary course of 3GPP's regularly conducted business activities, and pursuant to its standard business practices, 3GPP maintains archives that include different versions of the specifications, as well as email communications to its membership, including emails announcing the uploading of new or additional documents to 3GPP's FTP server. These archives are created at the time the emails are initially sent.

44. Since their creation in December 1998, all of 3GPP's email archives, including the dedicated email lists for TSG RAN WG2, have been freely accessible to the general public with no login, password, or membership requirement and subscription was possible for every interested individual. The screenshot below represents the subscription page of the 3GPP RAN WG2 email list on list.etsi.org[2] demonstrating that this webpage is publicly available and that only an email address and name had to be entered to join the email list. In 2006, the registration webpage looked as follows:[3]

[2] In the past there was also list.3gpp.org which did not represent a dedicated website but instead redirected to list.etsi.org.
[3] https://web.archive.org/web/20060105222647/http://list.etsi.org/scripts/wa.exe?SUBED1=3gpp_tsg_ran_wg2&A=1



45. Alternatively, anyone interested can obtain a LISTSERV password for managing subscriptions interactively without email confirmations.

46. Each of 3GPP's member companies typically assigned one or more individuals to regularly participate in these email lists. Thus, not only did the general public have access to the emails in 3GPP's email archives, but some of the most interested members of the public—those working to develop standards for cellular telecommunication—personally received copies of such emails through their participation in the email lists.

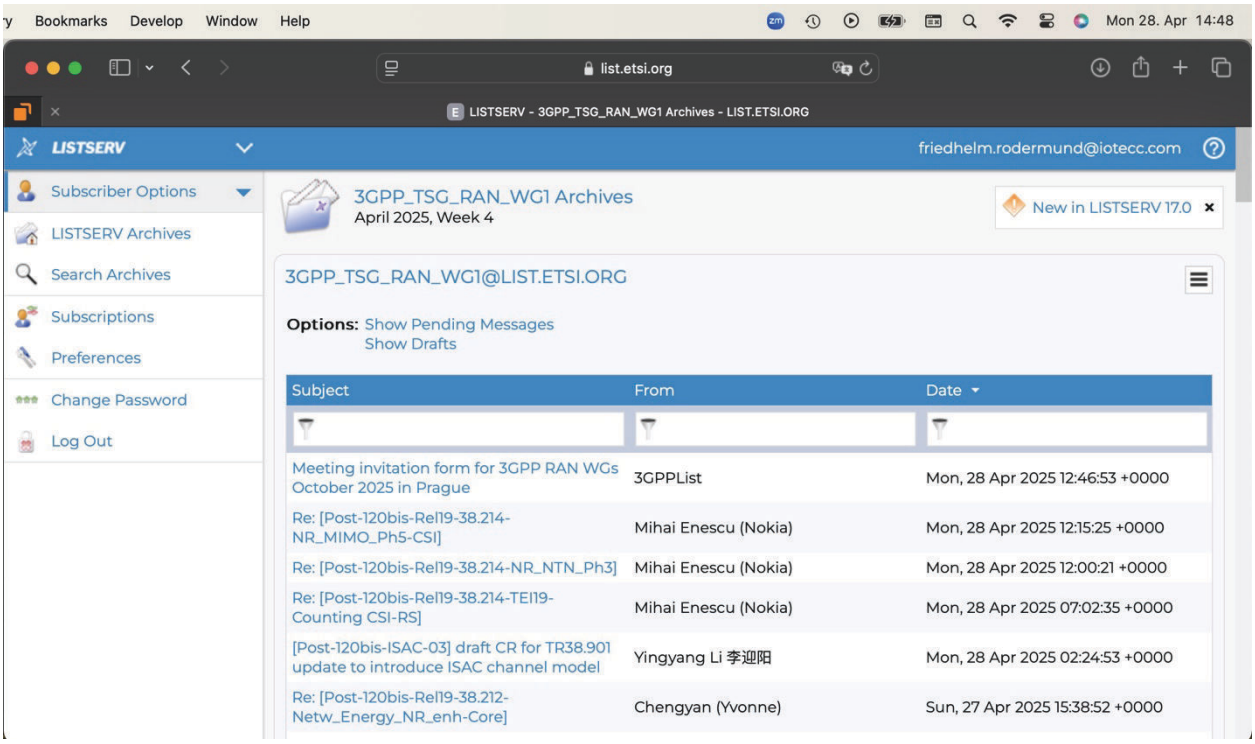
47. Since their creation in December 1998, 3GPP's email archives have been well-known to persons in the cellular telecommunications industry as a source of public information and for technical specifications, proposals, meeting announcements, technical discussions and reports regarding industry standards and technological advances.

48. Since the creation of 3GPP in December 1998 until today, ETSI and 3GPP are using the same email list management software LISTSERV from L-Soft.

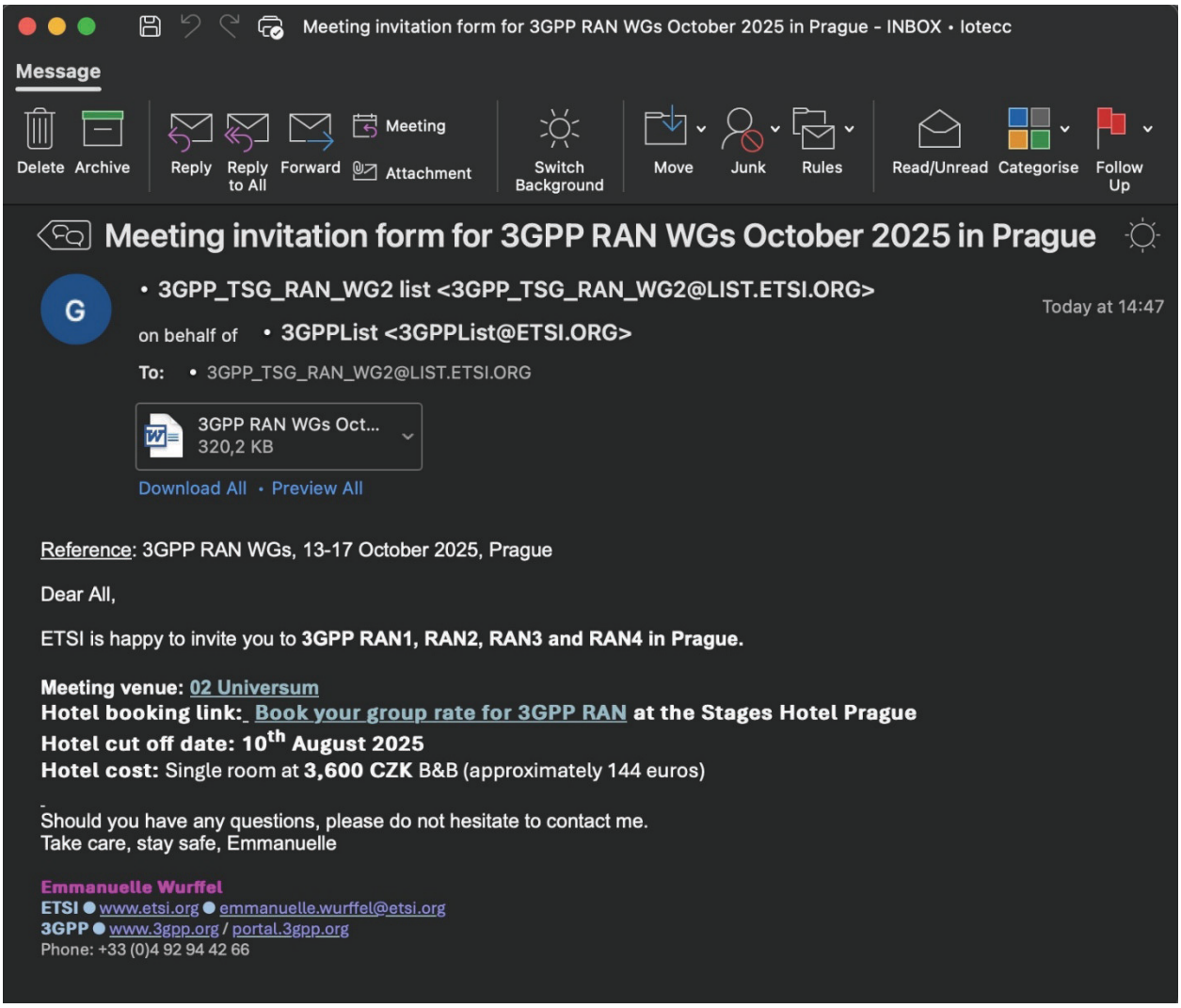
49. Based on my personal knowledge and experience, emails sent via the 3GPP email exploders are stored and indexed in the archive at the time the emails are initially sent. Thus, they are accessible within seconds or minutes (depending on system load) after the time the sender hit the "send" button. I have been using the 3GPP email exploder tool for many years, and during my time working for ETSI, I was "list owner" of several email exploders which means I was responsible for managing and administrating several ETSI and 3GPP email exploder lists.

50. Furthermore, the example below shows an email which became available via the 3GPP email archive at list.etsi.org right after it was sent. The date and time shown on the newest (upper) email in this list shows Mon, 28 April 2025 12:46 (UTC time zone). This time is nearly identical with the date and time shown on my PC as 28 April 14:46 (CEST time zone which is 2 hours ahead of UTC). Thus, the time difference in this example between sent time and current time is only two

minutes, in other words it took 2 minutes at most from sending until the email was accessible via the archive.



51. In comparison, the received time stamp shown on the same email in my inbox is shown as “14:47”, as can be seen with the screenshot below. This was even slightly later than the time the email appeared on the 3GPP email archive. According to my experience, it happens sometimes that email distribution may take several minutes after the entry in the archive already has appeared. This may be explained with system load as e.g. the 3GPP RAN WG1 and WG2 email exploders have more than 1000 subscribers, and the system needs some time to process such a number of emails.


Meeting invitation form for 3GPP RAN WGs October 2025 in Prague - INBOX • Iotecc

Message

Delete Archive Reply Reply to All Forward Meeting Attachment Switch Background Move Junk Rules Read/Unread Categorise Follow Up

Meeting invitation form for 3GPP RAN WGs October 2025 in Prague

• 3GPP_TSG_RAN_WG2 list <3GPP_TSG_RAN_WG2@LIST.ETSI.ORG>

on behalf of • 3GPPList <3GPPList@ETSI.ORG>

Today at 14:47

To: • 3GPP_TSG_RAN_WG2@LIST.ETSI.ORG

3GPP RAN WGs Oct... 320,2 KB

Download All • Preview All

Reference: 3GPP RAN WGs, 13-17 October 2025, Prague

Dear All,

ETSI is happy to invite you to **3GPP RAN1, RAN2, RAN3 and RAN4 in Prague.**

Meeting venue: 02 Universum
Hotel booking link: Book your group rate for 3GPP RAN **at the Stages Hotel Prague**
Hotel cut off date: 10th August 2025
Hotel cost: Single room at **3,600 CZK** B&B (approximately 144 euros)

Should you have any questions, please do not hesitate to contact me.
Take care, stay safe, Emmanuelle

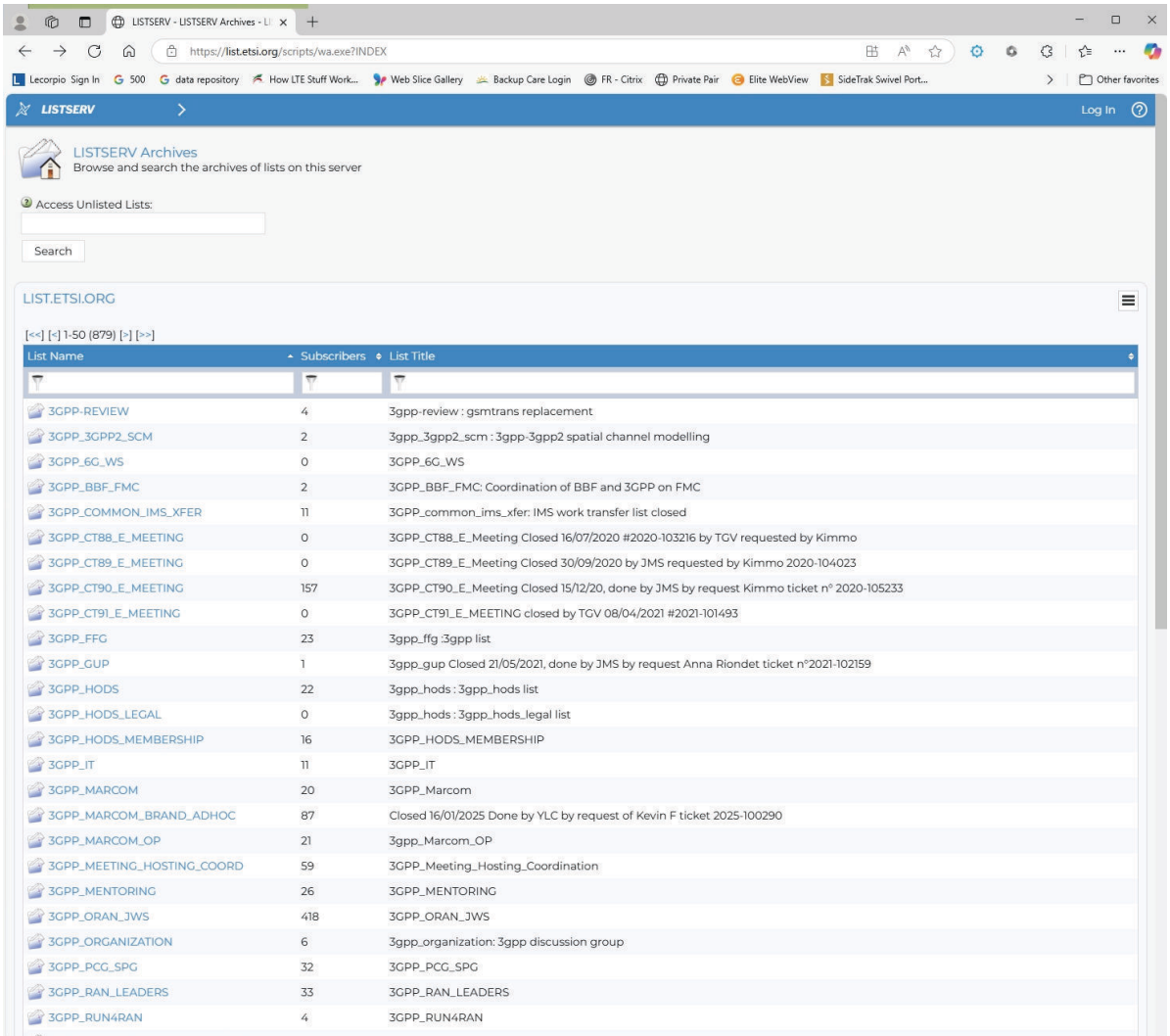
Emmanuelle Wurffel
ETSI ● www.etsi.org ● emmanuelle.wurffel@etsi.org
3GPP ● www.3gpp.org / portal.3gpp.org
Phone: +33 (0)4 92 94 42 66

52. While this is an example of near contemporaneous publication of emails in the 3GPP email archive shortly after they are sent in 2025, it is my experience that this how the 3GPP email archive operated prior to November 2019 as well.

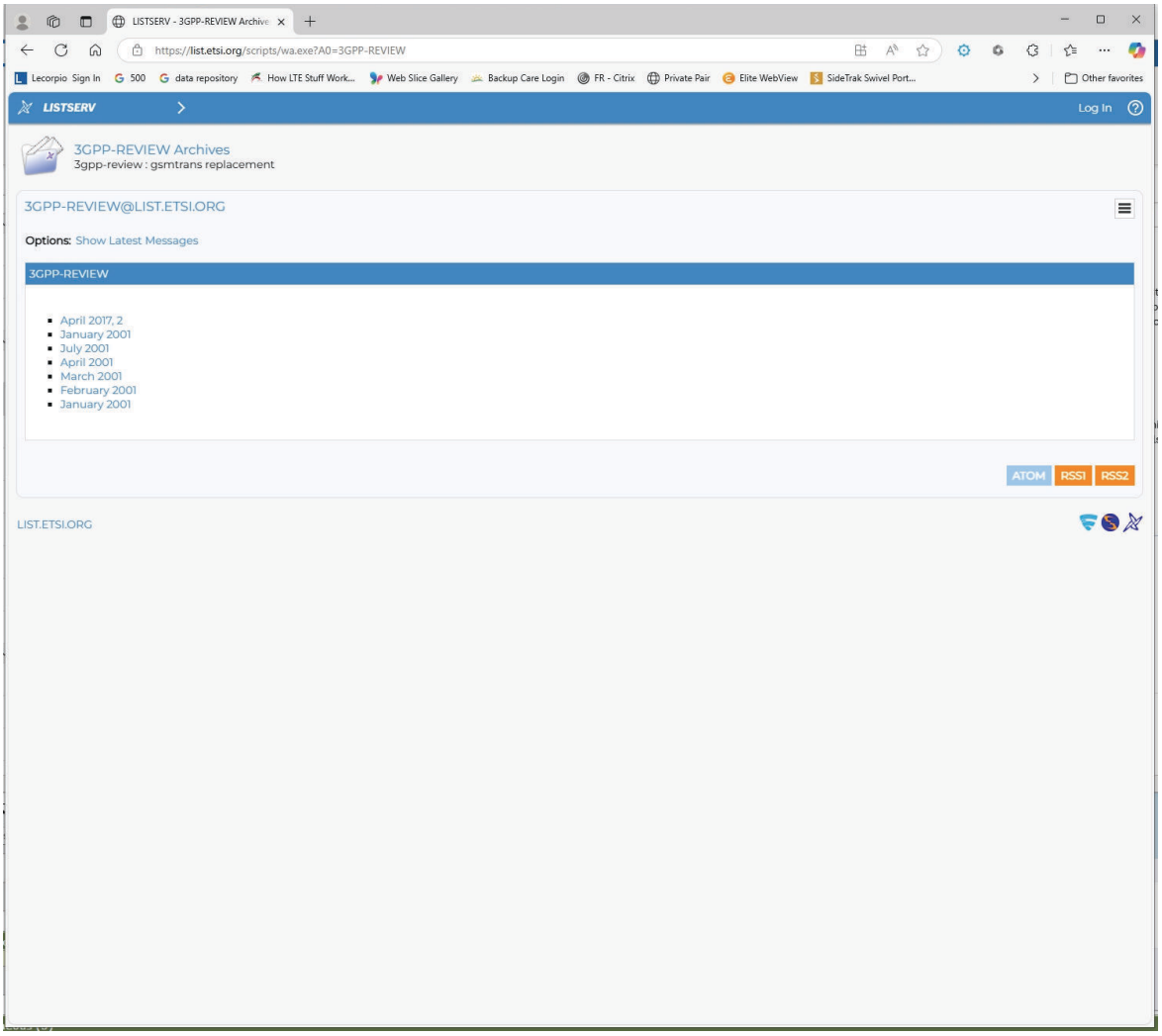
53. Emails in the 3GPP archive can be indexed by List Name, chronologically indexed (date-based), and organized into folders (webpages) by month or week over the years. Furthermore, there is subject-line indexing allowing

to group messages by threads. Full-text indexing allows search of the emails in the 3GPP email archive by keywords and author indexing allows search of emails in the 3GPP email archive by author.

54. An example of indexed emails in the 3GPP archive have been indexed by List Name at https://list.etsi.org/scripts/wa.exe?INDEX is shown in the screenshot below:

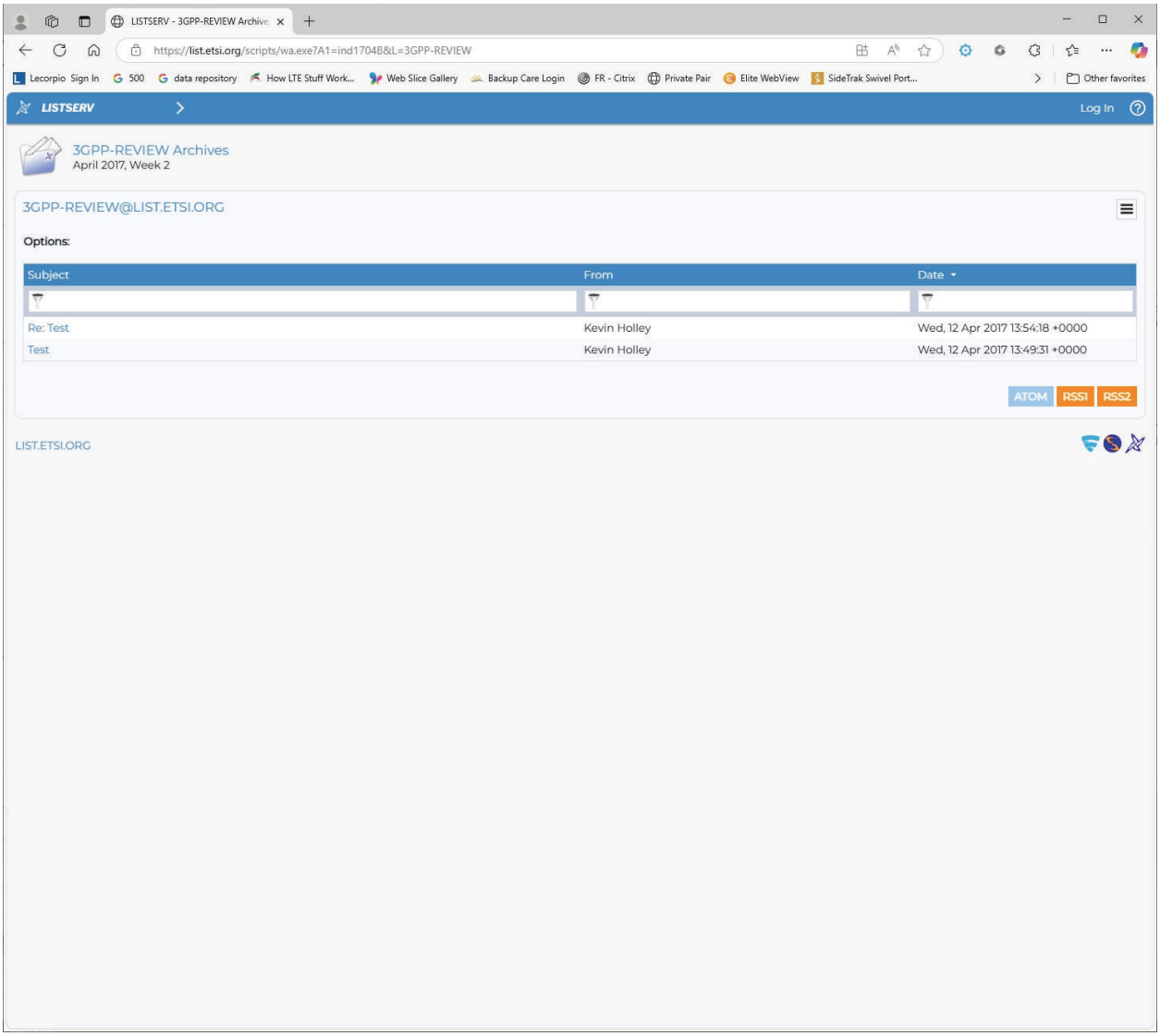


55. Selection of the first indexed List Name (i.e., 3GPP-Review) returns the webpage https://list.etsi.org/scripts/wa.exe?A0=3GPP-REVIEW, which includes chronologically indexed emails from 3GPP List Name 3GPP-Review, which is shown in the screenshot below:



56. Selection of a date from the webpage above such as, e.g., April 2017 returns a webpage showing the emails sent to the 3GPP List Name "3GPP-Review" that have been indexed chronologically as being communicated in April

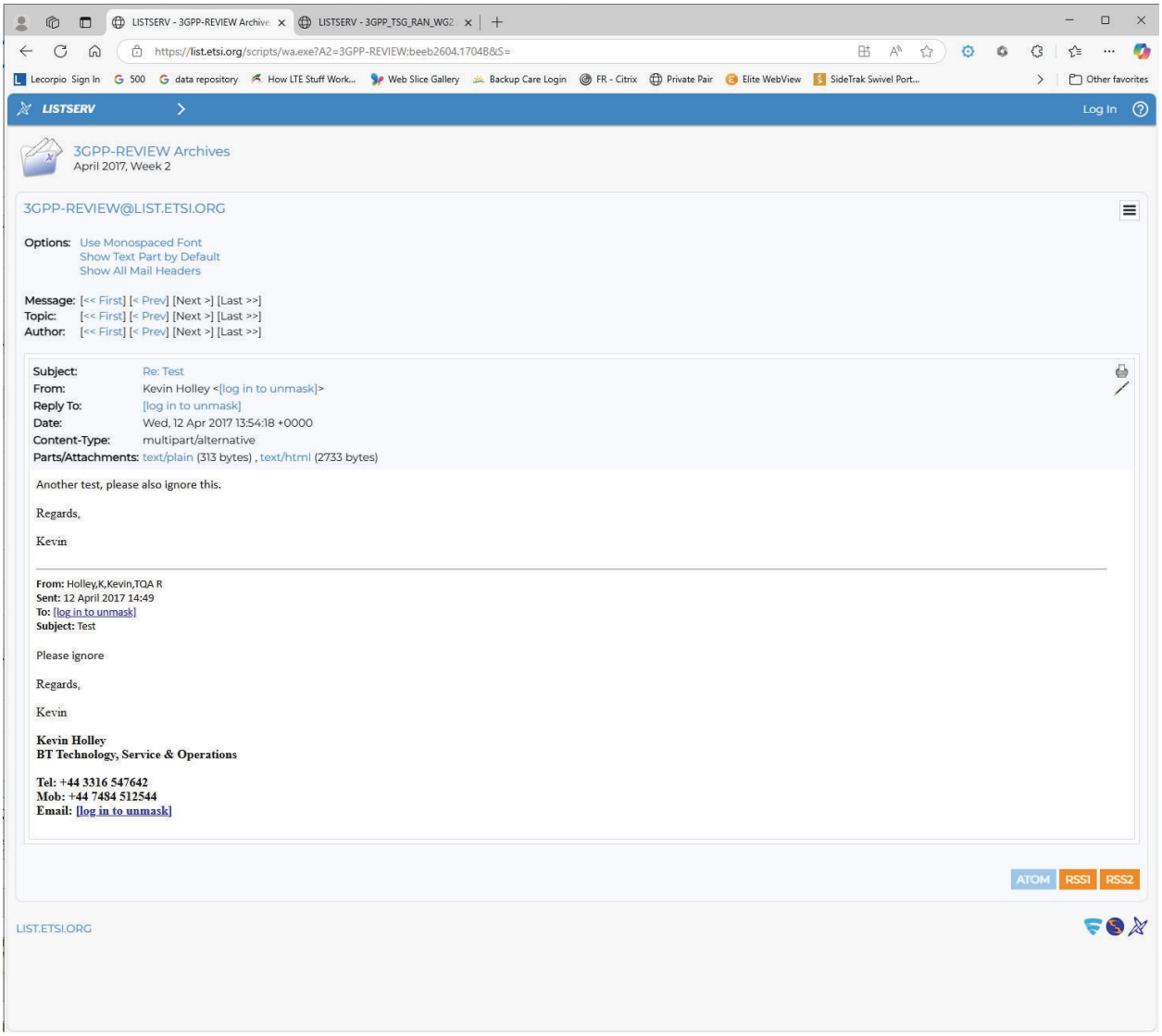
2017. A screenshot of the webpage that results from the selection of the link April 2017 shown in the webpage in the above screenshot returns the webpage https://list.etsi.org/scripts/wa.exe?A1=ind1704B&L=3GPP-REVIEW that includes emails indexed as being communicated in April 2017, which is shown below:



57. As shown in the screenshot of the webpage https://list.etsi.org/scripts/wa.exe?A1=ind1704B&L=3GPP-REVIEW above, the

emails in the 3GPP archive for List Name 3GPP-Review have been indexed under the List Name 3GPP-Review, further indexed chronologically as being communicated on April 2017, and then further indexed by email subject name, and author ("From").

58. Email messages in the 3GPP email archive are also indexed internally, as they are assigned a unique identifier which is also included in the URL. For example, selection of the first email having subject line RE:Test shown in the screenshot of https://list.etsi.org/scripts/wa.exe?A1=ind1704B&L=3GPP-REVIEW above returns the webpage https://list.etsi.org/scripts/wa.exe?A2=3GPP-REVIEW;beeb2604.1704B&S= shown below:

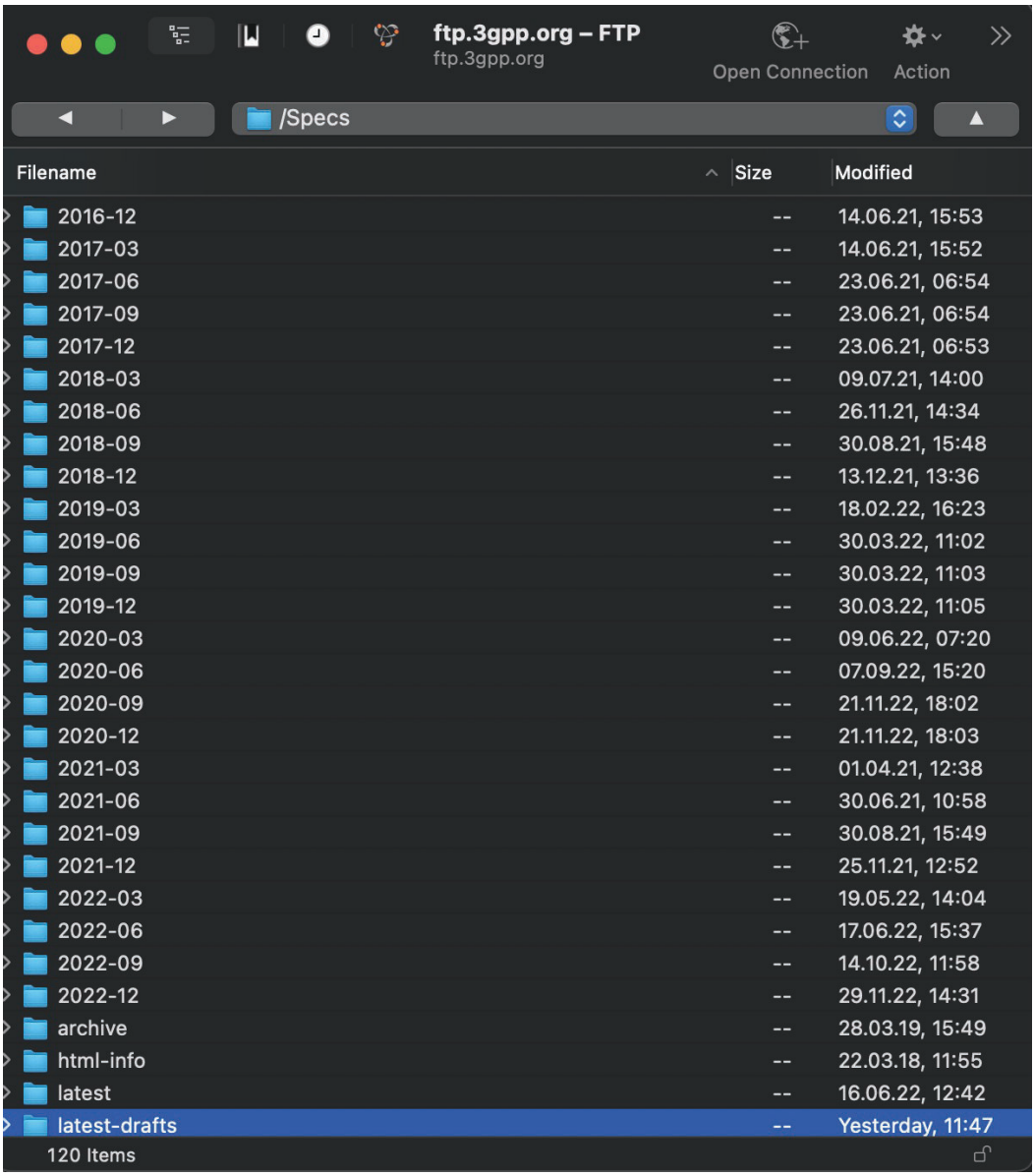


59. In the example of the email archived at the webpage https://list.etsi.org/scripts/wa.exe?A2=3GPP-REVIEW;beeb2604.1704B&S=, beeb2604.1704B is used as an unique identifier that is to index the email shown in the screenshot above.

60. While this is an example of indexing of emails in the 3GPP email illustrated using present-day websites of a 3GPP mail archive, it is my experience

that this how the emails in the 3GPP email archive were indexed prior to November 2019 as well.

61. 3GPP specifications almost always are duplicated in at least two and sometime more locations on the FTP server. One location corresponds to a "snapshot" of the specifications corresponding to a particular plenary meeting cycle—for instance, the 2018-12 snapshot contains a snapshot of numerous specifications after the December 2018 3GPP plenary meetings. The second location is an "archive" that contains all versions over time for a given specification. The screenshot below shows an excerpt of the "Spec" folder at ftp.3gpp.org:



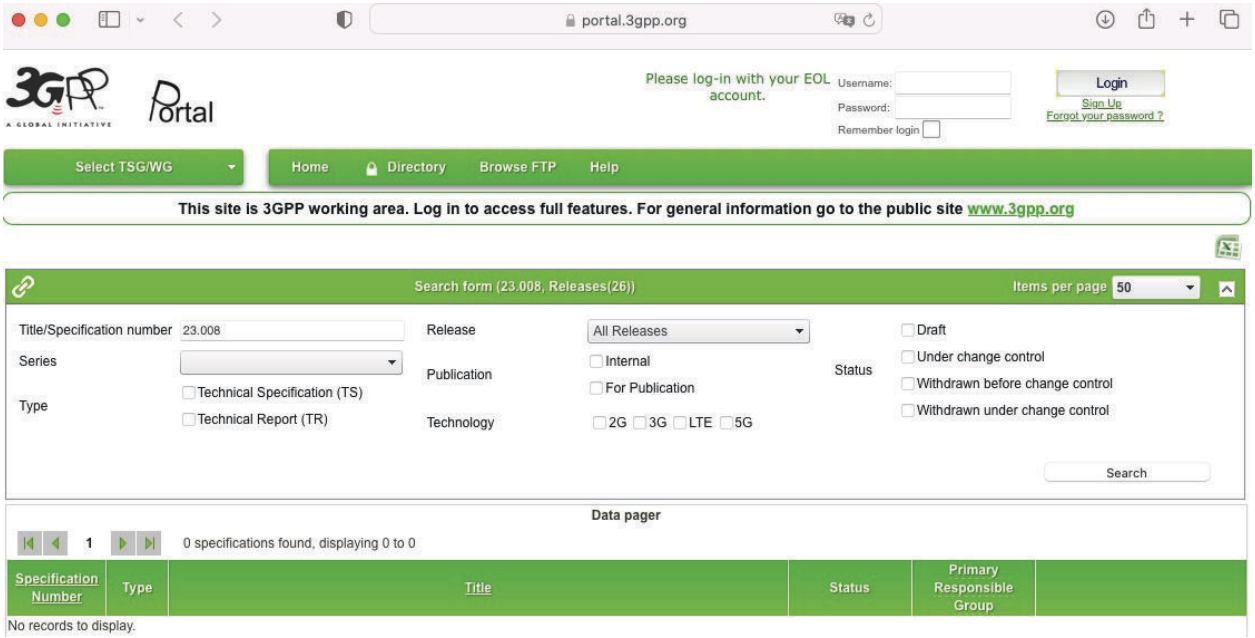
62. While 3GPP aims to upload the updated specifications to both locations at the same time, occasionally there may be a small difference in the upload date, and thus the date stamp, for the same specification uploaded to the two locations. Additionally, specifications which are not yet approved (so called "draft" specifications) are presented as TDocs at working group and at plenary meetings (as

soon as the working group decides to submit the specification to the plenary meeting for information or approval). In many cases, the TDocs are also distributed on the email exploder of the working group prior to the meeting, making the TDocs available to all those subscribed to the email distribution list.

63. The timestamp on 3GPP's FTP server shows the date when the document was uploaded the last time. Thus, the timestamp shows the latest possible date the document became publicly available and accessible on 3GPP's FTP server. The given document might have been available earlier and the original timestamp might have been overwritten because the document was uploaded again. According to my experience, this is something which happened occasionally. Thus, the FTP timestamp is reliable as the latest possible upload date but one cannot determine whether it represents the first upload of a document to the FTP server.

64. An additional means of accessing 3GPP documents including TDocs and specifications is the 3GPP portal. *See* https://portal.3gpp.org/Specifications.aspx. 3GPP preserves the posted document indefinitely on its server for future reference. *Id.* As detailed below, the 3GPP website provides the date that a particular version of a technical specification was uploaded, using the date convention YYYY-MM-DD. The 3GPP portal also provides a login function to unlock full features, however, login is not required for searching and downloading technical specifications. Based on my personal

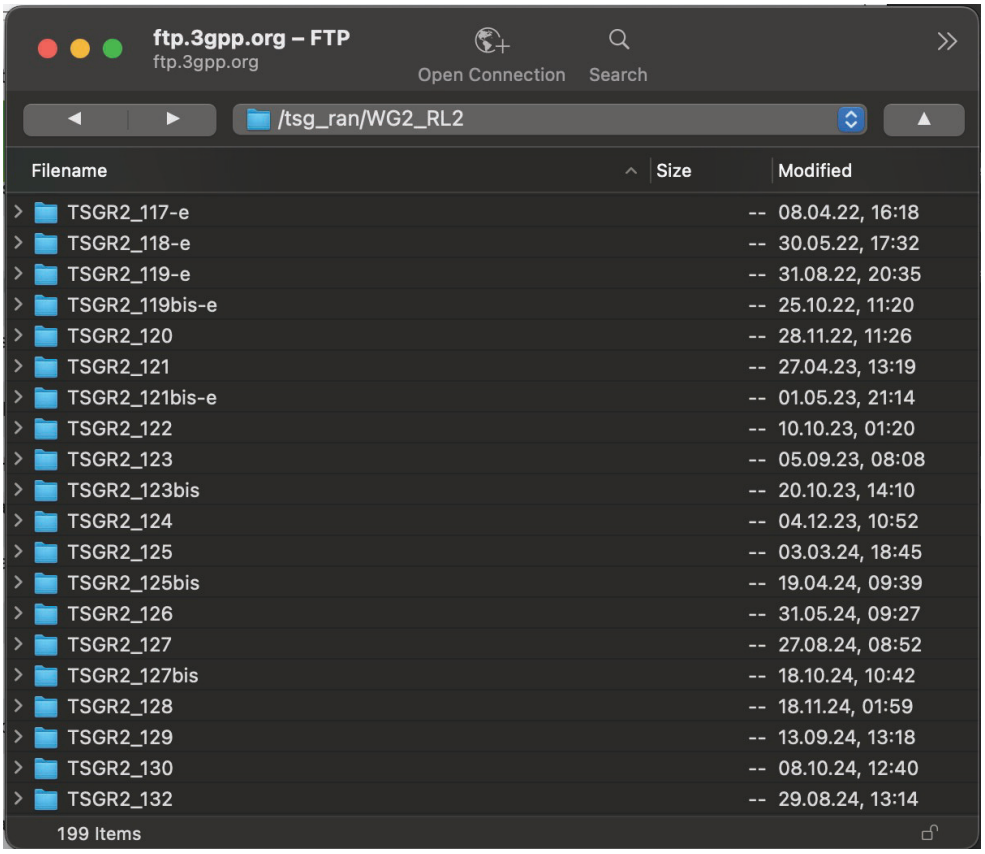
experience, throughout the 2019 timeframe, anyone interested in a particular 3GPP specification could search the 3GPP portal to find and download the latest version of a technical specification using the 3GPP portal in substantially the same manner as they would today:



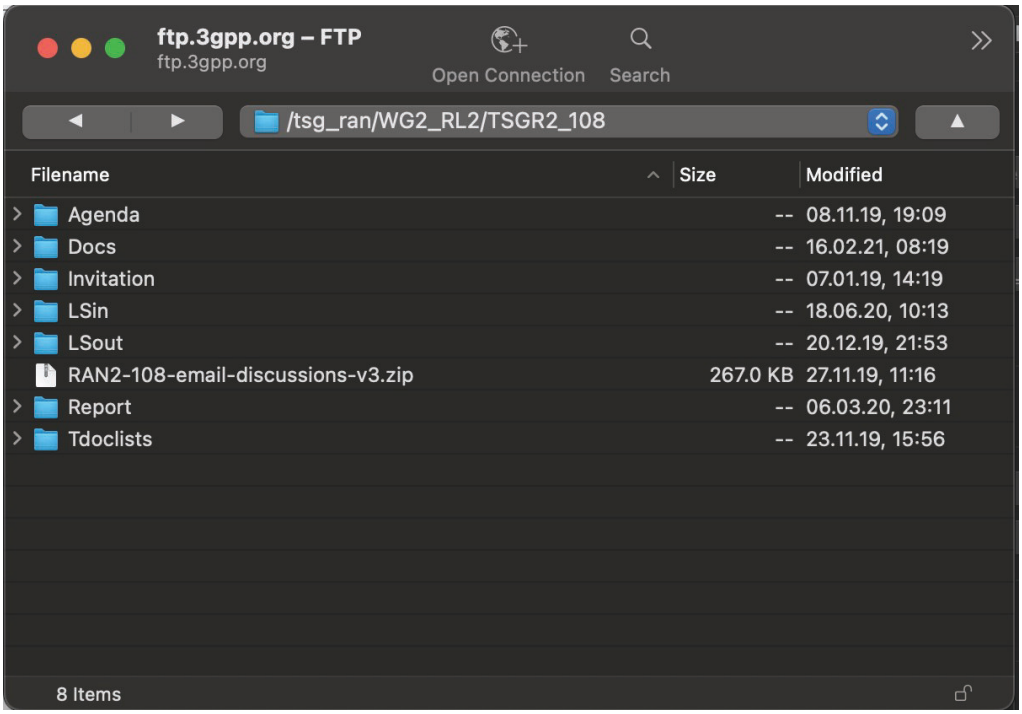
https://portal.3gpp.org/Specifications.aspx; *see, e.g.,* 2015 internet archive https://web.archive.org/web/20150924200802/https://portal.3gpp.org/.

65. 3GPP's working practice to store their documents on its FTP server, as described above, has not changed over time. Starting from the first 3GPP meetings in 1998 until present, all WGs and plenary meetings are represented by dedicated meeting folders on the FTP server. These meeting folders include the documents discussed at the meetings. Both the folders and the documents are accessible to the public. Almost every week, a new meeting folder with the respective documents is

added. As an example, the screenshot below shows an extract of the RAN WG2 folder named "WG2_RL2" showing that every meeting has a dedicated number:



66. As an example, the screenshot below shows the typical structure of a meeting folder including the most important folders "Agenda", "Docs" (includes all meeting contributions), and "Report" (includes the meeting report):



67. In addition to the plenary and WG meeting folders, and some other folders, there is also the "Specs" folder, which holds all 3GPP specifications including the aforementioned "snapshot" and archive folders. Since the early days of 3GPP a new folder is added inside the "Specs" folder after each TSG plenary meeting to hold the latest versions of specifications approved at those TSG plenary meetings. This is still 3GPP's working practice today; thus, this practice has not changed over time.

68. 3GPP maintains a set of publicly accessible documents[4] providing further details on its way of working:

[4] All available from https://www.3gpp.org/delegates-corner/3gpp-working-procedures

- 3GPP Working Procedures
- Vocabulary for 3GPP Specifications 3GPP TR 21.905
- Working Methods 3GPP TR 21.900
- Specification Drafting Rules 3GPP TR 21.801

B. Specific Documents

1. 3GPP CR 38.213 "Samsung"

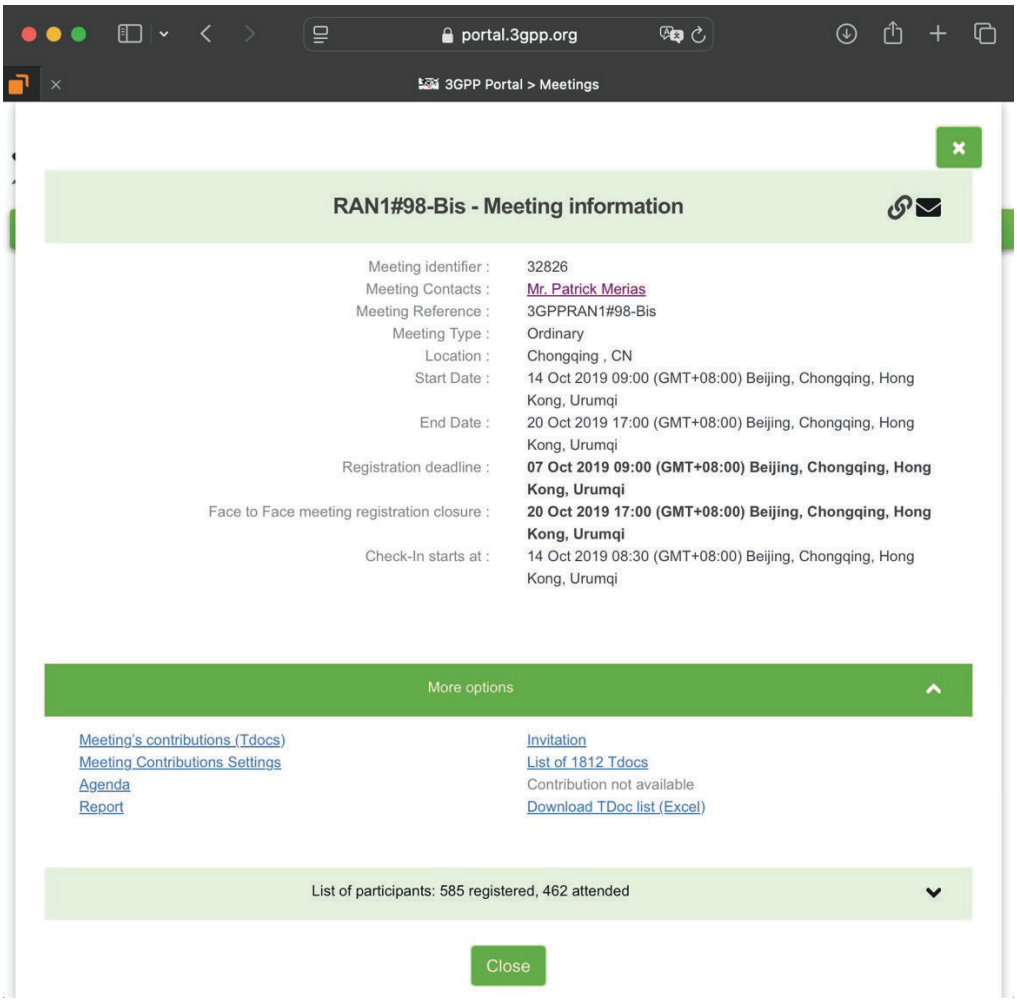
69. Based on my personal knowledge and my review of 3GPP's business records, I recognize APPLE-1006 as a true and correct copy of a 3GPP Change Request (CR) with the title "Introduction of Industrial IoT", named "Samsung" hereafter. The document was authored by Samsung and proposed specification text including aspects of DL SPS and UL grant Type 2. The CR was aimed at Version 15.7.0. of 3GPP TS 38.213 which is the 5G NR (New Radio) technical specification covering physical layer procedures for control.

70. On its face, "Samsung" refers to the RAN WG1 meeting #98bis held on October 14-20, 2019, in Chongqing, China. Based on my experience, the text on the face of "Samsung" referring to "RAN WG1 meeting #98bis" identifies a 3GPP working group meeting and the text referring to "October 14-20, 2019, in Chongqing, China" identifies the date and location of that working group meeting. Thus, based on my personal knowledge and experience with ETSI's and 3GPP's

standard business practices, this information tells me that "Samsung" was available either prior to or during or shortly after that meeting to 3GPP members, and to the general public.

71. According to the 3GPP website at https://portal.3gpp.org/Meetings.aspx#/ which is shown by the screenshot below, the RAN WG1 meeting #98bis meeting held on October 14-20, 2019, in Chongqing, China was attended by 462 individuals (out of 585 registered participants)[5]:

[5] The participant list of the RAN WG1 meeting #98bis meeting can be found in Appendix E.



72. The document was distributed via the 3GPP_TSG_RAN_WG1 email exploder on November 3, 2019, as an attachment to an email from Aris Papasakellariou from Samsung as shown in APPLE-1009. As of today, this email exploder has around 1497 subscribers, as can be seen by https://list.etsi.org/scripts/wa.exe?INDEX. I would expect a similar, or, only slightly lower, number of subscribers around November 2019.

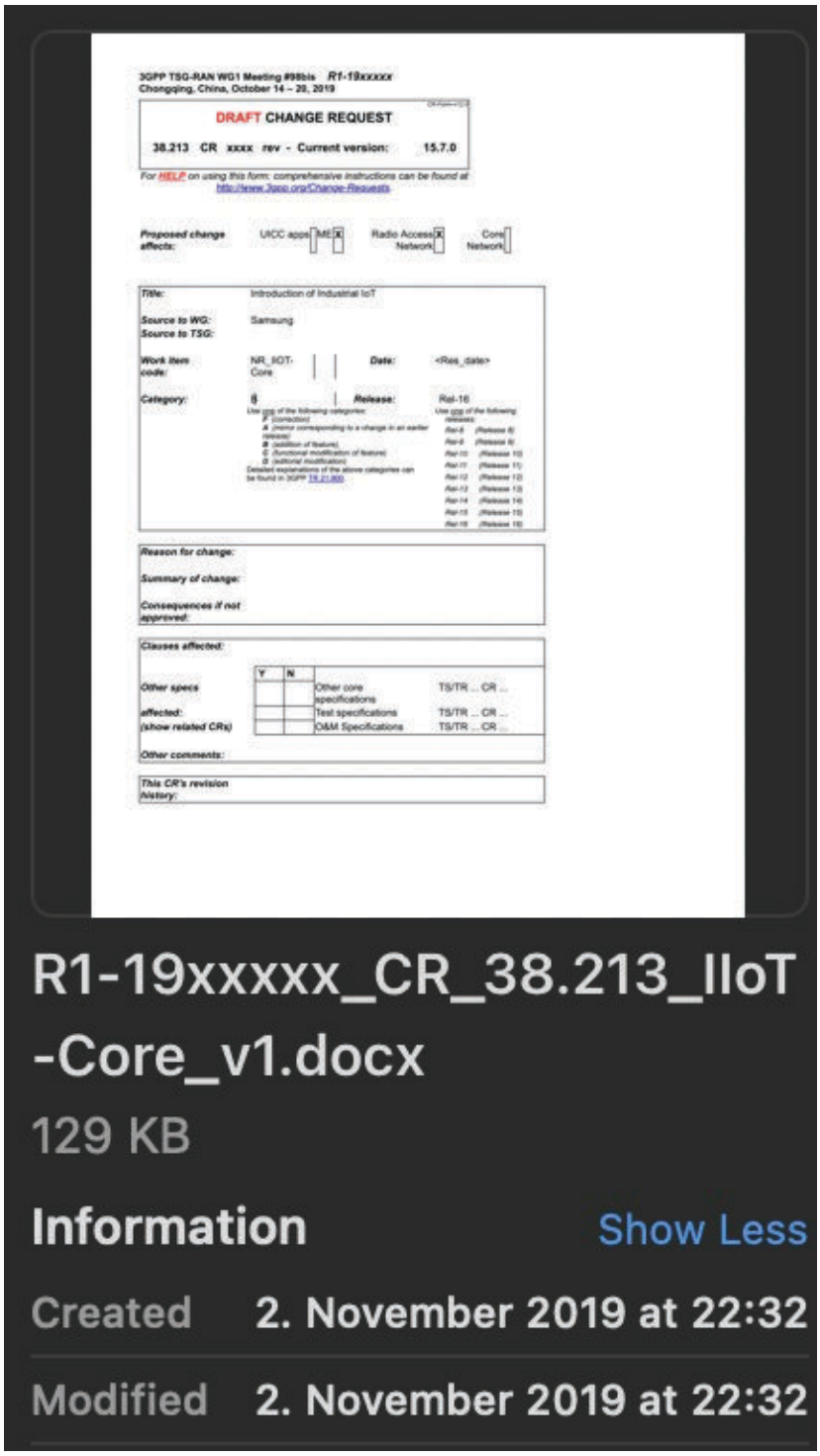
73. Representatives of Samsung, Huawei, and Nokia will have received this email via the 3GPP_TSG_RAN_WG1 email exploder given that all companies active in 3GPP WGs are subscribed to the respective email exploders. E.g. the email shown in APPLE-1009 shows Aris Papasakellariou from Samsung, Sigen Ye from Nokia, and Yamping Xing from CATT as participants of this email thread.

74. An archived version of the email shown in APPLE-1009 from Aris Papasakellariou is accessible at https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_RAN_WG1;f8c17069.1911A&S=. The archived email shown in APPLE-1009 includes an attachment named "R1-19xxxxx_CR_38.213_IIoT-Core_v1.zip". I accessed the archived version of the email shown in APPLE-1009 at the link above and downloaded the attachment named "R1-19xxxxx_CR_38.213_IIoT-Core_v1.zip" and the downloaded file had a size of 106 KB. A comparison of the size of the downloaded zip file to the attachment shown in APPLE-1009 reveals that the downloaded file has the same size as the file attached to the email shown in APPLE-1009. However, the size of a file is measured by the operating system that is used to store the file and it is common that identical files stored on different operating systems can have a different file size, as the file size is a function of the mathematical formula used by an operating system to calculate the file size in accordance with the file system used to organize files and the properties of the hard drive used to store the file. As a result, there may be some

operating systems that result in a downloaded file having a similar, but different, file size than others.

75. I unzipped the downloaded file "R1-19xxxxx_CR_38.213_IIoT-Core_v1.zip" to access a TDoc file named "R1-19xxxxx_CR_38.213_IIoT-Core_v1.docx." Based on my review of "R1-19xxxxx_CR_38.213_IIoT-Core_v1.docx," I can confirm that the filed named "R1-19xxxxx_CR_38.213_IIoT-Core_v1.docx" is a true and authentic copy of APPLE-1006.

76. The metatdata for the filed named "R1-19xxxxx_CR_38.213_IIoT-Core_v1.docx" confirms that the file is named "R1-19xxxxx_CR_38.213_IIoT-Core_v1.docx," that the file named "R1-19xxxxx_CR_38.213_IIoT-Core_v1.docx" was created on "2. November 2019," that the file named "R1-19xxxxx_CR_38.213_IIoT-Core_v1.docx" was last modified on "2. November 2019," and that the unzipped file size of the file named "R1-19xxxxx_CR_38.213_IIoT-Core_v1.docx" was "129 KB." A screenshot of the metadata for the file named "R1-19xxxxx_CR_38.213_IIoT-Core_v1.docx" is shown below.



77. As explained in paragraph 42, any member of the public would have been able to receive 3GPP emails via the 3GPP email exploders as of the date and

time the email was sent. Furthermore, in addition to receiving such emails, any member of the public would have been able to access all emails via the 3GPP email archive at list.etsi.org. As mentioned in paragraph 47, it is my opinion that emails were accessible via the archive immediately after they have been sent.

78. In my opinion, an attachment to an email sent via the 3GPP email exploder would have been available to the public as of at least the date shown in the header of an email sent via the 3GPP email exploder and displayed in the 3GPP archive at list.etsi.org.

79. The last modified date is consistent with the November 3, 2019, date of the email distribution, and the standard business practice among 3GPP participants to make documents available shortly after completing them.

80. Thus, based on my personal knowledge and experience with ETSI's and 3GPP's standard business practices, APPLE-1006 is an authentic copy of "Samsung" that was shared via the public 3GPP email exploder, and made accessible via the 3GPP email archive to the general public by November 3, 2019, at the latest.

2. 3GPP CR 38.212 "Huawei"

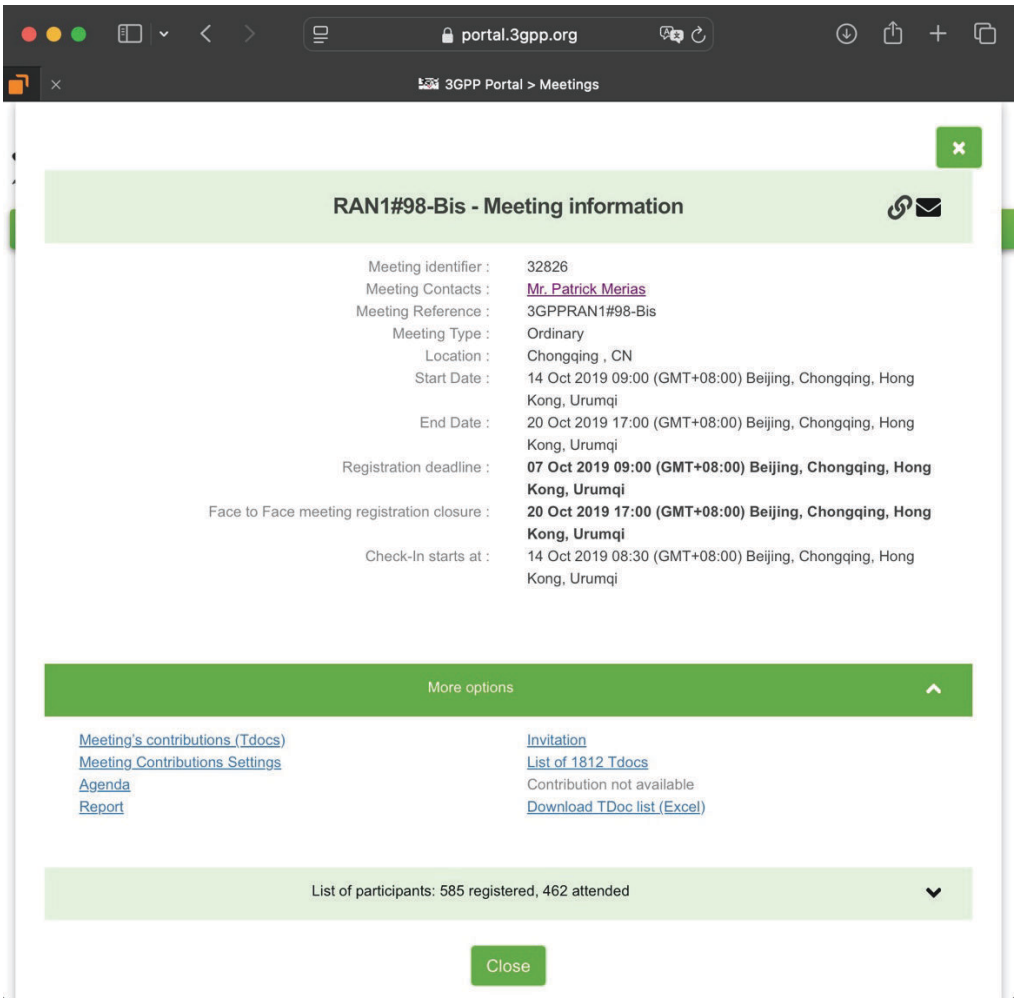
81. Based on my personal knowledge and my review of 3GPP's business records, I recognize APPLE-1007 as a true and correct copy of a 3GPP Change Request (CR) with the title "Introduction of Physical Layer Enhancements for NR

URLLC", named "Huawei" hereafter. The document was authored by Huawei and proposed DCI format enhancements including several new DCI formats. The CR was aimed at Version 15.7.0. of 3GPP TS 38.212 which is the 5G NR (New Radio) technical specification named "Multiplexing and channel coding".

82. On its face, "Huawei" refers to the RAN WG1 meeting #98bis held on October 14-20, 2019, in Chongqing, China. Based on my experience, the text on the face of "Huawei" referring to "RAN WG1 meeting #98bis" identifies a 3GPP working group meeting and the text referring to "October 14-20, 2019, in Chongqing, China" identifies the date and location of that working group meeting. Thus, based on my personal knowledge and experience with ETSI's and 3GPP's standard business practices, this information tells me that "Huawei" was available either prior to or during or shortly after that meeting to 3GPP members, and to the general public.

83. According to the 3GPP website at https://portal.3gpp.org/Meetings.aspx#/ which is shown by the screenshot below, the RAN WG1 meeting #98bis meeting held on October 14-20, 2019, in Chongqing, China was attended by 462 individuals (out of 585 registered participants)[6]:

[6] The participant list of the RAN WG1 meeting #98bis meeting can be found in Appendix E.



84. The document was distributed via the 3GPP_TSG_RAN_WG1 email exploder on November 1, 2019, as an attachment to an email from Zukang Shen from Huawei as shown in APPLE-1010. As of today, this email exploder has around 1497 subscribers, as can be seen by https://list.etsi.org/scripts/wa.exe?INDEX. I would expect a similar, or, only slightly lower, number of subscribers around November 2019.

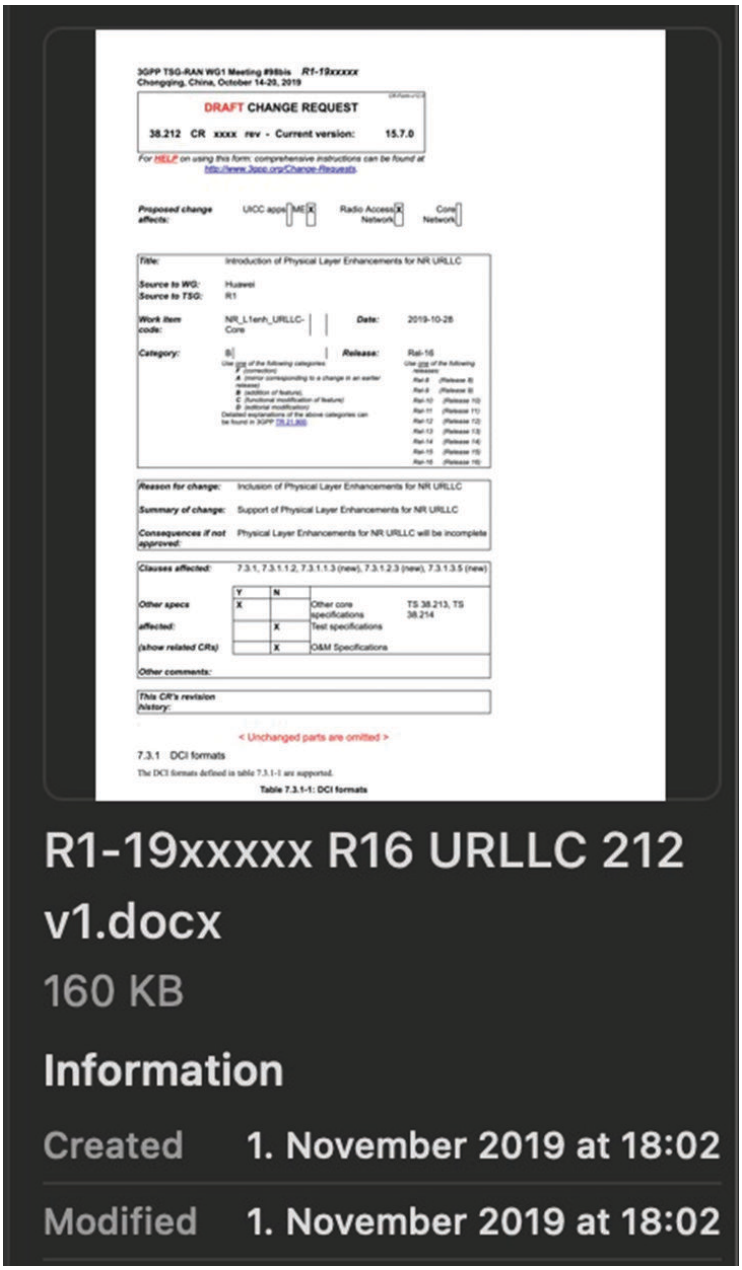
85. Representatives of Samsung, Huawei, and Nokia will have received this email via the 3GPP_TSG_RAN_WG1 email exploder given that all companies active in 3GPP WGs are subscribed to the respective email exploders. E.g. the email shown in APPLE-1009 shows Aris Papasakellariou from Samsung, Sigen Ye from Nokia, and Yamping Xing from CATT as participants of this email thread, thus, they have been subscribed to the 3GPP_TSG_RAN_WG1 email exploder that time.

86. An archived version of the email shown in APPLE-1010 from Zukang Shen is accessible at https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_RAN_WG1;21230e19.1911A&S=. The archived email shown in APPLE-1010 includes an attachment named "R1-19xxxxx R16 URLLC 212 v1.zip". I accessed the archived version of the email shown in APPLE-1010 at the link above and downloaded the attachment named "R1-19xxxxx R16 URLLC 212 v1.zip" and the downloaded file had a size of 141 KB. A comparison of the size of the downloaded zip file to the attachment shown in APPLE-1010 reveals that the downloaded file has the same size as the file attached to the email shown in APPLE-1010. However, the size of a file is measured by the operating system that is used to store the file and it is common that identical files stored on different operating systems can have a different file size, as the file size is a function of the mathematical formula used by an operating system to calculate the file size in accordance with the file system used to organize

files and the properties of the hard drive used to store the file. As a result, there may be some operating systems that result in a downloaded file having a similar, but different, file size than others.

87. I unzipped the downloaded file "R1-19xxxxx R16 URLLC 212 v1.zip" to access a TDoc file named "R1-19xxxxx R16 URLLC 212 v1.docx." Based on my review of "R1-19xxxxx R16 URLLC 212 v1.docx," I can confirm that the file named "R1-19xxxxx R16 URLLC 212 v1.docx" is a true and authentic copy of APPLE-1007.

88. The metadata for "R1-19xxxxx R16 URLLC 212 v1.docx" confirms that the file is named "R1-19xxxxx R16 URLLC 212 v1.docx," that the file named "R1-19xxxxx R16 URLLC 212 v1.docx" was created on "1. November 2019," that the file named "R1-19xxxxx R16 URLLC 212 v1.docx" was last modified on "1. November 2019," and that the unzipped file size of the file named "R1-19xxxxx R16 URLLC 212 v1.docx" was 160 KB. A screenshot of the metadata for the file named "R1-19xxxxx R16 URLLC 212 v1.docx" is shown below.



89. As explained in paragraph 42 above, any member of the public would have been able to receive 3GPP emails via the 3GPP email exploders as of the date and time the email was sent. Furthermore, in addition to receiving such emails any member of the public would have been able to access all emails via the 3GPP

email archive at list.etsi.org. As mentioned in paragraph 47, it is my opinion that emails were accessible via the archive immediately after they have been sent.

90. In my opinion, an attachment to an email sent via the 3GPP email exploder would have been available to the public as of at least the date shown in the header of an email sent via the 3GPP email exploder and displayed in the 3GPP archive at list.etsi.org.

91. The last modified date is consistent with the November 1, 2019, date of the email distribution, and the standard business practice among 3GPP participants to make documents available shortly after completing them.

92. Thus, based on my personal knowledge and experience with ETSI's and 3GPP's standard business practices, APPLE-1007 is an authentic copy of "Huawei" that was shared via the public 3GPP email exploder, and made accessible via the 3GPP email archive to the general public by November 1, 2019, at the latest.

3. CR 38.331 "Ericsson"

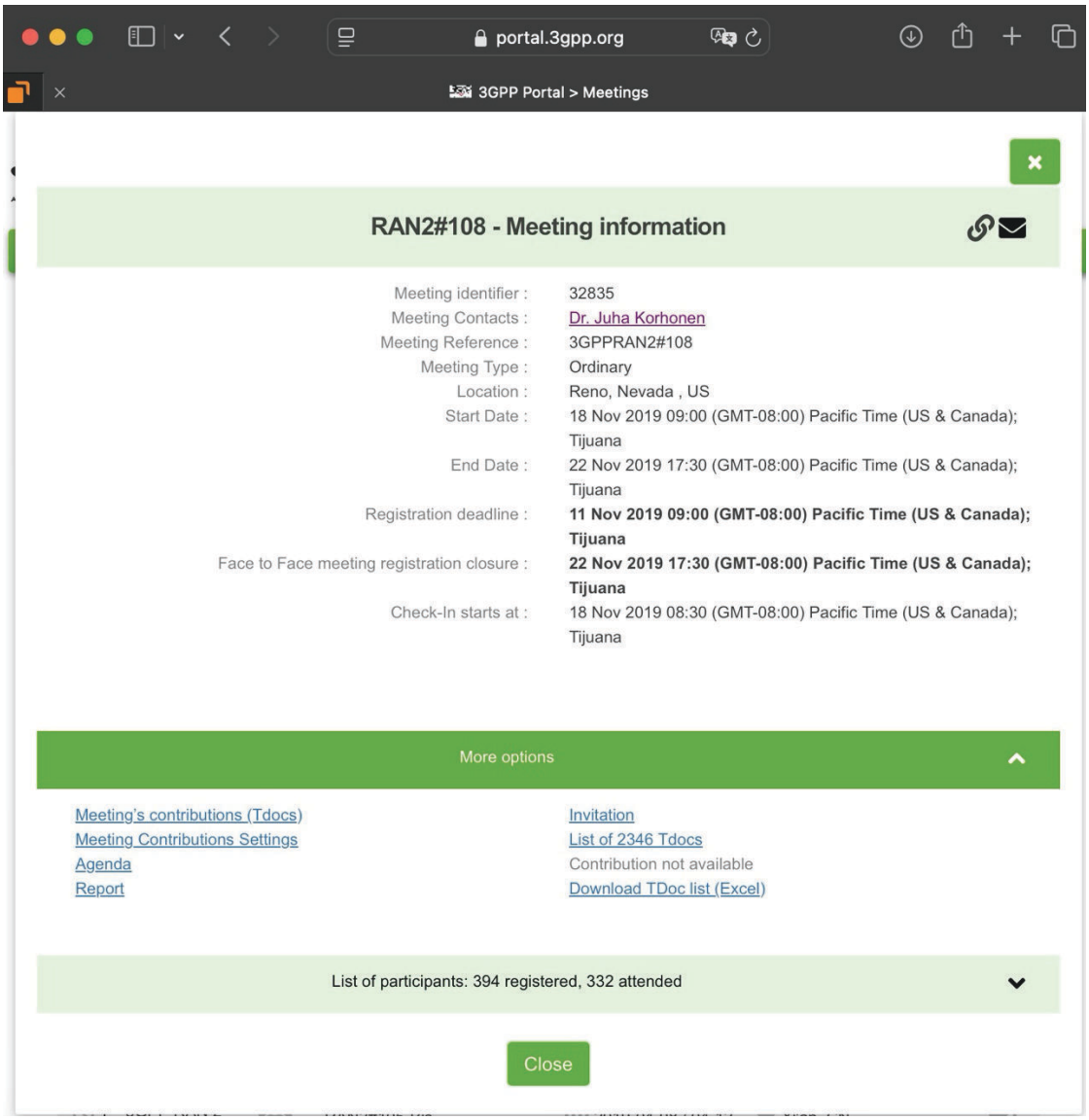
93. Based on my personal knowledge and my review of 3GPP's business records, I recognize APPLE-1012 as a true and correct copy of a draft 3GPP Change Request (CR) with the title "RRC running CR for NR IIoT", named "Ericsson" hereafter. The document was authored by Ericsson and introduced new features related to NR IIoT including aspects of DL SPS and UL CG. The draft CR

was aimed at Version 15.7.0. of 3GPP TS 38.331 which is the 5G NR (New Radio) technical specification named "Radio Resource Control (RRC); Protocol specification".

94. On its face, "Ericsson" refers to the RAN WG2 meeting #108 held on November 18-22, 2019, in Reno, Nevada. Based on my experience, the text on the face of "Ericsson" referring to "RAN WG2 meeting #108" identifies a 3GPP working group meeting and the text referring to "November 18-22, 2019, in Reno, Nevada" identifies the date and location of that working group meeting. Thus, based on my personal knowledge and experience with ETSI's and 3GPP's standard business practices, this information tells me that "Ericsson" was available either prior to or during or shortly after that meeting to 3GPP members, and to the general public.

95. According to the 3GPP website at https://portal.3gpp.org/Meetings.aspx#/ which is shown by the screenshot below, the RAN WG2 meeting #108 held on November 18-22, 2019, in Reno, Nevada, was attended by 332 individuals (out of 394 registered participants)[7]:

[7] The participant list of the RAN WG2 #108 meeting can be found in Appendix F.



96. The document was distributed via the 3GPP_TSG_RAN_WG2 email exploder on November 1, 2019, as an attachment to an email from Zhenhua Zou from Ericsson as shown in APPLE-1013. As of today, this email exploder has around 1127 subscribers, as can be seen by https://list.etsi.org/scripts/wa.exe?INDEX. I

would expect a similar, or, only slightly lower, number of subscribers around November 2019.

97. Representatives of Samsung, Huawei, and Nokia will have received this email via the 3GPP_TSG_RAN_WG2 email exploder given that all companies active in 3GPP WGs are subscribed to the respective email exploders.

98. An archived version of the email shown in APPLE-1013 from Zhenhua Zou is accessible at https://list.etsi.org/scripts/wa.exe?A2=3GPP_TSG_RAN_WG2;5b1a1fd1.1911A&S=. The archived email shown in APPLE-1013 includes an attachment named "R2-19xxxxx RRC running CR for NR IIoT.docx". I accessed the archived version of the email shown in APPLE-1013 at the link above and downloaded the attachment named "R2-19xxxxx RRC running CR for NR IIoT.docx" and the downloaded file had a size of 212 KB. A comparison of the size of the downloaded zip file to the attachment shown in APPLE-1013 reveals that the downloaded file has the same size as the file attached to the email shown in APPLE-1013. However, the size of a file is measured by the operating system that is used to store the file and it is common that identical files stored on different operating systems can have a different file size, as the file size is a function of the mathematical formula used by an operating system to calculate the file size in accordance with the file system used to organize files and the properties of the hard

drive used to store the file. As a result, there may be some operating systems that result in a downloaded file having a similar, but different, file size than others.

99. Based on my review of "R2-19xxxxx RRC running CR for NR IIoT.docx," I can confirm that APPLE-1012 is a true and authentic copy of the file named "R2-19xxxxx RRC running CR for NR IIoT.docx" attached to the email shown in APPLE-1013.

100. As explained in paragraph 42, any member of the public would have been able to receive 3GPP emails via the 3GPP email exploders as of the date and time the email was sent. Furthermore, in addition to receiving such emails, any member of the public would have been able to access all emails via the 3GPP email archive at list.etsi.org. As mentioned in paragraph 47, it is my opinion that emails were accessible via the archive immediately after they have been sent.

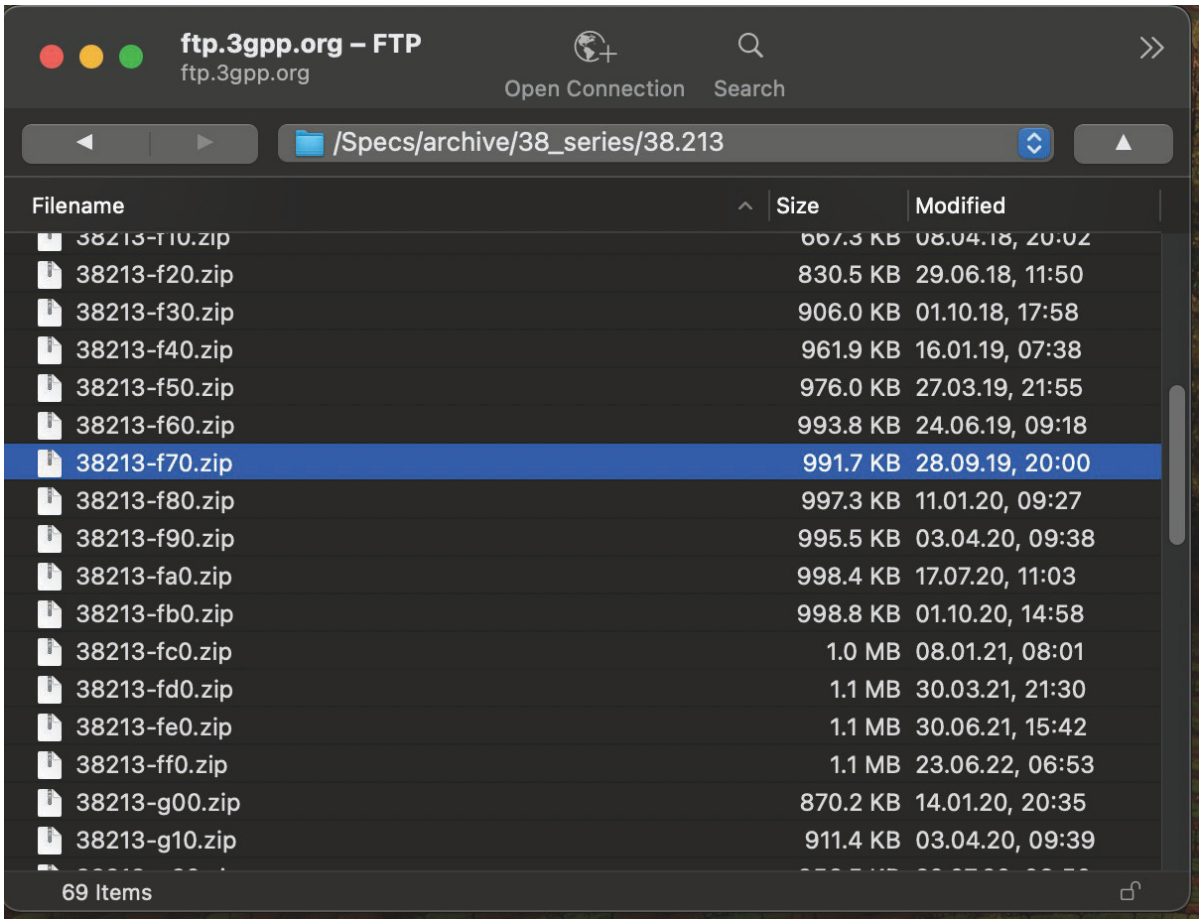
101. In my opinion, an attachment to an email sent via the 3GPP email exploder would have been available to the public as of at least the date shown in the header of an email sent via the 3GPP email exploder and displayed in the 3GPP archive at list.etsi.org.

102. Thus, based on my personal knowledge and experience with ETSI's and 3GPP's standard business practices, APPLE-1012 is an authentic copy of "Ericsson" that was shared via the public 3GPP email exploder, and made accessible via the 3GPP email archive to the general public by November 1, 2019, at the latest.

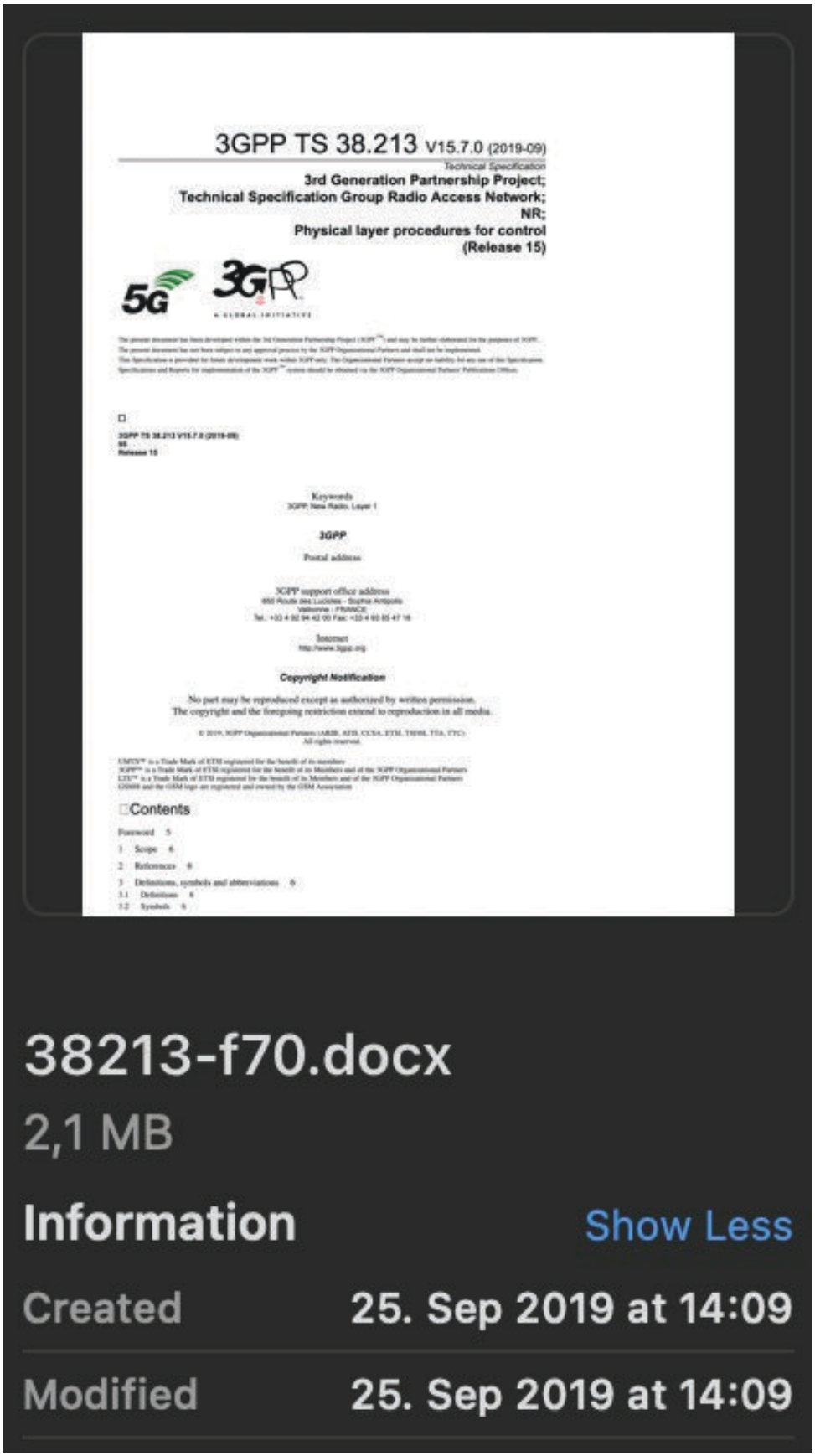
4. TS 38.213 V15.7.0

103. Based on my personal knowledge and my review of 3GPP's business records, I recognize APPLE-1005 as a true and correct copy of version 15.7.0 of technical specification 3GPP TS 38.213 ("Technical Specification Group Radio Access Network; NR; Physical layer procedures for control (Release 15)"), which shows on its cover page "2019-09" as the year (2019) and month (September) during which this document was released by 3GPP.

104. The document was published and freely available on 3GPP's ftp server by September 28, 2019. This is confirmed by the date stamp shown on the historic 3GPP ftp server for the corresponding downloadable file ("38213-f70.zip"), as maintained by the Internet Archive at http://web.archive.org/web/20200315043318/https://www.3gpp.org/ftp/Specs/archive/38_series/38.213/. This information is also shown on the date stamp for the present-day listing of the same document on the 3GPP ftp server at https://www.3gpp.org/ftp/Specs/archive/38_series/38.213, as shown by the screen shot below:

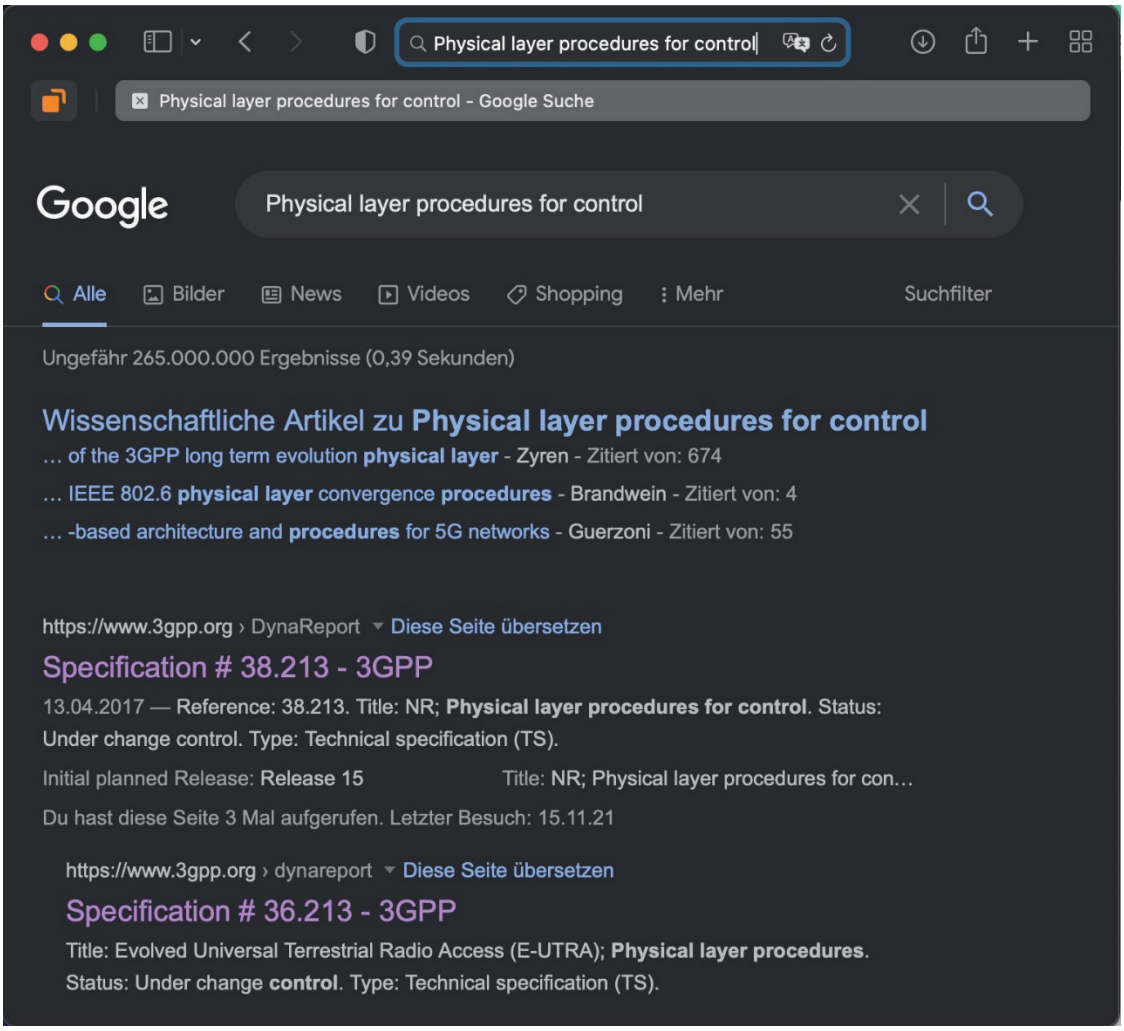


105. In addition, metadata information for the downloaded and extracted specification file states a last Modified date of “25. September 2019”, as shown in the screenshot below:

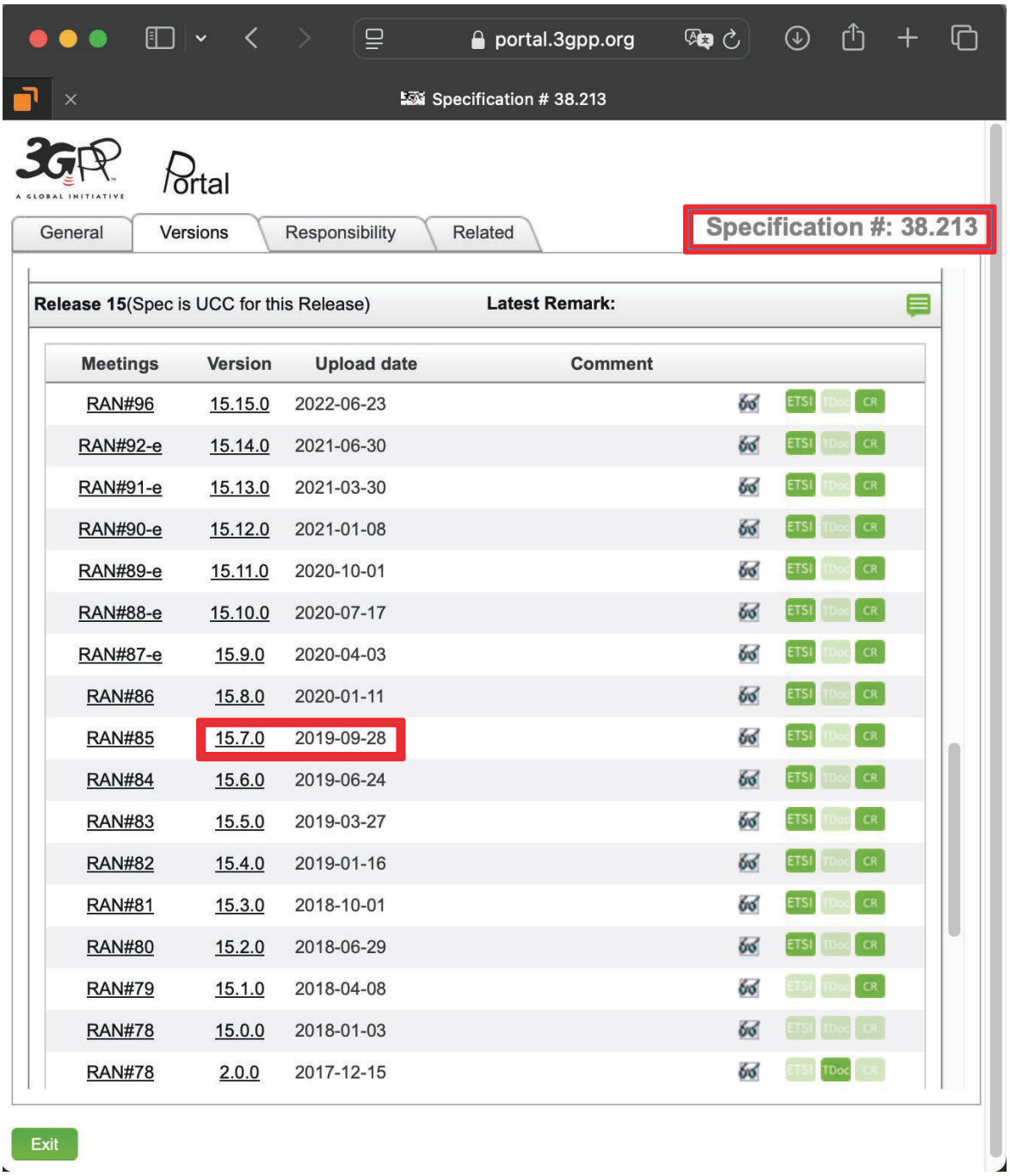

3GPP TS 38.213 V15.7.0 (2019-09)
Technical Specification
3rd Generation Partnership Project;
Technical Specification Group Radio Access Network;
NR;
Physical layer procedures for control
(Release 15)
Keywords
3GPP
Postal address
Internet
Copyright Notification
Contents
38213-f70.docx
2,1 MB
Information
Show Less
Created
25. Sep 2019 at 14:09
Modified
25. Sep 2019 at 14:09

106. This last modified date well aligned with the September 28, 2019, upload date of the document, and the standard business practice among 3GPP participants to upload submissions shortly after completing them.

107. I believe that a person without prior knowledge of 3GPP and/or the technical specification (TS) number would have been able to easily find the TS for download via internet search. For instance, a Google search for "Physical layer procedures for control" provides the TS number "38.213" as one of the top results as can be seen in the screenshot below:



108. Following the provided search result link “Specification # 38.213” leads to a 3GPP web page offering under the tab “Versions” download links to all versions of TS 38.213 including version 15.7.0, as shown by the screenshot below:



109. The above example search illustrates that it is very easy for an interested member of the public without prior knowledge of the TS number and even without prior knowledge of 3GPP to locate any version of TS 38.213, including version 15.7.0, for download.

110. The above search was performed at the time of writing this report. According to my personal experience, in September 2019 or around that timeframe it would have been similarly straightforward to locate a path to download version 15.7.0 of TS 38.213.

111. Thus, based on my personal knowledge and experience with ETSI's and 3GPP's standard business practices, this information tells me that APPLE-1005 is an authentic copy of Version 15.7.0 of technical specification 3GPP TS 38.213 which was available to all 3GPP members and the general public by September 28, 2019, at the latest.

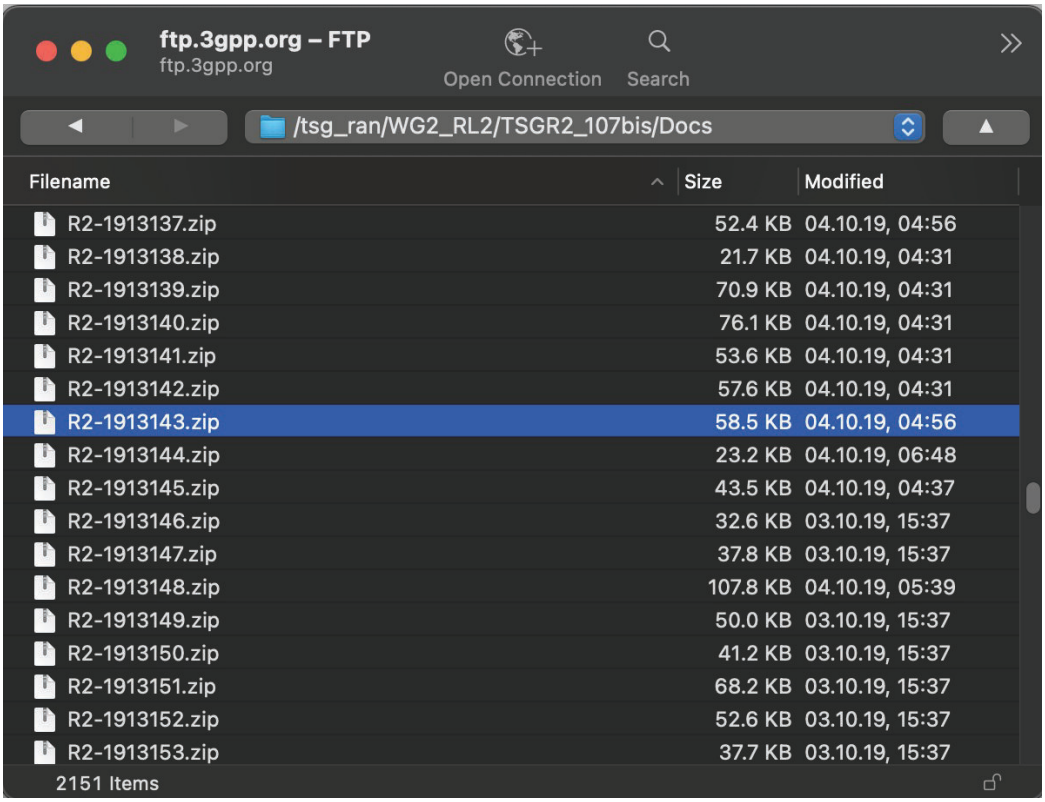
5. TDoc R2-1913143

112. Based on my personal knowledge and my review of 3GPP's business records, I recognize APPLE-1011 as a true and correct copy of 3GPP TDoc R2-1913143, which represents a 3GPP document with the title "Confirmation MAC CE for multiple CG configurations." The document was authored by LG Electronics Inc. and LG Uplus and discussed the enhancement of confirmation MAC CE for the utilization of multiple CG configurations.

113. On its face, R2-1913143 refers to the RAN WG2 meeting #107bis held on October 14–18, 2019, in Chongqing, China. Thus, based on my personal knowledge and experience with ETSI's and 3GPP's standard business practices,

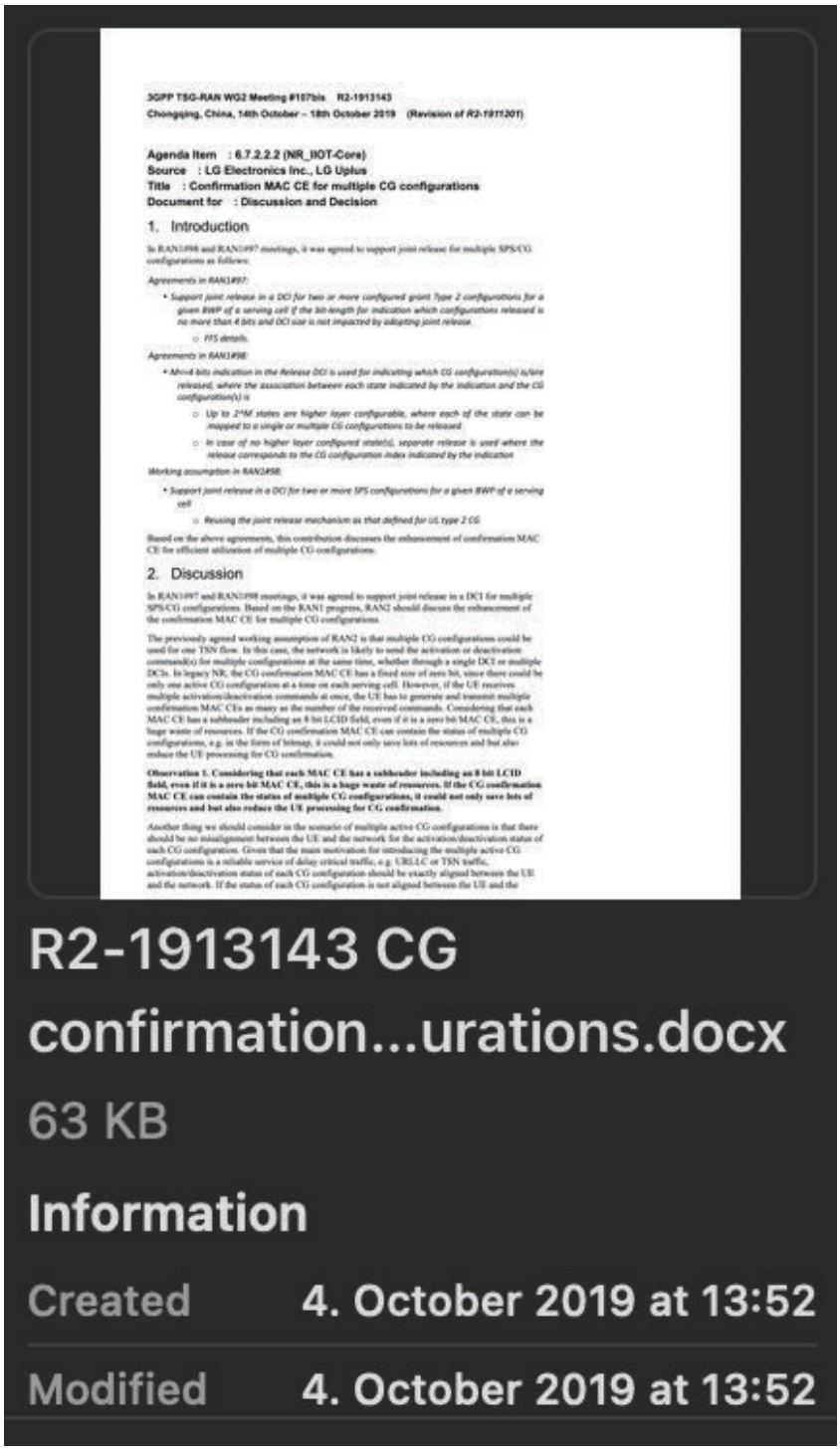
this information tells me that R2-1913143 was available either prior to or during or shortly after that meeting to 3GPP members, and to the general public.

114. The public availability of the document is confirmed by the date stamp, October 4, 2019, shown on the historic 3GPP FTP server for the corresponding downloadable file ("R2-1913143.zip"), as maintained by the Internet Archive at https://web.archive.org/web/20200621063846/https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_107bis/Docs. This information is also shown on the date stamp for the present-day listing of the same document on the 3GPP FTP server at https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_107bis/Docs as shown in the screenshot below:



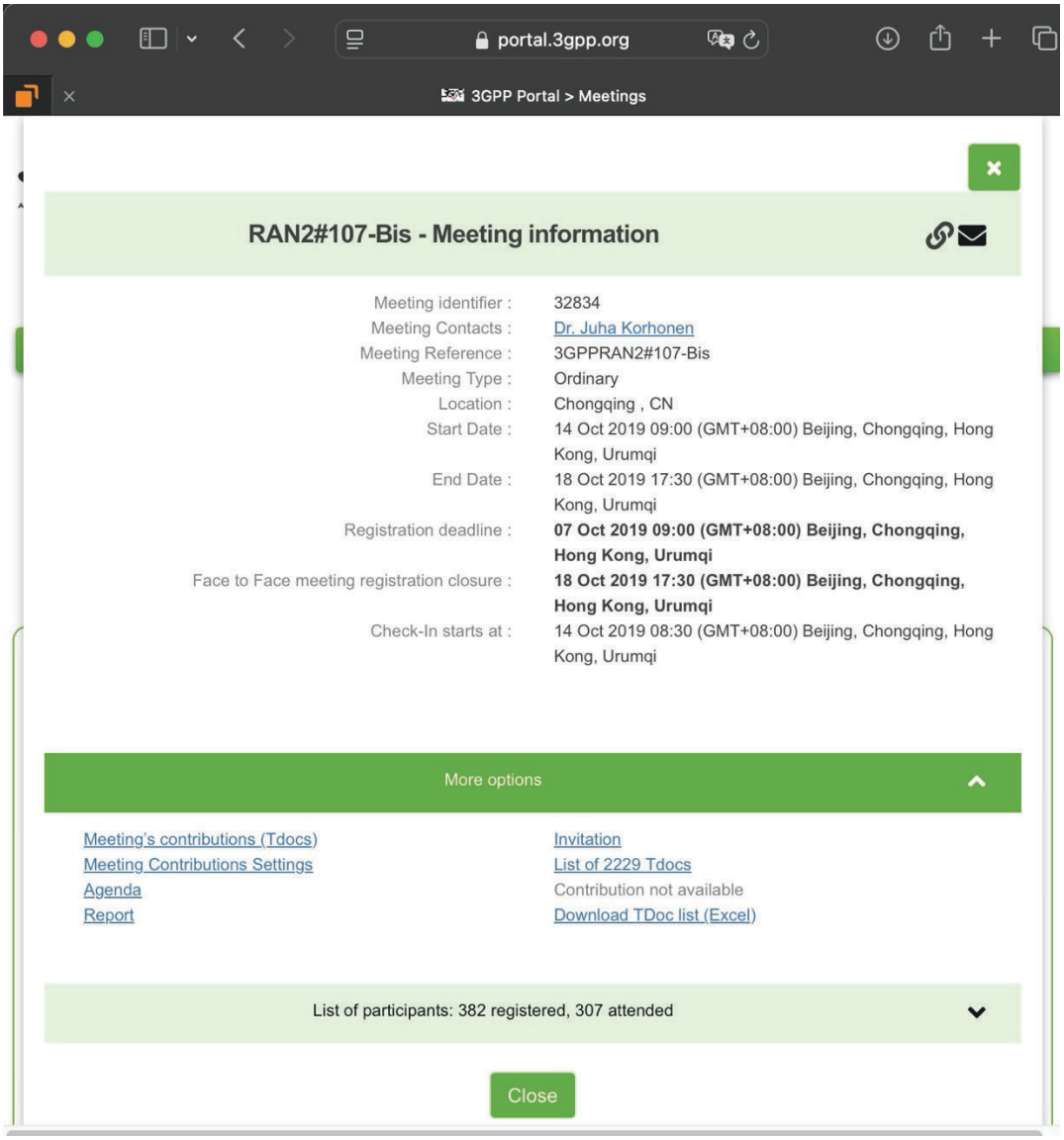
115. In my opinion, the FTP server upload date on the 3GPP FTP server is the date the document became available to the public.

116. In addition, metadata information for the downloaded and extracted TDoc file states a last Modified date of "4 October 2019," as shown in the screenshot below.



117. This last modified date is consistent with the October 4, 2019, upload date of the document, and the standard business practice among 3GPP participants to upload submissions shortly after completing them.

118. The final meeting report of the RAN WG2 meeting #107bis held on October 14–18, 2019, in Chongqing, China, can be found in Appendix C. According to the 3GPP website at https://portal.3gpp.org/Meetings.aspx#/ which is shown by the screenshot below, that meeting was attended by 307 individuals (out of 382 registered participants):



119. The meeting report mentions R2-1913143 on page 124 which clearly indicates that the document was registered for this meeting. Furthermore, the meeting report includes in the zip file the meeting's document list of which an excerpt can be found in Appendix D[8]. R2-1913143 is listed in row 1145 and the "Upload" date is shown as "2019-10-04" as can be seen by the screenshot below:

	TDoc	Title	Source	TDoc Status	Reservation date	Uploaded
1145	R2-1913143	Confirmation MAC CE for multiple CG configurations	LG Electronics Inc.	not treated	2019-10-03 09:05:13	2019-10-04 04:56:38

120. Thus, based on my personal knowledge and experience with ETSI's and 3GPP's standard business practices, APPLE-1011 is an authentic copy of 3GPP TDoc R2-1913143 that was uploaded and made available via the 3GPP FTP server to the general public by October 4, 2019, at the latest.

V. AVAILABILITY FOR CROSS-EXAMINATION

121. In signing this declaration, I recognize that the declaration may be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I also recognize that I may be subject to cross examination in the case and that cross examination will take place within the United States. If cross examination is required of me, I will cooperate to the best of

[8] Given the size of the document list the Appendix only includes the columns relevant for this declaration: TDoc, Title, Source, TDoc Status, Reservation date, Uploaded.

my ability to appear for cross examination within the United States during the time allotted for cross examination.

A. Right To Supplement

122. I reserve the right to supplement my opinions in the future to respond to any arguments that the Patent Owner raises and to take into account new information as it becomes available to me.

B. Signature

123. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

124. I declare under penalty of perjury that the foregoing is true and correct.

Dated: May 1, 2025



Friedhelm Rodermund

Appendix A

CURRICULUM VITAE

I. PERSONAL DATA

Name: **Friedhelm RODERMUND**

Mailing address: Am Steiner Graben 18
56077 Koblenz, Germany

Phone: +49 172 2606489

Email: fred@iotecc.com

II. PROFESSIONAL EXPERIENCE

Summary

Senior expert in telecommunications and Internet of Things (IoT) technology. 25 years of experience within the mobile communications industry, and several years in the IoT domain in various roles such as project management, technology innovation and evolution, standards development, technology strategy, patent creation and patent litigations, and development/introduction of new services.

Recognized standards expert who was actively involved in leading roles in the development of key standards for mobile telephony/data and service anablers across standards development organizations such as 3GPP, ETSI, GSMA, IETF, OMA, and oneM2M. Currently focussing on standards for the Internet of Things including ETSI and 3GPP standards such as 5G and 6G, and OMA Lightweight M2M (LwM2M).

Founder and director of IOTECC GmbH which provides consulting services around technologies and standards enabling the Internet of Things, and consulting and expert services related to patents for mobile telcommunications and IoT.

01/2015 – present **IOTECC GmbH** **Koblenz, Germany**

Founder and CEO

- Mobile telecommunications, Internet of Things (IoT) technology and standards consulting
- Telecommunications and IoT patent consulting
  - Consulting services around telecommunications and IoT patents in particular related to 3GPP, ETSI and OMA standards
  - State of the art/prior art research services related to patent filing e.g. for 5G and 6G
  - Prior art research, essentiality assessment, patent infringement analysis related to litigations and validity actions
  - Advising on IP strategy
  - Advising on Standards Development Organisations (SDO) e.g. ETSI and 3GPP working processes and IPR policy
  - Conducting seminar on Standards Essential Patents (SEPs) for the Internet of Things at the Technical University of Ilmenau, Germany
  - Experienced expert witness (please see section III for a list of supported actions)

11/2014 – 12/2014 **Friedhelm Rodermund Consulting** **Koblenz, Germany**

Internet of Things (IoT) Consultant

- IoT standards development and introduction of new IoT services

01/2011 – 10/2014 **Vodafone Germany / Vodafone Group R&D** **Düsseldorf, Germany**

Senior Standards Strategist
- Representing Vodafone in various standardisation bodies
- Creating technical standards for the Internet of Things
- Work item lead, technical editor and key contributor of Open Mobile Alliance (OMA) "Lightweight M2M (LwM2M)" – the new standard for the Internet of Things
- Advising and supporting various IoT/M2M projects related to e.g. smart metering
- Advising on the introduction of new IoT/M2M technologies and services
- Leading Proof of Concepts of emerging technologies
- Involved in innovation projects
- Supporting the creation and protection of Intellectual Property

01/2009 – 12/2010 **Vodafone Germany** **Düsseldorf, Germany**

Vice Chairman Open Mobile Alliance (OMA) Device Management (DM)
- Responsible for Vodafone's Device Management standardisation
- As OMA DM Vice Chairman, co-leading the group, chairing committee meetings and web conferences, steering the technical direction, management of the different work items
- Editor of several specifications, rapporteur of various work items
- Support of projects for the introduction of device management
- Delegate to 3GPP SA1 with responsiblity for the introduction of MTC (machine type communications) related service/network requirements

01/2005 – 12/2008 **Vodafone Germany** **Düsseldorf, Germany**

Project Manager Mobile Broadcast Standards
- Responsible for Mobile Broadcast standardisation across different broadcast systems/standards bodies and across all Vodafone local operations
- Responsible for Mobile Broadcast standardisation strategy development and implementation
- Delegation Lead for the Open Mobile Alliance (OMA) BCAST working group
- Initiated and managed the BCAST device profile development in the BMCO Forum
- Leading the "Service Protection" (pay-TV) stream of the German DVB-H Consortium
- Filed several patents
- Supporting patent litigations and patent portfolio evaluation (various technical areas)

04/2003 – 12/2003 **GSM Association** **London, United Kingdom**

Member of the MMS Task Force
- Verification of the MMS operator interworking framework
- Supporting the definition and specification of the MMS functional evolution
- Acting as a "link" between 3GPP and GSMA in the area of MMS

06/1998 – 12/2004 **European Telecommunications Standards Institute (ETSI)**
Sophia Antipolis, France

01/2002 – 12/2004: Secretary 3GPP Technical Specifications Group *"Terminals"* and Terminals Working Group 2 *"Terminal Services and Capabilities"*

01/1999 – 12/2001: Secretary 3GPP Terminals Working Group 2 *"Terminal Services and Capabilities"* and GERAN 3 *"Base Station Testing"*

06/1998 – 03/1999: Secretary ETSI SMG4 *"Data Services"* and SMG8 *"Base Station Testing"*

- Supported the establishment of 3GPP (3rd Generation Partnership Project) as the leading standards organization for mobile telecommunications
- Project manager and secretary of TSG "Terminals" reponsbile for Terminal Conformance Testing, Terminal Services and Capabilities, Universal Subscriber Identity Module (USIM)
- Project manager and secretary of Terminals Working Group 2 "Terminal Services and Capabilities" that was responsible for Terminal Execution Environments, Messaging including Short Message Service (SMS), Cell Broadcast Service (CBS), Enhanced Messaging Service (EMS), Multimedia Messaging Service (MMS), Terminal Interfaces incl. AT-commands, Generic User Profile, Data Synchronization and others
- Establishment and management of the Work Plan and follow-up and report on the progress of the related work items
- Advising the chairmen and the standards groups on technical, procedural and political issues
- Editorship of various GSM and UMTS technical specifications
- Responsible for presenting the technical results of the working groups to the parent body
- Responsible for the communication with other standards bodies inside and outside 3GPP
- PR activities (articles, interviews)

12/1993 – 06/1998 Mannesmann Mobilfunk GmbH Düsseldorf, Germany

System Engineer and Project Manager in Quality Assurance and Technical Standards

- Leadership and management of acceptance test projects in the area of GSM Base Station Controller (BSC) and GSM Base Station (BTS) hardware and software.
- Leading project teams of around 15 people
- Responsible for the clearance of releasing new software/hardware into the network
- Supported Request for Quotations, supplier evaluation and pre-selection, project manager of System Verification as a central part of the supplier selection process.
- Representation of Mannesmann Mobilfunk to the ETSI standardization group "Standardization Technical Committee SMG3 System Architecture"
- Conduction of product and hardware development quality audits
- Representative of Mannesmann Mobilfunk in A-interface interoperability testing activities
- Member of BSS product planning group which was defining operator requirements for future BSS releases
- Development of process improvements for type acceptance

III. LIST OF SUPPORTED PATENT LITIGATIONS AND VALIDITY ACTIONS

2024

Pantech Corporation v. Oppo Mobile Telecommunications Corp., Ltd.
Inter Partes Review matters
On behalf of Oppo
Counsel: Bayes PLLC
Role: Expert witness and consulting services

2024

Pantech Corp. et al. v. LG Electronics Inc. et al.
Civil Action No. 5:22-cv-00113-RWS-JBB (E.D.Tx.)
On behalf of LG Electronics
Counsel: Ropes & Gray LLP
Role: Expert witness and consulting services

2024

Ericsson v. Lenovo
Inter Partes Review matters
On behalf of Lenovo
Counsel: Kirkland & Ellis LLP
Role: Expert witness and consulting services

2024

Pantech Corp. et al. v. OnePlus Technology Co., Ltd.
Civil Action No. 5:22-cv-00069-RWS (E.D.Tx.)
On behalf of OnePlus
Counsel: Leydig, Voit & Mayer, Ltd.
Role: Expert witness and consulting services

2024

G+ Communications, LLC, v. Samsung Electronics Co., Ltd.
Civil Action No. 2:22-CV-78 (E.D.Tx.)
On behalf of Samsung
Counsel: Fish&Richardson P.C.
Role: Expert witness and consulting services

2023

Unified Patents, LLC v. Helios Streaming LLC
Inter Partes Review matters
On behalf of Unified Patents
Counsel: Akin
Role: Expert witness and consulting services

2023

Unified Patents, LLC v. SLS Manager Technologies
Inter Partes Review matters
On behalf of Unified Patents
Counsel: Unified Patents
Role: Expert witness and consulting services

2023

Headwater Research LLC v. Samsung Electronics Co., Ltd.
Inter Partes Review matters
On behalf of Samsung
Counsel: Fish&Richardson P.C.
Role: Expert witness and consulting services

2023

Pantech Corp. et al. v. LG Electronics Inc. et al.
Inter Partes Review matters
On behalf of LG Electronics
Counsel: Ropes & Gray LLP
Role: Expert witness and consulting services

2023

Apple Computer Trading (Shanghai) Co., Ltd, Apple Electronics Products Commerce (Beijing) Co., Ltd. v. Optis Cellular Technology LLC
Shenzhen, China, Intermediate People's Court
On behalf of Apple
Counsel: WilmerHale
Role: Expert witness and consulting services

2023

Huawei Technologies Co., Ltd. v. MediaTek Inc.
Inter Partes Review matters
On behalf of MediaTek
Counsel: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.
Role: Expert witness and consulting service

2023

Apex Beam Technologies LLC v. Samsung
Inter Partes Review matters
On behalf of Samsung
Counsel: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.
Role: Expert witness and consulting services

2022

Constellation Designs LLC v. LG Electronics, Inc.
Inter Partes Review matters
On behalf of LG Electronics
Counsel: Fish&Richardson P.C.
Role: Expert witness and consulting services

2022

Unified Patents, LLC v. Togail Technologies LTD.
Inter Partes Review matters
On behalf of Unified Patents
Counsel: Duane Morris LLP
Role: Expert witness and consulting services

2022

Ericsson v. Apple
Certain Mobile Telephones, Tablet Computers With Cellular Connectivity, And Smart Watches With Cellular Connectivity, Components Thereof, And Products Containing Same, Inv. No. 337-TA-1299 (U.S.I.T.C.)
On behalf of Apple
Counsel: WilmerHale
Role: Expert and consulting services

2022

Ericsson v. Apple
Civil Action No. 2:21-cv-376 (E.D.Tex.)
On behalf of Apple
Counsel: WilmerHale
Role: Expert and consulting services

2022

Intellectual Ventures II LLC v. Toyota Motor Cooperation.
Inter Partes Review matters
On behalf of Toyota

Counsel: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.
Role: Expert witness and consulting services

2022

Ericsson v. Apple
2nd Business Court, Rio de Janeiro, Brazil
On behalf of Apple
Counsel: WilmerHale
Role: Expert and consulting services

2022

Ericsson v. Apple
Civil Court, Bogotá, Columbia
On behalf of Apple
Counsel: WilmerHale
Role: Expert and consulting services

2022

Proven Networks LLC. v. NetApp Inc.
Inter Partes Review matters
On behalf of NetApp
Counsel: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P., Ropes & Gray LLP
Role: Expert witness and consulting services

2022

Ericsson v. Apple
Inter Partes Review matters
On behalf of Apple
Counsel: Fish&Richardson, Erise IP
Role: Expert witness and consulting services

2021

AEGIS 11 LLC v. Hisense Company, Ltd. and Hisense USA Corporation
Inter Partes Review matters
On behalf of Hisense
Counsel: Orrik Herrington & Sutcliffe LLP
Role: Expert witness and consulting services

2021

Nokia v. Lenovo
Certain Electronic Devices, Including Computers, Tablet Computers, and Components and Modules Thereof, Inv. No. 337-TA-1208 (U.S.I.T.C.)
On behalf of Lenovo
Counsel: WilmerHale
Role: Expert witness and consulting services

2021

Optis Cellular Technology LLC et al. v. Apple
Claim No. HP-2019-000006 (High Court of Justice, Business and Property Courts of England and Wales)
On behalf of Apple
Counsel: WilmerHale
Role: Expert witness and consulting services

2021

Ericsson v. Samsung
Inter Partes Review matters
On behalf of Samsung
Counsel: Kirkland&Ellis LLP, Fish&Richardson
Role: Expert witness and consulting services

2020

Panoptis Patent Management LLC et al. v. Apple Inc.
Civil Action No. 2:19-cv-66 (E.D. Tex.)
On behalf of Apple
Counsel: WilmerHale
Role: Expert witness at bench trial

2020

Sol IP, LLC v. AT&T Mobility, LLC et al.
Civil Action No. 2:18-cv-526 (E.D. Tex.)
On behalf of AT&T, Verizon, Sprint
Counsel: Gibson Dunn
Role: Expert witness and consulting services

2020

Bell Northern Research LLC v. LG Electronics Inc. et al.
Civil Action No. 18-CV-2864-CAB-BLM (S.D. Cal.)
On behalf of LG Electronics Inc.
Counsel: Fish&Richardson
Role: Expert witness and consulting services

2019

Conversant Wireless Licensing S.a.r.l. v. LG Electronics Deutschland GmbH
Civil Action No. 7 O 3277/18 (Landgericht Munich, Germany)
On behalf of LG Electronics Deutschland GmbH
Counsel: Wildanger Kehrwald Graf von Schwerin & Partner mbB
Role: Expert witness and consulting services

2019

Bell Northern Research, LLC v. Huawei Device Co., Ltd, et al.
Civil Action No. 3:18-cv-01784-CAB-BLM
On behalf of Huawei
Counsel: Fish&Richardson
Role: Expert witness and consulting services

2019

Uniloc USA, Inc., et al. v. Samsung Electronics America, Inc. and Samsung Electronics Co. Ltd.
Civil Action Nos. 2:18-cv-00040-JRG, 2:18-cv-00041-JRG, 2:18-cv-00042-JRG and 2:18-cv-00044-JRG (United States District Court for the Eastern District of Texas)
On behalf of Samsung
Counsel: Greenberg Traurig
Role: Expert witness and consulting services

2019

Uniloc USA, Inc., et al. v. Huawei Device USA, Inc. et al.
Civil Action No. 2:18-cv- 00072-JRG-RSP (E.D. Tex.)
On behalf of Huawei
Counsel: McGuireWoods
Role: Expert witness and consulting services

2019

Microsoft Corporation v. Uniloc 2017 LLC
Inter Partes Review of U.S. Pat. No. 7,167,487
Inter Partes Review of U.S. Pat. No. 7,075,917
On behalf of Microsoft and on behalf of Apple as joinder petitioner
Counsel: Klarquist Sparkman (Microsoft), Erise IP (Apple)
Role: Expert witness and consulting services

2019

Qualcomm v. KFTC
South Korean Case, Seoul High Court
On behalf of intervenor Apple supporting the KFTC

Counsel: Boies Schiller Flexner
Role: Expert witness

2018/19

Evolved Wireless, LLC v. Apple, Inc.
Civil Action No. 1:15-cv-00542-JFB-SRF
On behalf of Apple
Counsel: DLA Piper
Role: Expert witness and consulting services

2018/19

Cisco Systems Inc. v. Traxcell Technologies
Inter Partes Review of Traxcell Technologies patents
On behalf of Cisco
Counsel: King&Spalding
Role: Expert witness and consulting services

2018/19

Qualcomm Inc. v. Apple Inc.
Civil Action No. 3:17- cv-02398-DMS-MDD (United States District Court for the Southern District of California)
Civil Action No. 3:17-cv-02402-WQH-MDD
Certain Mobile Electronic Devices and Radio Frequency and Processing Components Thereof (II), Inv. No. 337-TA-1093
Inter Partes Review of U.S. PATENT NO. 9,154,356
Cases IPR2019-00047, IPR2019-00048, IPR2019-00049, IPR2019-00128, IPR2019-00129
On behalf of Apple and Intel
Counsel: WilmerHale
Role: Expert witness and consulting services

2018/19

Apple Inc. v. Qualcomm Inc.
Civil Action No. 3:17-CV-00108-GPC-MDD (United States District Court for the Southern District of California)
On behalf of Apple
Counsel: Fish&Richardson, Boies Schiller Flexner
Role: Expert witness and consulting services

2018

3G Licensing, S.A. et al. v. LG Electronics Inc. et al
Inter Partes Review of U.S. Patent No. 7,995,091
On behalf of LG Electronics
Counsel: Fish&Richardson
Role: Expert witness

2017

Huawei Technologies Co. LTD. v. T-Mobile US, Inc. & T-Mobile USA, Inc.
E.D. Tex. Case Nos. 2:16-cv-00052-JRG-RSP; 2:16-cv-00055-JRG-RSP; 2:16-cv-00056-JRG-RSP; and 2:16-cv-00057-JRG-RSP
On behalf of T-Mobile
Counsel: Gibson Dunn
Role: Expert witness and consulting services

2016

Koninklijke KPN N.V. v. Samsung Electronics America, Inc. et al.
Civil Action No. 14-cv-1165
On behalf of Samsung Electronics
Counsel: Baker Botts
Role: Expert witness and consulting services

2016

SSH v. Sony

OLG Düsseldorf, Germany
On behalf of SSH
Counsel: Cohausz&Florack
Role: Technical expert support

2015/16

LG Electronics v. Core Wireless Licensing S.A.R.L.
Inter Parles Review of U.S. Patent No. 8,165,049
On behalf of LG Electronics
Counsel: Greenberg Traurig
Role: Expert witness

2015/16

Core Wireless Licensing S.A.R.L. v. LG Electronics Inc. and LG Electronics MobileComm U.S.A., Inc
Civil Action No. 2:14-cv-911 (lead case) and Civil Action No. 2:14-cv-912 (consolidated)
On behalf of LG Electronics
Counsel: Greenberg Traurig, Sidley Austin
Role: Expert witness

2015

Intellectual Ventures I LLC v. T-Mobile USA, Inc. & T-Mobile US, Inc.
D. Del. Case No. 1:13-cv-01632
Intellectual Ventures II LLC v. T-Mobile USA, Inc. & T-Mobile US, Inc.
D. Del. Case No. 1:13-cv-01633
On behalf of T-Mobile
Counsel: Gibson Dunn
Role: Technical expert support

IV. EDUCATION

10/1984 – 10/1993 **University of Technology Aachen** **Aachen, Germany**
Graduate of Electrical Engineering with a focus on telecommunications technologies (Dipl.-Ing. TH)

10/1992 – 04/1993 **University of Technology Trondheim** **Trondheim, Norway**
Diploma Thesis "Design of a dual processor computer for digital signal processing in power electronics"

V. LANGUAGES

German, English, French

VI. PUBLICATIONS (selection)

- ”Unlocking the internet of things and driving the need for interoperability”, Global Telecoms Business, December 2013
- “The need for standardisation in the M2M services layer”, Global Telecoms Business, February 2014
- Co-authored white paper “Lightweight M2M: Enabling device management and applications for the internet of things”, Open Mobile Alliance, March 2014
- “Objects are a new way to create M2M applications”, Global Telecoms Business, April 2014
- “The need for standardisation in the M2M services layer”, M2M Now, July 2015

Appendix B

Appendix	Description
A	Curriculum Vitae of Friedhelm Rodermund
B	List of Appendices
C	Meeting report of the RAN WG2 meeting #107bis held on October 14–18, 2019, in Chongqing, China
D	Document list of the RAN WG2 meeting #107bis held on October 14–18, 2019, in Chongqing, China
E	Participant list of the RAN WG1 meeting #98bis
F	Participant list of the RAN WG2 meeting #108

Appendix C

3GPP TSG-RAN WG2 meeting #108 **R2-1914301**
Agenda Item: 2.2
Source: ETSI MCC
Title: Report of 3GPP TSG RAN2#107bis meeting, Chongqing, China

Document for: Approval

Report of 3GPP TSG RAN WG2 meeting #107bis
Chongqing, China
14 - 18 October, 2019

3GPP

Postal address

3GPP support office address
650 Route des Lucioles - Sophia Antipolis
Valbonne - FRANCE
Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Internet
http://www.3gpp.org

© 2019, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).
All rights reserved.

ORGANISATION OF THE MEETING 9

STATISTICS/EXECUTIVE SUMMARY 9

1 OPENING OF THE MEETING (9 AM) 9

1.1 Call for IPR 9

1.2 Network usage conditions 10

1.3 Other 10

1.4 Statement Regarding Engagement with Companies Added to the U.S. Export Administration Regulations (EAR) Entity List in 3GPP Activities 10

2 GENERAL 11

2.1 Approval of the agenda 11

2.2 Approval of the report of the previous meeting 11

2.3 Reporting from other meetings 12

2.4 Others 13

3 INCOMING LIAISONS 13

4 EUTRA CORRECTIONS REL-15 AND EARLIER 15

4.1 NB-IoT corrections Rel-15 and earlier 15

4.3 V2X and Sidelink corrections Rel-15 and earlier 16

4.4 Positioning corrections Rel-15 and earlier 17

4.5 Other LTE corrections Rel-15 and earlier 18

5 WI: NEW RADIO (NR) ACCESS TECHNOLOGY 21

5.1 Organisational 21

5.2 Stage 2 22

5.2.1 Stage 2 corrections for TS 38.300 22

5.2.2 Stage 2 corrections for TS 37.340 23

5.2.3 Positioning 25

5.3 Stage 3 user plane 26

5.3.1 MAC 26

5.3.2 RLC 27

5.3.3 PDCP 27

5.3.4 SDAP 27

5.4 Stage 3 control plane 27
5.4.1 NR RRC 27
5.4.1.3 Connection control procedures 27
5.4.1.3.1 Corrections to L1 Parameters 27
5.4.1.3.2 Corrections to L2 Parameters 28
5.4.1.3.3 Connection establishment procedure 29
5.4.1.3.4 Connection reconfiguration procedure 29
5.4.1.3.5 Connection re-establishment procedure 31
5.4.1.3.6 Connection resume procedure and RRC_INACTIVE state 31
5.4.1.3.7 Connection release procedure 32
5.4.1.3.8 Security procedures 32
5.4.1.3.10 Access control 33
5.4.1.3.11 Other 33
5.4.1.4 RRM 36
5.4.1.6 System information 38
5.4.1.9 Inter-Node RRC messages 38
5.4.2 LTE changes related to NR 40
5.4.4 UE capabilities 41
5.4.5 Idle/inactive mode procedures 45
5.4.5.1 Cell selection/reselection 45
5.4.5.2 Idle/inactive paging 46

5.5 Late Drop 46
5.5.1 Stage 2 CRs 46
5.5.2 UE capabilities and capability coordination 46
5.5.3 Measurements and measurement coordination 48
5.5.4 Other 48

6 REL-16 NR WORK ITEMS 50

6.1 Integrated Access and Backhaul for NR 50
6.1.1 Organisational 50
6.1.2 Stage-2 and general 51
6.1.3 BAP functionality 54
6.1.3.1 Routing 54
6.1.3.2 Bearer Mapping 55
6.1.3.3 Flow Control 55
6.1.3.4 Other 56
6.1.4 User plane aspects 57
6.1.4.1 Scheduling and QoS 57
6.1.4.2 LCID extension 59
6.1.4.3 Other 60
6.1.5 Control plane aspects 60
6.1.5.1 RLF handling 60
6.1.5.2 Configuration 62
6.1.5.3 Other 64

6.2 NR-based Access to Unlicensed Spectrum 65
6.2.1 General 65
6.2.2 User plane 66
6.2.2.1 4-step RACH 66
6.2.2.2 Handling UL LBT failures 68
6.2.2.3 2-step RACH 70
6.2.2.4 DRX 70
6.2.2.5 Configured grant operation 71

6.2.2.6 CAPC 73
6.2.2.7 Other 74
6.2.3 Control plane 75
6.2.3.1 Paging 75
6.2.3.2 Mobility 76
6.2.3.3 RRM 77
6.2.3.4 RLM/RLF 78
6.2.3.5 Other 78

6.4 NR V2X 79

6.5 Optimisations on UE radio capability signalling 109
6.5.1 Organisational 109
6.5.2 UE radio capability signalling using UE capability identity 109
6.5.3 Segmentation of UE radio capabilities 110

6.6 Study on NR non-terrestrial network 111
6.6.1 General 111
6.6.2 Requirements and Scenarios 112
6.6.3 User Plane 112
6.6.3.1 MAC Enhancements 112
6.6.3.2 RLC and PDCP Enhancements 113
6.6.4 Control Plane 114
6.6.4.1 Mobility 114
6.6.4.2 Idle mode 116
6.6.4.3 Other 117

6.7 NR Industrial Internet of Things (IoT) 117
6.7.1 General 117
6.7.2 TSC 118
6.7.2.1 Accurate reference timing 118
6.7.2.2 Scheduling Enhancements 121
6.7.2.2.1 CG and SPS for TSC - General and configuration impact 121
6.7.2.2.2 CG and SPS for TSC - L2 impacts 123
6.7.2.2.3 Other 125
6.7.2.3 Ethernet Header Compression 126
6.7.3 Intra-UE prioritization and multiplexing 128
6.7.3.1 Handling of deprioritized transmissions 128
6.7.3.2 Data Data prioritization with CG 130
6.7.3.3 SR Data prioritization 131
6.7.3.4 Other 131
6.7.4 PDCP duplication enhancements 132
6.7.4.1 Network Controlled Duplication 132
6.7.4.2 UE controlled Duplication 134
6.7.4.3 Other 134

6.8 NR Positioning Support 134
6.8.1 Organisational 134
6.8.2 Architecture and protocol aspects 135
6.8.2.1 Support of NR RAT-dependent positioning 135
6.8.2.2 Support of SSR phase 2 (PPP-RTK) 139
6.8.2.3 Broadcast assistance data 140
6.8.2.4 UE-based positioning 140
6.8.3 Other 140

6.9 NR mobility enhancements 141
6.9.1 Organisational 141
6.9.2 Reduction in user data interruption during handover 141

6.9.3 Handover robustness improvements 141
6.9.3.1 Conditional handover – configuration and execution details 141
6.9.3.2 Conditional handover – failure handling 144
6.9.3.3 Conditional handover - other aspects 145
6.9.3.4 Fast handover failure recovery 146
6.9.3.5 Conditional handover - beam specific aspects 147
6.9.4 Conditional PSCell addition/change 147

6.10 DC and CA enhancements 149
6.10.1 Organisational 149
6.10.2 NR-NR Dual Connectivity 151
6.10.3 Early measurement reporting 151
6.10.4 Efficient and low latency configuration signalling 154
6.10.4.1 Direct SCell activation 154
6.10.4.2 Fast SCell activation 155
6.10.4.3 MCG SCell and SCG Configuration with RRC Resume 156
6.10.4.4 Other 158
6.10.5 Fast MCG link Recovery 158
6.10.6 Cross-Carrier scheduling with different numerologies 160
6.10.7 Other 160

6.11 UE Power Saving in NR 161
6.11.1 Organisational 161
6.11.2 PDCCH-based power saving signals/channel Additional stage-3 RAN2 aspects 161
6.11.3 Efficient transition from RRC_CONNECTED to RRC_IDLE/RRC_INACTIVE 164
6.11.4 MIMO layer adaptation 165
6.11.5 UE assistance 165
6.11.6 RRM measurement relaxation 167

6.12 SON/MDT support for NR 168
6.12.1 General 168
6.12.2 MDT 169
6.12.3 L2 measurements 173
6.12.4 SON 174
6.12.5 Others 176

6.13 2-step RACH for NR 176
6.13.1 General 176
6.13.2 Stage-2 open issues 177
6.13.3 MAC PDU formats 181
6.13.4 RRC stage-3 related aspects 183
6.13.5 Stage-3 aspects 183
6.13.6 Other 184

6.14 Single Radio Voice Call Continuity from 5G to 3G 184
6.14.1 Organisational 184
6.14.2 Inter RAT handover to UTRAN for SRVCC 185
6.14.3 Other 185

6.15 Cross Link Interference (CLI) handling and Remote Interference Management (RIM) for NR 186

6.16 Enhancements on MIMO for NR 188
6.16.1 Organisational 188
6.16.2 Single-PDCCH multi-TRP operation 189
6.16.3 Multi-PDCCH multi-TRP operation 190
6.16.4 General beam management enhancements 191

6.18 Private Network Support for NG-RAN 192

6.18.1 Organisational 192
6.18.2 Idle and inactive mode 193
6.18.3 Connected mode 196

6.19 Other NR Rel-16 WIs/SIs 196

6.20 NR TEI16 enhancements 198
6.20.1 RAN2 led TEI16 enhancements - Control plane related 199
6.20.2 RAN2 led TEI16 enhancements - User plane related 203
6.20.3 TEI16 enhancements led by other WGs 206

6.21 On demand SI in connected 207

7 REL-16 LTE WORK ITEMS 209

7.1 Additional MTC enhancements for LTE 209

7.2 Additional enhancements for NB-IoT 227
7.2.1 Organisational 227
7.2.2 Mobile-terminated (MT) early data transmission (EDT) 229
7.2.3 UE-group wake-up signal (WUS) 229
7.2.4 Transmission in preconfigured resources 233
7.2.5 Scheduling multiple DL/UL transport blocks 238
7.2.6 Network management tool enhancement 238
7.2.7 Improved multi-carrier operation 239
7.2.8 Inter-RAT cell selection 241
7.2.9 Coexistence with NR 241
7.2.10 Connection to 5GC 241
7.2.10.1 Indication of supported CIoT features and other common aspects 241
7.2.10.2 Other 244
7.2.11 UE specific DRX 244
7.2.12 Other 245

7.3 Even further mobility enhancement in E-UTRAN 245
7.3.1 Organizational 245
7.3.2 Reduction in user data interruption (RUDI) during handover for dual active protocol stack (DAPS) 246
7.3.2.1 User plane aspects of RUDI HO 246
7.3.2.1.1 PDCP/RLC aspects of RUDI HO 246
7.3.2.1.2 MAC and UL transmission aspects of RUDI HO 252
7.3.2.2 Control plane aspects of RUDI HO 255
7.3.2.2.1 RRC procedures during RUDI HO 255
7.3.2.2.2 UE capabilities for RUDI HO 257
7.3.2.3 Other aspects of RUDI HO 259
7.3.3 Conditional Handover 259

7.4 Further performance enhancement for LTE in high speed scenario 259

7.5 Other LTE Rel-16 WIs 259

7.6 LTE TEI16 enhancements 260

7.7 Support of Indian Navigation Satellite System (NavIC) 264

7.8 Breakout session reports 265
7.8.1 Report from session on LTE legacy, LTE TEI16 and NR/LTE Rel-16 Mobility 265
7.8.2 Report from Break-Out Session on SRVCC, CLI, PRN, eMIMO, RACS 266
7.8.3 Report from eMTC breakout session 266
7.8.4 Report from NR-U, Power Savings, NTN and 2-step RACH sessions 266

7.8.5 Report from session on Rel-15 and 16 LTE and NR positioning 266
7.8.6 Report from SON/MDT session 266
7.8.7 Report from NB-IoT breakout session 266
7.8.8 Report from session on LTE V2X and NR V2X 267

CLOSING OF THE MEETING (17:00) 267

ANNEX A: LIST OF PARTICIPANTS 267

ANNEX B: LIST OF TDOCS 267

ANNEX C: INCOMING LIAISON STATEMENTS 267

ANNEX D: OUTGOING LIAISON STATEMENTS 272

ANNEX E: LIST OF AGREED-IN-PRINCIPLE CRS AND DRAFTCRS 273

ANNEX F: EMAIL APPROVALS 274

ONE WEEK DISCUSSIONS: DEADLINE THURSDAY, 2019-10-24, 23:59 PACIFIC TIME (UNLESS STATED) 274

TWO WEEK DISCUSSIONS: DEADLINE THURSDAY, 2019-10-31, 23:59 PACIFIC TIME (UNLESS STATED) 275

NEXT MEETING DISCUSSIONS: DEADLINE THURSDAY, 2019-11-07, 23:59 PACIFIC TIME (UNLESS STATED) 277

ANNEX G: HISTORY 283

Organisation of the meeting

Meeting:	3GPP TSG RAN2#107bis
Meeting location:	Chongqing, China
Duration:	14.10 - 18.10.2019
Host:	CF3
TSG RAN WG2 Chairman:	Johan Johansson (MediaTek) (johan.johansson@mediatek.com)
TSG RAN WG2 Vice chairman:	Tero Henttonen (Nokia) (tero.henttonen@nokia.com)
TSG RAN WG2 Vice chairman:	Sergio Parolari (ZTE) (sergio.parolari@zte.com.cn)
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_107bis/Docs
Next meetings:	TSG RAN2#108, 18.11 - 22.11.2019, Reno, USA
	TSG RAN2#109, 24.02 - 28.02.2019, Athens, Greece

Statistics/Executive Summary

TSG RAN2#107bis was held in Chongqing, China, hosted by CF3. The meeting had 8 breakout sessions in addition to the main session. The main session was mainly about NR. The breakout sessions were:

- LTE legacy, LTE TEI16 and NR/LTE Rel-16 Mobility
- SRVCC, CLI, PRN, eMIMO, RACS
- eMTC
- NR-U, Power Savings, NTN and 2-step RACH sessions
- Rel-15 and 16 LTE and NR positioning
- SON/MDT session
- NB-IoT breakout session
- LTE V2X and NR V2XNR idle/inactive mobility, NR SON/MDT, LTE TEI16

The statistics from this meeting are:

- 307 participants checked in (registered: 382 participants).
- 2229 Tdoc numbers allocated with 2162 available contributions. (See the attached tdoc list)
- 74 incoming liaison statements, out of which 69 were noted, and one postponed. The remaining liaison is to be treated in RAN2#108 meeting.
- 30 outgoing liaison statements.
- 96 email approvals/discussions scheduled after RAN2#107bis meeting, see Annex F for details.
- Number of CRs submitted: 260. Out of these, 49 were agreed-in-principle. See Annex E for details.

Note that RAN2#107bis meeting did not formallly agree any CRs. All agreed-in-principle CRs from this meeting have to be resubmitted to RAN2#108 for formal agreeent.

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 (https://www.etsi.org/images/files/IPR/etsi-ipr-form.doc)

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:
(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.

1.4 Statement Regarding Engagement with Companies Added to the U.S. Export Administration Regulations (EAR) Entity List in 3GPP Activities

1. Public Information is Not Subject to EAR

3GPP is an open platform where all contributions (including technology protected or not by patent) made by the different Individual Members under the membership of each respective Organizational Partner are publicly available. Indeed, contributions by all and any Individual Members are uploaded to a public file server when received and then the documents are effectively in the public domain.

In addition, since membership of email distribution lists is open to all, documents and

emails distributed by that means are considered to be publicly available.

As a result, information contained in 3GPP contributions, documents, and emails distributed at 3GPP meetings or by 3GPP email distribution lists, because it is made available to the public without restrictions upon its further dissemination, is not subject to the export restrictions of the EAR.

Meeting minutes are maintained for 3GPP meetings. Such meeting minutes for 3GPP meetings are made available to the public without restrictions upon its further dissemination. As a result, information, including information conveyed orally, contained in 3GPP meetings is not subject to the export restriction of the EAR; this would include information conveyed during side meetings that may occur during the main meetings, if these meetings are open to any participants and the results of all said meetings are publicly available without restrictions upon their further dissemination.

2. Non-Public Information

Non-public information refers to the information not contained or not intended to be contained in 3GPP contributions, documents or emails. Such non-public information may be disclosed during informal meetings, exchanges, discussions or any form of other communication outside the 3GPP meetings and email distribution lists, and may be subject to the EAR.

3. Other Information

Certain encryption software controlled under the International Traffic in Arms Regulations (ITAR), even if publicly available, may still be subject to US export controls other than the EAR.

4. Conduct of Meetings

The situation should be considered as "business as usual" during all the meetings called by 3GPP.

5. Responsibility of Individual Members

It should be remembered that contributions, meetings, exchanges, discussions or any form of other communication in or outside the 3GPP meetings are of the accountability, integrity and the responsibility of each Individual Member. In addition, Individual Members remain responsible for ensuring their compliance with all applicable export control regulations, including but not limited to EAR.

Individual Members with questions regarding the impact of laws and regulations on their participation in 3GPP should contact their companies' legal counsels.

2 General

2.1 Approval of the agenda

R2-1912000 Agenda for RAN2#107bis Chairman agenda Late

⇒ **approved**

2.2 Approval of the report of the previous meeting

R2-1912001 RAN2#107 Meeting Report MCC report Late

⇒ **approved**

2.3 Reporting from other meetings

RAN2 impact summary from RP-85

Rel-15

1/ Rel-15: Synchronous NR-NR DC, in RP-192345 (endorsed)
Introduction of a UE capability is agreed.

Rel-16

2/ TEI16
IDC can be treated at R2 meeting in February (briefly, max 15 min online time). Proponents has until then to convince opponents.
UDC is not part of Rel-16 and will not be treated in R2

3/ Power saving Enhancements, NR DC CA enhancements, Guidance in RP-192326 (endorsed)
The guidance on signalling for power saving, mainly with R1 impact, clarifies the following:
1. RANP tasks RAN2 to define dormancy behavior under MR-DC/CA WI
2. In parallel, in the next quarter, RAN1, in consultation with RAN2, specifies L1 based mechanism for transitioning between 'dormancy-like' and 'non-dormancy-like' behavior on activated SCells under MC-DC/CA WI.
3. Further study will be conducted if any additional UE behavior is needed when UE is also configured for receiving PDCCH based power saving signal/channel outside active time, and, if agreed, the additional UE behavior will be specified.
   a. RAN1 chair will treat this together with dormancy discussion under MR-DC/CA WI
   b. RAN2 will wait for RAN1 conclusion. If it is agreed that additional behavior is needed for outside of active time, RAN2 chair will decide how to split the work between MC-DC/CA and Power Saving.

4/ WID update: NR DC CA Enhancements, WID in RP-192336
Two R1 led objectives were added: *Support for Aperiodic CSI-RS triggering with different numerology between PDCCH and CSI-RS*, and *support for unaligned frame boundary with slot alignment for inter-band CA*

5/ WID update: NR Mobility enhancements WID in RP-192277
Clarification that the study objectives are finished, and instead new R2 led WI objectives on A) *to reduce interruption time during HO:* by *Dual active protocol stack based HO interruption time reduction solution*; and *To improve HO/SCG change reliability and robustness:* B) by *Conditional handover for NR PCell change;* C) by *Conditional handover based NR PSCell addition/change for any architecture option with NR PSCell;* and D) by *T312 based fast failure recovery (similar to LTE).*
NOTE that RACH-less is no longer mentioned, and that C) involves a slight increase in scope (as expected).

6/ WID update: 2-step RACH WID in RP-192330
CFRA for handover is added, no R1 impact is allowed.

7/ WID update: Industrial IoT WID in RP-192324
UE based PDCP duplication has lower priority. For intra-UE prioritization, L1 multiplexing of different services is excluded from the R1 objective. LTE impacted specs for Ethernet Header Compression were added.

8/ WID update EUTRA: NB-IoT WID in RP-192313
Introduction of UE based DRX.

9/ New WI EUTRA: NavIC, WID in RP-192350
Support of Indian navigation satellite system (NavIC) for LTE

10/ Time budget – no change except for addition of 0.5 TUs for the next two WG meetings for the new LTE NAVIC work item.

11/ Other, Can trigger work in R2 by LS
R4 WID RP-192227 Addition: Possible R2 aspects of Enhancements methods for avoiding radio link failures and connection releases due to significant and unpredictable UE P-MPRs due to the FR2 UE RF exposure compliance reasons.
R4 WID RP-192157 Addition: Possibly Mandating additional Gap patterns.
R4 WID RP-192282 Addition: R2 TSes impact, if needed.

Rel-17

Interesting, but no impact to R2 in the next quarter.

2.4 Others

Rapporteur changes

Spec	former rapporteur	proposed new rapporteur
38.306	Kyeongin Jeong(Intel)	Naveen Palle (Intel)

⇒ **rapporteur change is approved**

Isolated impact analysis

Note that an isolated impact analysis is required for Rel-8 to Rel-15 CRs from Q3 2018 onwards.
Only corrections where there is a proven problem are allowed for frozen releases (Rel-8 to Rel-15).

RAN2 WG Handbook

Latest version can always be found at ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/Org/RAN2_Handbook/

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/

Time Budget

The time budget endorsed at RAN-85 can be found in RP-192351.

Tdoc Limitation

A limit of max number of allowed tdocs for a company for submission towards an Agenda Item and its sub-agenda-items. Co-source documents counts towards the tdoc limitation of the presenting company, which is assumed to be the first in the list if not presented. The following is not counted towards the tdoc limitation:
- Rapporteur input (TS rapporteur, TR rapporteur, WI/SI rapporteur)
- One Draft Reply LS by contact company.
- Pre-agreed volunteer input (email discussion report, update of running CRs etc)
- At-Meeting-decided input (revisions, offline discussion reports, LS outs etc).

Offline discussions during RAN2 meeting

Chairs will allocate a number for offline discussions during the meeting. Create a folder starting with this number within inbox/drafts and use this to share any documents relating to the offline discussion (please use format "[Offline-nnn] ....", i.e. a 3 digit number). Also use this number in the title of any reflector emails relating to this offline discussion. (please use format "[RAN2#107bis Offline-nnn]....."). Do not share documents over the reflector during the meeting.

The outcome of offline discussions need to be clear and public. One way to achieve that is to provide the outcome in a tdoc (e.g. discussion paper, CR, LS). Verbal-only reporting need to be captured by the session chair, and is suitable only for very simple outcomes, e.g. discussion didn't happen, no result, or a very simple result.

Efficient handling of comebacks

Please allocate tdoc numbers for comebacks as soon as possible. Allocate tdoc numbers for your Friday comebacks on Thursday.

3 Incoming liaisons

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

For Information

R2-1912007 LS on O-RAN Alliance & 3GPP Coordination on O-RAN Alliance Outputs (ORAN_3GPP_Liaison_Statement_final; contact: AT&T, CMCC) IEEE 802.3 LS in Rel-16 To:SA, CT, RAN, SA1, SA2, SA3, SA5, SA6, RAN1, RAN2, RAN3 Cc:3GPP PCG

R2-1912064 Reply LS to “O-RAN Alliance & 3GPP Coordination on O-RAN Alliance Outputs” (SP-190947; contact: Intel) SA LS in To:O-RAN Alliance Cc:CT, RAN, SA1, SA2, SA3, SA5, SA6, RAN1, RAN2, RAN3, PCG

⇒ **2 above noted wo presentation**

R2-1912063 LS on aspects of Mission Critical Services over 5MBS (S6-192003; contact: AT&T) SA6 LS in Rel-17 FS_MC5MBS To:SA, RAN, SA2, RAN2, RAN3Cc:SA1

⇒ **postponed next meeting**

4 EUTRA corrections Rel-15 and earlier

See Appendix A for reference to Work items, work item codes and WIDs.

4.1 NB-IoT corrections Rel-15 and earlier

Documents in this agenda item will be handled in a break out session. Common NB-IoT/eMTC parts treated jointly with 4.2.
Including output of email discussion [107#56][NB-IoT R15] When PDCCH monitoring starts/ends for Timers Started in the Middle of a PDCCH Period (DoCoMo)

R2-1912228 Report of email discussion [107#56][NB-IoT R15] NTT DOCOMO INC. discussion Rel-15

⇒ **Capture in the MAC specification, at least for the OnDuration timer, a note to confirm the understandings made in Observations 2 and 3 about when monitoring should start and end.**

R2-1913067 Clarification of PDCCH monitoring period with non-zero DRX-startoffset for NB-IoT NTT DOCOMO INC. CR Rel-15 36.321 15.7.0 1458 - F NB_IOTenh2-Core

⇒ **Revised in R2-1914097**
Offline discussion #705 (DoCoMo) – to finalise the wording of the note in this CR.

R2-1914097 Clarification of PDCCH monitoring period with non-zero DRX-startoffset for NB-IoT NTT DOCOMO INC. CR Rel-15 36.321 15.7.0 1458 1 F NB_IOTenh2-Core

- Huawei don't think we should have a general statement and only address what we have discussed.
- Sequans would be OK with the previous version, this is too general.
- QC thinks there are other timers specified in a similar way and they do not specify where the PDCCH monitoring starts, and don't think OnDuration timer should be handled differently to others.
- Fujitsu think we need to check before agreeing a general solution.
- ZTE thinks only this timer has an issue so we should fix only this.
- Nokia thinks we should fix this issue now and other timers only if we identify an issue.
- Intel wonders if other timers will have a backwards compatibility issue.
- Huawei thinks all other timers are clear.

✉ **[107bis#88][NB-IoT R15] NPDCCH monitoring start/stop timers (NTT DoCoMo)**
Check whether there is impact to timers other than OnDuration timer for NPDCCH monitoring start/stop
Intended outcome: Report and CR to be submitted to the next meeting.
Deadline: Next Meeting

R2-1912998 Reselection to a Cell with Valid Dedicated Frequency Offset MediaTek Inc, LG Electronics discussion

- Huawei agrees there is a problem. The intention is to make the UE stay on the frequency once redirected there, so only really for the initial case. Mediatek think this provides a preferred frequency over a period of time.
- Intel wonders if we can apply positive offset to the preferred carrier instead.
- LG thinks if the NW redirects to a carrier it is not the intention to make UE stay there.
- Nokia have the same view as Huawei. Ericsson think we have to correct this and Mediatek way seems reasonable.
- QC think we need to be careful about backwards compatibility, and are not sure really what the problem is.
- ZTE think this is a corner case so probably doesn't happen often.

- Mediatek thinks this can happen if there is a temporary coverage problem on the preferred carrier, so UE reselects away then it gets better and could move back.

⇒ **We will clarify one way or another – either UE keeps the offset to be applied after reselecting away from the preferred carrier, or UE discards the offset after reselecting away from the preferred carrier**

Offline discussion #701 (Mediatek) decide which of the above options to go with
- After offline Mediatek reports that there is no consensus which way to correct the issue.

⇒ **Postponed**

R2-1912999 Reselection to a Cell with Valid Dedicated Frequency Offset MediaTek Inc., LG Electronics
draftCR Rel-15 36.304 15.4.0 C NB_IOT-Core

R2-1913191 Correction on T322 Nokia, Nokia Shanghai Bell CR Rel-14 36.331 14.12.0 4112
- F NB_IOTenh-Core
- Huawei thinks the CR is UE only so cover page and impact analysis needs an update.
- Ericsson think the section title could also be updated
- Intel think the timer is described in the table

⇒ **Revised in R2-1914091**

Offline discussion #700 (Nokia) – update the CR on T322

R2-1914091 Correction on T322 Nokia, Nokia Shanghai Bell CR Rel-14 36.331 14.12.0 4112
1 F NB_IOTenh-Core

⇒ **Interoperability should be updated to "none".**

⇒ **With the above change the CR is agreed in principle**

R2-1913192 Correction on T322 Nokia, Nokia Shanghai Bell CR Rel-15 36.331 15.7.0 4113
- A NB_IOTenh-Core

4.2 eMTC corrections Rel-15 and earlier

Documents in this agenda item will be handled in a break out session. Common NB-IoT/eMTC parts treated jointly with 4.1.

R2-1912605 Clarification on UP-EDT Huawei, HiSilicon CR Rel-15 36.331 15.7.0 4104 -
F LTE_eMTC4-Core, NB_IOTenh2-Core

- QC clarifies that if user plane data is transmitted in the DL with the RRC release message, it should be on DRB.

[CB Offline discussion #300] To decide whether the change is needed, and if it is what the proper wording would be (Huawei)

The outcome can be provided in R2-1914043.

R2-1914043 Clarification on UP-EDT Huawei, HiSilicon CR Rel-15 36.331 15.7.0 4104 1 F
LTE_eMTC4-Core, NB_IOTenh2-Core

- Intel prefers not to remove any legacy text. ZTE agrees.
- QC suggests checking further to be careful with the changes.
- LG suggests updating the title with "Clarification in default configuration for UP-EDT"
-

⇒ **Postponed**

4.3 V2X and Sidelink corrections Rel-15 and earlier

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

R2-1912450 Discussion on priority value in LTE V2X SHARP Corporation discussion

[Ericsson]: There has not been RAN1 LS to ask RAN2 to fix it. It would be easier to fix it in RAN1 specifications. Just to map 0 to 7 in L1 instead of 1 to 8. [Huawei]: It is clear for PPPP, the lower number means higher priority, so there is no difference regardless of whether it maps 0 to 7 or 1

to 8. [ZTE]: Priority information will be indicated to the lower layer and how to map the information is RAN1 issue as long as it keeps the ascending order. [OPPO, Qualcomm, LG]: Shares the view with all companies. It should be ok to do nothing or just to capture RAN2 understanding in minutes. [Ericsson, OPPO]: Propose to send LS to RAN1 to solve it in RAN1 specification [Intel]: If we see RAN1 notes, it clearly indicated RAN2 should solve the issue. [Huawei]: Anyway it should not impact to Rel-14. [Ericsson]: At least we should wait for official RAN1 LS.

⇨ Noted.

R2-1912451 Correction on priority values in LTE V2X 14.12.0 F SHARP Corporation draftCR Rel-14 36.331 LTE_V2X-Core

R2-1912452 Correction on priority values in LTE V2X 15.7.0 A SHARP Corporation draftCR Rel-15 36.331 LTE_V2X-Core

R2-1912453 Correction on value of sensing priority for sidelink mode 3 sensing measurement SHARP Corporation draftCR Rel-15 36.331 15.7.0 F LTE_eV2X

R2-1912911 Avoid ping pong state transition for sidelink UE Beijing Xiaomi Software Tech discussion

[LG, Intel]: NW may not configure inactive timer, then it can be solved. [ZTE]: Rel-15 UE actually sends CBR MR or others, so it can be rarely happen. [Ericsson]: If problem exists in NR, we need to discusss the issue in NR V2X and common solution can be applied to both NR and LTE. [Apple]: It is not correction, it is for new enhancement so it should be discussed in TEI-16. [Ericsson]: NW can also send some information/data to the UE, then it can be solved.

⇨ Noted

R2-1913966 Discussion on priority misalignment issue OPPO, Apple discussion LTE_V2X-Core

⇨ Noted

R2-1912803 Issue on ping pong state transition for sidelink UE Beijing Xiaomi Software Tech discussion Withdrawn

4.4 Positioning corrections Rel-15 and earlier

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

R2-1913420 posSIBs on a selective carrier Ericsson discussion Rel-16

Nokia think this is not a correction and they do not see how it addresses the resource optimisation aspects. It seems more to affect load distribution.

Ericsson think it reduces overhead on the carriers that do not broadcast the AD.

Qualcomm wonder what the UE behaviour would be if it reads SIB1 and finds itself on the wrong carrier, since the UE cannot autonomously switch to whichever carrier it prefers. Ericsson understand that the UE would be able to know if it is on the wrong carrier and switch. Chair thinks this would require a change to idle mode behaviour.

Intel think it would lead to all UEs being concentrated on the AD carrier and this impacts the load distribution. Ericsson intend it to be used when an operator has multiple carriers and not so many UEs needing the assistance data.

Deutsche Telekom see value in the proposal.

Intel think broadcast is intended for the case where many UEs need the AD and this proposal targets the opposite scenario. Ericsson think there is value in broadcast even for small numbers of UEs, to prevent having to send dedicated AD frequently.

Nokia think this is a bit like MBMS where we needed a frequency interest indication to redirect the involved UEs to the concerned frequency layer.

Qualcomm see this as a deployment question. In cases like a small cell layer the UE would need to be moved to the macro layer to receive the AD. Ericsson think this can be influenced by the existing dedicated priority mechanism.

Chair thinks the existing dedicated priority mechanism could be used to prioritise the carrier with the AD. Ericsson agree but think the UE should be aware of where the AD are.
Nokia think we should limit these corrections to serious problems and this solution does not really address the stated problem. Also it has the side effect of concentrating all the positioning-interested UEs onto one frequency layer.
⇨ Noted

R2-1913421 PosSIB Broadcast carrier LCS_LTE_acc_enh-Core Ericsson CR Rel-15 36.331 15.7.0 4122 - C

4.5 Other LTE corrections Rel-15 and earlier

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

Rel-13 CA enhancements

R2-1913543 On Scell AddMod and Release lists LTE_CA_enh_b5C-Core Ericsson discussion Rel-13

Example 1
UE is configured with SCells indexed {1, 2, 4, 6} using sCellToAddModList-r10.
Another SCell indexed {8] is added using sCellToAddModListExt-r13.
Scell indexed {4} is released.
Now, UE has 4 SCells, but only 3 are configured with sCellToAddModList-r10.

1. *Is it allowed to add an Scell with ScellIndex in the range 1-7 using SCellToAddModListExt-r13?*
2. *Is it allowed to delete an SCell (originally added with SCellToAddModList-r10) with sCellIndex 4 using SCellToReleaseListExt-r13?*
3. *Is the configuration in Example 1 in conflict with Restriction 2?*
4. *If another SCell is now to be added, should it be added using sCellToAddModList-r10 (this list is not "full") or sCellToAddModListExt-r13 (UE has already 4 SCells)? Or can any be used?*
5. *Is Restriction 2 relevant in eNB to UE signalling?*

Discussion
- Nokia thinks the release case is clear and any list is allowed.
- Qualcomm thinks both addition and release with either R10 or R13 are allowed. Intel agrees. Huawei also agrees.
- Intel thinks addition could use the restriction if needed. Qualcomm doesn't see that necessary.
- Huawei thinks the restriction could be there for only initial setup. Nokia wonders why that would be necessary.
- Ericsson wonders if the first SCell can be added using R13 extension. The restriction is quite vague. Nokia thinks there is no need for the restriction from UE viewpoint, only network. Could just remove it.

⇨ **General agreement that restriction on addition/release is not needed.**
⇨ **SCellIndex sentence is trying to clarify all SCells need unique identifiers.**
⇨ **Companies are asked to provide CRs to next meeting according to above agreements.**

Rel-14 Voice/Video enhancements

R2-1913553 Clarification on RA and Msg3 with PUSCH Enhancements Nokia, Nokia Shanghai Bell CR Rel-14 36.321 14.11.0 1456 2 F LTE_VoLTE_ViLTE_enh R2-1910720 Late

(moved from 4)
⇨ **Typo: performaning --> performing**

⇨ **Remove extra word: “methods techniques”**
⇨ **Inter-operability analysis could be improved (if UE follows RAN1 specs, no issues)**
⇨ **Move the second change to be before “For NB-IoT...”**
⇨ **Remove first change**

- Qualcomm thinks first change shouldn’t change TTI bundling for CFRA. Nokia thinks this doesn’t change legacy but clarifies the functionality. Ericsson thinks the first message only concerns initial acccess but is fine not to have first change.
- Ericsson wonders if inter-operability is correct. Nokia explains there are noproblems if YE implements RAN1, but if it only does MAC there could be issues.
- Ericsson thinks the second part looks odd since it now refers to SI configuration, whereas the new part refers to dedicated configuration.

CB: Revised CR can be provided in R2-1913981

R2-1913981 Clarification on RA and Msg3 with PUSCH Enhancements Nokia, Nokia Shanghai Bell CR Rel-14 36.321 14.11.0 1456 3 F LTE_VoLTE_ViLTE_enh R2-1913553
⇨ **Agreed in principle.**

R2-1913554 Clarification on RA and Msg3 with PUSCH Enhancements Nokia, Nokia Shanghai Bell CR Rel-15 36.321 15.7.0 1457 1 A LTE_VoLTE_ViLTE_enh R2-1910721 Late
(moved from 4)

CB: Revised CR can be provided in R2-1913982

R2-1913982 Clarification on RA and Msg3 with PUSCH Enhancements Nokia, Nokia Shanghai Bell CR Rel-15 36.321 15.7.0 1457 2 A LTE_VoLTE_ViLTE_enh R2-1913554
⇨ **Agreed in principle**

Rel-15 LAA

R2-1912982 Missing QCI to CAPC mapping Nokia, Nokia Shanghai Bell CR Rel-16 36.300 15.7.0 1240 2 F LTE_unlic-Core R2-1911628
(moved from 4)
⇨ Remove Rel-15 from consequences if not approved.
⇨ **Agreed in principle unseen in R2-1913983**

Rel-15 euCA

R2-1913314 Correction to SIB5 acquisition for idle mode measurements Ericsson CR Rel-15 36.331 15.7.0 4120 - F LTE_5GCN_connect-Core
R2-1913315 Correction on inter-frequency neighbour cell measurements Ericsson CR Rel-15 36.300 15.7.0 1252 - F LTE_5GCN_connect-Core
⇨Add euCA WID code to cover page
⇨ **CRs agreed in principle unseen in R2-1913984 and R2-1913985**

R2-1913984 Correction to SIB5 acquisition for idle mode measurements Ericsson CR Rel-15 36.331 15.7.0 4120 1 F LTE_5GCN_connect-Core
R2-1913985 Correction on inter-frequency neighbour cell measurements Ericsson CR Rel-15 36.300 15.7.0 1252 1 F LTE_5GCN_connect-Core

Rel-15 UDC

R2-1913411 Specify UDC Header is part of Data Field Ericsson CR Rel-15 36.323 15.4.0 0276 - F LTE_UDC-Core
- LG indicates they are OK with the CR now.
- Huawei think this was the original wording but companies didn’t agree at that time.

- Nokia thinks intent is fine but is not essential.
- LG thinks the main discussion was about cover page previously, not need.

⇨**Postponed (should bring CRs showing which changes are needed if RAN2 agrees to this CR or if RAN2 does not agree to this CR).**

Rel-15 eLTE

R2-1912758 Correction to the handling of stored AS context upon CN type change Huawei, HiSilicon
CR Rel-15 36.304 15.4.0 0772 - F LTE_5GCN_connect-Core

- Qualcomm agrees with intent. Ericsson thinks this is for resume only.
- Nokia thinks this has not network impact and this is just specs alignment.

⇨ **Untick "network"**
⇨ **Correct specification to 36.304.**
⇨ **Reason for change should be checked**

CB: Offline discussion 100: Work on the cover page reason for change. Revised CR can be provided in R2-1913986

R2-1913986 Correction to the handling of stored AS context upon CN type change Huawei, HiSilicon
CR Rel-15 36.304 15.4.0 0772 1 F LTE_5GCN_connect-Core, LTE_euCA-Core
⇨ Huawei reports more time is needed to check whether this relates to another Rel-16 WID.
⇨ **Postponed**

Rel-13 LAA

R2-1912974 Clarification on RSSI and Channel Occupancy measurement in LAA Qualcomm
Incorporated CR Rel-13 36.331 13.14.0 4109 - F LTE_LAA-Core

R2-1912975 Clarification on RSSI and Channel Occupancy measurement in LAA Qualcomm
Incorporated CR Rel-14 36.331 14.12.0 4110 - A LTE_LAA-Core

R2-1912976 Clarification on RSSI and Channel Occupancy measurement in LAA Qualcomm
Incorporated CR Rel-15 36.331 15.7.0 4111 - A LTE_LAA-Core

- Nokia asks if this is RAN2 matter but should be in 36.214. Qualcomm indicates RAN4 thought this should be in RAN2.
- Intel agrees with Nokia that this is RAN1 or RAN4 matter. Nokia thinks some clarification may be needed but not in RAN2.
- Ericsson thinks this is NBC change and doesn't agree with the change. Qualcomm disagrees and thinks we need to make the UE behaviour clear: What does the current specification indicate?
- Intel wonders if RAN4 agreed something. Qualcomm thinks there was no agreement.

CB: Offline discussion 101 (Qualcomm): Check what RAN4 agreement is and whether RAN2 can clarify anything on the expected behaviour. Result can be provided in R2-1913987.

R2-1913987 Result of offline discussion 101 on RSSI and channel occupancy measurement in LAA, Qualcomm Incorporated discussion LTE_LAA-Core

- Not available (withdrawn)
- Intel thinks RAN1 could do it, Nokia thinks RAN1 or RAN4 could do, no conclusion to send LS.
- Qualcomm indicates RAN4 had discussed this but hasn't concluded. Some issue seems possible.

=> There is an issue that needs to be clarified but no conclusion where/how to fix it. We may come back to this if needed.
=> Noted

5 WI: New Radio (NR) Access Technology

(NR_newRAT-Core; leading WG: RAN1; REL-15; started: Mar. 17; closed: Jun. 19: WID: RP-191971)

5.1 Organisational

Incoming LSs, etc.

UP

R2-1912021 Reply LS to RAN 2 on CSI reporting in C-DRX (R1-1909889; contact: Qualcomm) RAN1 LS in Rel-15 NR_newRAT-Core To:RAN2

⇒ **Noted**

UE capabilities

R2-1912016 Reply LS on RAN1/4 feature lists R1-1909856; contact: NTT DOCOMO) RAN1 LS in Rel-15 NR_newRAT-Core To:RAN2 Cc:RAN4

⇒ **Noted**

R2-1912040 Reply LS on RAN1/4 feature lists (R4-1909845; contact: Intel) RAN4 LS in Rel-15 NR_newRAT-Core To:RAN2 Cc:RAN1

⇒ **noted**

R2-1912047 LS on Handling of Fallbacks for combined contiguous and non-contiguous CA or DC configurations in FR2 (R4-1910239; contact: Apple) RAN4 LS in Rel-15 NR_newRAT-Core To:RAN2

⇒ **noted**

Supported BW

R2-1912026 Reply LS on supported BW for initial BWP (R1-1909900; contact: Nokia) RAN1 LS in Rel-15 NR_newRAT-Core To:RAN2, RAN4

- Nokia indicate that this is already included in TS (106#28)
- Huawei have some related documents and think some issues still need to be fixd

⇒ **Noted**

R2-1912049 LS reply on supported BW for initial BWP (R4-1910522; contact: Nokia) RAN4 LS in Rel-15 NR_newRAT-Core To:RAN1, RAN2

⇒ **noted**

Idle etc

R2-1912015 Reply LS on transmission of short message with multiple beams (R1-1909852; contact: Qualcomm) RAN1 LS in Rel-15 NR_newRAT-Core To:RAN2

⇒ **Noted**

FR2

R2-1912048 LS on FR2 Pmax (R4-1910262; contact: Huawei) RAN4 LS in Rel-15 NR_newRAT-Core To:RAN2

⇒ **Noted**

MR-DC

R2-1912012 Reply LS on SFTD measurement (R1-1909819; contact: Huawei) RAN1 LS in Rel-15 NR_newRAT-Core To:RAN2, RAN4

- Huawei expect that we need to reply.

⇒ **Noted**

R2-1912046 Reply LS on SFTD measurement (R4-1910179; contact: ZTE) RAN4 LS in Rel-15 NR_newRAT-Core To:RAN2
- ZTE expect that we need to capture in R2 TS.

⇒ **Noted**

R2-1912008 Reply LS on PDCCH monitoring for NR-DC (R1-1909550; contact: Samsung) RAN1 LS in Rel-15 NR_newRAT-Core To:RAN2 Cc:RAN3
- Samsung think it is now clear we need to capture something in our TS

⇒ **Noted**

R2-1912020 LS on SFN sync (R1-1909882; contact: Nokia) RAN1 LS in Rel-15 NR_newRAT-Core To:RAN, RAN2
- Nokia indicate this was resolved at RP. ZTE think we can discuss if to have a stage-2 CR.

⇒ **noted**

Offline 03, Stage-2 CR, in R2-1913976 (ZTE)

R2-1913976 Clarification of NR-DC synchronization ZTE CR Rel-15 37.340 0163 - F NR_NewRAT-Core

⇒ **Agreed in principle**

R2-1912033 LS on full configuration during SN Modification procedure (R3-194758; contact: Huawei) RAN3 LS in Rel-15 NR_newRAT-Core To:RAN2
- There are contributions on this. HW think we need to reply regardless.

⇒ **Noted**

R2-1912051 Reply LS on reporting criteria limitation in MR-DC (R4-1910570; contact: Huawei) RAN4 LS in Rel-15 NR_newRAT-Core To:RAN2
- there are contributions. Huawei think there is no need to impact R2

⇒ **noted**

Misc

R2-1913972 Update LS on Release-with-Redirect in 2-step resume procedure (C1-196902; contact: OPPO) CT1 LS in Rel-15 NR_newRAT-Core To:RAN2
- Oppo think we need to update TS for Rel-15 then and there are proposals

⇒ **noted**

R2 cc

R2-1912014 Reply LS on Tx DC location (R1-1909849; contact: Huawei) RAN1 LS in Rel-15 NR_newRAT-Core To:RAN4 Cc:RAN2

⇒ **Noted wo presentation**

5.2 Stage 2

5.2.1 Stage 2 corrections for TS 38.300

CRs to correct errors in stage 2 are still appropriate, but CRs to tidy up the specifications or add additional cases covered by stage 3 but not stage 2 are no longer appropriate for Rel-15. As at previous meetings you should discuss your stage 2 CRs with the specification rapporteurs before submission.

R2-1912326 Correction on PUCCH transform precoding vivo, Nokia (rapporteur) draftCR Rel-15 38.300 15.7.0 F NR_newRAT-Core
- vivo think this is agreed in R1. Nokia think this is correct
- Samsung suggest to have further details on the coversheet on the R1 conclusion.
- Huawei think we can remove the line. Vivo would also be ok.

⇒ **Agree the contents, can polish the coversheet for next meeting, a CR is expected next meeting.**

R2-1913834 Clarification on measurement gap for LTE inter-RAT measurement in NR SA MediaTek Inc, Nokia (rapporteur) CR Rel-15 38.300 15.7.0 0173 - F NR_newRAT-Core
- Ericsson think this is a copy paste from inter-freq, and Ericsson think the wording need to be modified, as frequency range need then to be specified for LTE.
- ZTE think the intention is ok, but we need to remove the last part

⇒ **Will have a correction, need to work on the wording**

Offline 04 to find agreeable wording (MTK), revision in R2-1913978

R2-1913978 Clarification on measurement gap for LTE inter-RAT measurement in NR SA MediaTek Inc., Nokia (Rapporteur) CR Rel-15 38.300 15.7.0 0173 1 F NR_newRAT-Core
- Samsung think this is also applicable for intra-NR. Can consider this for next meeting

⇒ **Agreed in principle (can consider whether anything need to be added for intra-RAT for next meeting)**

5.2.2 Stage 2 corrections for TS 37.340

CRs to correct errors in stage 2 are still appropriate, but CRs to tidy up the specifications or add additional cases covered by stage 3 but not stage 2 are no longer appropriate for Rel-15. As at previous meetings you should discuss your stage 2 CRs with the specification rapporteurs before submission.

Including output of email discussion [107#25][NR/R15] PDCP configuration generation for MR-DC cases (Huawei)

Including output of email discussion [107#26][NR/R15] SMTC setting in MR-DC PSCell change (Nokia)

Corrections

R2-1913273 PDCP configuration generation (email discussion of 107#25) Huawei, HiSilicon CR Rel-15 37.340 15.7.0 0158 - F NR_newRAT-Core
- Ericsson think we should tell R3 about this. Huawei think that R3 can also work off the R2 agreements.
- Samsung wonder if anything is broken in the current TS. Huawei think that if this is not correctly by the network the will be a failure
- Intel think there may be the case that DRB with a certain ID is released by both MN and SN, and wonder if this is acceptable (there is a stage-3 Note). Huawei think this can be captured in the cover sheet.
- Nokia think this is related to LTE connect to 5GC.
- ZTE think there are some editorial upgrades that can be done
- Oppo think we need to add interoperability analysis to the cover sheet

⇒ **Agreed in principle with additional changes: Double DRB release added in the cover sheet acc to comment, also allowed to fix editorials and other possible cover sheet problems, see this CR next meeting.**

R2-1913017 Report for email discussion [107#26] [NR/R15] SMTC setting in MR-DC PSCell change (Nokia) Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core
DISCUSSION
- Nokia indicate that we can agree P3 and work offline on wording
- Ericsson think possibly no clarification is needed
- Huawei think the text proposed is strange

⇒ **P3 is agreed**

Offline 05, to find an agreeable wording for Stage-2, CR revision in R2-1913979 (Nokia)
Nokia proposes an email discussion, not clear if to correct stage-2 or stage-3.
- Ericsson think we can close it here and just update the stage-2. Vivo agrees.
- ZTE think the wording suggested by ZTE over email would be ok. Nokia would be ok with this. Huawei are ok to compromise.

R2-1913018 SMTC setting in MR-DC PSCell change Nokia, Nokia Shanghai Bell CR Rel-15
37.340 15.7.0 0157 - F NR_newRAT-Core

⇒ **revised** in R2-1913979

R2-1913979 SMTC setting in MR-DC PSCell change Nokia, Nokia Shanghai Bell CR Rel-15
37.340 15.7.0 0157 1 F NR_newRAT-Core

⇒ **agreed in principle**

R2-1913312 Correction on sending Failure Information via SRB3 Ericsson, ZTE Corporation
(Rapporteur) CR Rel-15 37.340 15.7.0 0159 - F NR_newRAT-Core
=> Revised in R2-1913980

R2-1913980 Correction on sending Failure Information via SRB3 Ericsson, ZTE Corporation
(Rapporteur) CR Rel-15 37.340 15.7.0 0159 1 F NR_newRAT-Core

⇒ **agreed in principle**

R2-1913612 Sending FailureInformation message on SRB3 Huawei, HiSilicon CR Rel-15
37.340 15.7.0 0162 - F NR_newRAT-Core
DISCSUSION on the 2 tdocs above
- LG think SRB3 is not used for this.
- Ericsson think this is for CA duplication case, and think “SN” is used because SCG is not used on Stage-2, and think the second change is needed because we then introduce ambiguity. Intel agrees that a clearification is neeed if we have the first change
- Ericsson also noticed an error on the cover sheet
- Nokia and LG think “RLF” might not be exactly correct as this is about the RLC error.
- MTK Samsung and Oppo think the second change is not needed.

⇒ **We will capture some change**

Offline 06, on finding agreeable wording, revision of 3312 in R2-1913980 (Ericsson).

R2-1913482 Clarification on security key change and bearer termination point change ZTE Corporation, Ericsson, Intel CR Rel-15 37.340 15.7.0 0160 - F NR_newRAT-Core
- Nokia think this is ok, but the cover sheet interop statement should be changed. ZTE think we can also soften the problem statement.
- Oppo wonder why not key change due to master key change is included. ZTE think it is the intention of these texts to Not handle that case.
- Huawei support this, and think it is correct.

⇒ **Agreed in principle, but can consider cover page update for the next meeting.**

R2-1913523 Correction on capability coordination terminology (37.340) Ericsson CR Rel-15
37.340 15.7.0 0161 - F NR_newRAT-Core
- Huawei think this is just editorial.
- Nokia think this text may cause inconsistency with stage-3
- ZTE think this is editorial
- Ericsson think another way it to remove the text within brackets.

⇒ **Not pursued**

R2-1913589 Clarification regarding QoS handling in MRDC with 5G CN Samsung, ZTE Corporation draftCR Rel-15 37.340 15.7.0 F NR_newRAT-Core
- Huawei think the second part need modifications. Samsung would be ok to e.g. align with handover wording in 38300.
- intel think the cover page need updating.
- Oppo think the last part of second change is not correct and it is already captured elsewhere.

Offline 07, revision in R2-1914121, on the wording (e.g. acc to comments above) (Samsung)

R2-1914121 Clarification regarding QoS handling in MRDC with 5G CN Samsung, ZTE Corporation draftCR Rel-15 37.340 15.7.0 F NR_newRAT-Core

⇒ **Agreed in principle**

Enhancements

R2-1912363 PDCP version in EN-DC Ericsson discussion Rel-15 NR_newRAT-Core DISCSUSSION
- Huawei think this is allowed already. ZTE think the stage-2 is not clear on this.

⇒ **Proposal is already intended to be supported, i.e. P1 is confirmed**

R2-1912364 PDCP version in EN-DC Ericsson CR Rel-15 37.340 15.7.0 0155 - F NR_newRAT-Core
Offline 08, revision in R2-1914122, agreeable CR (Ericsson)

R2-1914122 PDCP version in EN-DC Ericsson CR Rel-15 37.340 15.7.0 0155 1 F NR_newRAT-Core

⇒ **Agreed in principle**

5.2.3 Positioning

Corrections to both the stage 2 and stage 3 aspects related to positioning.

R2-1913280 Correction on EUTRAN terminology Huawei, HiSilicon CR Rel-15 38.305 15.4.0 0014 - F NR_newRAT-Core

Qualcomm think the changes in the E-CID section are not correct. There is a reference to 36.214 that is proposed to be changed to 38.215, but the TA, AoA measurements etc. are not in 38.215. Huawei agree there are no such measurements but understand that RAN1 are in the process of adding them.
Nokia wonder if the LTE measurements in Rel-15 originally included only neighbouring eNBs or also ng-eNBs.
⇨ Back out the change of the reference for now
⇨ Agreed in principle with this change

R2-1913425 Corrections for Positioning Architecture Ericsson CR Rel-15 38.305 15.4.0 0015 - F NR_newRAT-Core

Nokia think the change to NOTE 2 under the architecture figure to add the reference to 37.340 is not needed.
Ericsson think the NOTE is confusing as it is. Intel agree but think the clarification is still unclear.
⇨ Offline discussion to converge on a clear wording. Offline 401 (Ericsson), revision in R2-1914072.

R2-1914072 Corrections for Positioning Architecture Ericsson CR Rel-15 38.305 15.4.0 0015 1 F NR_newRAT-Core

Huawei are OK with the removal of the note but think the change from E-UTRAN to E-UTRA may collide with a Huawei CR. After checking there is no collision.
⇨ Agreed in principle

5.3 Stage 3 user plane

Essential functional corrections.

5.3.1 MAC

R2-1913281 Remaining issues for the MAC specification Huawei, HiSilicon CR Rel-15 38.321 15.7.0 0667 - F NR_newRAT-Core
- Oppo think gaps are per UE or per FR and the first change is not needed
- Oppo think the second change is not needed, this is old text since LTE. Oppo think also the third change is not needed.
- LG thnk no change needed. QC could consider the second change, but none of then are needed. ZTE agrees.
- Chair: Some limited support for the second change, no support for the others. Ericsson think the second change is good and related to the different of UL harq in NR cmp to LTE. Lenovo think that anyway the proposal do not change the behaviour. Vivo agrees
- Samsing think change 1 and 2 could be useful.

⇒ **Not pursued**

R2-1913311 Correction on handover terminology Ericsson CR Rel-15 38.321 15.7.0 0669 - F NR_newRAT-Core
- Samsung think we don't need to change and think the current text is deliberate. LG think we don't need this change.
- Ericsson would like to align,
- Huawei think the change involves UE behaviour change

⇒ **Not Pursued**

R2-1913897 Clarification to CSI reporting in C-DRX Qualcomm Inc CR Rel-15 38.321 15.7.0 0672 - F NR_newRAT-Core
=> Revised in R2-1913936

R2-1913936 Clarification to CSI reporting in C-DRX Qualcomm Inc CR Rel-15 38.321 15.7.0 0672 1 F NR_newRAT-Core
- Samsung think this is not BW compatible. And it can be avoided by network configuration. ZTE agrees
- Huawei don't know about the issue, and think the issue might be covered by the current TS. CATT also think this is covered.
- Ericsson support the CR.
- Oppo think there are 2 changes. The first change is a clarification. Oppo would like to think about this.
- Lenovo wonders when the overlap is determined and point out that this need to be detected 4ms in advance. QC think this is not so related.
- QC think that we can discuss if to have mandatory text or a note.
- MTK think the CSI masking becomes redundant in this case.
- vivo wonder if this happens bothe for periodic and aperiodic CSi reporting

Offline 29, find agreeable CR if any revision in R2-1914175 (QC), f2f offline during afternoon coffe break today Tuesday in the back of main room.

R2-1914175 Clarification to CSI reporting in C-DRX Qualcomm Inc. CR Rel-15 38.321 15.7.0 0672 2 F NR_newRAT-Core

⇒ **Agreed in principle**

R2-1913898 Correction to PHR in dual connectivity Qualcomm Inc, Nokia, Nokia Shanghai Bell, Ericsson CR Rel-15 36.321 15.7.0 0660 2 F NR_newRAT-Core R2-1911305
- LG think NE-DC case is needed. LG wonders if dyn power sharing is specified for this case.
- QC indicates that there is also a CR to define what is NE-DC power sharing.
- Samsung the reference shall not be hard coded in the CR.

⇒ **Agreed in principle, reference should be changed to [xx], Change for next meeting.**

Not Available

R2-1913890 Clarification to CSI reporting in C-DRX Qualcomm Inc CR Rel-15 38.321 15.7.0 0671 - F NR_newRAT-Core Late

R2-1913891 Correction to PHR in dual connectivity Qualcomm Inc, Nokia, Nokia Shanghai Bell, Ericsson CR Rel-15 36.321 15.7.0 0660 2 F NR_newRAT-Core R2-1911305 Late

5.3.2 RLC

5.3.3 PDCP

R2-1912997 PDCP uplink transmit operation for split-bearer Qualcomm Incorporated CR Rel-15 38.323 15.6.0 0036 - F NR_newRAT-Core

- Vivo think that this was discussed earlier, for LTE, and it was agreed to not modify. LG think this would typically happen at the end of data, and we decided earlier to not fix this, and think this do not resolve the issue of overallocation.
- Google think a UE implementation could possibly avoid this, and think we designed this with pre-processing in mind and think we shouldn't have this.
- Huawei also would not like this, Ericsson neither.
- Sequans think this would be ok for the LTE leg as we haven't agreed pre-processing for LTE.
- Lenovo think this is already allowed for NR.

⇒ **Not pursued**

5.3.4 SDAP

5.4 Stage 3 control plane

5.4.1 NR RRC

5.4.1.3 Connection control procedures

No documents should be submitted to 5.4.1.3. Please submit to 5.4.1.3.x.

5.4.1.3.1 Corrections to L1 Parameters

UP related

R2-1912199 CR to 38.331 on configuration of rach-ConfigCommon in initial UL BWP for RRC triggered BWP switch Qualcomm Incorporated CR Rel-15 38.331 15.7.0 1344 - F NR_newRAT-Core
=> Revised in R2-1913944

R2-1913944 CR to 38.331 on configuration of rach-ConfigCommon in initial UL BWP for RRC triggered BWP switch Qualcomm Incorporated CR Rel-15 38.331 15.7.0 1344 1 F NR_newRAT-Core
=> Revised in R2-1913957

R2-1913957 CR to 38.331 on configuration of rach-ConfigCommon in initial UL BWP for RRC triggered BWP switch Qualcomm Incorporated CR Rel-15 38.331 15.7.0 1344 2 F NR_newRAT-Core

- Huawei think this is the common understanding and otherwise it doesn't work, and think nothing need to be clarified. Samsung agrees that this is obvious from MAC, and think the CR is not 100% correct.
- Vivo are ok to clarify the second part.
- Nokia agreed for the Pcell and the PScell and think we don't need to specify this.
- QC think that this is a IODT problem and some network vendor doesn't do this.
- Oppo think that the first change is needed.
- Ericsson are ok to clarify.
- Nokia think this is just a misconfiguration.

Offline 02, find a clarification wording, either for chair notes or for a CR (QC)
- QC think we may need an email discussion
- Samsung think this is just a misconfiguration and think we don't need a CR. Nokia would be fine to capture a clarification circulated by email in Chair notes. Docomo as well. Samsung cannot agree with the Nokia clarification.
- Nokia proposes the following clarification "Network always configures rachconfigcommon for initial BWP"
- QC think that we shall capture in Chair notes for now and can think about CR next meeting.

⇒ **R2 understands that the Network configures rachconfigcommon for initial BWP, if the RACH procedure need to be performed in the initial UL BWP. Otherwise the UE behaviour is not specified.**

BW handling

R2-1913255 Correction on initial DL BWP and CORESET#0 Huawei, MediaTek, HiSilicon CR Rel-15 38.331 15.7.0 1293 - F NR_newRAT-Core
- QC think it is ok to remove the may, but the additional text should not be added. Intel think this is UE implementation so why do we need this. Nokia think this involves a change, and now the UE has to retune.
- MTK think that the intention is to clarify that the UE keeps monitoring corset 0 until msg4
- Ericsson think the wording now looks strange.
- Intel think that anyway the UE need to monitor corset 0 until receiving MSG4.

⇒ **Agreed change: Remove "may" and "the bandwidth of", merged with the rapporteur CR**

R2-1913256 Correction on capabilities of BWP bandwidth Huawei, HiSilicon CR Rel-15 38.306 15.7.0 0180 - F NR_newRAT-Core
- Docomo think we discussed the same issue yesterday, and think there was no conclusion yesterday.
- CATT support these CRs.
- Ericsson think that the text need to placed somewhere else and it need to be rephrased.
- Nokia are ok with the CRs.
- Docomo wonders if UE vendors can support this. QC disagree with the CR. MTK think this was agrees in R1 and R4 and can support this.
- Vivo think this is different to the other discussion.
- ZTE think we will need to implement this as it was agreed, and it can be resolved in R5. Samsung want to have time to check.

⇒ **postpone**

R2-1913257 Correction on camping conditions Huawei, HiSilicon CR Rel-15 38.331 15.7.0 1294 - F NR_newRAT-Core

⇒ **postpone**

Other

R2-1913283 Correction on PUSCH frequency hopping Huawei, HiSilicon CR Rel-15 38.331 15.7.0 1297 - F NR_newRAT-Core
- Nokia wonder if we really need this in our specs. Samsung also think this is not needed as FD refers to R1 TS. ZTE agrees.
- Vivo think the first change is nice but is editorial.

⇒ **First change is agreed, merged with the rapporteur CR**

5.4.1.3.2 Corrections to L2 Parameters

Corrections

R2-1913305 Remaining issues for correction on the condition of RBTermChange Ericsson discussion Rel-15 NR_newRAT-Core

R2-1913304 Remaining issues for correction on the condition of RBTermChange Ericsson CR Rel-15 38.331 15.7.0 1307 - F NR_newRAT-Core
- Huawei wonders if this impacts EN-DC (as cov sheet). The proposed proc text is ok but, Huawei think we need a wider discussion on when this field need to be included.
- Ericsson think there could be an email discussion.
- MTK think these are needed, and only the third change may have UE impl impact. No email discussion is needed.

Offline 09, to find agreeable change, revision in R2-1914123 (Ericsson).

R2-1914123 Remaining issues for correction on the condition of RBTermChange Ericsson CR Rel-15 38.331 15.7.0 1307 1 F NR_newRAT-Core
- Huawei has some comments that have not been addressed
- Huawei wonder still if this impacts EN-DC
- Ericsson proposes an email discussion.

✉ **[107bis#30][NR R15] Correction on the condition of RBTermChange (Ericsson)**
Intended outcome: Agreeable CR 38331
Deadline: Next Meeting

Text enhancements

R2-1913730 Corrections on the PDCP duplication (de)activation Huawei, HiSilicon CR Rel-15 38.331 15.7.0 1339 - F NR_newRAT-Core

R2-1913731 Corrections on the condition of PDCP for split SRB Huawei, HiSilicon CR Rel-15 38.331 15.7.0 1340 - F NR_newRAT-Core

5.4.1.3.3 Connection establishment procedure

Access control and establishment cause are discussed in the access control agenda item 5.4.1.3.10

5.4.1.3.4 Connection reconfiguration procedure

Including corrections related to handover (i.e. reconfig with sync)

Corrections

R2-1913285 Correction on delta signalling for handover Huawei, HiSilicon CR Rel-15 38.331 15.7.0 1299 - F NR_newRAT-Core
- Samsung think that at HO failure there will be reestablishment and this CR is not needed.
- MTK think this is not needed. Ericsson agrees. QC agrees as well on the first change but would accept a discussion on the intention of the second change for rel-16.
- Vivo think that for the PScell part vchange is not needed, but for the reconfiguration, some change is needed.

⇒ **Not pursued**

R2-1913310 Correction to integrity protection in DRB addition and modification Ericsson CR Rel-15 38.331 15.7.0 1309 - F NR_newRAT-Core
- Intel wonders if there is interoperability problems. Ericsson are not sure. Huawei think there are no interoperability problems. Huawei suggest to merge with rapporteur CR.
- Nokia think there is no impact to EN-DC
- LG support this CR

⇒ **Agreed in principle, change the cover-sheet to “no interoperability problems foreseen”, and remove EN-DC**

R2-1912671 Clarification on the RRCReconfiguration for unauthenticated emergency call ZTE Corporation, Sanechips CR Rel-15 38.331 15.7.0 1271 - F NR_newRAT-Core
- Huawei think this is not needed.

- ZTE think we can also remove the word “unprotected”. QC think we should use the word activated.

  ⇒ **The interpretation “Protected = Security activation has been done” is confirmed, but no clarification in the TS needed**

  ⇒ **Not pursued**

R2-1913518 Correction to field conditions in NE-DC Ericsson CR Rel-15 36.331 15.7.0 4128 - F NR_newRAT-Core
- Huawei think this should be treated with R2-1913632

=> Revised in R2-1914124

R2-1914124 Correction to field conditions in NE-DC Ericsson CR Rel-15 36.331 15.7.0 4128 1 F NR_newRAT-Core

⇒ **Agreed in principle**

R2-1913632 Correction for the establishment of LTE RLC bearers for (NG)EN-DC and NE-DC Huawei, HiSilicon CR Rel-15 36.331 15.7.0 4132 - F NR_newRAT-Core
- Ericsson think that we could split more clearly, and keep the conditions “connected the EPC” could be kept in the Ericsson CR, and the other part in the Huawei CR.

=> Revised in R2-1914125

R2-1914125 Correction for the establishment of LTE RLC bearers for (NG)EN-DC and NE-DC Huawei, HiSilicon CR Rel-15 36.331 15.7.0 4132 1 F NR_newRAT-Core

⇒ **Agreed in principle**

Offline 10, arrive at to agreeable CRs based on the above two, Revisions in R2-1914124 and R2-1914125 (Huawei, Ericsson).

R2-1913613 Clarification on SRB3 release Huawei, HiSilicon CR Rel-15 38.331 15.7.0 1329 - F NR_newRAT-Core
- Samsung think this is not an essential correction. Ericsson agrees that this is not needed. Huawei think the problematic word is “present”

⇒ **Merged with the rapporteur CR**

R2-1913614 sk-counter presence in RRC(Connection)Reconfiguration Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
- Huawei don’t have a good solution but think this is a problem. It need to be clear what cases the UE can handle. MTK are not sure anything need to be changed
- Huawei think the issue is whether the UE is implemented acc to FD or proc text.
- Ericsson think that the network is allowed to provide a Skcnt without Sec alg etc.
- Ericsson has a CR in 3958

⇒ **noted**

R2-1913958 Correction to AS security key update Ericsson CR Rel-15 38.331 15.7.0 1348 - F NR_newRAT-Core
- MTK think the note contradicts the procedure text. MTK proposes that the network shall always provide this at the same time.
- Huawei think the UE might already know the security algorithm.
- Intel wonders if there really is an issue. MTK think it is clear. Samsung agrees.
- Huawei think that if the UE follows the procedure text the network behaviour in the FD doesn’t make sense. Ericsson think that in such case, some other change may be needed.

⇒ **R2 assumes that the UE will follow the procedure text.**

Offline 12, based on the above two tdcos, clarify if conditions / cases / network restrictions need to be updated for consistency, Revision in R2-1914126 (Ericsson/Huawei)

R2-1914126 Correction to AS security key update Ericsson CR Rel-15 38.331 15.7.0 1348 1 F NR_newRAT-Core
- Ericsson think this need to be moved to email

✉ **[107bis#31][NR R15] Correction to AS security key update (Ericsson)**
Intended outcome: CR 38331 for next meeting
Deadline: Next Meeting

R2-1913481 Correction to RRCReconfigurationComplete in NR-DC Ericsson CR Rel-15 38.331 15.7.0 1318 - F NR_newRAT-Core

⇒ **Withdrawn**

R2-1913284 Correction on synchoronous reconfiguration Huawei, HiSilicon CR Rel-15 38.331 15.7.0 1298 - F NR_newRAT-Core
- MTK think the original text is correct and the change is incorrect. Samsung agrees, and think it has been like this since Rel-8. Nokia agrees as well, and think that if anything is needed we just add a note.
- Samsung don't think TA is a suitable condition.
- Huawei think there is a similar NOTE for LTE.
- Intel think that UE can do RACH without knowing SFN.
- Huawei propose to anyway keep the modification CQI -> CSI

⇒ **The editorial change CQI -> CSI is agreed, merged with the rapporteur CR**

Text enhancements

R2-1912138 Corrections on the premises of HO to E-UTRA CATT CR Rel-15 36.331 15.7.0 4101 - F NR_newRAT-Core

R2-1912139 Corrections on the premises of E-UTRA HO to NR CATT CR Rel-15 38.331 15.7.0 1266 - F NR_newRAT-Core

R2-1913014 Addition of indication for successful Random access procedure Ericsson CR Rel-15 38.321 15.7.0 0665 - F NR_newRAT-Core

R2-1913385 Full configuration in inter-RAT handover Google Inc. CR Rel-15 38.331 15.7.0 1311 - F NR_newRAT-Core

Withdrawn

R2-1913729 Corrections on the reconfiguration with sync Huawei, HiSilicon CR Rel-15 38.331 15.7.0 1338 - F NR_newRAT-Core

5.4.1.3.5 Connection re-establishment procedure

5.4.1.3.6 Connection resume procedure and RRC_INACTIVE state

Corrections

R2-1913542 Presence and absence of TAC in NR cell Ericsson CR Rel-15 38.331 15.7.0 1325 - F NR_newRAT-Core
- LG support the intention but think we need to add more cases.
- Huawei think camping is in 331, and think this text is not needed at all as the UE don't need to act on this. LG would be ok to also remove the text.
- Samsung agrees with this clarification, but think it doesn't impact NE-DC.
- Oppo think this interpretation info is used for ANR.
- Ericsson agrees that the UE behaviour is clear, the UE will regard the cell as barred is TAC is not present.

Offline 13, agreeable change (if any), revision in R2-1914127 (Ericsson)

R2-1914127 Presence and absence of TAC in NR cell Ericsson CR Rel-15 38.331 15.7.0 1325 1 F NR_newRAT-Core

⇒ **Agreed in principle**

Text Enhancements

R2-1912327 Cell re-selection during RRC connection resume vivo draftCR Rel-15 38.331 15.7.0 F NR_newRAT-Core

R2-1912404 Correction on RRC Resume procedure OPPO CR Rel-15 38.331 15.7.0 1269 - F NR_newRAT-Core

5.4.1.3.7 Connection release procedure

Including release from connected to inactive and connected to idle.

R2-1912290 Configuration limitation for RRCRelease message in R15 OPPO CR Rel-15 38.331 15.7.0 1268 - F NR_newRAT-Core

- Huawei think that the network shouldn't respond with RRC release message at all in Rel-15.
- Nokia think nothing need to be captured.
- Ericsson think that if we capture something we should capture as normative text, or a field description.
- Huawei don't have a strong opinion on where to put it.
- Samsung would prefer either normative text or field descry.

⇒ **R2 think that the CT1 LS means that release with redirection and suspend is not supported for NAS triggered resume in Rel-15**

Offline 14, to make an agreeable CR, revision in R2-1914128 (Oppo).

R2-1914128 Configuration limitation for RRCRelease message in R15 OPPO CR Rel-15 38.331 15.7.0 1268 1 F NR_newRAT-Core

⇒ **Agreed in principle**

5.4.1.3.8 Security procedures

Including initial security activation and counter check procedure.

Corrections

R2-1912418 Correction to applicability of UP IP in NR Ericsson discussion Rel-15 NR_newRAT-Core

⇒ **noted**

R2-1912419 Correction to applicability of UP IP in NR Ericsson draftCR Rel-15 38.331 15.7.0 F NR_newRAT-Core

- Huawei think this change is only for NE-DC, and for integrity protection it cannot be configured for LTE. Ericsson agrees that this is fir NE-DC, and would be ok with other wording.
- QC are worried that this may mean to support IP for DRBs,
- Intel think the general description covers the cases, and this doesn't need to be present for every field. Samsung agrees
- Nokia think keytouse is not strictly indicating wether a bearer is terminated in MN vs SN.
- ZTE think what is allowed is clear in any case, by applying Stage-2. Intel agrees.
- Huawei think that there is no ambiguity to resolve.
- Chair: it seems everyone agrees in principle this is how the system work but there is no agreement to update the TS as it should be clear by e.g. applying stage-2.

⇒ **Not pursued**

R2-1913394 ARFCN used for security key derivation Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core

DISCUSSION

- MTK wonders which IE defines CD-SSB. QC think this has been used before.
- Ericsson think we can just state SSB frequency.
- Samsung think SA3 don't need an LS.

Offline 15, details on implementation, agreeable CR, in R2-1914129 (QC)

⇒ **R2 confirm that Both gNB and UE, use CD-SSB frequency as DL ARFCN for security key (K_{NG-RAN}*) derivation in Xn handover and RRC resume/reestablishment.**

R2-1914129 KgNB derivation upon mobility Qualcomm Incorporated CR Rel-15 38.300 0174 - F NR_newRAT-Core

⇒ **Agreed in principle**

R2-1913516 Correction to secondary key derivation Ericsson CR Rel-15 38.331 15.7.0 1319 - F NR_newRAT-Core

- MTK are not sure why this is needed, the presence conditions should resolve this. ZTE agrees. Intel agrees.
- Huawei think that this is already clear

⇒ **Not Pursued**

R2-1913672 Security Algorithms for all Radio Bearer in NR-DC Qualcomm Incorporated CR Rel-15 38.331 15.7.0 1332 - F NR_newRAT-Core
=> Revised in R2-1913935

R2-1913935 Security Algorithms for all Radio Bearer in NR-DC Qualcomm Incorporated CR Rel-15 38.331 15.7.0 1332 1 F NR_newRAT-Core

- MTK think we should avoid "terminated in the same node" as this is a network perspective. Would be better to write from UE perspective.

Offline 16, find agreeable wording, revision IN R2-1914130 (QC)

R2-1914130 Security Algorithms for all Radio Bearer in NR-DC Qualcomm Incorporated CR Rel-15 38.331 15.7.0 1332 2 F NR_newRAT-Core

- Samsung are ok with the change but think it should affect the last paragraph.
- Huawei prefers this version

⇒ **Revision in R2-1914225**

R2-1914225 Security Algorithms for all Radio Bearer in NR-DC Qualcomm Incorporated CR Rel-15 38.331 15.7.0 1332 3 F NR_newRAT-Core

⇒ **Agreed in pricnciple**

5.4.1.3.10 Access control

5.4.1.3.11 Other

Including RRC processing delay requirements

Corrections

R2-1913540 Miscellaneous non-controversial corrections Set IV Ericsson CR Rel-15 38.331 15.7.0 1323 - F NR_newRAT-Core

- Ericsson recommends that for UE capabilities, FD for fields used to link UE capabilities are kept in 331, but FD for the parameters indicating specific capability is in 306. Ericsson will discuss offline with 306 rapporteur.

⇒ **postponed**

Offline 17, Offline to progress the rapporteur CR (Ericsson). Result expected to be input to next meeting.

- Ericsson proposes an email discussion and suggest to coordinate with 306

✉ **[107bis#32][NR R15] Miscellaneous CR 331 (Ericsson)**
Intended outcome: Agreeable CR 38331 to next meeting, including coordination with 306 changes.
Deadline: Next Meeting

R2-1913541 Definition of NR standalone Ericsson CR Rel-15 38.331 15.7.0 1324 - F NR_newRAT-Core
- Huawei think that NR SA is only used to denote a network configuration, not a UE configuration. Huawei think the number of occurrences is small.
- MTK support clarification and think it should not include NR DC.
- Nokia think we use NR SA in CR cover pages but not so much in TS.
- Oppo also think SA NSA etc is about network.
- ZTE also think we shouldn't clarify too much and instead try to avoid using it.
- LG support a clarification a'la Ericsson

Offline 18, discuss problem and resolution for possible ambiguity of "NR standalone", revision in R2-1914139 (Ericsson).

R2-1914139 Definition of NR standalone Ericsson CR Rel-15 38.331 15.7.0 1324 1 F NR_newRAT-Core
- Ericsson indicate that there is a comment that in other contexts NR standalone sometimes includes NR NR DC. Ericsson think we can clarify that the definition is only for this TS.
- Huawei think we should say NR without SCG configuration when we mean that ..
- MTK support this CR, and think this is general.

⇒ **postpone**

R2-1913578 Correction of RRC procedure upon expiry of DataInactivityTimer Qualcomm Incorporated CR Rel-15 38.331 15.7.0 1327 - F NR_newRAT-Core
- Oppo support the intention but think we don't need a new release cause.
- Nokia think the timer is to resolve state mismatch between UE and network, and think we cannot define a new NAS release cause without asking CT1. MTK agree with Nokia. Huawei agrees.

⇒ **Not pursued**

R2-1913579 Draft LS on RRC indication to NAS upon expiry of DataInactivityTimer Qualcomm Incorporated LS out To:CT1

R2-1913685 Clarification for aggregated bandwidth for overheating Huawei, HiSilicon, Ericsson CR Rel-15 38.331 15.7.0 1335 - F NR_newRAT-Core
- Nokia think we ned to be careful
- Vivo support this, and think UE RF bw = active BWP bw
- ZTE wonders about how to count non-contiguous frequencies
- Apple support to clarify, and think the wording should contain the word "maximum"
- Chair: there is support to clarify this

Offline 19, find agreeable CR wording, revision in R2-1914140 (Huawei).

R2-1914140 Clarification for aggregated bandwidth for overheating Huawei, HiSilicon, Ericsson CR Rel-15 38.331 15.7.0 1335 1 F NR_newRAT-Core
- Ericsson think this is not correct, btu agrees this need to be clarified.

⇒ **Postpone**

R2-1913851 Correction to mobility from NR Google Inc. CR Rel-15 38.331 15.7.0 1346 - F NR_newRAT-Core

- Intel don't agree with this CR, and think the Note describes the current agreement, Ericsson and Huawei agrees.

  ⇒ **Not pursued**

R2-1913586 Remaining issues regarding UE assistance information Samsung, Ericsson discussion Rel-15 NR_newRAT-Core

DISCSUSSION
- MTK support P1
- Intel think that for LTE the prohibit timer is not always started, e.g. for PPI. Samsung clarifies that the proposal is to keep the timers independent. Intel are ok with the proposal with this clarification.
- Huawei can agree this for NR but not for LTE. We should not change old LTE features.

P2
- Samsung explains that the intention is that the UE reports values/state only at change, i.e. no repetition of the same thing. A problem is that the UE reports values / states for all features when one feature triggers reporting.
- Nokia think it is too late to change this now, and this would be a major change.
- Ericsson think that the network don't act on the "additional" values reports
- Intel point out that if we go with delta then we need to have a mechanism to release a previously reported preference.
- Chair: there seems to be quite wide support to apply this for NR Rel-15, but also some concerns were expressed. Final decision on release/feature after CB.

  ⇒ **At least for NR, Prohibit mechanisms are feature specific, e.g. prohibit timer handling**

  ⇒ **At least for NR, For UE assistance reporting features use delta as the general approach.**

  ⇒ **At least for NR, specify that UE repeats UE assistance reported within 1 second prior to change of PCell**

  ⇒ **For LTE, the intention is to apply this to new features (rel-16 and later)**

R2-1913587 Correction of UE assistance information Samsung, Ericsson draftCR Rel-15 38.331 15.7.0 F NR_newRAT-Core
- Intel think that for UE delay budget there is a need to report also release of reported value.
- Nokia think we should not change so late.
- Huawei think that if we need ASN.1 change we should go for rel-16 instead

R2-1913588 Correction of UE assistance information Samsung, Ericsson draftCR Rel-15 36.331 15.7.0 F NR_newRAT-Core Late
- Samsung indicate that for LTE there is no new features so only timer handling is affected.

Offline 20, Based on the 3 tdocs above, find an agreeable CR for NR, revision in R2-1914161, check if possible to agree to change anything for LTE (Samsung)

R2-1914211 Report of offline discussion 020 on Correction of UE assistance information Samsung report Rel-15 NR_newRAT-Core

  ⇒ **noted**

R2-1914161 Correction of UE assistance information Samsung, Ericsson draftCR Rel-15 36.331 15.7.0 F NR_newRAT-Core
- Huawei think there is a compatibility problem. Ericsson think there is no compatibility problem. Nokia also would like to check
- Chair; Yes it is ok to be careful

  ⇒ **Postpone**

Text enhancement

R2-1913678 Clarification on informative timer table Huawei, HiSilicon CR Rel-15 38.331 15.7.0 1334 - F NR_newRAT-Core

R2-1913814 Clarification on the using of RRCSetup Huawei, HiSilicon CR Rel-15 38.331 15.7.0 1345 - F NR_newRAT-Core

5.4.1.4 RRM

SFTD

R2-1913732 Discussion on SFTD measurement based on RAN1 LS Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1913733 [draft] Reply LS to RAN1 on SFTD measurement Huawei, HiSilicon LS out Rel-15 NR_newRAT-Core To:RAN1 Cc:RAN4

- Several companies think R4 should reply to Q1-Q3.
- MTK think we can await the other offline on NR SA definition.
- Samsung think we can reply to Q1-Q3. ZTE agrees. QC prefer to leave it to R4.
- ZTE think that from UE point of view it doesn't matter if the measurement is inter- intra- etc.
- LG think we don't need to reply, as R4 understanding anyway has priority in these kind of matters.
- P1: MTK think this is an intra-freq measurement. MTK doesn't understand why R1 need this discrimination.
- Huawei proposed that we just list the cases that we want to cover and we reply that we believe that discrimination between Intra- Inter- etc is not important.

⇒ **we list the cases that we want to cover and we reply that we believe that discrimination between Intra- Inter- etc is not relevant from R2 point of view. For the definition of NR SA await outcome of offline 18**

Offline 21, Draft LS revision in R2-1914162 (Huawei)

R2-1914162 [draft] Reply LS to RAN1 on SFTD measurement Huawei, HiSilicon LS out Rel-15 NR_newRAT-Core To:RAN1 Cc:RAN4

⇒ **Approved in R2-1914221**

R2-1912767 CR to introduce timer for DRX based SFTD measurement ZTE Corporation, Sanechips, MediaTek Inc. CR Rel-15 38.331 15.7.0 1273 - F NR_newRAT-Core

- Intel think another way is to let R4 define the times instead of specify in RRC.
- ZTE think the R4 LS is due to R4 thinking that R2 should capture
- Huawei think that for the LTE measurement of NR cell there is no timer and think it can be left to implementation. LG agrees and think we need confirmation from R4 to define a timer in R2 spec.
- Ericsson are ok with the CR, but think timer should be renamed.
- Samsung think this CR is not correct, start and stop conditions should be different.
- QC are ok with the CR.

⇒ **Agreed in principle, timer should be called T3xx in the CR.**

Other Corrections

R2-1913158 Correction to nrofSS-BlocksToAverage and nrofCSInrofCSI-RS-ResourcesToAverage description Nokia, Nokia Shanghai Bell CR Rel-15 38.331 15.7.0 1289 - F NR_newRAT-Core

- Samsung agrees with this but as it is a clarification it can be merged with the rapporteur CR. LG think it is not needed. Intel agrees as well, and it is clear from proc text, Huawei agrees, and think the proposed text is less clear than current text.

⇒ **Not pursued**

R2-1913159 Missing reportAddNeighMeas in periodic measurement reporting Nokia, Nokia Shanghai Bell CR Rel-15 38.331 15.7.0 1290 - F NR_newRAT-Core

- Huawei think this is a new requirement

- MTK prefer to not have this in Rel-15. QC agrees and think this is not so important for periodic measurements.
- LG think there is no conflict between proc text and asn.1 in current TS.
- Ericsson support to have it but think it should be Rel-16

⇒ **Not pursued (for Rel-15)**

R2-1913429 CR to 36.306 on FR2 related ANR capability Ericsson CR Rel-15 36.306 15.6.0 1718 - F NR_newRAT-Core

R2-1913430 CR to 36.331 on FR2 related ANR capability Ericsson CR Rel-15 36.331 15.7.0 4124 - F NR_newRAT-Core

R2-1913431 CR to 38.306 on FR2 related ANR capability Ericsson CR Rel-15 38.306 15.7.0 0182 - F NR_newRAT-Core

R2-1913432 CR to 38.331 on FR2 related ANR capability Ericsson CR Rel-15 38.331 15.7.0 1314 - F NR_newRAT-Core

- QC think the intention is to introduce a new capability for FR2 and let the existing capability apply for FR1 and support this, but think this should be made clear.
- MTK think that we shouldn't change definition of an existing capability. Huawei agrees. ZTE agrees.
- Nokia think current capability is sufficient. Oppo agrees.
- Ericsson would be ok to change the CR to keep compatibility with old TS but would then need one more capability.
- Chair: think proponents need to better convince other companies, there is significant opposition.

⇒ **Not pursued (4 CRs above)**

R2-1913433 CR to 36.331 on performing L3 filtering for NR related measurements Ericsson CR Rel-15 36.331 15.7.0 4125 - F NR_newRAT-Core

- CATT think that the first part is not correct as the filtering is also for InterRAT measurements such as UTRA, and suggest to use "except for NR" for the first part

⇒ **Agreed in principle with the change to use "except for NR", change included for next meeting.**

R2-1913434 CR to 36.331on NR CGI reporting related to cellReservedForOtherUse Ericsson CR Rel-15 36.331 15.7.0 4126 - F NR_newRAT-Core

R2-1913435 CR to 38.331 on NR CGI reporting related to cellReservedForOtherUse and LTE CGI reporting related to CSG cells Ericsson CR Rel-15 38.331 15.7.0 1315 - F NR_newRAT-Core

- MTK think this is a too late change, and would prefer to not have this in Rel-15. Nokia agrees, and think this is a R3 discussion.
- ZTE think the second change is not needed, as it is already supported.
- Oppo also think we shouldn't do this now.

⇒ **Not pursued**

R2-1913736 CR to 36.331 on CGI information Huawei, HiSilicon, Ericsson CR Rel-15 36.331 15.7.0 4133 - F NR_newRAT-Core

- Nokia think this isn't essential and we shouldn't add this now. LG agrees, MTK as well ..

⇒ **Not pursued**

R2-1913737 CR to 38.331 on CGI information Huawei, HiSilicon, Ericsson CR Rel-15 38.331 15.7.0 1341 - F NR_newRAT-Core

- Intel think that if the IE is mandatory, we don't need to explain that the UE shall set it. Huawei think we might need to explain how it is set.

⇒ **Agreed in principle**

Text enhancements

R2-1913466 SSB-ToMeasure related clarification Ericsson LM discussion Rel-15

R2-1913427 CR to 38.331 on SSB-ToMeasure clarifications Ericsson CR Rel-15 38.331 15.7.0 1313 - F NR_newRAT-Core

R2-1913428 CR to 36.331 on SSB-ToMeasure clarifications Ericsson CR Rel-15 36.331 15.7.0 4123 - F NR_newRAT-Core

R2-1913436 CR to 38.331 on A2 event definition clarification Ericsson CR Rel-15 38.331 15.7.0 1316 - F NR_newRAT-Core

R2-1913437 CR to 36.331 on A2 event definition clarification Ericsson CR Rel-15 36.331 15.7.0 4127 - F NR_newRAT-Core

5.4.1.6 System information

R2-1913193 Correction on the actions for frequencyBandList in SIB1 and SIB2 Ericsson, MediaTek CR Rel-15 38.331 15.7.0 1291 - F NR_newRAT-Core

R2-1913279 Correction on the frequency indication in SIB2 Huawei, HiSilicon CR Rel-15 38.331 15.7.0 1296 - F NR_newRAT-Core

DISCUSSION
- MTK think the last change in the Huawei CR, the field description, can be a separate CR, the rest is covered by / overlapped with the Ericsson CR.
- Ericsson think the CRs are overlapping and there are different ways to write it
- Samsung think the important change in the ericsson cr is the change in section 52243 and an offline should focus on that. Huawei agrees. Ericsson think that for this change we would have either the condition in ASN.1 or the proc text change and not both of them.

Offline 22, arrive at agreeable solution, in one or two CRs, include from the Ericsson CR the second and third change, in addition to impact to SIB2. For the Ericsson CR last change, only include if it resolves a problem. (Huawei, Ericsson)

=> Revised in R2-1914209

R2-1914209 Correction on the frequency indication in SIB2 Huawei, HiSilicon, Ericsson, MediaTek CR Rel-15 38.331 15.7.0 1296 1 F NR_newRAT-Core
- Samsung think there is a problem on the cover sheet, summary of change includes “however for FDD … “ where “for FDD” shall be removed.

  ⇒ **Agreed in principle, address the coversheet change for the next meeting version.**

R2-1913673 Correction on the Msg3 based on demand system information Huawei, HiSilicon CR Rel-15 38.331 15.7.0 1333 - F NR_newRAT-Core

⇒ **Agreed in principle**

R2-1913912 Correction on common search space Google Inc. CR Rel-15 38.331 15.7.0 1347 - F NR_newRAT-Core
- Samsung think this is not needed, Vivo agrees, MTK agrees, LG agrees

  ⇒ **Not pursued**

Text Enhancements

R2-1913671 Clarification on essential system information acquisition Qualcomm Incorporated CR Rel-15 38.331 15.7.0 1331 - F NR_newRAT-Core

5.4.1.9 Inter-Node RRC messages

Including output of email discussion [107#27][NR/R15] Determining L2 buffer size (Ericsson)

R2-1913532 Email Discussion [107#27][NR/R15] Determining L2 buffer size (Ericsson) Ericsson discussion

⇒ **RAN2 understanding is that it is not critical that MN and SN determine how to share the UE's total L2 buffer size for Rel-15. No solution will be provided for Rel-15.**

R2-1912768 Correction on absence of gapPurpose ZTE Corporation, Sanechips CR Rel-15 38.331 15.7.0 1274 - F NR_newRAT-Core

⇒ **Agreed in principle**

R2-1913234 Conditional presence on ue-CapabilityInfo and servCellIndexRangeSCG for inter-MN handover without SN change NTT DOCOMO, INC. draftCR Rel-15 38.331 15.7.0 F NR_newRAT-Core

R2-1913298 Corrections on scg-RB-Config in CG-Config Ericsson CR Rel-15 38.331 15.7.0 1301 - F NR_newRAT-Core

- Huawei think that the first change may bring problems. Ericson think we can clarify that this is to enable delta configuration in MN
- ZTE think the CR is correct and support it. Samsung also support.
- Huawei wonder if we should refer to a network procedure rather than bearer type change.
- After checking Huawei indicate that the CR is agreeable.

⇒ **Agreed in principle**

R2-1913313 Correction on inter-node messages from CU to DU Ericsson CR Rel-15 38.331 15.7.0 1310 - F NR_newRAT-Core

- ZTE think SCG is not correct.

⇒ **Not pursued**

R2-1912141 Corrections on CG-Config CATT CR Rel-15 38.331 15.7.0 1267 - F NR_newRAT-Core

- Huawei and ZTE prefer the CATT CR

⇒ **Agreed in principle**

Above tdoc moved from 5.5.4

R2-1913609 Further issues of not up-to-date SN configuration at handover Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

Proposal 1: For handover in EN-DC, when there are SN terminated bearers and the source MN does not have the updated configuration of the SN terminated bearers, the source MN indicates to the target the list of DRB IDs of SN terminated bearers, so that the target can release them.

Proposal 2: For late drop, at DRB addition/release, the SN provides the list of SN DRB IDs to the MN.

R2-1913610 Exchanging used IDs of SN terminated DRBs Huawei, HiSilicon CR Rel-15 36.331 15.7.0 4131 - F NR_newRAT-Core

R2-1913611 Exchanging used IDs of SN terminated DRBs Huawei, HiSilicon CR Rel-15 38.331 15.7.0 1328 - F NR_newRAT-Core

DISCUSSION

- ZTE think that in R3 for HO request, all the ERAB-IDs are included, and it is up to the target how to handle these. Huawei think DRB IDs are not included.
- Samsung think that the RB related information is supposed to be in the R3 specs.

Offline 23, How to handle this, whether the proposed CRs are agreeable (Huawei),

- Huawei suggest an email discussion as companies need to check more

✉ **[107bis#33][NR R15] Exchanging used IDs of SN terminated DRBs (Huawei)**
Intended outcome: Agreeable CRs 36331 38331, if none agreeable: Report
Deadline: Next Meeting

LS on full config at SN modification

R2-1913607 Discussion on the SN modification trigger Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

DISCUSSION
- Intel think the LS was not so clear, and it is not clear that this is needed. E.g. a release and add could be done. Huawei agrees that release/add could work.
- Huawei think the intention is to avoid several reconfigurations taking time.
- Nokia think we don't need to optimize, Ericsson agrees.

Offline 24, assuming we don't optimize (e.g. use release add), a Draft reply LS to RAN3, revised in R2-1914164 (Huawei)

R2-1914164 Draft reply LS on full configuration during SN Modification procedure Huawei, HiSilicon LS out Rel-15 NR_newRAT-Core To:RAN3

⇒ **Approved in R2-1914218**
- [MCC}: removed "Draft" from the LS title

⇒ **Approved in R2-1914228**

R2-1913608 Draft reply LS on full configuration during SN Modification procedure Huawei, HiSilicon LS out Rel-15 NR_newRAT-Core To:RAN3

5.4.2 LTE changes related to NR

Corrections

R2-1913308 Correction to connection resume in EN-DC Ericsson CR Rel-15 36.331 15.7.0 4118 - F NR_newRAT-Core
- Huawei wonders what is the restore of PDCP state. MTK think this is a Rel-13 procedure and we don't need to change. CATT agrees with MTK and think PDCP state is ROHC state.

Allow time to check
- MTK still think the CR is not needed.

⇒ **Not pursued**

R2-1913309 Correction to power limitations in (NG)EN-DC Ericsson CR Rel-15 36.331 15.7.0 4119 - F NR_newRAT-Core
- Huawei think change 2 and 3 is in the scenario of release/add and there is no effect of the changes.
- Nokia think one of the fields are already released, and that maybe another field TDM pattern would need to be released.
- Huawei think the network can do anything, possibly the resume case need to be looked at.

Offline 25, address comments, determine what is needed if anything, Revision in R2-1914167

R2-1914167 Correction to power limitations in (NG)EN-DC Ericsson CR Rel-15 36.331 15.7.0 4119 1 F NR_newRAT-Core
- Ericsson think there is a risk that too low power would be applied when the UE resumes in non-DC.
- Huawei point out that the tdm-pattern is delta configured so releasing it can cause a mismatch between the network and UE knowledge about the configuration.

⇒ **Postpone**

R2-1913300 Corrections to power limitations in NE-DC Ericsson CR Rel-15 38.331 15.7.0 1303 - F NR_newRAT-Core
- Chair: CB together with the other power limitation CR

=> Revised in R2-1914190

R2-1914190 Corrections to power limitations in NE-DC Ericsson CR Rel-15 38.331 15.7.0 1303 1 F NR_newRAT-Core
- Huawei think there is no UE impact this is just removal of duplicates. Should be merged with rapporteur CR

⇒ **Merged with rapporteur CR**

R2-1913521 Clarification to radio bearer handling for intra-5GC HO from LTE to NR (38.331) Ericsson CR Rel-15 38.331 15.7.0 1320 - F NR_newRAT-Core

R2-1913522 Clarification to radio bearer handling for intra-5GC HO from NR to LTE (36.331) Ericsson CR Rel-15 36.331 15.7.0 4129 - F NR_newRAT-Core
- Ericsson think it is not clear whether the PDCP configuration is intended to include security configuration or not in the current text.

Offline 26, check whether this is needed or not (Ericsson)
- Ericsson think this is related to offline 9 that was decided for email. MTK think we can wait.

⇒ **2 CRs postponed**

Text enhancements

R2-1912140 Correction on reestablishRLC CATT CR Rel-15 36.331 15.7.0 4102 - F NR_newRAT-Core

R2-1913386 Full configuration in inter-RAT handover Google Inc. CR Rel-15 36.331 15.7.0 4121 - F NR_newRAT-Core

R2-1913857 Correction to mobility from E-UTRA Google Inc. CR Rel-15 36.331 15.7.0 4135 - F NR_newRAT-Core

5.4.4 UE capabilities

Including output of email discussion [107#28][NR/R15] Ambiguity of UE FDD&TDD FR1&FR2 RAN2 capabilities (ZTE)

R2-1913687 Clarification on the feature set report in EUTRAN Huawei, HiSilicon CR Rel-15 38.331 15.7.0 1337 - F NR_newRAT-Core

⇒ **In principle agreed**

R2-1913447 Miscellaneous corrections on UE capability fields Intel Corporation, NTT DoCoMo CR Rel-15 38.306 15.7.0 0186 - F NR_newRAT-Core
- Intel explains that the LS input from R1 and R4 is included.

Offline 32, for comments to the above rapporteur CR, if any (Intel)

=> Revised in R2-1914193

R2-1914193 Miscellaneous corrections on UE capability fields Intel Corporation, NTT DoCoMo CR Rel-15 38.306 15.7.0 0186 1 F NR_newRAT-Core
- Intel report that there were no comments received. Ericsson change to be merged has also been included.

⇒ **Agreed in principle**

R2-1912771 Report of [107#28][NR R15] Ambiguity of UE FDD&TDD FR1&FR2 RAN2 capability ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd discussion Rel-15 NR_newRAT-Core

R2-1912772 Correction on ambiguity of UE FDD/TDD FR1/FR2 capabilities ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd CR Rel-15 38.306 15.7.0 0172 - F NR_newRAT-Core

- Ericsson think we should add to Note 1 that for Configured Grants configuration for only FDD, only the FDD capability need to be considered, and same for TDD.
- Qualcomm has a similar comment for Note 2.
- Huawei think we should remove FGI in the text.
- Intel think that for voice over NR it currently says per serving cell which is not entirely correct. Suggest it should be per FR. QC think the text is clear. Possibly add a note on the associated UE behaviour.
- Ericsson think we can say “all serving cells in a cell group”

Offline 33, Update the CR according to comments, Revision in R2-1914180 (ZTE)

R2-1914180 Correction on ambiguity of UE FDD/TDD FR1/FR2 capabilities ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd CR Rel-15 38.306 15.7.0 0172 1 F NR_newRAT-Core

- ZTE indicate that more time is needed.
- QC think that if R1 send an LS we can take it into account.

✉ **[107bis#34][NR R15] Ambiguity of UE FDD/TDD FR1/FR2 capabilities (ZTE)**
Intended outcome: Agreeable CR 38306, can take into account also R1 LS
Deadline: Next Meeting

R2-1913696 Summary on email discussion 107#05 BWCS for inter-ENDC BC with intra-ENDC BC Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core Late DISCUSSION

- MTK think R4 has already discussed this, and think they should not discuss again, so Option 4 is not a valid variant. Docomo think that R4 can indeed discuss again. MTK think R2 need to update signalling.
- Ericsson think option 3 is best. Huawei think option 3 is not backwards compatible and cannot accept option 3. QC agrees with Huawei. Nokia too.
- Nokia prefers option 1. MTK also think Option 1 is best.

⇒ **Option 1 is agreed: introduce a new field indicating the BWCS of intra-band EN-DC component for inter-band EN-DC combination with intra-band EN-DC component. No changes on the current field “supportedBandwidthCombinationSet” and “supportedBandwidthCombinationSetEUTRA”.**

R2-1914181 CR on BWCS for inter-ENDC BC with intra-ENDC BC (38.331) Huawei, HiSilicon CR Rel-15 38.331 15.7.0 1349 - F NR_newRAT-Core

R2-1914182 CR on BWCS for inter-ENDC BC with intra-ENDC BC (38.306) Huawei, HiSilicon CR Rel-15 38.306 15.7.0 0195 - F NR_newRAT-Core

⇒ **2 CRs above postponed**

Offline 34, CRs for the above 38331 R2-1914181 (CR1349) and 38306 R2-1914182 (CR0195) (Huawei)

- Huawei indicate that a LS to R4 is needed

R2-1914220 DRAFT LS to R4 on BWCS for inter-ENDC BC with intra-ENDC BC Huawei

⇒ **Approved in R2-1914226**

R2-1913019 Clarification regarding the supportedSRS-TxPortSwitch capability Nokia, Nokia Shanghai Bell CR Rel-15 38.306 15.7.0 0175 - F NR_newRAT-Core

- Intel think this is already supported, and nothing is needed. Huawei agrees. Samsung too. QC think that indeed if the UE includes fallback combinations for other purpose this parameter can be different.

- Chair: The intended behaviour is already supported.

  ⇒ **Not pursued**

R2-1913517 Miscellaneous corrections to 38.306 Ericsson CR Rel-15 38.306 15.7.0 0187 - B NR_newRAT-Core
- Huawei think we should not have duplication between 306 and 331 and we may need to discuss offline. Ericsson agrees that for the 2nd and 3rd change this need to be discussed.
- Intel think the first change can be included into the miscellaneous CR

  ⇒ **Change 1 merged with rapporteur misc CR**

R2-1913446 Clarification on the restriction of maximum SRS resource sets configuration for uplink beam management. Intel CR Rel-15 38.306 15.7.0 0185 - F NR_newRAT-Core
- Samsung think this is already in TR 822. Intel think we shouldn't rely on TR for restrictions, and the drafting rules don't allow referring to TR. QC agrees for this case, as this is a normative requirement.

  ⇒ **Agreed in principle**

R2-1913663 channelBWs parameter and legacy channel bandwidths Sprint Corporation discussion 38.306

DISCUSSION
- Intel think this may change within a release. Intel think we can align based on release.
- Ericson think this need to be discussed, and that the easiest may be to define new bit string. Huawei agrees this need to be discussed, as new bandwidths are added in a release independent way.
- MTK agrees current signalling is broken.
- QC has a R4 paper, on a new table, and the old table will not be used for new bandwidths. We could wait for R4 discussion.
- Docomo think we should consider futureproofness by frequency.
- Intel think the R2 signalling is not broken, but R4 usage is the problem. Intel think we should send an LS to R4 explaining what we want.

  ⇒ **Noted, expect to resume discussion at next meeting**

R2-1913686 Correction on procedural text for appliedFreqBandListFilter Huawei, HiSilicon CR Rel-15 38.331 15.7.0 1336 - F NR_newRAT-Core
- MTK think there is no problem as the signalled information can't be misunderstood. Intel agrees.

  ⇒ **Not pursued**

Text Enhancement

R2-1913229 Clarification to CA fallback band combinations Nokia, Nokia Shanghai Bell CR Rel-15 38.306 15.7.0 0179 - F NR_newRAT-Core

R2-1913524 Correction to Feature Set Combinations for NR-DC (38.331) Ericsson CR Rel-15 38.331 15.7.0 1321 - F NR_newRAT-Core

38.822

R2-1913020 Importing consequences if not approved from RAN1 and RAN4 excel files Nokia, Nokia Shanghai Bell, NTT Docomo Inc. CR Rel-15 38.306 15.7.0 0176 - F NR_newRAT-Core
=> Revised in R2-1913964

R2-1913964 Importing consequences if not approved from RAN1 and RAN4 excel files Nokia, Nokia Shanghai Bell, NTT Docomo Inc. CR Rel-15 38.306 15.7.0 0176 1 F NR_newRAT-Core

- Intel agrees with the intention, but think some of the clarifications are not needed. Docomo also agree with the intention. QC too.
- QC think the CR title should be changed.
- Samsung think this can be merged into a rapporteur CR.

⇒ **There is agreement for the intention, the details need to be checked**

✉ **[107bis#35][NR R15] Consequences if not supported (Nokia)**
Intended outcome: Agreeable CR 38306, based on R2-1913964
Deadline: Next Meeting

R2-1913021 Importing feature index numbers from TR 38.822 Nokia, Nokia Shanghai Bell CR Rel-15 38.306 15.7.0 0177 - D NR_newRAT-Core
- Docomo think we can still use the current TR.
- Docomo think we could use the TR also for Rel-16.
- Huawei and Samsung think we don't do this.

⇒ **Not pursued**

R2-1913697 Clarification on description for mandatory capability without capability signalling Huawei, HiSilicon CR Rel-15 38.306 15.7.0 0193 - F NR_newRAT-Core
- Intel wonder if this is really needed. MTK agrees with Intel.
- MTK and Nokia think we need to discuss this on case by case.

⇒ **Not pursued**

R2-1913783 Correction on parameter description of beamManagementSSB-CSI-RS in 38.306 Huawei, HiSilicon CR Rel-15 38.306 15.7.0 0194 - F NR_newRAT-Core
- Nokia suggest to also add ref to R1 TS. Huawei agrees

⇒ **Agreed in principle with the change to add ref to R1 TS, to be seen next meeting,**

FR2 CA fallbacks

R2-1913022 On FR2 CA fall-backs Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core
=> Revised in R2-1913965

R2-1913965 On FR2 CA fall-backs Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core
- Another Option: Intel proposes that R4 defined new BW classes for the fallbacks.

R2-1913525 Handling of fallback band combinations Ericsson, NTT DOCOMO discussion
DISCUSSION
- Apple think there are good reasons for the R4 decision. The UE have to implement the fallback combinations, which is not realistic for the concerned cases. Intel agrees, and think there are ways to solve this, e.g. as indicated in the Nokia paper. Samsung agrees and agrees we need to discuss in R2.
- Samsung think option 2 Nok is not possible and prefer option 3.
- Docomo think we should not change our signalling.
- Samsung think this is just for FR2 intra-band.
- Apple think the non-backwards compatibility is not an issue as the issue relates to band combinations not yet in the field.
- QC agrees the current scheme shall be kept, and new signalling shall be used for the new cases.

✉ **[107bis#36][NR R15] FR2 CA Fallbacks (Nokia)**
Intended outcome: Report to next meeting, Identify possible options, pave the way for discussions next meeting
Deadline: Next Meeting

R2-1913383 Handling of fallbacks for combined contiguous and non-contiguous CA in FR2 Apple
discussion Rel-15 NR_newRAT-Core
=> Revised in R2-1913974

R2-1913974 Handling of fallbacks for combined contiguous and non-contiguous CA in FR2 Apple
discussion Rel-15 NR_newRAT-Core

R2-1913384 CR to TS38.306 on FR2 intra band contiguous and non-contiguous CA fallback Apple CR
Rel-15 38.306 15.7.0 0181 - F NR_newRAT-Core

R2-1913526 [DRAFT] Reply LS on Handling of Fallbacks for combined contiguous and non-contiguous CA or DC configurations in FR2 Ericsson LS out Rel-15 NR_newRAT-Core To:RAN WG4
Cc:-

Not Available

R2-1913445 Correction on the usage of the TCI capability Intel CR Rel-15 38.306 15.7.0 0184
- F NR_newRAT-Core Late

5.4.5 Idle/inactive mode procedures

This AI addresses the idle and inactive behaviour specified in 38.304 or 36.304. Other aspects related to inactive (e.g. state transitions or other behaviour triggered by cell reselection, out of coverage, etc) are covered under RRC agenda items (5.4.1.x)

5.4.5.1 Cell selection/reselection

Pmax for FR2

R2-1913194 RAN2 impact of undefined Pmax for FR2 in REL-15 Ericsson, NTT Docomo Inc.
discussion Rel-15 NR_newRAT-Core

R2-1913195 Correction for P-Max in FR2 Ericsson, NTT DOCOMO INC. CR Rel-15 38.331
15.7.0 1292 - F NR_newRAT-Core

⇒ **Agreed in principle**

R2-1912985 Pcompensation and FR2 Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

- Ericsson wonder about the definition of P, was not decided by R4.

⇒ **noted**

R2-1913565 Correction to Pcompensation for FR2 Huawei, HiSilicon CR Rel-15 36.304
15.4.0 0773 - F NR_newRAT-Core

- Wrong spec in cover-sheet.
- Nokia think we don't have FR1 FR2 descriptions in 304

⇒ **Revised into a new CR for 38.304 (cover sheet change), in R2-1914169 (CR0140), which is agreed in principle unseen.**

DISCUSSION

- Samsung think that all the proposals could work.
- ZTE think R4 will not specify anything for Rel-15, and support that Pcompensation is set to 0
- Ericsson think that it is good to not set Pcomp to zero to allow high power class UE to have more coverage.
- Docomo think the main problem is about future compatibility, how a Rel-15 behaves when Pmax is used for Rel-16 UEs, and as baseline the Ericsson proposal is needed.
- Nokia think Pcompensation = 0 might be ok, but would like to check with R4
- Huawei proposes to agree the CRs now and attach in an LS to R4

⇒ **R2 assumes that for FR2, Rel-15 UE ignores broadcasted Pmax if any**

⇒ **R2 assumes that for FR2, Rel-15 UE set Pcompensation = 0**

Offline 27, DRAFT reply LS to R4 asking to feedback if the R2 agreements are problematic, In R2-1914170 (Huawei)

R2-1914170 [DRAFT] Reply LS on FR2 Pmax Huawei LS out Rel-15 NR_newRAT-Core To:RAN4

⇒ **Approved in R2-1914222**

Other

R2-1912899 Correction of cell reselection parameters for multi-beam operation Qualcomm Incorporated, Ericsson CR Rel-15 38.304 15.5.0 0139 - F NR_newRAT-Core

R2-1913566 Correction to the parameter descriptions for cell measurement quallity derivation in multi-beam operation Huawei, HiSilicon CR Rel-15 36.304 15.4.0 0774 - F NR_newRAT-Core

R2-1912893 Correction on field description of cellReselectionInfoCommon Qualcomm Incorporated, Ericsson CR Rel-15 38.331 15.7.0 1278 - F NR_newRAT-Core

R2-1913567 Correction to the field description of cellReselectionInfoCommon for cell measurement quallity derivation in multi-beam operation Huawei, HiSilicon CR Rel-15 36.331 15.7.0 4130 - F NR_newRAT-Core

5.4.5.2 Idle/inactive paging

R2-1912986 Clarification on PO calculation Nokia, Nokia Shanghai Bell CR Rel-15 38.331 15.7.0 1281 - F NR_newRAT-Core

R2-1913928 NR Paging Frame Calculation when SearchSpaceId is Zero MediaTek Inc. discussion

5.5 Late Drop

Corrections that only impact the late drop architecture options (NE-DC, NGEN-DC and NR-DC) should be submitted to 5.5.x. If a correction also impacts EN-DC and/or SA then it should be submitted to an earlier AI.

5.5.1 Stage 2 CRs

5.5.2 UE capabilities and capability coordination

R2-1913024 Clarifying the alignment of capability filtering across LTE and NR in MR-DC Nokia, Nokia Shanghai Bell CR Rel-15 38.306 15.7.0 0178 - F NR_newRAT-Core

- Huawei wonder is we can merge with rapporteur CR.

⇒ **To be merged with rapporteur CR**

R2-1913023 Clarifying the alignment of capability filtering across LTE and NR in MR-DC Nokia, Nokia Shanghai Bell CR Rel-15 38.331 15.7.0 1283 - F NR_newRAT-Core

- Ericsson think that the new ordering have unwanted consequences, and prefer to clarify in the FD. Samsung agrees and think the current procedure works ok.
- Nokia agrees something in the CR has to be corrected

⇒ **Revised**

R2-1914219 Clarifying the alignment of capability filtering across LTE and NR in MR-DC Nokia, Nokia Shanghai Bell CR Rel-15 38.331 15.7.0 1283 1 F NR_newRAT-Core

- Huawei are ok

⇒ **Agreed in principle**

Offline 35, clarify the need for these CRs, if possible, come up with agreeable CR(S) (Nokia)

R2-1913025 Clarifying the interpretation behind the encapsulation of the filter extensions - Option 1
Nokia, Nokia Shanghai Bell CR Rel-15 38.331 15.7.0 1284 - F NR_newRAT-Core

R2-1913026 Clarifying the interpretation behind the encapsulation of the filter extensions - Option 2
Nokia, Nokia Shanghai Bell CR Rel-15 38.331 15.7.0 1285 - F NR_newRAT-Core

R2-1913027 Clarifying the interpretation behind the encapsulation of the filter extensions - Option 3
Nokia, Nokia Shanghai Bell CR Rel-15 38.331 15.7.0 1286 - F NR_newRAT-Core

R2-1913028 Clarifying the interpretation behind the encapsulation of the filter extensions - Option 4
Nokia, Nokia Shanghai Bell CR Rel-15 38.331 15.7.0 1287 - F NR_newRAT-Core

⇒ **postponed**

DISCUSSION
- Huawei think there is no problem to resolve.

Offline 42, offline resolve which option is correct, if any.
- Nokia think this is controversial. At least ASN.1 changes seems not agreeable.
- No conclusion at this meeting expected.
- Docomo think the ASN1 works, but think we should think about this and the beahivour is different from LTE.
- Ericsson think we also have NBs that are not the latest version.

✉ **[107bis#37][NR R15] Clarifying the interpretation behind the encapsulation of the filter extensions (Nokia)**
Intended outcome: Report to next meeting, possibly agreeable CR 38331 (dep on progress)
Deadline: Next Meeting

R2-1913520 Addition of dynamic power sharing for NE-DC Ericsson discussion

⇒ **noted**

R2-1913519 Addition of dynamic power sharing for NE-DC (38.306) Ericsson CR Rel-15 38.306 15.7.0 0188 - B NR_newRAT-Core

⇒ **not pursued**

R2-1913669 NE-DC dynamic power sharing capability Qualcomm Incorporated CR Rel-15 38.331 15.7.0 1330 - F NR_newRAT-Core

R2-1913670 NE-DC dynamic power sharing capability Qualcomm Incorporated CR Rel-15 38.306 15.7.0 0190 - F NR_newRAT-Core

DISCSUSSION on the 4 docs above.
- QC think we should create a new capability for NE-DC.
- Huawei think QC proposal is clearer.
- QC think the Ericsson proposal comes with too much overhead.
- Samsung support the QC CR. LG too.
- Huawei think there are other capabilities that are conditional based on dynamic power sharing, they need to be checked.
- Chair: there is support for QC CRs expect to agree.

Offline 43, check for conditional capabilities, whether update is needed (QC)
- QC reports that there is another capability that depends on this so CRs need to be further revised. Suggest email discussion

✉ **[107bis#38][NR R15] NE-DC dynamic power sharing capability (QC)**
Intended outcome: Agreeable CRs 306 331
Deadline: Next Meeting

R2-1913688 Corrections on PDCCH blind decoding in NR-DC Huawei, HiSilicon CR Rel-15 38.306 15.7.0 0191 - F NR_newRAT-Core

5.5.3 Measurements and measurement coordination

R2-1912765 Measurement coordination on maxMeasIdentitiesSCG in MR-DC ZTE Corporation, Sanechips, Ericsson discussion Rel-15 NR_newRAT-Core

R2-1912766 Corrections on maxMeasIdentitiesSCG-NR in MR-DC ZTE Corporation, Sanechips, Ericsson CR Rel-15 38.331 15.7.0 1272 - F NR_newRAT-Core

R2-1913302 Correction on MCG measurements in SCGFailureInformation Ericsson CR Rel-15 38.331 15.7.0 1305 - F NR_newRAT-Core

R2-1913303 Correction on SCGFailureInformation Ericsson CR Rel-15 38.331 15.7.0 1306 - F NR_newRAT-Core

5.5.4 Other

R2-1913268 Reconfiguration with sync for NE-DC Google Inc. CR Rel-15 38.331 15.7.0 1295 - F NR_newRAT-Core
=> Revised in R2-1913970

R2-1913970 Reconfiguration with sync for NE-DC Google Inc., Ericsson CR Rel-15 38.331 15.7.0 1295 1 F NR_newRAT-Core
- MTK think this is a corner case, and we don't need to overspecify. Samsung agrees this is a corner case.

  ⇒ **Not pursued**

R2-1913270 Reconfiguration failure in NE-DC Google Inc. CR Rel-15 36.331 15.7.0 4115 - F NR_newRAT-Core
- Huawei agrees with the CR

  ⇒ **Agreed in pricnciple**

R2-1913297 Handling of AS-Config in HandoverPreparationInformation Ericsson CR Rel-15 38.331 15.7.0 1300 - F NR_newRAT-Core
- Huawei think the field description is different to the 36.331

  ⇒ **Agreed in principle**

R2-1913299 Correction on candidateCellInfoListSN-EUTRA in HandoverPreparationInformation Ericsson CR Rel-15 38.331 15.7.0 1302 - F NR_newRAT-Core
- Huawei think the CR is not needed but the change is ok

  ⇒ **Merge with rapporteur CR**

R2-1913301 Correction of SRB3 handling at full configuration (Alt1) Ericsson CR Rel-15 38.331 15.7.0 1304 - F NR_newRAT-Core

R2-1913306 Correction of SRB3 handling at full configuration (Alt2) Ericsson CR Rel-15 38.331 15.7.0 1308 - F NR_newRAT-Core
DISCUSSION
- Huawei think the current note is clear. Intel also think there is no risk for wrong impl.
- MTK think this is not clear and prefer Alt2.
- Google think that there is anyway no Lower layer configuration so nothing can be sent.
- Intel think the very first normative line is very clear. LG agrees.

Offline 28, attempt to find an agreeable wording, Revision in R2-1914172 (ericsson)

R2-1914172 Correction of SRB3 handling at full configuration (Alt2) Ericsson CR Rel-15 38.331 15.7.0 1308 1 F NR_newRAT-Core
- Huawei think we shojld remove NE-DC on the cover sheet

⇒ **Agreed in principle, remove NE-DC on cover sheet, for next meeting**

R2-1913307 Miscellaneous correction for late drop Ericsson CR Rel-15 36.331 15.7.0 4117
- F NR_newRAT-Core
- Ericsson indicate that the CR overlaps with a Huawei CR and those parts can be removed.
Revised in R2-1914173

R2-1914173 Miscellaneous correction for late drop Ericsson CR Rel-15 36.331 15.7.0 4117
1 F NR_newRAT-Core

⇒ **Agreed in principle**

R2-1913577 Clarification on SRB3 usage ZTE Corporation CR Rel-15 38.331 15.7.0 1326
- F NR_newRAT-Core

R2-1913971 Handover in (NG)EN-DC Google Inc., Ericsson CR Rel-15 36.331 15.7.0 4138 -
F NR_newRAT-Core

Not available

R2-1913271 Reconfiguration failure in NE-DC Google Inc. CR Rel-15 36.331 15.7.0 4116 -
F NR_newRAT-Core Late

6 Rel-16 NR Work Items

Organisational

⇒ **R2 Rel-16 CRs for all WI, NR and LTE agreed in February (both Stage-3 and Stage-2), until then for TEI CRs may be agreed in principle. Agreed in principle CRs to be submitted for agreement in February**

- ZTE think that there will be a lot of work in Feb for merging and do consistency checking

R2-1914163 Work plan for Rel-16 UE Capability feature list Intel Corporation discussion

DISCUSSION
- Ericsson think it is too optimistic to know the real capabilities in Nov.
- Huawei think we need to find the features first,
- Docomo think it is sufficient to finalize in June, and we can start in Feb. QC think it is better to have ASN.1 sooner than June.
- Samsung agrees the time plan is too aggressive.
- Chair: most seems to expect that the first step is identifying features and this can possibly start Nov, likely Feb.
- Docomo think we can ask other groups to use a certain format

P3
- Ericsson hope thay always do this
- Samsung think signalling is less important than features
- Huawei think they arelady know the cost.

⇒ **Revisit the plan in Dec**

✉ **[107bis#01][NR R16] LS on feature list format for Rel-16 (Intel)**
Intended outcome: Approved LS on feature list format for Rel-16 to R1, R4, cc: R3
Deadline: 1 week

=> Approved in R2-1913997.

RRC

- RRC rapporteur think we need to work on merge of WI CRs before FEB. Huawei point out that there is Chinese and Korean holidays before FEB meeting which
- Docomo think L1 parameter discussions should be coordinated.

⇒ **Continue the planning next meeting**

6.1 Integrated Access and Backhaul for NR

(NR_IAB-Core; leading WG: RAN2; REL-16; started: Dec 18; target; Mar 20; WID: RP-192188)
Time budget: 3 TU
Tdoc Limitation: 12 tdocs

6.1.1 Organisational

Including incoming LSs, draft TS, rapporteur inputs, etc

LS in

R2-1912037 LS on the IAB-indication to core network (R3-194787; contact: Qualcomm) RAN3 LS in Rel-16 NR_IAB To:SA2, RAN2 Cc:SA3, SA5
- On the last part, parent node selection, LG wonders why R3 excluded other options, e.g. OAM etc?
- QC think R3 hasn't excluded other options.

- Huawei think R2 can confirm that IAB node indication is in MSG5.

  ⇒ **Noted, we reply after discussion.**

R2-1914206 LS on NR IAB case-1 timing (R1-1911548; contact: ZTE) RAN1 LS in Rel-16 NR_IAB-core To:RAN2 Cc:RAN4

Work Plan

R2-1912797 IAB workplan update Qualcomm Incorporated (Rapporteur) Work Plan Rel-16 R2-1909641

⇒ **Noted**

✉ **[107bis#02][IAB] 38300 (Qualcomm)**
Intended outcome: Endorsed Running CR. Agreements incl 107bis
Deadline: 1 week
=> Endorsed in R2-1913998.

✉ **[107bis#03][IAB] 38340 (Huawei)**
Intended outcome: Endorsed Running CR. Agreements incl 107bis
Deadline: 1 week
=> Endorsed in:
R2-1914006 (v0.0.0).
R2-1914008 (v0.1.0).

✉ **[107bis#39][IAB] 38321 (Samsung)**
Intended outcome: Draft running CR to the next meeting, including agreements incl 107bis
Deadline: Next Meeting

6.1.2 Stage-2 and general

Including principles and higher level aspects e.g. that involve both user plane and control plane, multi-connectivity etc.
Including output of email discussion [107#51][NR IAB] F1 over LTE (AT&T)

F1AP transport in EN-DC

R2-1913557 Report for [107#51][NR IAB] F1 over LTE (AT&T) AT&T discussion Rel-16
DISCUSSION

- Futurewei think that architectural implications were not discussed. Solutions 1a and 1b and possible 2a seems not compatible with usage of security gateways.
- LG think 1 is reusing as much as possible of current solutions. LG don't see an issue. QC think the whole stack is transported by RRC in 1a.
- Huawei think 1a introduce a new protocol stack for CP which changes the whole idea.
- Verizon think there is no security issue, the whole stack including IP etc is transported on top of RRC.
- Futurewei think this is about securing outgoing connections from the data center, no normal security gateway could work with the current protocol stack. LG don't see the problem.
- Samsung think we don't need to consider IPsec, and PDCP gives sufficient security. Nokia think that with solution 1a we need to discuss PDCP.
- Huawei would suggest solution 2b, and ask R3 to do the solution down selection. KDDI wonder why 2b need to be
- Chair: there seems to be only Huawei and Futurewei that has concerns.
- QC suggest that R2 can assume solution 1a and ask SA3 in an LS
- Chair wonder about solution 2b. Samsung think this means a UP entity wold then be present in the CP. LG think 2b is completely up to implementation.
- Futurewei object to solution 1a. // Chair offline friday: Futurewei withdraw formal objection and are ok to have the suggested working assumption. //

⇒ **Working assumption: R2 assumes to use solution 1a (or possibly 1b) (agreement in R2). Security can be addressed by SA3, Architecture can be addressed by R3, we expect to send an LS**

R2-1913628 IAB with NSA operation Sequans Communications discussion Rel-16 NR_IAB-Core Late

Proposal 1: If solution 1a is adopted, consider including NR PDCP for future proofness

R2-1913802 F1AP over LTE LG Electronics France discussion NR_IAB-Core

In-sequence delivery/duplication detection, if needed beyond existing RAN2 specifications, is offered by SCTP,

DISCUSSION on the 2 docs above

- Nokia think there is no need for PDCP below RRC, even sequans admits it is not really needed for this case.
- Futurewei wonders if we then don't need an additional PDCP layer why do we need to use the NR RRC at all, can't we just use the LTE RRC. Nokia think this could work as well, but think there is more reuse in 1a, i.e. more impact to X2. Futurewei think this is a R3 issue. Ericsson think we can add this as a question to the LS.

⇒ **Ask R3 about 1b/1a X2 impact, i.e. to use NR RRC as a tunnelling layer or not.**

R2-1913954 [DRAFT] LS on F1 over LTE KDDI Corporation LS out Rel-16 NR_IAB-Core To:RAN3 Cc:-

- Futurewei wonders if we can ask about 2b. QC think R3 is overloaded and we should not ask non-neccesary questions.

Offline 30, agreeable LS to R3 cc SA3, inform about R2 working agreement, ask for feedback, ask about X2 impacts (i.e. 1a1b), Revision in R2-1914179 (KDDI)

R2-1914179 [R2#107bis-offline-30] IAB LS on F1 over LTE KDDI Corporation discussion Rel-16 NR_IAB-Core

R2-1914179 Offline 30 KDDI

DISCUSSION

- Huawei think it is strange to use LTE SRB1 for F1AP (+ SCTP IP etc) transfer, and think SRB1 is sometimes not available, e.g. SRB1 is suspended at reestablishment, cleared at reconfig with synch. Chair wonders if SRB2 would resolve the Huawei issues. Chair indicate that SRB2 is used for transport of most NAS messages. Huawei would like to specify a new SRB.
- Samsung point out that when there are link breaks e.g. at re-establishment, the communication is broken so what to do.
- LG don't see problems with this, and think the tunnelling is already assumed.
- On P3 Futurewei think there is no technical motivation for this. Nokia think the main reason is just the R3 impact.
- KDDI think it is important to decide in R2 as this consumes time in R3.
- Chair think we can keep open SRB1 or SRB2, similar to 1a1b (also open)

⇒ **R2 understanding is that the protocol stacks in R2-1914179 are the ones applicable to solution 1a and solution 1b.**

⇒ **Whether to use LTE SRB1 or SRB2 for solution 1a/1b is open but it is not foreseen the specification of a new SRB for this.**

R2-1912585 Control plane signalling deliver in NSA deploymentZTE Corporation, Sanechips discussion

R2-1913960 CR to 36.331 on support of F1AP over LTE for IABAT&T, KDDI draftCR Rel-16 36.331 15.7.0 NR_IAB-Core

R2-1913961 CR to 38.331 on support of F1AP over LTE for IABAT&T, KDDI draftCR Rel-16 38.331 15.7.0 NR_IAB-Core

Terminology

R2-1913463 IAB-MT terminology Nokia, Nokia Shanghai Bell, Vodafone discussion Rel-16 NR_IAB-Core

- Futurewei think we deliberately decided on the term MT. Ericsson agrees with Futurewei. QC think that P2 is needed.
- LG agree with the intention.
- Huawei think IAB MT can be used. Samsung think we should keep IAB MT
- ZTE think IAB MT can be used.
- Nokia think SA2 will use “IAB UE”

⇒ **From R2 specifications point of view, IAB MT (or other term if changed) is equivalent to UE, unless otherwise stated.**

R2-1913190 Draft CR to 38.300 on IAB to add definitions for IAB-MT and IAB-DU Ericsson draftCR Rel-16 38.300 15.7.0 NR_IAB-Core

- Huawei think we should discuss this in the running CR email discussion.

⇒ **Include this discussion in running CR email discussion (38300)**

Load reporting

R2-1912802 IAB load reporting to IAB-donor CU-CP Qualcomm Incorporated discussion Rel-16 R2-1909647

Moved here from 6.1.3

Stage-2 L2 Description

R2-1912798 IAB (TP to CR on 38300) L2 structures Qualcomm Incorporated discussion Rel-16

⇒ **Include L2 structure capture into running CR discussion (38300)**

Multi-Connectivity

R2-1912535 EN-DC support in IAB (srb, drb, data flow) Samsung R&D Institute UK discussion

R2-1912536 NR DC support (which link is MCG link, SCG link, MN, SN role in DU Samsung R&D Institute UK discussion

R2-1913185 On Multi-connectivity for IAB Ericsson discussion Rel-16 NR_IAB-Core

Routing

R2-1912707 Multi-route support in IAB Intel discussion Rel-16 NR_IAB-Core

R2-1913004 Considerations on IAB multi connectivity KDDI Corporation discussion

Topology

R2-1912706 Initial Access and Network Setup for IAB Intel discussion Rel-16 NR_IAB-Core

Other Enhancements

R2-1913189 Support for LTE Deployment at IAB Node Sites Ericsson discussion Rel-16 NR_IAB-Core

Moved here from 6.1.5.3

R2-1913629 Support for LTE deployment at IAB node sites Sequans Communications discussion Rel-16 NR_IAB-Core R2-1911388

Not available

R2-1913922 Discussion on supporting SN terminated Split SRB for IAB CP in NSA deployments Futurewei discussion R2-1911803 Late

6.1.3 BAP functionality

Including output of email discussion [107#08][NR IAB] Running BAP CR (Huawei)

CRs

R2-1913253 Report of email discussion [107#08][NR IAB] Running BAP CR Huawei, HiSilicon discussion Rel-16 NR_IAB-Core Late
- Huawei proposes to discuss P1. LG think 1a need to be discussed as well.

P1, P1a
- Ericsson think header may be removed.
- Chair think that in stage-3 we always have some small text on how we use incoming information and how to set outgoing information, so this is not a Stage-3 issue. IT could be usedful to discuss whether some fields would not be the same in outgoing vs incoming packets.
- QC think this is nonsense. Nokia agree we don't need to optimize. Intel agree.
- LG point out that we then need to specify how routing works in the case of Rerouting in case of RLF.

⇒ **BAP address of forwarded packet is the same as in the incoming PDU**

⇒ **R2 assumes that BAP path ID of forwarded packet is the same as in the incoming PDU (need to agree routing behaviour at rerouting, e.g. at RLF)**

R2-1913254 Running CR for TS 38.340 (BAP) Huawei, HiSilicon pCR Rel-16 38.340 0.0.0 NR_IAB-Core Late
- Huawei want to agree not to remove the header, transmit operation, is a PDU or SDU received from receive side.

⇒ **Endorsed as baseline**

6.1.3.1 Routing

Including output of email discussion [107#53][NR IAB] Routing (Ericsson)

General

R2-1913179 Summary for Email Discussion [107#53] [NR_IAB-Core] Routing Ericsson discussion Rel-16 NR_IAB-Core Late

DISCUSSION
- Ericsson think we start w P2

P2
- Samsung think the BAP routing ID etc can be agrees, but we may need additional discussion about additional fields.
- Huawei think the proposed size can be considered a min size.
- LG think 14 bits routing ID shall be used. Ericsson wonder if we need more than one R bit.
- Futurewei wonder if we have two different partitions of address/path id wheter we need additional indication bit. QC and Huawei think no. Huawei think that also 13 bits routing ID could work. Futurewei would be ok with 13bits

P3
- Futurewei propose 4/9 for UL. LG think we should use same as for UL.

BAP header:

⇒ **Routing ID is 13bits**

⇒ **There is a C/D bit**

⇒ **Length of the BAP address and BAP path ID sub-fields of the BAP routing ID to be fixed/predefined**

⇒ **For the DL, BAP address is 10bits and BAP path ID is 3bits**

⇒ **For the UL, BAP address is FFS bits and BAP path ID is FFS bits**

⇒ **R2 expects that there will be no restrictions in the TS to restrict configuration of routing ID and its components. The network has to ensure that e.g. there is no path confusion.**

R2-1912365 Remaining issues for routing Huawei, HiSilicon discussion Rel-16 NR_IAB-Core
R2-1912125 Remaining issues with IAB Routing CATT discussion Rel-16 NR_IAB-Core
R2-1912582 Consideration on routing in IAB ZTE Corporation, Sanechips discussion
R2-1912978 Downstream Next hop ID design NEC Telecom MODUS Ltd. Discussion
R2-1913538 Open Issues for IAB Routing Futurewei Technologies discussion R2-1910904
R2-1913295 Routing details in IAB Sony Europe B.V. discussion Rel-16 NR_IAB-Core R2-1909896

Local routing

R2-1913459 Route priority and local routing Nokia, Nokia Shanghai Bell discussion Rel-16 NR_IAB-Core

R2-1912583 Discussion on re-routing in IAB network ZTE Corporation, Sanechips discussion
R2-1913810 Discussion on local decision make for routing Samsung discussion Rel-16 NR_IAB
R2-1913820 Consideration on local route selection in IAB node LG Electronics Inc. discussion Rel-16 NR_IAB-Core R2-1911341

6.1.3.2 Bearer Mapping

R2-1913181 Uplink BH RLC Channel Mapping in IAB Nodes Ericsson, KDDI discussion Rel-16 NR_IAB-Core
R2-1913811 UL mapping configuration Samsung discussion Rel-16 NR_IAB
R2-1912366 Remaining issues for bearer mapping Huawei, HiSilicon discussion Rel-16 NR_IAB-Core
R2-1912581 Further consideration on bearer mapping ZTE Corporation, Sanechips discussion
R2-1913822 Way forward for CP bearer mapping LG Electronics Inc. discussion Rel-16 NR_IAB-Core
R2-1912935 BAP mapping support for routing CMCC discussion Rel-16
R2-1913812 Further discussions on bearer mapping configuration for CP and UP Samsung discussion Rel-16 NR_IAB

6.1.3.3 Flow Control

BAP based flow control

R2-1913819 Further details for DL flow control LG Electronics Inc., LG Uplus discussion Rel-16 NR_IAB-Core
DISCUSSION
P1/P2
- LG explains that we don't need to block all traffic,
- Futurewei wonder if the destination BAP address is the Access IAB node.
- ZTE agrees with the intention but think it is not sufficient. Ericsson think that if the feedback comes on a certain link the previous node can determine which traffic to regulate.
- Futurewei think P2 is more useful.
- Huawei agrees with P2
- QC think P2 doesn't work. LG think the flow control indication may need to include multiple Destination IDs.

- QC do not support P1/P2. Samsung do not support either.
- Intel support P1 wpould prefer to indicate UE bearer, but could accept per destination BAP address.
- Nokia agrees in principle with P2 but think Pathid should be included as well, as the buffer could be different dep on path as well. Ericsson agrees,
- Samsung think UE bearer should be indicated. QC think this involves too much overhead. Samsung think that for such case the IAb node would anyway do buffering per UE/UEbearer. Sequans agrees with Samsung.
- CATT think we should assume course granularity, and think ingress RLC channel is sufficient.

P3
- Ericsson wonders which BH RLC channel is intended. Samsung think this is about the RLC channel between the two nodes.

Chair: Proposals on the table on the information in the feedback on the “source” of the problem:
0) No information
1) Implicit information: the BH RLC channel the feedback is sent on is the BH RLC channel for which packets are buffered.
2) Routing IDs of buffered traffic
(covers congestion on next IAB link(s))
3) UE id + UE bearer ID of buffered traffic
(covers also UE access link congestion)

DISCUSSION
- Verizon think we can keep it simple, go for 1. QC think that for 1-to-1 mapped traffic, 1 is same as 3.
- Ericsson think option 2 is good enough.
- Ericsson think level 0 is not useful.

⇒ **Decision next meeting**

R2-1912980	Flow control in IAB	NEC Telecom MODUS Ltd.	Discussion		
R2-1912576	Downlink hop-by-hop flow control	Samsung Electronics GmbH	discussion		
R2-1913209	Details of hop-by-hop flow control	Nokia, Nokia Shanghai Bell	discussion	Rel-16	NR_IAB-Core
R2-1912367	Flow control for IAB networks	Huawei, HiSilicon	discussion	Rel-16	NR_IAB-Core
R2-1912584	Furth er consideration on flow control in IAB	ZTE Corporation, Sanechips	discussion		
R2-1912708	Flow control in IAB - remaining issues	Intel	discussion	Rel-16	NR_IAB-Core
R2-1913183	Remaining Issues Related to Flow Control	Ericsson	discussion	Rel-16	NR_IAB-Core
R2-1913871	Discussion on the flow control	ITL	discussion		
R2-1912577	On the need for bearer ID in the BAP header	Samsung Electronics GmbH	discussion		
R2-1913920	Hop-by-Hop Flow control for IAB	Futurewei Technologies	discussion		

6.1.3.4 Other

PDU format

R2-1912368	BAP PDU format	Huawei, HiSilicon	discussion	Rel-16	NR_IAB-Core
R2-1913859	Discussion and Decision	LG Electronics	discussion	NR_IAB-Core	

Other

R2-1912711	Handling of Fairness in IAB	Intel	discussion	Rel-16	NR_IAB-Core
R2-1913180	Remaining Issues for BAP Layer	Ericsson	discussion	Rel-16	NR_IAB-Core
R2-1913821	BAP layer configurbation for data forwarding	LG Electronics Inc.	discussion	Rel-16	NR_IAB-Core
R2-1912123	Discussion on BAP Buffer CATT	discussion	Rel-16	NR_IAB-Core	

6.1.4 User plane aspects

User plane aspects not covered by BAP.

6.1.4.1 Scheduling and QoS

Including resubmission output of email discussion [106#46][IAB] Low-latency scheduling (Samsung)

Low-latency scheduling

R2-1912572 Report on email discussion [106#46][IAB]: Low-latency scheduling Samsung Electronics GmbH
report R2-1910028

DISCUSSION

- Samsung explains that the remaining proposals to treat are 4-9

P4

- Ericsson support P4

P5

- Samsung think that agreement
- Huawei think we should agree to capture this in the MAC CR

P6

- ZTE, LG, Huawei, Samsung Lenovo, FW, Sequans, Nokia think we need this. The main concern is about resource waste. CATT think we already agreed something in P1.
- Ericsson think this anyway doesn't guarantee the handling of data for the new BSR.
- Nokia also think there is a problem triggering current BSR based on SR as the node will not know the LCH. Lenovo agree this is not only about resource waste.
- Intel think this could become complex, and Intel think this is going too far.
- Samsung think this is important from timing point of view in how the network schedules the data.
- LG think that if we introduce Pre-emptive BSR we must differentiate the reporting. Then Ericsson think we also need to specify some timing in order for this to be useful.
- Huawei would like to not impact the legacy BSR behaviour.

P8

- Samsung think this is related to multi-connected nodes, and is not pre-emptive BSR specific.
- ZTE think that for a BSR, an IAB node cannot guess the routing decision, and cannot estimate which link this affects. Lenovo agrees with ZTE.
- Huawei think we can discuss this later
- LG think that also for legacy for multi-link scenarios there are similar problems.
- Intel think this now becomes too complex.
- Huawei think LCG can be associated with routing decisions. QC agrees.
- Ericsson think anyway the pre-emtive BSR is a bit speculative, and think if we need to specify details we should not do this.

P9

- Chair suggest to not specify details on triggering as this seem unactable to some companies.
- Futurewei think some behaviour should be captured. Huawei think specification could be on a high level, capture intentions acc to current agreements and using e.g. "may".
- Ericsson think that if the specification becomes too vague it is useless.
- Futurewei think it is important to capture more than intent.
- LG don't want to impact any of the current text for BSR.
- Intel wonder it the discrimination is to be able to ignore the pre-BSR.

⇒ **RAN2 will not specify any normative solution to the perceived issue of possible resource wastage due to introduction of pre-emptive BSR.**

⇒ **Confirmation that this is the expected enhanced behavior: Following the reception by the second (parent) node of a BSR from a first (child) node, resources may be requested from the third node (parent of second node) before actual data arrives from the first node**

Chair summary, possible compromise way forward:

- We will differentiate in BSR available data (as today) and expected data.
- Associating a LCH with pre-emptive BSR is left to implementation, unless issues are identified requiring normative solutions.

- FFS if SR and BSR generated by a MAC entity need or can only be reported to the parent node where the peer of that MAC entity resides.
- On Triggering of pre-emptive BSR, can capture some text similar to the current agreements, in stage-3/2.
- Exact timing etc is up to implementation.

Chair propose to either
a) Agree the way forward above, or
b) Not do the Preemptive BSR

DISCUSSION
- Ericsson object to the proposed way forward..
- Futurewei, LG, Samsung, Lenovo, ZTE, CATT think the way forward is acceptable
- After discussion, Intel would be ok to distinguish Normal and pre-BSR Data.

CB after lunch, to check the status.
- Ericsson can compromise and agree to the way forward under condition. Ericsson wonders whether an IAB implementation can use the current BSR as pre-emptive BSR, i.e. triggered by BSR rather than data. Chair wonder if Ericsson are asking for a second specified version of pre-emptive BSR.
- Futurewei think that networks can not follow the spec at its own risk. Samsung agrees, and think that the new format helps interoperability. Intel also think this is ok, but at the risk of the IAB node implementation.
- Futurewei think we are aiming to not change anything for current BSR in MAC. Ericsson think this is ok.

Chair: R2 is not planning to change behaviour for current BSR with the above way forward. Using the “current BSR” with a pre-emptive trigger will not be standards compliant. Most companies think that network nodes can diverge from standard, but it is at the risk of the network node.

Chair: Ericsson still object

R2-1913213	Buffer status reporting for IAB	Nokia, Nokia Shanghai Bell	discussion	Rel-16	NR_IAB-Core
R2-1912124	Pre-emptive BSR	CATT	discussion	Rel-16	NR_IAB-Core
R2-1912369	Remaining issues for uplink scheduling enhancement	Huawei, HiSilicon	discussion	Rel-16	NR_IAB-Core
R2-1912573	Remaining issues with pre-emptive BSR	Samsung Electronics GmbH	discussion		
R2-1912586	Discussion on low latency scheduling in IAB	ZTE Corporation, Sanechips	discussion		
R2-1912587	Discussion on low latency scheduling in multi-connectivity scenario	ZTE Corporation, Sanechips, NEC	discussion		
R2-1912709	Uplink latency reduction	Intel	discussion	Rel-16	NR_IAB-Core
R2-1913065	Trigger Conditions for low-latency IAB Uplink Scheduling	ITRI	discussion	NR_IAB-Core	
R2-1913085	Consideration on UL low-latency scheduling	Lenovo, Motorola Mobility	discussion	Rel-16	R2-1910538
R2-1913086	Pre-emptive BSR in multiple connection scenario	Lenovo, Motorola Mobility	discussion	Rel-16	
R2-1913184	Further details for BSR in IAB Networks	Ericsson	discussion	Rel-16	NR_IAB-Core
R2-1913351	BSR enhancement for IAB	Sony	discussion	Rel-16	NR_IAB-Core R2-1909898
R2-1913539	Enhancements for low-latency IAB Uplink scheduling	Futurewei Technologies	discussion	R2-1911438	
R2-1913654	Consideration of preemptive BSR in IAB	Kyocera	discussion		
R2-1913764	On the consideration of routing for reporting pre-emptive BSR	ASUSTeK	discussion	Rel-16	NR_IAB-Core

R2-1913765 Discussion on traditional uplink and IAB uplink traffic for BSR triggering ASUSTeK discussion Rel-16 NR_IAB-Core

R2-1913766 SR configuration for pre-emptive BSR ASUSTeK discussion Rel-16 NR_IAB-Core

Scheduling General

R2-1913210 Signalling for radio aware scheduling Nokia, Nokia Shanghai Bell discussion Rel-16 NR_IAB-Core

PDU format

R2-1913818 BSR MAC CE format for pre-BSR LG Electronics Inc., LG Uplus discussion Rel-16 NR_IAB-Core R2-1911339

6.1.4.2 LCID extension

R2-1912370 LCID and LCG space extension for IAB backhaul link Huawei, HiSilicon discussion Rel-16 NR_IAB-Core

R2-1912575 LCID space extension Samsung Electronics GmbH discussion

R2-1913182 LCID and LCG Extension in IAB Networks Ericsson discussion Rel-16 NR_IAB-Core

DISCUSSION on the 3 docs above

- LG think that if we use LCID to indicate extension, we just extend the format and it is future proof.
- Ericsson think we should use the existing LCID bits.
- Huawei think that legacy LCID need to be used as well.
- QC wonders if we really want to carry the overhead in every PDU.
- LG don't want to use the R bit to indicate LCID extension because it is useful to keep it for other future indications. Samsung agrees R-bit is useful for future extension, but think the LCID extension can also add a byte of R bits.
- Futurewei think that the R-bit can be used differently for IAB and for UEs.
- Nokia and Ericsson would be ok with using an LCID value to indicate extension.
- LG think that if we use the R-bit we will need more discussion to determine the new format.
- Futrewei think R-bit can be used and LCID value is inefficient. Huawei think that LCID is good.
- Oppo point out the word reserved
- LG think we need two bytes, Samsung agrees. QC agrees. OPPO wonder if this means 16 bits LCID. Most companies think yes 16bits, LG point out that we can also add some reserved bits.
- Huawei would like to be future-proof and think that for IAB the overhead is ok, and 3 bytes would be better. Huawei think 2 bytes could be ok, but would like to check. ZTE also think 3 bytes would be better.
- Huawei think for 1-to-1 mapping, with 16 bits we then have 10 bits to identify the UE.
- Futurewei think we can also consider a 1-byte option
- CATT think this extension mechanism is very general and think we can extend further in the future if needed.
- ZTE think we don't need to support extension of LCG as we have same set of priority values. Samsung agrees.
- LG think that fine-grained QOS assumption for 1-to-1-mapping need to be taken into account. Ericsson think we need to extend. Intel wonders how many LCG are needed, LG think it may be tripled. Huawei think we don't need to extend. Lenovo would support to extend, and think BS-values may need extension.,
- Chair think the BSR/Scheduling etc for fine-grained QoS might need more discussion. QC think we can go for email.
- Samsung think extending LCG may have very high impact, and think we should not extend. Intel agrees.
- Oppo wonders if this is just for IAB. chair think it is for IAB, but there is a possibility that other items can accept to use this as well.

For IAB:

⇒ **Whether the extended LCID is used is indicated in the MAC header**

⇒ **A reserved LCID value (in the legacy field) is used to indicate the extended LCID extension.**

⇒ **We assume 16-bit LCID for the extension for IAB, and add 2 bytes to the MAC header (no additional reserved bits or values)**

⇒ **For Rel-16 we don't expect to extend LCG (or make any other changes for fine-grained QoS for UL scheduling)**

R2-1912588 Consideration on the Extension of LCID and LCG Space in IAB ZTE Corporation, Sanechips discussion

R2-1912800 IAB extension of LCID space Qualcomm Incorporated discussion Rel-16

R2-1912801 IAB extension of LCG space Qualcomm Incorporated discussion Rel-16

R2-1913211 Discussion on number of LCIDs and LCGs for IAB Nokia, Nokia Shanghai Bell discussion Rel-16 NR_IAB-Core

R2-1913815 LCID space extension and MAC format LG Electronics Inc. discussion Rel-16 NR_IAB-Core R2-1911334

R2-1913816 Consideration on LCG space extension LG Electronics Inc. discussion Rel-16 NR_IAB-Core R2-1911335

Stage-3

R2-1913212 Discussion on MAC subheader structures for IAB Nokia, Nokia Shanghai Bell discussion Rel-16 NR_IAB-Core

6.1.4.3 Other

Other MAC RLC PDCP impacts if any, F1 based flow control etc

L1

R2-1912372 RACH related issues for IAB Huawei, HiSilicon discussion Rel-16 NR_IAB-Core

RLC

R2-1912371 General RLC impacts Huawei, HiSilicon discussion Rel-16 NR_IAB-Core

PDCP

R2-1912373 Support of UE PDCP duplication Huawei, HiSilicon discussion Rel-16 NR_IAB-Core

Other

R2-1913817 LCG based UL grant LG Electronics Inc. discussion Rel-16 NR_IAB-Core R2-1911338

R2-1913631 Queue Management vs Flow Control for Congestion Handling Sequans Communications discussion Rel-16 NR_IAB-Core R2-1911389

R2-1913630 F1-U Flow Control and Reordering Issues Sequans Communications discussion Rel-16 NR_IAB-Core

R2-1912979 End to end reliability in IAB NEC Telecom MODUS Ltd. Discussion

Moved here from 6.1.4

6.1.5 Control plane aspects

6.1.5.1 RLF handling

Including resubmission output of email discussion [106#43][IAB] Backhaul RLF (CATT)

R2-1912127 Summary of the email discussion [106#43][IAB] Backhaul RLF CATT discussion Rel-16 NR_IAB-Core R2-1908842

DISCUSSION

P2

- Samsung think this is about NR DC.

P5

- Ericsson think we can just turn off the cell rather than indicating. Kyocera agrees and think turing off the cell is simpler. QC think the difference may be the action taken by downstream nodes.
- Huawei think we already agreed this.
- ZTE think it is more useful to indicate that RLF happens rather than recovery failure, so downstream nodes can start prepare to recover. Intel agrees. LG think both indications are useful. Ericsson also think more notifications are needed.
- Huawei think we should focus on MT behaviour on the indication. Huawei think this mechanism need to be fast.
- Samsung think recovery failure is the most important.
- NEC think turning off the cell is not a good idea as it is possible that the cell backhaul can recover.

P10

- LG think that this is the case for MCG RLF if fast MCG recovery is not supported

P13

- Nokia are ok with this, but think we can also use SIB1. Do we really need two indications.
- Futurewei wonders which BH RLC channel would be used. Ericsson think this could be a BAP control PDU. LG agrees, but think the internal interaction need to be discussed. KDDI think RRC is more general as also the UE can be informed.
- Huawei think there was a majority for using BAP.
- Nokia think SIB1 can be used as it is encoded in the DU, and as we anyway may need some SIB1 indication.

⇒ **R2 confirm that when the IAB-node is not configured with DC, it applies for BH RLF handling the same mechanisms and procedures as UE's RLF handling currently specified in TS 38.331 (including e.g. detection and recovery). FFS on need of additional enhancements.**

⇒ **When NR DC is configured for the IAB-node, 2.1 RLF is detected separately for the MCG-link and for the SCG-link, and 2.2 existing UE procedures are used for MCG-link and SCG-link failure handling.**

⇒ **The following is agreed as working assumption: BH RLF recovery for DC case reuses UE's MCG and SCG failure recovery procedures specified in Rel-16.**

⇒ **For an IAB-node not configured with DC, it initiates RRC reestablishment when it receives downstream notification "Recovery Failure"**

⇒ **For DC case, the IAB-node considers the radio link is failed and uses RRC existing or Rel-16 Mechanism (e.g. MCG or SCG failure report, RRC reestablishment) if "Recovery Failure" notification is received from parent nodes on MCG-link or/and SCG-link.**

⇒ **R2 assumes that RLF notification "recovery failure" would be triggered when RRC reestablishment has failed. FFS whether this need to be specified**

⇒ **BAP layer is used to transmit BH RLF notification(s).**

⇒ **R2 assumes that Upstream BH RLF notification to Donor CU via current F1-AP signalling is supported.**

R2-1913087	Cell selection for IAB RLF recovery	Lenovo, Motorola Mobility	discussion	Rel-16	R2-1910547
R2-1912589	Discussion on IAB BH RLF handling	ZTE Corporation, Sanechips	discussion		
R2-1913803	Resolving open issues on BH RLF	LG Electronics France	discussion	NR_IAB-Core	
R2-1913460	BH link failure handling	Nokia, Nokia Shanghai Bell	discussion	Rel-16	NR_IAB-Core
R2-1913655	Further discussion on Backhaul RLF handling	Kyocera	discussion		
R2-1912981	IAB backhaul RLF handling	NEC Telecom MODUS Ltd.	discussion		
R2-1913063	Backhaul RLF handling	ITRI	discussion	NR_IAB-Core	R2-1909960
R2-1913544	Backhaul RLF Notification and Recovery Procedure	Futurewei Technologies	discussion		R2-1911066

R2-1912126	Further Discussions on IAB BH RLF	CATT	discussion	Rel-16	NR_IAB-Core
R2-1912374	Backhaul RLF Recovery	Huawei, HiSilicon	discussion	Rel-16	NR_IAB-Core
R2-1912537	RLF reporting in dual connection of IAB	Samsung R&D Institute UK	discussion		
R2-1912710	Further discussion on Backhaul RLF handling	Intel	discussion	Rel-16	NR_IAB-Core
R2-1913088	RLF notification to downstream IAB node	Lenovo, Motorola Mobility	discussion	Rel-16	R2-1911231
R2-1913188	Backhaul link RLF Notification Types to Downstream Node(s)	Ericsson	discussion	Rel-16	NR_IAB-Core
R2-1913813	Upstream BH link RLF notification	Samsung	discussion	Rel-16	NR_IAB

6.1.5.2 Configuration

Including output of email discussion [107#52][NR IAB] Configuration (Ericsson)

Offline 31, discuss configuration offline, and treat the topic of configuration first thing on Thursday (QC)

R2-1914186 [RAN2#107bis Offline-031]: IAB - config of BAP and bearer mapping Qualcomm Inc (Rapporteur) discussion

RAN2 email discussion107#53 on BAP routing (R2-1913179) proposes:
Proposal 1: The BAP address of the next hop node to be used as the next hop identifier for the downstream

Offline-31 further proposes:
Proposal 2: The BAP address of the next hop node also to be used as the next hop identifier for the upstream

Proposal 3: Confirm that BAP address for a is configured via RRC.

Proposal 4: To configure the association between child IAB-node and NextHopID (i.e. BAP address of next hop), the CU includes the BAP address of the child IAB-node in the F1AP message (e.g. F1AP UE CONTEXT SETUP/MODIFICTION REQUEST message) for the child IAB-node MT.

Proposal 5: To configure the association between parent IAB-node and NextHopID (i.e. BAP address of next hop), the CU includes the BAP address of the parent IAB-node together with the cell group ID of the parent node in the RRCReconfiguration message.

Proposal 6: Upstream and downstream bearer mapping tables use either the BH RLC CH ID or the LCID for ingress and egress RLCchannelIDs.

Proposal 7: The BAP address of the prior-hop node is used as PriorHopID, i.e. the ingress link ID, in addition to the IngressRLCchannelID to uniquely identify the ingress RLC channel for upstream and downstream bearer mapping.

<u>BH RLC CH ID vs. LCID for ingress/egress RLCchannelID:</u>
7 companies are in favour of BH RLC CH ID, 2 of them are also okay with LCID
2 companies are in favour of LCID, 1 of them is also okay with BH RLC CH ID.
Some points were raised in favour of either identifier. It seems, however, that both can be accommodated.

Proposal 8: The BH RLC CH ID is used for ingress/egress RLCchannelID in the bearer mapping configuration.

<u>RRC vs. F1AP for configuration of upstream routing & bearer mapping on intermediate node</u>
6 companies are in favour of RRC
3 companies are in favour of F1AP.

Some companies claim that we had already agreed in RRC in: “BAP has a DU part configured by F1-AP and a MT part configured by RRC”

Proposal 9: (modified) RRC is used for configuration of upstream routing and bearer mapping of IAB nodes (intermediate nodes).

Option 1, 2, or 3 for mapping from upper layers to L2:
5 companies are in favour of option 1, i.e. 1-step, configured by RRC.
1 company is in favour of option 2. i.e. 2-step, configured by F1-AP.
2 companies are in favour of option 3, i.e. 1-step, configured by F1-AP
During this email discussion, RAN3 agree to pursue option 1 or option 3. RAN3 has agreed that the GTP FTEID (= GTP TEID + IP address) is used for the mapping of F1-U.

Proposal 10: RRC is used for configuration of mapping from upper layers to access IAB-node.

DISCUSSION
P3
- ZTE think the BAP address of the Donor may be configured by F1-AP, so this is applicable to IAB nodes.
- Chair think that BAP address handling internally in the donor can be handled by R3)

P6
- LG think that in any case LCH ID or BH Channel ID there is a one-to-one mapping.
- Huawei think LCID is currently not known by the CU it would be easier to use BH RLC channel id

P8
- LG wonders if BH RLC Channel ID is unique for BH link or per MAC entity. QC confirms yes and it is 1-to-1 mapped to LCID.
- Ericsson think that the LCH ID could have been used, and the IE in current F1 can be used.
- CATT wonders who configures what. QC think this is the next discussion.

P9
- QC explains that P9 was wrongly captured in the summary. It should be: P9: “RRC is used for configuration of upstream routing and bearer mapping of IAB nodes (intermediate nodes).”
- Chair: We consider this clarified P9
- Nokia wonders why we are choosing different protocols, Nokia would prefer that BAP is completely configured by F1-AP.
- Nokia think that it would be good if R3 is responsible for the detailed mapping between higher layers (=the transported layers, e.g. GTP/IP etc) and BAP.
- Huawei think that for an Access IAB node there is no F1 until there is a DU.
- QC think that BAP configuration is required to create the bearers for F1 CP so we need RRC configuration for this at least. Nokia think this is a very simple configuration and can be by RRC.
- Futurewei support Nokia.
- Intel also support P9. LG as well.
- Nokia objects to making this agreement now

⇒ **For BAP routing Next Hop ID, The BAP address of the next hop node to be used as the next hop identifier for the downstream**

⇒ **For BAP routing Next Hop ID, The BAP address of the next hop node also to be used as the next hop identifier for the upstream**

⇒ **Confirm that BAP address for a IAB node (e.g. to differentiate the data delivered to higher layer in BAP) is configured via RRC**

⇒ **To configure the association between child IAB-node and Next Hop ID, RAN2 assumes that the CU includes the BAP address of the child IAB-node in a F1AP configuration (e.g. F1AP UE CONTEXT SETUP/MODIFICTION REQUEST message) for the child IAB-node MT. Details up to R3.**

⇒ **To configure the association between parent IAB-node and Next Hop ID (i.e. BAP address of next hop), the CU includes the BAP address of the parent IAB-node together with the cell group ID of the parent node in the RRCReconfiguration message (details FFS).**

⇒ **Observation: Upstream and downstream bearer mapping tables can use either the BH RLC CH ID or the LCID (they are mapped 1-to-1 always) for BAP ingress and egress RLCchannelIDs.**

⇒ **The BH RLC CH ID is used for ingress / egress RLCchannelID in the BAP bearer mapping configuration.**

Chair: Nokia object to P9 and P10, so decision is postponed to next meeting. Running CRs can assume P9 and P10 are agreed.

R2-1913177 Running CR to TS 38.331 on IAB for NR NR_IAB-Core Late — Ericsson — draftCR — Rel-16 — 38.331 — 15.7.0

- Ericsson explains that the CR proposes to have a new IE for BH RLC channel config rather than reusing RLC bearer config IE, and this may be controversial.
- Ericsson think that if this is still not agreeable to companies it can be removed with an FFS note and the running CR after this meeting could also reuse the RLC bearer config IE.

⇒ **noted**

✉ **[107bis#04][IAB] Running CR 38331 (Ericsson)**
Intended outcome: Endorsed Running CR. Capture agreements of this meeting, include discussion from previous version.
Deadline: 1 week

=> Endorsed in R2-1914027

R2-1912375 BAP and RLC configurations — Huawei, HiSilicon — discussion — Rel-16 — NR_IAB-Core

R2-1913462 Routing and mapping configuration in IAB nodes — Nokia, Nokia Shanghai Bell — discussion — Rel-16 — NR_IAB-Core

R2-1914171 IAB routing and bearer mapping config — Qualcomm Incorporated (Rapporteur) — discussion

R2-1912590 Discussion on BH RLC channel configuration in IAB network — ZTE Corporation, Sanechips — discussion

R2-1912580 Discussion on BAP configuration in IAB — ZTE Corporation, Sanechips — discussion

6.1.5.3 Other

Initial access

R2-1913461 IAB initial access and IAB support indication — Nokia, Nokia Shanghai Bell — discussion — Rel-16 — NR_IAB-Core

Moved from 6.1.5.2

R2-1912376 Cell (re)Selection and Access Control and Connection Establishment — Huawei, HiSilicon — discussion — Rel-16 — NR_IAB-Core

R2-1912480 (De)Prioritizing the Access for IAB Setup — Samsung — discussion — NR_IAB-Core

R2-1912591 Discussion on IAB node connection setup — ZTE Corporation, Sanechips — discussion

R2-1913186 Access Identities and Access Categories for IAB Nodes — Ericsson — discussion — Rel-16 — NR_IAB-Core

R2-1913187 Allowing only IAB Nodes in a Standalone NR Deployment — Ericsson — discussion — Rel-16 — NR_IAB-Core

R2-1913350 IAB System information handling — Sony — discussion — Rel-16 — NR_IAB-Core — R2-1909897

R2-1913464 Admission control for IAB — Nokia, Nokia Shanghai Bell — discussion — Rel-16 — NR_IAB-Core — Late

R2-1913666 Access restrictions (barring) in IAB — Sharp — discussion — Rel-16 — R2-1910806

R2-1913801 Access control in IAB networks LG Electronics France discussion NR_IAB-Core

✉ **[107bis#40][IAB] SI Broadast, barring, Initial access, Connection setup (Ericsson)**
Intended outcome: Report to next meeting, agreeable proposals, Draft reply LS
Deadline: Next Meeting

L1 Aspects

R2-1913214 T_delta signalling for IAB timing Nokia, Nokia Shanghai Bell discussion Rel-16 NR_IAB-Core

R2-1913178 Draft CR to 38.331 on IAB for enhancements to existing signaling for TDD pattern configuration Ericsson draftCR Rel-16 38.331 15.7.0 NR_IAB-Core

Moved here from 6.1.1

6.2 NR-based Access to Unlicensed Spectrum

(NR_unlic-Core; leading WG: RAN1; REL-16; started: Dec 18; target; Mar 20; WID: RP-191575; Further prioritization guidance in RP-191581). Documents in this agenda item will be handled in a break out session.

Time budget: 3 TU

Tdoc Limitation: 12 tdocs

6.2.1 General

Including incoming LSs, rapporteur inputs, etc.
Contributions in this AI are reserved for WI rapporteur inputs and/or spec rapporteur inputs and do not count towards the tdoc limits.

R2-1912052 LS on RSSI definition (R4-1910573; contact: MediaTek) RAN4 LS in Rel-16 NR_unlic-Core To:RAN1 Cc:RAN2
=> Noted

R2-1912303 Running CR for NR-based Access to Unlicensed Spectrum Qualcomm Incorporated draftCR Rel-15 38.300 15.7.0 NR_unlic-Core
=> The CR is endorsed

R2-1913509 Running MAC CR for NR-U Ericsson discussion Rel-16 NR_unlic-Core
=> The CR is endorsed

R2-1913575 Running RRC CR for NR-based Access to Unlicensed Spectrum Qualcomm Incorporated draftCR Rel-15 38.331 15.7.0 B NR_unlic-Core Late
=> Moved to email discussion

R2-1913576 Running Idle/Inactive mode CR for NR-based Access to Unlicensed Spectrum Qualcomm Incorporated draftCR Rel-15 38.304 15.5.0 NR_unlic-Core Late
=> Moved to email discussion

✉ **[107bis#16][NR-U] Running CR for 38.331 (Qualcomm)**
Intended outcome: Endorsed running CR
Deadline: 2 weeks
=> Endorsed in R2-1914001

✉ **[107bis#17][NR-U] Running CR for 38.321 (Ericsson)**
Intended outcome: Endorsed running CR
Deadline: 2 weeks
=> Endorsed in R2-1914026

✉ **[107bis#18][NR-U] Running CR for 38.300 (Qualcomm)**
Intended outcome: Endorsed running CR
Deadline: 2 weeks
=> Endorsed in R2-1914002

✉ **[107bis#19][NR-U] Running CR for 38.304 (Qualcomm)**
Intended outcome: Endorsed running CR
Deadline: 2 weeks
=> Endorsed in R2-1914003

6.2.2 User plane

6.2.2.1 4-step RACH

Aspects of 4 step RACH procedure specific to unlicensed operation; including supporting extended RAR window, and LBT impact.

Extending RAR window and Contention resolution

R2-1912302	Remaining issues on 4-step RACH for NR-U => Noted	Qualcomm Incorporated	discussion	
R2-1912685	Further details of the RACH procedure for NR-U Rel-16 NR_unlic-Core R2-1910098 => Noted	Lenovo, Motorola Mobility	discussion	
R2-1913033	RAR format and contention resolution for NR-U	Huawei, HiSilicon	discussion	Rel-16
R2-1912423	Remaining Issues for Extending RAR Window Rel-16 NR_unlic-Core => Noted	Samsung Electronics Co., Ltd	discussion	
R2-1912866	Remaining issues related to random access procedure Rel-16 NR_unlic-Core => Noted	Intel Corporation	discussion	

Discussion on how to signal LSB SFN (DCI or in RAR)
- Vivo thinks that if we include in DCI we can't multiplex. ZTE explains that we only include 2bits. Intel thinks that we should first discuss whether we would multiplex several SFNs in the same PDUs. Intel understands that we don't multiplex.
- Nokia is not sure if we can use DCI for msgB. Qualcomm thinks that instead of changing the RAR format of both of them then we just use the same DCI.
- Oppo thinks that we should include in the payload per MAC RAR. Ericsson thinks that it is enough to have on SFN per PDU and we can multiplex several UEs in the same message 2. Qualcomm thinks that have more than one SFN is an optimization and for UEs this is more complex.
- LG also prefers to include in the DCI, otherwise it is complicated for the UE to know if it is targeted for the UE. Also we don't need to multiplex.
- Huawei thinks that even with DCI we can multiplex.
- ZTE explains that we have to include LBT type so the UE has to decode anyways.
- Lenovo sees some benefits to put it in DCI.
- LG explains that the UE is not required to read SFN for HO and now we are requiring the UE to read to SFN. Nokia explains that you can get the LSBs from other signals and we can get up to 4bits of LSB.

How many bits
- Huawei thinks that we should allow flexibility.

Discussion on whether RAR transmission on an SCell should be allowed
- Ericsson would like both preamble and RAR to be allowed. Oppo would like to prevent sending preamble and RAR on different cells.
- Huawei supports sending RAR on SCells but not preamble.

- Nokia doesn't supports this as we don't have common search space on SCell. LG agrees with Nokia.
- Samsung explains that for SCell we only support CFRA and this is an optimization. ZTE thinks that we should allow as otherwise we would need to change the RAR for licensed carrier. Nokia thinks that we haven't agreed whether we will change RAR or not.

=> This will not be supported for Rel-16

Discussion on when do we start ra-ContentionResolutionTimer is started
Option1: regardless of the LBT outcome of msg3 transmission
Option 2: upon successful transmission of msg3

- Qualcomm thinks we should start regardless. Ericsson, Samsung, Intel, ZTE, Vivo and LG agrees. If we got back to msg1 we have to redo msg1.
- Lenovo thinks that it is more beneficial to go back to preamble transmission rather than waiting for contention resolution time to expire. Nokia agrees and it is better for the UE to start over. Oppo thinks that waiting will cause large delays as the UE may never get msg3 retx. Mediatek agrees with Nokia and this will guarantee that there is no hanging. The network doesn't have to differentiate between missing tx or LBT failure.
- Nokia is concerned as everyone is assuming that the network will send a retx but most likely the network will not.

R2-1914053 LS to RAN1 on RACH for NR-U Qualcomm

- Nokia and Ericsson and Vivo think that we shouldn't limit to unlicensed agreed

=> Update last sentence "RAN2 respectfully asks RAN1 to provide feedback on the inclusion of 2 LSBs of SFN in DCI used for scheduling of msg2 in 4-step RACH and msgB in 2-step RACH <u>on the unlicensed carrier</u>

=> The LS is approved in R2-1914064 with the change above

Agreements:
- From RAN2 point of view it is beneficial to include LSB of SFN in the DCI. The same design is desirable to be used for 2-step RACH. Write LS to RAN1 to ask if there is any feasibility issues.
- For NR-U, 2 bits are enough for a maximum of 40ms response windows.
- Multiplexing of responses for more than one SFN is not allowed.
- ra-ContentionResolutionTimer is started regardless of the LBT outcome of msg3 transmission

RAR transmission on SCell

R2-1913505 RACH enhancements for NR-U Ericsson discussion Rel-16 NR_unlic-Core

=> Not treated

Increasing msg1/msg3 opportunities

R2-1913215 Increasing Tx opportunities for Msg1 Nokia, Nokia Shanghai Bell discussion Rel-16 NR_unlic-Core

Proposal 1: Support configuration of multiple PRACH resources in frequency domain spread across multiple 20MHz sub-bands.

- Huawei thinks that this is already supported. Ericsson thinks that we should have this and be able to configure them.
- Qualcomm explains that RAN1 has deprioritized this. LG thinks that this is RAN2 configuration and we can agree and RAN1 can determine the detail.
- Samsung asks that if we allow the configure how does the UE select. Qualcomm would like to avoid the UE performing LBT on multiple sub-bands. ZTE explains that there is no point for this feature if we don't allow multiple LBT.
- Panasonic thinks that this can be used for the case of UL LBT failure. Nokia thinks that the UE should be able to do LBT.

=> Noted

R2-1912176 Remaining Issues on RACH Procedure in NR-U vivo discussion
=> Noted

R2-1912098 Remaining issues on extending RA response window in NR-U OPPO discussion Late
- Nokia, QC, Vivo think that RAN1 is discussing this
=> Noted

Not treated

R2-1912425 Signaling Multiple UL grants for Msg3 Transmission in NR-U Samsung Electronics Co., Ltd discussion Rel-16 NR_unlic-Core
R2-1913507 Channel access for Msg3 Ericsson discussion Rel-16 NR_unlic-Core
R2-1912097 Issues on contention resolution timer in NR-U OPPO discussion
R2-1912099 [Draft] LS on supporting LBT type in RAR OPPO LS out To:RAN1
R2-1912424 Contention Resolution Timer Handling in NR-U Samsung Electronics Co., Ltd discussion Rel-16 NR_unlic-Core
R2-1912426 Draft RRC CR_Supporting RAR Window Size larger than 10ms in NR-U Samsung Electronics Co., Ltd draftCR Rel-16 38.331 15.7.0 NR_unlic-Core
R2-1912427 Random Access Resource Selection in NR-U Samsung Electronics Co., Ltd discussion Rel-16 NR_unlic-Core
R2-1912888 Random access in NR-U InterDigital discussion Rel-16 NR_unlic-Core
R2-1912936 BWP and sub-band switching for NR-U in RACH CMCC discussion Rel-16 R2-1909436
R2-1912938 Consideration on further CP enhancements for NR-U CMCC discussion Rel-16 Revised
R2-1913034 PRACH and msg3 for NR-U Huawei, HiSilicon discussion Rel-16
R2-1913062 Msg1 transmission opportunities ITRI discussion NR_unlic-Core R2-1909955
R2-1913129 Additional opportunity for Msg1 in 4-step RACH LG Electronics Inc. discussion NR_unlic-Core R2-1911198
R2-1913216 Msg2 format and contention resolution based on LBT outcome of Msg3 Nokia, Nokia Shanghai Bell discussion Rel-16 NR_unlic-Core
R2-1913261 RAR design for NR-U MediaTek Inc. discussion Rel-16 NR_unlic-Core
R2-1913263 MAC behaviour for LBT failures in Msg3 transmissions MediaTek Inc. discussion Rel-16 NR_unlic-Core R2-1910078
R2-1913371 RAR MAC PDU design for NR-U ZTE Corporation, Sanechips discussion Rel-16
R2-1913372 Multiple Msg1 transmission opportunities for NR-U ZTE Corporation, Sanechips discussion Rel-16
R2-1913854 Discussion on contention resolution timer in NR-U LG Electronics Polska discussion Rel-16 NR_unlic-Core R2-1910981
R2-1912227 NR-U RACH enhancements SHARP discussion Rel-16
=> moved from 6.2.3

6.2.2.2 Handling UL LBT failures

Including detection, recovery, and reporting a consistent UL LBT failure

R2-1913287 Remaining issues on UL LBT Nokia, Nokia Shanghai Bell discussion Rel-16 NR_unlic-Core
=> Noted
R2-1912889 Handling UL LBT Failures in MAC InterDigital discussion Rel-16 NR_unlic-Core
=> Noted
R2-1912304 Details of the Uplink LBT failure mechanism Qualcomm Incorporated discussion
=> Noted

1.
Discussions

Whether the UE needs to be aware of the LBT success and whether the counter/timers are reset.
- Qualcomm thinks that the reason we chose BFD is so we don't need to indicate success. Lenovo thinks that the MAC should not be made aware. Oppo thinks that we need to indicate otherwise the MAC doesn't know. Nokia thinks that one success doesn't mean that there is no LBT failure. Google thinks that it is important to know when the channel is good. ZTE agrees with Qualcomm that the whole point of using BFD is to not be told of success. Ericsson thinks that the MAC needs to know. Huawei thinks the timer is helpful.

New timer to prevent counting too close failure
- Qualcomm thinks we should count all of them. Google thinks that we should count all of them. Oppo supports having a timer. Panasonic thinks that we can resolve it with the BFD timer. Nokia explains that the timer doesn't help as it won't prevent too close triggers. Charter supports having. LG thinks that we should discuss resolving this problem. InterDigital explains that because we agreed to count all signals we can't rely on just allowing the threshold.

Discussion whether the UE declares RLF or the UE switches to another BWP upon declaration of LBT failure if there is another BWP with different sub-band(s) and configured RACH resources.
- LG doesn't think that BWP is appropriate and the UE should immediately declare RLF on PCell. Huawei support BWP switching instead of declaring RLF.
- Google thinks that for PCell switching is better. InterDigital doesn't think RLF is a good option if we have another BWP.
- Ericsson also would like to trying switching

When the UE stops trying to switch
Once all configured BWPs are exhausted, the UE shall trigger RRC re-establishment procedure if the consistent UL LBT failure was detected on the PCell
- Nokia thinks that we can have it can be network configurable. Mediate thinks that in a way it is network configured.

How to we report SCell failures
MAC CE or RRC
- Nokia thinks that the network should also know why the UE switch BWP using the MAC CE.

Agreements:
1. MAC relies on reception of a notification of UL LBT failure from the physical layer to detect a consistent UL LBT failure.
2. The UE switches to another BWP and initiates RACH upon declaration of consistent LBT failure on PCell *or PSCell* if there is another BWP with configured RACH resources.
3. The UE shall perform RLF recovery if the consistent UL LBT failure was detected on the PCell and UL LBT failure was detected on "N" possible BWP. "
4. When consistent uplink LBT failures are detected on the PSCell, the UE informs MN via the SCG failure information procedure after detecting a consistent UL LBT failure on "N" BWPs.
5. "N" is the number of configured BWPs with configured PRACH resources. If N is larger than one it is up to the UE implementation which BWP the UE selects.
6. When consistent uplink LBT failures are detected on an SCell, a new MAC CE to report this to the node where SCell belongs to is used. FFS whether the MAC CE can be used to report failure on PCell

R2-1914054 Summary of discussion on UL LBT InterDigital
- Ericsson thinks we should use RRC and minimize spec impacts

=> Noted

Not treated

R2-1912095 Remaining issues on detecting uplink LBT failure for NR-U OPPO discussion

R2-1912096 Uplink LBT failure revoery for NR-U OPPO discussion

R2-1912177 Remaining Issues on Uplink LBT Failure vivo discussion

R2-1912178 Issue on the Autonomous BWP Switching in NR-U vivo discussion
R2-1912243 LBT Failures Handling in Non-Connected State Spreadtrum Communications, Huawei, HiSilicon discussion
R2-1912244 Inconsecutive UL LBT Failures Handling Spreadtrum Communications discussion
R2-1912474 Recovery of consistent UL LBT failures Samsung discussion Rel-16 NR_unlic-Core
R2-1912569 Handling UL LBT Failures in NR-UPANASONIC R&D Center Germany discussion
R2-1912625 Detecting and Handling of UL LBT failures Intel Corporation discussion Rel-16 NR_unlic-Core
R2-1912684 Impact of systematic LBT failure on UL transmission procedure Lenovo, Motorola Mobility discussion Rel-16 NR_unlic-Core R2-1910099
R2-1912937 Further consideration on consistent LBT failures CMCC discussion Rel-16
R2-1913029 UL LBT failure handling Huawei, HiSilicon discussion Rel-16
R2-1913064 Handling of consistent UL LBT failures during HO ITRI discussion NR_unlic-Core
R2-1913130 Problems in BFD-inspired detection mechanism for consistent UL LBT failures LG Electronics Inc. discussion NR_unlic-Core
R2-1913162 UE behavior upon consistenB2:AE10t UL LBT failures Fujitsu discussion Rel-16 NR_unlic-Core Withdrawn
R2-1913260 On consistent LBT failures MediaTek Inc. discussion Rel-16 NR_unlic-Core
R2-1913293 UE behavior upon consisten UL LBT failures Fujitsu discussion Rel-16 NR_unlic-Core Withdrawn
R2-1913294 UE behavior upon consistent UL LBT failures Fujitsu discussion Rel-16 NR_unlic-Core
R2-1913375 Recovery from consistent LBT failures ZTE Corporation, Sanechips discussion Rel-16
R2-1913479 Consistent LBT failure detection Google Inc. discussion Rel-16
R2-1913504 Handling LBT failures Ericsson discussion Rel-16 NR_unlic-Core
R2-1913649 Remaining Issues on Persistent LBT Failures in NRU Charter Communications, Inc discussion
R2-1913913 Further considerations on handling UL LBT failures ETRI discussion Rel-16 NR_unlic-Core
R2-1912988 Consecutive failed connection attempts in NR-U Nokia, Nokia Shanghai Bell discussion Rel-16 NR_unlic-Core
=> moved from 6.2.2.5

6.2.2.3 2-step RACH

Aspects of 2 step RACH procedure specific to unlicensed operation, e.g. considering LBT impact. Generic discussion of 2 step RACH will take place under the 2 step RACH WI.

Not treated

R2-1912100 2-step RACH for NR-U OPPO discussion
R2-1913508 2-step Random Access for NR-U Ericsson discussion Rel-16 NR_unlic-Core
R2-1913574 NR-U specific aspects for 2-step RACH Qualcomm Incorporated discussion

R2-1912179 LBT Impacts on 2-step RACH vivo discussion R2-1908692
R2-1913035 Enhancement on 2-step RACH for NR-U Huawei, HiSilicon discussion Rel-16

6.2.2.4 DRX

Including impact of non-numeric K1 value on DRX, active time extension, impact on DRX cycle etc.

Impact of non-numeric

R2-1913288 Non-numeric K1 impacts Nokia, Nokia Shanghai Bell discussion Rel-16 NR_unlic-Core
=> Noted

R2-1913031 Discussion on DRX for NR-U Huawei, HiSilicon discussion Rel-16
Proposal 5: Send an LS to RAN1 asking whether the non-numeric K1 can be applicable for DL SPS.
Proposal 6: drx-RetransmissionTimerUL should be stopped when a HARQ feedback is received for corresponding HARQ process with configured grant transmission.
- Ericsson agrees. Nokia, LG, and Lenovo don't think this is needed and gNB can schedule dynamic grant.

=> Noted

Discussion on when the drx-RetransmissionTimerDL is started or if we have new timers
- Oppo thinks after the PDSCH scheduled by non-numerical K1. Huawei thinks that we should introduce a new timer and we shouldn't reuse the existing timers. Mediatek thinks that we anyways need to extend the timers so nothing needs to be done.
- Qualcomm thinks that the UE should continue monitoring PDCCH until it gets the DCI after non-numeric K1. ZTE thinks that the only requirement is that the UE has to monitor the DL and gNB needs to know when the UE is monitoring. Qualcomm explains that the issue is LBT so it can't guarantee anything.
- Lenovo thinks that it is just a modelling issue and Nokia's approach works and starting a new timer would introduce new cases.
- Lenovo thinks that we can also specify like we do for SR, that the UE has to stay awake to get the triggered DCI.

R2-1913556 Impact of ACK/NACK transmission to NR-U DRX Qualcomm Incorporated discussion
=> Noted

Agreements
1. The drx-RetransmissionTimerDL is started after the PDSCH scheduled by non-numerical K1
2. UE starts the drx-HARQ-RTT-TimerDL after the HARQ A/N transmission opportunity irrespective of the LBT outcome

Not treated

R2-1912101 Remaining DRX issues for non-numerical K1 and HARQ feedback OPPO discussion

R2-1912891 Impact of non-numeric K1 value on DRX Timers InterDigital discussion Rel-16 NR_unlic-Core

R2-1913558 Impact of non-Numeric K1 Value to NR-U DRX Qualcomm Incorporated discussion

Others

R2-1912102 DRX procedure enhancements due to LBT impacts OPPO discussion

R2-1912396 DRX enhancement for NR-U Xiaomi Communications discussion Rel-16 R2-1905731

R2-1913561 DRX Active Time for NR-U Qualcomm Incorporated discussion

R2-1913503 DRX enhancement for NR-U Ericsson discussion Rel-16 NR_unlic-Core

6.2.2.5 Configured grant operation

Including HARQ aspects, configuration aspects, multiple active configured grants, and conflicts between dynamic and configured grants (NR-U specific).

R2-1912626 Further consideration on configured UL grant enhancement Intel Corporation discussion Rel-16 NR_unlic-Core

Proposal#1 : When configuredGrantTimer expires, the UE should stop the CGretransmission timer (CGRT) if it is still running and stop the CG retransmission by flushing the HARQ buffer of the corresponding HARQ process.
- LG asks why the UE has to stop the HARQ buffer. Nokia agrees that we don't need to flush the buffer.

Proposal#2: To solve the collision case in Scenario 1 (A configured grant used for new transmission of HARQ process #N is not received by the gNB due to collision over shared resources and the gNB subsequently uses the same HARQ process for new transmission via scheduled grant using C-RNTI):
- *the UE should ignore the UL grant addressed to PDCCH C-RNTI for the HARQ process regardless of the TBS size when the HARQ process for configured grant has not been ACK*
- LG thinks that the dynamic grant should be prioritized. Nokia agrees and the UE should just follow. Ericsson proposes to have a timer on the configured grant.
- Qualcomm thinks that the real question is what do we do if the grant comes at the CG time or a little later. Do we define a timer or do we leave up to the UE?
- Mediatek doesn't think we need to solve this issue and can be solve by the network. Huawei also thinks that the UE should also follow the dynamic grant.

=> Noted

R2-1912301 Remaining Aspects of Configured Grant Transmission for NR-U Qualcomm Incorporated discussion

Proposal 1: HARQ process id selection is based on UE implementation like AUL
- Ericsson thinks that this should be for new transmissions and not retx. Nokia thinks that the UE should prioritize the retransmission. Ericsson thinks that we need to further prioritize older retx.

=> Noted

Agreements
1. When configuredGrantTimer expires, the UE should stop the CGretransmission timer (CGRT) if it is still running.
2. Upon receiving CG activation command, stop the CG retransmission timer for HARQ processes configured for the CG
3. No special handling for HARQ process sharing between configured grant and dynamic grants (i.e. follow licensed specifications)
4. HARQ process id selection is based on UE implementation. Ongoing retransmissions on HARQ processes should be prioritized.

R2-1913852 Discussion on multiple active CGs for NR-U LG Electronics Polska discussion Rel-16 NR_unlic-Core

Proposal 1. Multiple active CG configurations should be introduced for NR-U.

Proposal 2. The basic framework of multiple active CG configurations in IIoT can be considered a baseline for NR-U.
- Ericsson supports both of this but it comes for free. Interdigital agrees and proposal 1 is enough.
- Nokia thinks that the HARQ process operation is quite different for licensed and unlicensed. Lenovo explains that there are some differences.
- Oppo asks what is the main motivation, is it to increase transmission opportunities in frequency domain. Qualcomm explains it is for time domain like licensed.

=> Noted

Agreements
1. Multiple active CG configurations should be allowed for NR-U. Details are FFS

R2-1913501 Discussions on configured grant in NR-U Ericsson discussion Rel-16 NR_unlic-Core

Discussion on terminology
- Ericsson is concerned that when we write the CR the terminology gets too long. Oppo thinks that we can reuse the CGretransmission time to differentiate.

=> Noted

No treated

R2-1913373 Discussion on configured grant for NR-U ZTE Corporation, Sanechips discussion Rel-16

R2-1912103 Remaining issues on NR-U configured grant OPPO discussion

R2-1912180 Remaining Issues on Configured Grant in NR-U vivo discussion

R2-1912661 Handling of pending TB for CG transmission Lenovo, Motorola Mobility discussion Rel-16 NR_unlic-Core

R2-1913030 Configured grant for NR-U Huawei, HiSilicon discussion Rel-16

R2-1913163 On PDU overwritten in NR-U configured grant Fujitsu discussion Rel-16 NR_unlic-Core

R2-1913289 Multiple configured grants for NR-U Nokia, Nokia Shanghai Bell discussion Rel-16 NR_unlic-Core

R2-1913858 Discussion on MAC PDU overwritten issue LG Electronics Polska discussion Rel-16 NR_unlic-Core

6.2.2.6 CAPC

Including CAPC selection, impact on TB construction etc.

R2-1912890 CAPC selection for Configured grant transmission in NR-U InterDigital discussion Rel-16 NR_unlic-Core R2-1909605
=> Noted

R2-1913290 CAPC for configured grant and dynamic grant Nokia, Nokia Shanghai Bell, Lenovo discussion Rel-16 NR_unlic-Core
=> Noted

R2-1913562 CAPC and uplink transmission Qualcomm Incorporated discussion
=> Noted

Discussion on whether to introduce LCP restrictions for CAPC

- Google thinks that there is a requirement to do this for SRBs and in LAA we didn't mix up CAPC and LCP. InterDigital explains that for LAA we would have to SRBs on the licensed carriers and for NR-U we have standalone and no way to restrict. Nokia agrees. Ericsson thinks we can leave it up to gNB implementation. Lenovo is not sure that the gNB can be handled and supports this restrictions.
- Vivo also agrees and asks how the gNB can control what data can be put in multiple CG. Intel doesn't support the restriction and we would waste resources with padding
- Nokia thinks that at least we can do something for SRBs. Google thinks that we should do it for SRBs. Lenovo explains that we introduced restrictions in Rel-15 and this is another.
- Samsung proposes to not modify LCP but just change the rule for CAPC for SRB case.

=> Aim to introduce a mechanism for SRBs for CG. Try to find an easy way to capture this in the specs if possible.
=> For the determination of CAPC for a DRB, selection of the CAPC should be determined by gNB. Write in the spec that gNB should try to guarantee fairness in stage 2.

Not treated

R2-1912455 CAPC for RACH and PUCCH in NR-U Mediatek India Technology Pvt. discussion Rel-16 38.321 R2-1908849

R2-1912181 CAPC Restriction to Data Multiplexing for Configured Grant vivo discussion R2-1908697

R2-1912475 Remaining issues on CAPC Samsung discussion Rel-16 NR_unlic-Core

R2-1912484 CAPC Assignments for SRBs in NR-U Mediatek India Technology Pvt. draftCR Rel-15 38.331 15.7.0 FS_NR_newRAT, NR_newRAT R2-1908854

R2-1912627 Channel Access Priority selection & multiplexing for Configured Grant Intel Corporation discussion Rel-16 NR_unlic-Core

R2-1913476 Discussion on multiplexing of data Huawei, HiSilicon discussion NR_unlic-Core

R2-1913480 CAPC for configured grants in NR-U Google Inc. discussion Rel-16 NR_unlic-Core R2-1910689

R2-1913502 Further discussions on channel access priority Ericsson discussion Rel-16 NR_unlic-Core

R2-1912457 On Restrictions in Multiplexing of High and Low Priority LCH in NR-U Mediatek India Technology Pvt. discussion Rel-16 38.321 R2-1908851
=> Moved from 6.2.2.5

6.2.2.7 Other

Includes wideband operation aspects, HARQ, SR and PHR

SPS

R2-1912182 Introducing More Transmission Opportunities for DL SPS in NR-U vivo discussion R2-1909207
Proposal: The slot aggregation can be configured for the DL SPS in NR-U to increase the transmission opportunities.
- Qualcomm asks if this is RAN1. Ericsson thinks this is free.

=> confirm nothing new needs to be done

SR

R2-1912398 Consideration on SR transmission Xiaomi Communicationsdiscussion Rel-16 R2-1909215
=> Not treated

PHR

R2-1912183 On NR-U PHR Handling vivo discussion
Proposal 1: When a LBT success for a PUSCH carrying PHR MAC CE is received, MAC entity starts/restarts of phr-PeriodicTimer / phr-ProhibitTimer and cancels the triggered PHRs.
- Ericsson thinks this is unnecessary optimization. Huawei supports the proposal. Vivo thinks that if the UE starts prohibit timer PHR transmission will be delayed.
- Qualcomm explains that this was not done for LAA and PHR is not time critical anyways.

Proposal 2: The MAC entity can generate PHR MAC CEs respectively for multiple MAC PDUs before a LBT success is received for a PUSCH carrying PHR.
- Ericsson and Qualcomm think that this complicates the implementations

=> Noted

R2-1912663 Impact of LBT on power headroom reporting functionality Lenovo, Motorola Mobility discussion Rel-16 NR_unlic-Core R2-1910090
- Mediatek thinks that impact of option 2 is that the UE provides reduced information and option 1 is better.
- Lenovo explains that if we do nothing it will not work according to RAN1 specs. Nokia thinks that if we do something, we should do option 2.
- LG thinks that this is a RAN1 issue. Lenovo explains that the MAC CE itself doesn't indicate whether it is type 1 or type 3.

=> Noted

=> RAN2 acknowledges that with current framework the gNB will not be aware whether the UE transmitted type 1 or type 3. FFS if and how we address it

R2-1914066 LS to RAN1 to identify the problem Lenovo
=> Update second paragraph: "RAN2 discussed several options on how to solve the identified problem, e.g. reporting a predefined existing PHR-type (e.g. PHR type 1 or type 3) for cases when the PHR MAC CE is transmitted on a configured grant on an unlicensed cell, but did not conclude on any solution.

=> Update action: RAN2 respectfully asks RAN1 to discuss this problem and determine whether a solution is needed
=> The LS is approved in R2-1914068 with the change above.

Not treated

R2-1913262 On PHR and autonomous retransmissions MediaTek Inc. discussion Rel-16 NR_unlic-Core R2-1910079

Multi-TTI

R2-1912662 LBT impact to Multi-TTI scheduling Lenovo, Motorola Mobility discussion Rel-16 NR_unlic-Core

R2-1913555 MAC Scheduling Aspects of Multi-TTI Grant Qualcomm Incorporated discussion

R2-1913032 Impacts of Cross-COT HARQ feedback to BWP and SCell Huawei, HiSilicon discussion Rel-16

R2-1912104 Discussion RAN1 LS on supporting multiple frequency domain monitoring locations for a searchspace OPPO discussion

R2-1913878 MAC impacts of multiple CCAs in wide band operation LG Electronics Polska discussion Rel-16 NR_unlic-Core R2-1909829

R2-1913506 RAN2 impact of supporting wideband operation Ericsson discussion Rel-16 NR_unlic-Core

R2-1913500 Improved transmission mechanism for PUCCH-UCI Ericsson discussion Rel-16 NR_unlic-Core

R2-1913878 MAC impacts of multiple CCAs in wide band operation LG Electronics Polska discussion Rel-16 NR_unlic-Core R2-1909829

R2-1913506 RAN2 impact of supporting wideband operation Ericsson discussion Rel-16 NR_unlic-Core

R2-1912840 Split Threshold for DC and NR-U Nokia, Nokia Shanghai Bell discussion Rel-16 NR_unlic-Core R2-1906041

R2-1913131 Dynamic DL opportunity enhancement based on channel busy level in NR-U LG Electronics Inc. discussion NR_unlic-Core R2-1909830

6.2.3 Control plane

6.2.3.1 Paging

Including configuration of additional PDCCH monitoring occasions for paging and termination of monitoring

R2-1912987 Paging in NR-U Nokia, Nokia Shanghai Bell discussion Rel-16 NR_unlic-Core
=> moved from 6.2.2.2
=> Noted

R2-1913559 Paging monitoring in NR-U Qualcomm Incorporated discussion
=> Noted

Agreements
=> Wait for RAN1 to understand whether we can use existing channels to determine when the UE should stop monitoring.
=> A UE receives paging messages only in initial BWP or in its active BWP as in NR.

Not treated

R2-1913651 Paging Monitoring in NR-U Charter Communications, Inc discussion Rel-16

R2-1912644 Extended PO and early termination for page monitoring Ericsson discussion NR_unlic-Core

R2-1912428 Draft RRC CR for supporting Additional Opportunities for paging in NR-U Samsung Electronics Co., Ltd draftCR Rel-16 38.331 15.7.0 NR_unlic-Core

R2-1912887 Paging procedure in NR-U InterDigital discussion Rel-16 NR_unlic-Core R2-1909602

R2-1912965 Consideration on further CP enhancements for NR-U CMCC discussion Rel-16 R2-1912938

R2-1913061 Paging opportunities overlapping for the NR-U ITRI discussion NR_unlic-Core R2-1909957

R2-1913474 Paging for NR-U Huawei, HiSilicon discussion NR_unlic-Core

6.2.3.2 Mobility

Including camping and cell (re)-selection. Focus should be on idle and inactive mode mobility. For connected mode mobility solutions to be covered by the NR Mobility Enh WI are not to be discussed.

R2-1912645 Cell (re)selection for NR-U Ericsson discussion NR_unlic-Core
=> Revised in R2-1913968

R2-1913968 Cell (re)selection for NR-U Ericsson discussion NR_unlic-Core
Proposal 2 N is the minimum of the detected cells on the current frequency and the value N min which is configured in SIB3 or SIB4 for that frequency, respectively, and is an INTEGER(2..9), i.e. requires 3 bits.
- Nokia thinks we should just fix the number to something simple. Qualcomm thinks that this is a deployment scenario and fixing is dangerous.

Proposal 3 For RRC re-establishment, the gNB should control whether the UE is allowed to deprioritize a carrier frequency due to LBT issues.
- LG, ZTE, and vivo support this proposal. QC thinks the UE has to do cell selection anyways and it is up to the UE implementation. Intel doesn't support this as the UE will select the cell based on other criteria.
- Nokia and Huawei don't think this is critical

=> Noted

R2-1912429 Handling MIB_SIB1 Acquisition Failure Samsung Electronics Co., Ltd discussion Rel-16 NR_unlic-Core
If the UE in RRC_IDLE or in RRC_INACTIVE or in RRC_CONENCTED while T311 is running fails to acquire MIB or SIB 1 from a cell in unlicensed band, UE shall only consider this cell as barred. UE excludes this cell as a candidate for cell selection/reselection for 300 seconds
- Nokia thinks that the other cells in the same frequency may suffer from the same problem. But the issue may be that the UE may not read SIB1.

=> Come back to this next meeting
=> Noted

R2-1913478 Further discussion on PLMN selection for NR-U Huawei, HiSilicon discussion NR_unlic-Core
=> Noted

Agreements on cell reselection
1. The UE may consider the current NR-U frequency to be the lowest priority frequency for reselection for 300 seconds after at least < the N strongest cells > on that frequency were found not suitable due to belonging to a PLMN which is not indicated as being equivalent to the registered PLMN. N is UE implementation and the UE should check at least 2 if there is more than one.
2. If a cell is barred in NR-U, due to the registered PLMN or selected PLMN does not match one of the PLMN IDs in SIB1, "IntraFreqReselection" shall be always interpreted as "allowed". The same applies if SIB1 is not decoded.

R2-1913659 Recovery due to LBT failures Kyocera discussion
=> Noted

R2-1912532 introduction of channel occupancy and RSSI for NR-U CHO Samsung R&D Institute UK discussion
=> Not treated

Discussion: RAN2 should agree to support the configuration of channel occupancy and RSSI as one of the triggering conditions for conditional handover to support NR-U SA

- Nokia indicates that we agreed to not use RSSI for normal handover so it is a little strange to use it for CHO. QC and Intel agrees with Nokia.
- Ericsson explains that we didn't agree to RSSI for idle mode and not for connected mode. Qualcomm indicates that we agreed to use the existing LAA, no new event triggers but we will include RSSI CO measurements in the existing measurement reports (like LAA)

Agreements
=> For normal HO and CHO, no new event triggers will be introduced. RRSI CO measurements can be included in the measurement reports.

Not treated

R2-1912184 Further Discussion on the Whitelist in NR-U vivo discussion

R2-1912239 Mobility Consideration in NR-U Spreadtrum Communications discussion R2-1909082

R2-1912471 Considering top N cells for PLMN Selection Samsung discussion NR_unlic-Core

R2-1912481 Including RSSI and Channel Occupancy in Connected Mode Measurements Mediatek India Technology Pvt. draftCR Rel-15 38.331 15.7.0 FS_NR_newRAT, NR_newRAT R2-1908852

R2-1912512 Including RSSI and Channel Occupancy in NR-U UE Capabilities Mediatek India Technology Pvt. draftCR Rel-16 38.306 15.7.0 FS_NR_newRAT, NR_newRAT R2-1908855

R2-1912658 Discussion on PLMN and Cell selection and reselection enhancements for NR-U Nokia, Nokia Shanghai Bell discussion Rel-16 NR_unlic-Core

R2-1912865 Remaining FFSs on enabling the UE to camp on non-best cell Intel Corporation discussion Rel-16 NR_unlic-Core

R2-1913374 Considerations on camping on non-best cell ZTE Corporation, Sanechips discussion Rel-16

R2-1913560 Remaining FFS on cell reselection for NR-U Qualcomm Incorporated discussion

R2-1913750 Cell (re)selection after consecutive UL LBT failures LG Electronics Inc discussion Rel-16 NR_unlic-Core

R2-1913751 Remaining issues on camping on non-best cell LG Electronics Inc discussion Rel-16 NR_unlic-Core

6.2.3.3 RRM

Note RP-191581: RRM Measurements beyond currently agreed ones have lower priority.

R2-1912646 RRM in NR-U Ericsson discussion NR_unlic-Core
=> Noted

Agreements:
1 No additional mechanisms are introduced to help the UE find and identify NR-U target cells. The existing/agreed whitelist/blacklist configuration and CGI reports are considered sufficien.
2 No additional mechanisms are introduced to address PCI collisions in Rel-16

R2-1912660 On UL transmissions during SMTC in NR-U Nokia, Nokia Shanghai Bell discussion Rel-16 NR_unlic-Core R2-1909318
=> Noted

Not treated

R2-1912649 RRM Measurements for Mobility in NR-U Fraunhofer HHI, Fraunhofer IIS discussion R2-1910540

R2-1913753 RSSI and channel occupancy measurements for serving frequency LG Electronics Inc discussion Rel-16 NR_unlic-Core R2-1911403

6.2.3.4 RLM/RLF

Not treated

R2-1912105 RLM enhancements OPPO discussion

R2-1912472 RLM for NR-U Samsung discussion NR_unlic-Core

R2-1912659 RLM/RLF measurement on NR-U Nokia, Nokia Shanghai Bell discussion Rel-16 NR_unlic-Core R2-1909317

R2-1912892 RLM and RLF for NR-U InterDigital discussion Rel-16 NR_unlic-Core R2-1909606

R2-1913132 Measurement enhancement for channel occupancy LG Electronics Inc. discussion NR_unlic-Core R2-1911199

R2-1913477 Discussion on DL LBT failure impact on RLF triggering Huawei, HiSilicon discussion NR_unlic-Core

R2-1913752 RLMRLF in NR-U LG Electronics Inc discussion Rel-16 NR_unlic-Core R2-1911407

6.2.3.5 Other

Other control plane stage-3 aspects including system information. Note RP-191581: Enhancements for System Information has lower priority

R2-1912677 The issue of putting all SIBs in one SI message PANASONIC R&D Center Germany, MediaTek Inc., vivo, Charter Communications, OPPO discussion R2-1909236

Proposal 1: RAN2 reopen the discussion on the possible SI enhancements for NR-U, instead of relying on the assumption that all SIBs are to be transmitted together in one SI message

- Nokia indicates that we have discussed this. Qualcomm explains that this was if we could put everything in one SI. Google has some sympathy on this proposal as we should be future proof. Mediatek thinks it is impossible to fit. Ericsson thinks that this makes it complicated. Oppo and companies have shown that it is not possible to fit everything. ZTE thinks that for NR-U we have small cells and we don't have to put everything. Huawei also doesn't think this is critical and SIB1 to 5 are quite similar can use the same periodicity.
- Panasonic explains that it is not related to the size of the cell but rather the number of frequencies.

=> RAN2 will not reopen the discussion

=> Noted

R2-1912185 Enhancements of System Information in NR-U vivo discussion R2-1908695

=> Noted

R2-1912305 Broadcasting of System Information in NR-U Qualcomm Incorporated discussion

Proposal 4: For msg1 based SI request, a more optimal way to request SI messages, considering the LBT impact for RACH and SI, should be discussed. As a minimum, it should be possible to configure both separate preamble and common preamble options together.

- ZTE thinks that we also have msg3based SI request. Samsung explains that we anyways would have 1 or two SIs.

=> Noted

R2-1913652 On NR-U Operation in DFS Channels Charter Communications, Inc discussion Rel-16

=> Revised in R2-1914063

R2-1914063 On NR-U Operation in DFS Channels Charter Communications, Inc discussion Rel-16

Proposal 1: RAN2 to consider development of a mechanism so that a gNB, deployed in standalone NR-U mode, is equipped to perform effectively the regulatory requirement such as DFS in the event of detection of incumbent technologies protected by regulators.

- Nokia thinks that the gNB implementation can handle this. ZTE has some sympathy for the problem but the real question is what are the timing requirements. The problem with idle don't exist as the MIB and SIBs won't be broadcasted.
- Huawei asks how often this problem would happen. Charter explains that this is regulatory requirement. Qualcomm agrees it is a problem but if we have 200ms then the gNB should be able to solve it. The solution where the gNB broadcasts something has security issues.
- Ericsson also thinks that it is solvable
- Samsung explains that this was discussed in LAA and it was captured in the TR

=> Noted

Not treated

R2-1912106 System information enhancements for NR-U OPPO discussion

R2-1913475 SI enhancement for NR-U Huawei, HiSilicon discussion NR_unlic-Core

R2-1913653 System Information Transmission Enhancements in NR-U Charter Communications, Inc discussion Rel-16

R2-1912456 SI scheduling enhancements for NR-U Mediatek India Technology Pvt. discussion Rel-16 R2-1908850

=> moved from 6.2.3

6.4 NR V2X

(5G_V2X_NRSL-Core; leading WG: RAN1; REL-16; started: Mar 19; target; Mar 20; WID: RP-191723). Documents in this agenda item will be handled in a break out session

Time budget: 3 TU

Tdoc Limitation: 14 tdocs

6.4.1 General

Including incoming LSs, rapporteur inputs, running CRs, etc.

R2-1912017 LS on mapping between LTE V2X PPPP and NR V2X priority (R1-1909876; contact: Qualcomm) RAN1 LS in Rel-16 5G_V2X_NRSL To:SA2 Cc:RAN2

[Chair]: We do not have per packet priority so wonders if LTE PPPP can directly compare to NR V2X priority. [Apple]: In NR V2X, we have LCH priority so LTE PPPP would be compared to LCH priority. [Huawei]: QoS flow will be informed per packet and the corresponding priority is used.

⇨ Noted.

R2-1912018 Reply LS on Sidelink HARQ Feedback for Groupcast (R1-1909879; contact: LGE) RAN1 LS in Rel-16 5G_V2X_NRSL-Core To:RAN2, SA2

[ZTE]: There should be no RAN2 work for group management (e.g. to know member UEs id, etc.) [Huawei, Nokia, Intel, Ericsson]: Agree with ZTE.

⇨ RAN2 understands there should be no RAN2 work for the solution RAN1 asked. It's up to SA2.

⇨ Noted

R2-1912050 LS on sidelink BWP reconfiguration on ITS band (R4-1910542; contact: MediaTek) RAN4 LS in Rel-16 5G_V2X_NRSL-Core To:RAN1 Cc:RAN2

⇨ Noted

R2-1913533 LS on NR V2X synchronization procedures and priority (R1-1909910; contact: CATT) RAN1 LS in Rel-16 5G_V2X_NRSL-Core To:RAN2, RAN4

⇨ 38.331 rapporteur should take it into account in 38.331 running CR.

⇨ Noted

=> Besides RRC/MAC running CRs, details of all running CRs and TP will be discussed offline. Updated CRs will capture the agreements made this meeting. For RRC/MAC running CRs, we will have email discussion and it can includes the discussion for the detailed stage3 issues.

R2-1912164 38 323 running CR CATT draftCR Rel-16 38.323 15.6.0 B 5G_V2X_NRSL-Core

⇨ Offline discussion#801 (R2-1914111, CATT)

⇨ Endorsed in R2-1914111.

R2-1912252 Running CR to 37324 for 5G_V2X_NRSL vivo (Rapporteur) draftCR Rel-15 37.324 15.1.0 5G_V2X_NRSL-Core

⇨ Offline discussion#802 (R2-1914112, Vivo)

[OPPO]: Do we need differentiation for SL DRB and SL SRB (instead of SLRB)? [Vivo]: Agreements made this meeting have not been captured in this version.

✉ **[107bis#12][V2X] Running 37.324 CR (Vivo)**
Intended outcome: Endorsed running CR, 37.324 CR capturing this meeting's agreements
Deadline: 1 week

=> Endorsed in R2-1914152

R2-1913331 Running CR for 38.322 for NR V2X Ericsson draftCR Rel-16 38.322 15.5.0 B 5G_V2X_NRSL-Core

⇨ Offline discussion#803 (Ericsson, R2-1914113)

[Huawei]: For 5.1.1, it should be aligned with PDCP specification.

⇨ Endorsed in R2-1914146 with the removal of change in 5.1.1

R2-1913887 Running CR to 38.300 on 5G V2X with NR sidelink LG Electronics Inc. draftCR Rel-16 38.300 15.7.0 B 5G_V2X_NRSL-Core

⇨ Offline discussion#804 (LG, R2-1914114)

[Nokia]: It would be better to introduce sub-sections under 16.x.4. [LG]: Agrees with the observation and will take it into account in the next version. [OPPO, Apple]: In 16.x.2.3, the agreement "For UM, only uni-directional transmission is supported." may need to be reconsidered in order to support ROHC feedback for unicast.

✉ **[107bis#13][V2X] Running 38.300 CR (LG)**
Intended outcome: Endorsed running CR, 38.300 CR capturing this meeting's agreements
Deadline: 1 week

=> Endorsed in R2-1914000.

R2-1912392 (running)36.304CR on cell selection(reselection) for NR V2X UE ZTE Corporation, Sanechips draftCR Rel-16 36.304 15.4.0 B 5G_V2X_NRSL-Core

⇨ Offline discussion#805 (ZTE, R2-1914115)

⇨ Email discussion: Discuss how to handle editor's note and endorsed the version considering companies' inputs (ZTE)

R2-1912393 (running)38.304CR on cell selection(reselection) for NR V2X UE ZTE Corporation, Sanechips draftCR Rel-16 38.304 15.5.0 B 5G_V2X_NRSL-Core

⇨ Offline discussion#805 (ZTE, R2-1914116)

⇨ Email discussion: Discuss how to handle editor's note and endorsed the version considering companies' inputs (ZTE)

⇨

✉ **[107bis#95][V2X] 38.304 and 36.304 running CRs (ZTE)**

Intended outcome: Draft CRs for next meeting, to be endorsed. Including discuss how to handle editor's note.
Deadline: Next Meeting

R2-1913699 TP on NR V2X for TR 37.985 RAN2 parts Huawei, HiSilicon pCR Rel-16 37.985 0.1.0 5G_V2X_NRSL-Core Late

⇨ Offline discussion#806 (Huawei, R2-1914117)

⇨ Endorsed in R2-1914117.

R2-1912377 Running CR to TS 38.331 for 5G V2X with NR sidelink Huawei, HiSilicon draftCR Rel-15 38.331 15.7.0 B 5G_V2X_NRSL-Core Late

✉ **[107bis#91][V2X] 38.331 running CR (Huawei)**
Intended outcome: Draft CR for next meeting, to be endorsed. 38.331 running CR (including discussion of 38.331 miscellaneous open issues considering new RAN1/4 agreements, e.g. L1 parameters, information in Sidelink UE Information, information in UE Assistance Information, need of both Sidelink UE Information and UE Assistance Information, need of Uu MR (if needed including information in the corresponding MR), SIB remaining issues, etc). See also R2-1912377.
Deadline: Next Meeting

R2-1913698 Running CR to 36 331 for NR V2X Huawei, HiSilicon draftCR Rel-16 36.331 15.7.0 B 5G_V2X_NRSL-Core Late 8

✉ **[107bis#92][V2X] 36.331 running CR (Huawei)**
Intended outcome: Draft CR for next meeting, to be endorsed. 36.331 running CR, See also R2-1913698
Deadline: Next Meeting

R2-1913825 Running CR to 38.321 on 5G V2X with NR sidelink LG Electronics Inc. draftCR Rel-16 38.321 15.7.0 B 5G_V2X_NRSL-Core Late

✉ **[107bis#93][V2X] 38.321 running CR (LG)**
Intended outcome: Draft CR for next meeting, to be endorsed. 38.321 running CR (including discussion of 38.321 miscellaneous open issues considering new RAN1/4 agreements). See also R2-1913825
Deadline: Next Meeting

R2-1913824 Running CR to 36.321 on 5G V2X with NR sidelink LG Electronics Inc. draftCR Rel-16 36.321 15.7.0 B 5G_V2X_NRSL-Core Late

✉ **[107bis#94][V2X] 36.321 running CR (LG)**
Intended outcome: Draft CR for next meeting, to be endorsed. 36.321 running CR. See also R2-1913824
Deadline: Next Meeting

6.4.2 L2/3 protocols common to mode 1 and mode 2 resource allocation

Including L2/L3 functionalities and procedures that are applied to both mode-1 and mode-2 or independent of resource allocation modes. Note that functionalities specific to QoS support are discussed in 6.4.6.

R2-1913701 Discussion on HARQ support for NR sidelink Huawei, HiSilicon discussion Rel-16 5G_V2X_NRSL-Core

Proposal 1: Like Tx UE in LTE-V2X, only one NR sidelink HARQ entity maintained for each sidelink carrier for transmission, and shared by all cast-types.

[AsusTek]: Since one UE can have many unicast links, we may consider HARQ entity per unicast link. [LG]: Agree with AsusTek. Single HARQ entity across unicast links will bring the problem as described in the contribution. [OPPO, Lenovo, Samsung, Nokia, ZTE]: In LTE, we do not have L2 destination specific HARQ entity. If we consider cast type specific HARQ entity, some may be just wasted, so agree with the proposal. Single HARQ entity will be more efficient in buffer management. [LG]: If we follow LTE principle, it is ok, but we need to consider change of HARQ id. We should wait for RAN1 progress.

⇨ Agreed

Proposal 1a: Like Tx UE in LTE-V2X, the NR sidelink HARQ entity maintains a number of parallel sidelink processes, and shared by all unicast connections, groups and broadcast services. The maximum number of transmitting sidelink processes associated with each NR sidelink HARQ entity is pending on RAN1.

⇨ Agreed.

Proposal 2: For a SL grant, the Tx UE can select the HARQ process ID carried in the SCI, e.g. the Tx UE can select the HARQ process ID carried in the SCI from unoccupied HARQ process ID.

Proposal 3: Tx UE needs to store the corresponding relation between the HARQ process ID allocated by the network and HARQ process ID carried in SCI.

Proposal 4: For a SL grant for retransmission, Tx UE can set the HARQ process ID carried in SCI to be same as the new transmission.

Proposal 5: Like Rx UE in LTE-V2X, only one NR sidelink HARQ entity maintained for each sidelink carrier for reception, and shared by all cast-types.

⇨ Agreed.

Proposal 5a: Like Rx UE in LTE-V2X, the NR sidelink HARQ entity maintains a number of parallel sidelink processes, and shared by all unicast connections, groups and broadcast services. FFS for the maximum number of receiving sidelink processes associated with each NR sidelink HARQ entity.

⇨ Agreed.

Proposal 6: From a SCI, the Rx UE can select the HARQ process to handle the corresponding transmission from unoccupied HARQ process.

[Lenovo]: Agree with the proposal. [Samsung, LG, Nokia]: Why Rx UE selects the HARQ process id? There is nothing to do with HARQ process id selection in Rx UE. [Vivo]: Is it only for unicast or also for groupcast? [OPPO]: It should be same for all cast types.

⇨ Agreed.

Proposal 7: Rx UE needs to store the corresponding relation between HARQ process indicated in the SCI and the HARQ process selected by the Rx UE.

[Nokia]: Do we need to specify in MAC specification? It seems internal UE behavior. [Lenovo, LG]: First we should decide principle and whether to be captured in MAC or not will be discussed later. [OPPO]: Agree with Nokia.

⇨ Noted.

Proposal 8: For unicast/groupcast communication, each corresponding TB at the Tx UE should be associated with cast-type, Source ID, Destination ID and HARQ process id.

[OPPO]: Not sure whether we need a kind of fixed association or not. [AsusTek]: We need some association with ids, but need of association with cast type is not clear.

⇨ Agreed.

Proposal 9: For unicast/groupcast communication, each corresponding TB at the Rx UE should be associated with cast-type, Source ID, Destination ID and HARQ process.

[LG]: When Rx UE receives TB, it can not be aware of cast type. [OPPO]: Information in SCI should be left to RAN1. [Samsung]: Agree with the proposal in principle, but it does not mean SCI should include source id and destination id. It should be left to RAN1. [Intel]: Agree with LG.

⇨ Wait for RAN1 progress.

Proposal 10: For NR-V2X unicast/groupcast, a timer is introduced for the Rx UE to release the HARQ process.

[OPPO, Apple]: Agree with the observed problem described in the contribution, but not sure if timer-based option is the best one. [LG]: There would be other ways and we are not sure what information is included in SCI, so should wait for RAN1 progress.

⇨ Noted from proposal 10 to 15.

Proposal 11: For NR-V2X unciast/groupcast, this timer is carried in each SCI.

Proposal 12: For NR-V2X unciast/groupcast, this timer is also applied for the Tx UE to release the HARQ process.

Proposal 13: For NR-V2X unciast/groupcast, this timer is configured by network if Tx UE is scheduled by network, i.e. in mode 1.

Proposal 14: Tx UE should maintain NDI based on cast-type, Source ID, Destination ID and HARQ process ID.

Proposal 15: Rx UE should determine whether the transmission is a new transmission or a retransmission based on whether NDI of the same Source ID, Destination ID and HARQ process ID is toggled.

Proposal 16: For unicast/groupcast communication, the Tx UE’s MAC is able to receive the sidelink HARQ feedback indication (e.g. ACK or NACK) from SL PHY layer.

⇨ Agreed.

Proposal 16a: For unicast/groupcast communication, the Tx UE’s MAC needs to report the latest sidelink HARQ feedback status (i.e. ACK or NACK) to the gNB if requested (e.g. corresponding PUCCH resource has been configured).

Proposal 17: For at least mode2 UEs, the Tx UE’s MAC shall release the unused resource(s) and stop retransmission when the Rx UE(s) has successfully received the TB based feedback.

[ZTE]: What unused resource(s) means here? [LG]: It was already agreed for mode2 opearation in RAN1, but for mode1 there is no agreement yet in RAN1. We should wait for RAN1 progress. [Intel]: Assume it is applied to all cast types. “when it deems the Rx UE(s)…” is not clear.

Proposal 18: For mode1 Tx UE, for each SL transmission the MAC shall always instruct the PHY layer to feedback SL HARQ status, whether the Tx UE really send feedback on UL is pending on RAN1.

[OPPO]: If PUCCH is not configured for HARQ A/N, it sounds strange MAC still instruct PHY to feedback. [Apple]: If HARQ is disabled, still MAC shall always instruct the PHY to feedback? [Lenovo, LG]: All are more like MAC modelling issues.

Proposal 19: For the Tx UE, when the previous transmission is NACK, the Tx UE’s MAC (e.g. HARQ entity) shall instruct the sidelink process to trigger the retransmission.

[ZTE]: There are some corner cases which this proposal is not applied, e.g. high CBR case. [LG]: TX UE should decide retransmission is needed or not based on max retransmission number and remaining latency budget.

Proposal 20: For mode2 Tx UE, if the latest feedback is NACK and having no retransmission resources, it shall trigger the retransmission resource reservation.

Proposal 21: For Rx UE's MAC, it shall always instruct the PHY layer to send SL feedback for each SL reception, whether the Rx UE really send the SL feedback is pending on RAN1.

Proposal 22: For Rx UE's MAC, RAN2 to decide which option is adopted for the instruction from MAC layer to PHY layer:

- Option1: Instruct the PHY layer to generate acknowledgement(s) of the data in this TB if necessary.
- Option2: Generate a positive acknowledgement (ACK)/negative acknowledgement (NACK) of the data in this TB

Proposal 23: For unicast/groupcast, the network shall configure the HARQ enable/disable to Tx-UE:

- for RRC_CONNECTED UEs: the gNB configure via RRC message.
- for RRC_Idle/RRC_Inactive UEs: the gNB configure via SIB.
- for OOC UEs: via pre-configure.

[LG]: For RRC connected UE, gNB can also configure via DCI. [Huawei]: gNB may not know the pair of TX UE and RX UE. [OPPO]: Ok with all proposals. [Apple]: gNB configures HARQ but number of retransmissions will be based on CBR (just like LTE). [Xiaomi]: Do we need eNB to configure HARQ enabled/disabled for inter-RAT SL operation? [Huawei]: Dynamic scheduling is not supported for inter-RAT SL operation, so we do not need eNB to configure it. [ZTE]: To configure HARQ enabled/disabled is not directly related to dynamic scheduling. [LG]: Does gNB need to know UE SL capabilities?

⇨ Agreed.

Proposal 24: For unicast/groupcast, the Tx-UE shall configure the HARQ A/N enable/disable to Rx-UE.

[LG]: Agree with proposal [OPPO]: If RAN1 introduces HARQ A/N enabled/disabled in SCI, we do not need PC5-RRC based configuration. [Samsung, Interdigital, Ericsson]: Shares the view with OPPO. [Ericsson]: With the understanding, shouldn't we wait for RAN1 decision first?

⇨ Wait for RAN1 progress whether HARQ A/N enabled/disabled in SCI or not.

Proposal 25: For unicast/groupcast, RAN2 to support both SL-RRC and SCI for the configuration from Tx-UE to Rx-UE.

Proposal 26: RAN2 to support SL HARQ feedback enable/disable configures in SLRB level:

- For both mode1&mode2 UEs: SLRB level in RRC message
- For Idle/Inactive/OOC UEs: SLRB level in SIB/pre-configuration message

[Apple]: It should be included in MAC configuration instead of per SLRB level. [ZTE, Ericsson]: Agree with the proposal. [LG]: Do not see the issue related to LCP. Also maximum number of retransmission can be configured per SLRB level. [Intel]: Agree with the proposal since QoS flow will be associated with SLRB, so it sounds natural some QoS flow requires HARQ enabled.

⇨ Agreed.

Proposal 27: RAN2 to agree applying all the above proposals also for groupcast option1&2.

Agreements on SL HARQ:

1: Like Tx UE in LTE-V2X, only one NR sidelink HARQ entity maintained for each sidelink carrier for transmission, and shared by all cast-types.
2: Like Tx UE in LTE-V2X, the NR sidelink HARQ entity maintains a number of parallel sidelink processes, and shared by all unicast connections, groups and broadcast services. The

maximum number of transmitting sidelink processes associated with each NR sidelink HARQ entity is pending on RAN1.
3: Like Rx UE in LTE-V2X, only one NR sidelink HARQ entity maintained for each sidelink carrier for reception, and shared by all cast-types.
4: Like Rx UE in LTE-V2X, the NR sidelink HARQ entity maintains a number of parallel sidelink processes, and shared by all unicast connections, groups and broadcast services. FFS for the maximum number of receiving sidelink processes associated with each NR sidelink HARQ entity.
5: From a SCI, the Rx UE can select the HARQ process to handle the corresponding transmission from unoccupied HARQ process.
6: For unicast/groupcast communication, each corresponding TB at the Tx UE should be associated with cast-type, Source ID, Destination ID and HARQ process id.
7: For unicast/groupcast communication, the Tx UE's MAC is able to receive the sidelink HARQ feedback indication (e.g. ACK or NACK) from SL PHY layer.
8: For unicast/groupcast, the network shall configure the HARQ enable/disable to Tx-UE:
- For RRC_CONNECTED UEs: the gNB configure via RRC message.
- For RRC_Idle/RRC_Inactive UEs: the gNB configure via SIB.
- For OOC UEs: via pre-configure.
9: RAN2 to support SL HARQ feedback enable/disable configures in SLRB level:
- For both mode1&mode2 UEs: SLRB level in RRC message.
- For Idle/Inactive/OOC UEs: SLRB level in SIB/pre-configuration message.

R2-1913826 Layer-1 and Layer 2 Identifiers for NR Sidelink LG Electronics Inc. discussion Rel-16 5G_V2X_NRSL-Core R2-1910635

Proposal 1: The Source Layer-2 ID is 24 bits long and the Destination Layer-2 ID is 24 bits long in NR Sidelink, as in LTE Sidelink.

⇨ Agreed.

Proposal 2: RAN2 should inform RAN1 and SA2 that the Source/Destination Layer-2 IDs are 24 bits long in NR Sidelink.

⇨ Agreed.

Proposal 3: TX UE allocates a Layer-1 ID to RX UE for using it in SCI transmissions to RX UE via a PC5-RRC message at least for unicast. TX UE should ensure that allocation of the Layer 1-ID does not cause collision.

[Samsung, OPPO]: It is under RAN1 discussion. Collision issue also should be discussed in RAN1. [Ericsson]: Agree with the proposal. [Huawei, Intel]: Considering L2 id is also assigned by the UE, don't see the big need to introduce new L1 id. We can stick to LTE principle. [ZTE]: In LTE, blind HARQ retransmission is only supported. For NR, Rx UE needs to know whether it can be combined or not, so unique id would be helpful.

⇨ Noted.

Proposal 4: The actual size of the Layer-1 ID and whether the size is configurable or fixed are up to RAN1's decision.

Agreements on L2 id:
1: The Source Layer-2 ID is 24 bits long and the Destination Layer-2 ID is 24 bits long in NR Sidelink, as in LTE Sidelink.

R2-1913827 Proposed LS on Layer-1 and Layer 2 Identifiers for NR Sidelink LG Electronics Inc. LS out Rel-16 5G_V2X_NRSL-Core R2-1910636 To:RAN1 Cc:RAN3, SA2

⇨ Offline discussion#808 (LG, R2-1914120)

⇨ Approved in R2-1914147 with the removal of "Thus, the NR sidelink communication uses the same length of Source/Destination Layer-2 IDs as LTE V2X sidelink communication." and adding "SA2" into "To RAN1 group".

[Interdigital, Huawei]: It would be good to send this LS as soon as possible since RAN1 continues V2X discussion. [LG]: Will indicate Juha that it is urgent LS to RAN1.

R2-1913326 Remaining issues on UL-SL prioritisation Ericsson discussion Rel-16 5G_V2X_NRSL-Core

Proposal 1 A separate LCH priority thresholds is configured for both NR-UL and NR-SL.

[Intel, Convida]: Ok with the proposal. [LG]: Prefer SL threshold per LCH. [Vivo]: We may consider applying scaling factor.

⇨ Agreed.

Proposal 2 For between SL-data and UL-data/SRB, the SL transmission is prioritized if the highest priority value of UL LCH(s) with available data is larger than the UL priority threshold and the highest priority value of SL LCH(s) with available data is lower than the SL priority threshold. Otherwise the UL transmission is prioritized

[Nokia]: Agree with the proposal. Lower value means higher priority. [OPPO]: Agree with the proposal. [Intel]: Ok with the proposal. If both priority is lower (or higher) than the threshold, what should be the exact UE behavior? [Ericsson]: In the case, UL is prioritized. [Huawei]: Agree with the proposal. [Vivo]: How to handle PSFCH? [OPPO]: Pure PHY channel related issues can be discussed in RAN1. It was already discussed offline before.

⇨ Agreed.

Proposal 3 Prioritization between UL SR and SL data transmission could be based on priority of the UL LCH that triggered the UL SR and priority value(s) of SL LCH(s), similar as prioritization between NR UL data and NR SL data transmission.

[Interdigital, Convida]: Agree with the proposal.

⇨ Agreed.

Proposal 4 RAN2 to wait progresses from the IIOT WI regarding the handling of prioritization between UL BSR and SL data (i.e., same IIOT solution on prioritization between URLLC BSR and MBB data will be adopted for NR SL).

Agreements on prioritization:
1: A separate LCH priority thresholds is configured for both NR-UL and NR-SL.
2: For between SL-data and UL-data/SRB, the SL transmission is prioritized if the highest priority value of UL LCH(s) with available data is larger than the UL priority threshold and the highest priority value of SL LCH(s) with available data is lower than the SL priority threshold. Otherwise the UL transmission is prioritized.
3: Prioritization between UL SR and SL data transmission could be based on priority of the UL LCH that triggered the UL SR and priority value(s) of SL LCH(s), similar as prioritization between NR UL data and NR SL data transmission.

R2-1912071 Left issues on UL-SL prioritization for NR-V2X OPPO, Apple discussion 5G_V2X_NRSL-Core

Proposal 2 Before confirm the flexible BSR WA, RAN2 needs to solve the issue that low-priority SL-BSR entries preventing the UL-BSR, e.g., by only allowing the high-priority SL-BSR entries being prioritized over UL-BSR. The rule used for prioritization between UL-triggered UL-TX and SL-TX is applied to define high-priority SL-BSR entries. Otherwise, the WA needs to be reverted.

Proposal 3 If RAN2 confirms the flexible BSR WA, RAN2 further discuss, besides BSR, what other UL-TX(s) (e.g., UL/SL-SR, UL/SL-configured grant confirmation, UL MAC SDU) needs to be considered for prioritization between UL-triggered UL-TX and SL-triggered UL-TX, following the same rule for prioritization between UL-triggered UL-TX and SL-TX.

[Ericsson]: Similar issue is under other WI discussion, so prefer waiting for the decision from that WI. [Interdigital]: Agree with OPPO's observation. [Apple, CATT]: Here the problem is brought from SL-BSR, so it is not expected to be discussed in IIOT WI.

⇨ RAN2 understands possible problem described by OPPO.

⇨ Offline discussion#809 (To discuss way-forward, i) revert WA and have fixed prioritization rule between UL-BSR and SL-BSR or ii) introduced enhancement to resolve the issue while keeping the WA) (OPPO, R2-1914141)

Proposal 4 For prioritization between SL-TX and SL-triggered UL-TX, it is based on direct comparison between associated LCH priority. RAN2 further discuss which UL-TX (i.e., SR, BSR) needs to considered for prioritization between SL-TX and SL-triggered UL-TX. FFS on other MAC CEs.

⇨ Include proposal4 into offline discussion#809.

R2-1914141 WF on flexible BSR OPPO

Proposal 1: If SL-BSR is prioritized, and if the UL-grant size is not enough to carry "the BS of all prioritized SL-BSR entries + UL-BSR", transmit SL-BSR. Otherwise, rely on legacy behavior.

⇨ Agreed.

Proposal 2: The rule for UL-data/SL-data prioritization is reused for defining prioritized SL-BSR/UL-BSR.

⇨ Agreed.

Agreements on flexible BSR:
1: If SL-BSR is prioritized, and if the UL-grant size is not enough to carry "the BS of all prioritized SL-BSR entries + UL-BSR", transmit SL-BSR. Otherwise, rely on legacy behavior.
2: The rule for UL-data/SL-data prioritization is reused for defining prioritized SL-BSR/UL-BSR.

R2-1912380 Discussion on UL and SL prioritisation ZTE Corporation, Sanechips discussion

Proposal 4: For LTE UL and NR SL prioritization, it is suggested to configure a threshold of NR sidelink logical channel priority value for the eNB.

Proposal 5: For NR UL and LTE SL prioritization, a new threshold of NR UL logical channel priority value can be configured by gNB. Then if the value of the highest priority of the NR UL logical channel(s) in the UL MAC PDU is lower than the threshold, the NR UL Tx is prioritized, otherwise, the UE uses LTE solution of comparing the SL PPPP with PPPP threshold.

Proposal 6: It is suggested that NR SL and LTE SL prioritization depends on UE implementation.

Proposal 7: If there is necessity of MCG-SL/SCG-UL prioritization, the MCG UL/SL prioritization mechanism can be reused for the MCG-SL/SCG-UL prioritization if SCG UL TX overlaps in time domain with SL TX.

[Intel]: We have sent LS to RAN1/4 to ask the scenarios and we have not received any response yet. Can we decide solution w/o response LS on the scenarios? [Ericsson]: Agree, should wait for response LS.

⇨ First we will wait for RAN1/4 response LS.

R2-1913711 Remaining issue on sidelink LCP procedure Huawei, HiSilicon discussion Rel-16 5G_V2X_NRSL-Core

Proposal 1: UE in MAC may select the destination and cast type associated with the highest SL LCH priority for a new transmission. Then only the data of the SL LCHs belonging to the selected destination and cast type can be multiplexed into the MAC PDU to be transmitted.

[LG]: Is the proposal to include cast type into SCI? [Huawei]: Yes, original intention was.

⇨ Agreed.

Proposal 4: When an SL grant is indicated as “HARQ enabled”, at least SL LCHs with the LCP restriction of “HARQ enabled” match the grant and can be selected for transmission. FFS whether SL LCHs with “HARQ disabled” configured can be selected as well.Proposal 4a: When an SL grant is “HARQ disabled”, only SL LCHs with “HARQ disabled” match the grant and can be selected for transmission.

[ZTE]: What is RAN1 status? Packets with HARQ enabled and disabled can be sent over an SL grant? [LG]: Should wait for RAN1 progress. [Apple, Intel]: It does not make a sense to mux packets with HARQ enabled and disabled.

Proposal 4: LCP will take HARQ A/N enabled/disabled into account, e.g. packet with HARQ enabled will be multiplexed only with packets with HARQ enabled.

⇨ Agreed.

Proposal 6: For the LCP restriction on Groupcast HARQ option1/2, the MAC needs to select the matched DSTs, if it is agreed to be configured at DST level, but to select the matched SL LCHs, if it is agreed to be configured at LCH level.

[OPPO]: HARQ option1/2 is more group specific.

⇨ Wait for SA2 response LS first.

Proposal 12: For Sidelink unicast, data of different destinations is not multiplexed into the same MAC PDU.

⇨ Agreed.

Agreements on LCP:
1: UE in MAC may select the destination and cast type associated with the highest SL LCH priority for a new transmission. Then only the data of the SL LCHs belonging to the selected destination and cast type can be multiplexed into the MAC PDU to be transmitted.
2: LCP will take HARQ A/N enabled/disabled into account, e.g. packet with HARQ enabled will be multiplexed only with packets with HARQ enabled.
3: For Sidelink unicast, data of different destinations is not multiplexed into the same MAC PDU.

R2-1912688 SL LCP procedure considering the MCR requirements Lenovo, Motorola Mobility
discussion Rel-16 5G_V2X_NRSL-Core R2-1910088

Proposal 1: RAN2 discuss and choose between the two approaches to select an MCR associated with a MAC TB:

- Option 1: a TB contains data of only the SL LCH(s) having the same/range of MCR (10)
- Option 2: a TB generation is done irrespective of the MCR and in accordance to the normal LCP procedure & MCR is selected afterwards as (e.g.) the highest among the constituents (10)
- Option3: Leave it to RAN1 (3)

[OPPO]: Support option 2 [LG]: If we have multiple single value, how to handle? [Xiaomi]: Support option 1 [Intel]: Isn’t option2 not aligned with previous RAN2 agreement, i.e. LCP will consider MCR. [Huawei, OPPO]: We didn’t make any agreement last meeting. For option1, granuality is [m] and with that granulaity, does it really make a sense? [Interdigital]: Option2 doesn’t sound natural considering Rx UEs should take MCR into account. [Apple]: Prefer option1. [Chair]: 10 companies support option1 while 10 companies support option2 (No consensus)

⇨ Noted.

Proposal 2: RAN2 discuss if packing more than one L2 destination in a MAC TB is sensible from meeting the latency (PDB) requirement and from resource efficiency perspective.

Proposal 3: MAC CE(s) have no associated MCR and can be multiplexed in a TB regardless of the “determined MCR” of a TB.

R2-1913329 Remaining issues on RLC AM and UM support in SL Ericsson discussion Rel-16 5G_V2X_NRSL-Core

Proposal 1 When an RRC_CONNECTED UE receives an RLC AM SLRB configuration message, it forwards to the serving gNB. It is up to gNB to accept or reject the RLC AM SLRB establishment.

Proposal 2 When an RRC_IDLE/INACTIVE/OoC UE receives an RLC AM SLRB configuration message, the UE decides to accept or reject the RLC AM SLRB establishment.

Proposal 3 RAN2 discusses if TX side and RX side of the same SL RLC AM entity can adopt different RLC SN lengths.

Proposal 4 The established SL RLC AM entity can operate as SL RLC UM if the corresponding peer UE RLC entity using the same LCID is UM.

Proposal 5 For SL groupcast/broadcast, only uni-directional RLC UM SLRB is supported.

⇨ Agreed.

Proposal 6 For SL unicast, both bi-directional and uni-directional RLC UM SLRB are supported.

[LG]: UE can have multiple RRC connections, so we can rely on uni-directional RLC UM. Seems bi-directional RLC UM not essential in Rel-16. [Huwei]: Depending on the criterion whether NW configures uni-direcational RLC UM or bi-directional RLC UM, it can be different, but do not see the real essential need for bi-directional RLC UM for SL in Rel-16.

⇨ FFS on SL unicast, i.e. whether uni-direcational RLC UM is only supported or not in Rel-16.

[Apple]: For SL unicast, we need bi-directional RLC UM for ROHC feedback. We may consider to reuse a mechanism to be introduced for RLC AM.

Proposal 7 RAN2 discusses if TX side and RX side of the same bi-directional SL RLC UM entity can adopt different RLC SN lengths.

Agreements on RLC UM: 1: For SL groupcast/broadcast, only uni-directional RLC UM SLRB is supported (i.e. no support of bi-directional RLC UM SLRB). FFS on SL unicast.

R2-1913713 Support of RLC AM for Sidelink unicast Huawei, HiSilicon discussion Rel-16 5G_V2X_NRSL-Core

Proposal 1: For the RLC SR transmission over a bi-directional SLRB, the UE which initiates the establishment of the SLRB signals the SLRB ID/LCID and the RLC mode used for this SLRB to its peer UE which in turn establishes a corresponding SLRB with these parameters for RLC SR transmission.

[Ericsson]: If two UEs belong to different gNB and each gNB configures RLC AM, does the UE have two RLC AM entities for the given destination id? [Ericsson]: In the case, NW can coordinate the configuration or the UE should report the received configuration to NW to make a decision. [Ericsson, Nokia]; If both gNBs configure different SLRB configurations to two UEs at the same time for the given destination id and the corresponding QoS profile, how to work? [Ericsson]: In the case, for example if RLC AM is configured for one UE and RLC UM is configured for peer UE, both UEs should be just operated based on the its configured RLC mode/parameters.

- Option1: Fix RLC mode according to LCID.
- Option2: Only RLC AM is used for unicast (i.e. RLC UM is not used at all for unicast)
- Option3: LCID is assigned by UE
- Option4: NW coordination (avoids the problem)

- Option5: SRLB establishment via PC5 fails.

⇨ [Offline discussion#811]: Discuss/select option(s) (including other possible problematic configurations) (Huawei, R2-1914142)

Proposal 2: The LCID is assigned by the UE for each configured SLRB.

Proposal 3: RAN2 to discuss whether the SLRB ID can be assigned by the UE itself for each configured SLBR.

Proposal 4: For the RLC SR transmission over a bi-directional SLRB, the UE in RRC_CONNECTED reports the SLRB ID/LCID of the bi-directional SLRB as well as the corresponding QoS profiles to the gNB in order to request the mac-LogicalChannelConfig for this SLRB, and it configures the parameters of mac-LogicalChannelConfig for this SLRB by following the configurations of gNB.

Proposal 5: For the RLC SR transmission over a bi-directional SLRB, the UE in RRC_IDLE or in OOC can configure the parameters of mac-LogicalChannelConfig by UE implementation.

Proposal 6: For the RLC SR transmission over a bi-directional SLRB, the sn_FieldLength as aligned between the two UEs via PC5 RRC is used as the field length of the ACK_SN and NACK_SN in the RLC SR.

Proposal 7: For the RLC SR transmission over a bi-directional SLRB, the value of t-StatusProhit is set by UE implementation.

Proposal 8: For the bi-directional SLRB used to support the RLC AM, its logical channel should be used for both transmission and reception, and it should be unique within one unicast connection, e.g. no more differentiation on the order of UE IDs included in the {SRC L2 ID, DST L2 ID} combination.

R2-1914142 [Offline-811] Support of SL RLC AM Huawei

Proposal 2: To do further down selection among option 1, 2, 5 below:

- Option 1: Specified the RLC mode of each SL LCID value
- Option 2: LCID is assigned and negotiated by the UEs themselves
- Option 5: Handle the collision as failure case

⇨ Noted. Option will be selected based on the proposal3 and further discussion in email. However new option is not invited unless the discussed option can solve the issue.

Proposal 3a: The peer UE reports the indication to the NW when the initiating UE has already established an SLRB and the peer UE does not have corresponding SLRB configuration. FFS the specific information reported to the NW.

Proposal 3b: The peer UE reports the indication to the NW, when the initiating UE informs the peer UE of the establishment of an SLRB and the peer UE does not have corresponding SLRB configuration. FFS the specific information reported to the NW.

✉ **[107bis#96][V2X] RLC AM mismatch (Huawei)**
Intended outcome: Report for next meeting, discuss the RLC AM mismatch issues and decide solution.
Deadline: Next Meeting

R2-1912068	Discussion on RLC mode configuration collision	OPPO	discussion	5G_V2X_NRSL-Core
R2-1912065	Discussion on SL capability signaling for Uu-RRC	OPPO	discussion	5G_V2X_NRSL-Core
R2-1912066	Left issues on SIB and cell reselection for NR-V2X	OPPO	discussion	5G_V2X_NRSL-Core
R2-1912067	Discussion on SL-related Uu-RRC messages	OPPO	discussion	5G_V2X_NRSL-Core
R2-1912069	Left issues on RLC, PDCP and SDAP for NR-V2X	OPPO	discussion	5G_V2X_NRSL-Core
R2-1912070	Left issues on MAC for NR-V2X	OPPO	discussion	5G_V2X_NRSL-Core

=> Revised in R2-1913941

R2-1913941 Left issues on MAC for NR-V2X OPPO discussion 5G_V2X_NRSL-Core

R2-1912072 [DRAFT] LS on HARQ option for group-cast OPPO LS out 5G_V2X_NRSL-Core To:SA2 Cc:RAN1

R2-1912165 Remaining Issues on PDCP CATT discussion Rel-16 5G_V2X_NRSL-Core

R2-1912166 Resource allocation mode configuration CATT discussion Rel-16 5G_V2X_NRSL-Core

R2-1912167 Further discussion on LCP procedure CATT discussion Rel-16 5G_V2X_NRSL-Core

R2-1912169 Prioritization between UL and SL for NR V2X CATT discussion Rel-16 5G_V2X_NRSL-Core

R2-1912171 Configuration Procedure of the Bi-directional RLC AM SLRB CATT discussion Rel-16 5G_V2X_NRSL-Core

R2-1912231 Discussion on SLRB configuration alignment Spreadtrum Communications discussion

R2-1912234 Logical channel prioritization Consideration Spreadtrum Communications discussion

R2-1912253 Left Issues on NR SL RLC and PDCP vivo discussion

R2-1912254 Uplink and Sidelink transmission prioritization in NR V2X vivo discussion R2-1910215

R2-1912255 Indication and resource configuration on HARQ enable disable vivo discussion

R2-1912381 Consideration on NR V2X CBR ZTE Corporation, Sanechips discussion

R2-1912382 Discussion on left issue in NR V2X PDCP ZTE Corporation, Sanechips discussion

R2-1912383 Left issues for MAC in NR V2X ZTE Corporation, Sanechips discussion

R2-1912384 Considerations on sidelink RLC ZTE Corporation, Sanechips discussion

R2-1912387 Discussion on SDAP issues ZTE Corporation, Sanechips discussion

R2-1912388 Consideration on sidelink RLM management ZTE Corporation, Sanechips discussion

R2-1912389 Consideration on exceptional resource pool and system information acquisition ZTE Corporation, Sanechips discussion

R2-1912391 SLRB maintenance during RRC state transition ZTE Corporation, Sanechips discussion

R2-1912435 RRC Connection Initiation Trigger for V2X Sidelink Communication Samsung Electronics Co., Ltd discussion Rel-16 5G_V2X_NRSL-Core

R2-1912443 Discussion on Sidelink UE Information Initiation Trigger for NR V2X Sidelink Communication Samsung Electronics Co., Ltd discussion Rel-16 5G_V2X_NRSL-Core R2-1907966

R2-1912444 Interaction between RRC Connection Resume Condition and RNAU for NR V2X SL Communication Samsung Electronics Co., Ltd discussion Rel-16 5G_V2X_NRSL-Core R2-1911328

R2-1912620 Remaining issues for mode1 and 2 operation Intel Corporation discussion Rel-16 5G_V2X_NRSL-Core

R2-1912621 NR UL SL prioritization aspects Intel Corporation discussion Rel-16 5G_V2X_NRSL-Core

R2-1912628 Sidelink and Uplink Prioritization Samsung discussion Rel-16 5G_V2X_NRSL-Core R2-1911105

R2-1912629 Congestion control in NR-V2X Samsung discussion Rel-16 5G_V2X_NRSL-Core R2-1911120

R2-1912686 SL HARQ protocol operation Lenovo, Motorola Mobility discussion Rel-16 5G_V2X_NRSL-Core

R2-1912790 Remaining aspects on SL PDCP Intel Corporation discussion Rel-16 5G_V2X_NRSL-Core

R2-1912792 Need for SL RLC re-establishment Intel Corporation discussion Rel-16 5G_V2X_NRSL-Core

R2-1912804 Discussion on resource allocation Beijing Xiaomi Software Tech discussion

R2-1912805 Discussion on sidelink admission control Beijing Xiaomi Software Tech discussion

R2-1912820 Validity areas based on cell lists MediaTek Inc. discussion Rel-16 5G_V2X_NRSL-Core

R2-1912869 RAN2 Aspects of HARQ for NR V2X InterDigital discussion Rel-16 5G_V2X_NRSL-Core

R2-1912870 LCP for NR V2X InterDigital discussion Rel-16 5G_V2X_NRSL-Core
R2-1912871 Remaining Aspects of UL/SL Prioritization InterDigital discussion Rel-16 5G_V2X_NRSL-Core
R2-1912913 Remaining issue for prioritization for NR V2X Lenovo, Motorola Mobility discussion Rel-16
R2-1913146 Even further views on NR V2X System Information Nokia, Nokia Shanghai Bell discussion Rel-16 5G_V2X_NRSL-Core R2-1909279
R2-1913147 Unresolved issues on SL and UL prioritization Nokia, Nokia Shanghai Bell discussion Rel-16 5G_V2X_NRSL-Core
R2-1913148 On NR V2X Sidelink transmissions during Handover or Uu PHY layer problems Nokia, Nokia Shanghai Bell discussion Rel-16 5G_V2X_NRSL-Core
R2-1913235 Prioritization between NR-UL and NR-SL MediaTek Inc. discussion Rel-16 5G_V2X_NRSL-Core
R2-1913236 Remaining issues of SL LCP MediaTek Inc. discussion Rel-16 5G_V2X_NRSL-Core R2-1911127
R2-1913274 Resource Pool Configuration LG Electronics Inc. discussion Rel-16
R2-1913324 Discussion on SL information reporting over Uu Ericsson discussion Rel-16 5G_V2X_NRSL-Core
R2-1913327 Support on HARQ procedure over sidelink Ericsson discussion Rel-16 5G_V2X_NRSL-Core
R2-1913332 Discussion on SL AS configuration request over NR Uu Ericsson discussion Rel-16 5G_V2X_NRSL-Core R2-1910132
R2-1913334 Handling of SL in Uu RRC state transitions Ericsson discussion Rel-16 5G_V2X_NRSL-Core R2-1910135
R2-1913494 Discussion on SDAP protocol for NR V2X Apple discussion Rel-16 5G_V2X_NRSL-Core R2-1910201
R2-1913496 Discussion on remaining issues on HARQ feedback Apple discussion Rel-16 5G_V2X_NRSL-Core
R2-1913497 Draft LS on Support HARQ feedback design for SL groupcast Apple LS out Rel-16 5G_V2X_NRSL-Core To:SA2 Cc:RAN1
R2-1913512 Inter-RAT resource allocation in NR V2X Qualcomm Incorporated discussion Rel-16 5G_V2X_NRSL-Core R2-1910888
R2-1913595 PC5 groupcast handling Qualcomm Incorporated discussion Rel-16
R2-1913705 Identifier assignment to enable Option2 groupcast HARQ Huawei, HiSilicon discussion Rel-16 5G_V2X_NRSL-Core R2-1911068
R2-1913706 Discussion on related aspects of system information Huawei, HiSilicon discussion Rel-16 5G_V2X_NRSL-Core R2-1911093
R2-1913709 Further discussion on NR SL and NR UL prioritization Huawei, HiSilicon discussion Rel-16 5G_V2X_NRSL-Core
R2-1913767 Discussion on SCCH configuration ASUSTeK discussion Rel-16 5G_V2X_NRSL-Core R2-1911221
R2-1913768 Discussion on handling multiple SL communication ASUSTeK discussion Rel-16 5G_V2X_NRSL-Core
R2-1913778 Discussion on groupcast HARQ in NR SL LG Electronics Inc. discussion Rel-16 5G_V2X_NRSL
R2-1913779 Discussion on HARQ enable and disable LG Electronics Inc. discussion Rel-16 5G_V2X_NRSL
R2-1913780 Discussion on measurement and report in NR SL LG Electronics Inc. discussion Rel-16 5G_V2X_NRSL
R2-1913808 Remaining issues in SDAP layer MediaTek Inc. discussion Rel-16
R2-1913886 Discussion on assistance information for resource allocation in NR SL LG Electronics Inc. discussion Rel-16 5G_V2X_NRSL-Core

6.4.3 L2/3 protocols for mode 1 resource allocation

Including control and user plane aspects in order to support mode 1 (e.g. RRC procedures, information to be sent to NW/UE, UE behaviours in CP and/or UP, etc.). Note cross-RAT mode 1 resource scheduling is discussed in 6.4.7.

R2-1912168 Leftover issues for sidelink configured grant CATT discussion Rel-16 5G_V2X_NRSL-Core

R2-1912173 Left Issues of BSR/SR CATT discussion Rel-16 5G_V2X_NRSL-Core

R2-1912175 Type 1 Sidelink Configured Grant Validity Time CATT discussion Rel-16 5G_V2X_NRSL-Core

R2-1912256 Discussion on SR and BSR vivo discussion

R2-1912257 Discussion on Truncated Sidelink BSR vivo discussion R2-1910227

R2-1912258 Remaining issues on sidelink configured grant vivo discussion R2-1910211

R2-1912379 Consideration on mode1 resource allocation ZTE Corporation, Sanechips discussion

R2-1912434 Impact of Mode 1 Resource Allocation on Uu BWP Operation Samsung Electronics Co., Ltd discussion Rel-16 5G_V2X_NRSL-Core

R2-1912650 Resource Pool Sharing between Mode 1 and Mode 2 UEs Fraunhofer HHI, Fraunhofer IIS discussion R2-1910534

R2-1912687 SR trigger for NR SL Lenovo, Motorola Mobility discussion Rel-16 5G_V2X_NRSL-Core

R2-1912806 Discussion on BSR prioritization Beijing Xiaomi Software Tech discussion

R2-1912872 Multiple SL Configured Grants and UE Assistance InterDigital discussion Rel-16 5G_V2X_NRSL-Core

R2-1913164 Discussion on sidelink SR trigger Fujitsu discussion Rel-16 5G_V2X_NRSL-Core

R2-1913237 On SL configured grant MediaTek Inc. discussion Rel-16 5G_V2X_NRSL-Core R2-1911128

R2-1913325 Discussion on SL mode 1 left issues Ericsson discussion Rel-16 5G_V2X_NRSL-Core

R2-1913495 Discussion on prioritization between SL BSR and UL BSR Apple, OPPO discussion Rel-16 5G_V2X_NRSL-Core

R2-1913511 Discussion on mode 1 resource allocation Qualcomm Incorporated discussion Rel-16 5G_V2X_NRSL-Core R2-1910890

R2-1913702 Discussion on Sidelink Configured Grant support Huawei, HiSilicon discussion Rel-16 5G_V2X_NRSL-Core R2-1911072

R2-1913707 Discussion on remaining issues of SR and BSR for SL Mode 1 Huawei, HiSilicon discussion Rel-16 5G_V2X_NRSL-Core

R2-1913769 Discussion on resource allocation for sidelink HARQ ACK/NACK report ASUSTeK discussion Rel-16 5G_V2X_NRSL-Core R2-1911223

R2-1913781 Discussion on remaining issues of mode 1 operation LG Electronics Inc. discussion Rel-16 5G_V2X_NRSL

R2-1913868 Sidelink HARQ retransmission in mode 1 ITL discussion R2-1911411

6.4.4 L2/3 protocols for mode 2 resource allocation

Including control and user plane aspects in order to support mode 2 (e.g. RRC procedures, information to be sent to NW/UE, UE behaviours in CP and/or UP, etc.). Note cross-RAT mode 2 resource configuration is discussed in 6.4.7.

R2-1912163 Resource (Re-) selection function in NR V2X Sidelink CATT discussion Rel-16 5G_V2X_NRSL-Core

R2-1912622 On admission/congestion control Intel Corporation discussion Rel-16 5G_V2X_NRSL-Core

R2-1912630 Discussion on V2X specific validity area Samsung discussion Rel-16 5G_V2X_NRSL-Core R2-1911102

R2-1912651 Resource Allocation for Mode 2 NR V2X Fraunhofer HHI, Fraunhofer IIS discussion R2-1910536

R2-1912868 Considerations for Geographical Zone Design for NR V2X InterDigital discussion Rel-16 5G_V2X_NRSL-Core R2-1909585

R2-1912914 Considerations on QoS based resource pool for NR V2X Lenovo, Motorola Mobility discussion Rel-16

R2-1913275 NR V2X System Information Aspects LG Electronics Inc. discussion Rel-16 R2-1909838

R2-1913323 Discussion on SL Mode 2 left issues Ericsson discussion Rel-16 5G_V2X_NRSL-Core

6.4.5 PC5 RRC procedures and information

Including output of email discussion [107#75][NR/V2X] RLF (Ericsson), identification of the required PC5 RRC procedures, information to be sent to peer UE, UE behaviours, relation with the PC5-S procedures, PC5 RRC security aspects, etc.

R2-1913328 Summary of email discussion [107#75][NR/V2X] RLF Ericsson discussion Rel-16 5G_V2X_NRSL-Core

Proposal 1 In case of SL RLC AM, RLF declaration is triggered by indication from RLC that the maximum number of retransmissions has been reached

⇨ Agreed.

Proposal 2 RLF triggering condition based on indication by physical layer is supported (pending RAN1/RAN4 progresses on the topic).

⇨ Agreed.

Proposal 3 The RLM/RLF procedure only apply to NR SL unicast.

⇨ Agreed.

Proposal 4 RAN2 to agree on one of the following options regarding the UE behavior in case SL RLF is detected for RRC_INACTIVE/RRC_IDLE/Out-of-coverage UEs:

a. In case of RRC_CONNECTED/INACTIVE/RRC_IDLE/Out-of-coverage UEs, upon SL RLF declaration (e.g., expiring of timer T310) the UE releases the PC5-RRC connection immediately and sends an indication to upper layers.

b. In case of RRC_INACTIVE/RRC_IDLE/Out-of-coverage UEs, upon SL RLF declaration (e.g., expiring of timer T310) the UE continue to monitor the SL channel based on a new timer and if no recovery happens then the upper layers are informed with an indication.

c. In case of RRC_INACTIVE/RRC_IDLE/Out-of-coverage UEs, upon SL RLF declaration (e.g., expiring of timer T310) the UE try to perform resource reselection and if this fails, the upper layers are informed with an indication.

[OPPO, Ericsson, ZTE, MediaTek, Intel, Samsung, Qualcomm, Interdigital]: Option1 is preferred. New timer can cover option b) in principle (e.g. by setting the new timer to long value). [Xiaomi]: Option b) actually means there is no AS-level action until upper layer informs unicast link release. [ZTE]: With option b), the UE just continue sending/receiving the packets even though they can not be actually done in RLF. [LG]: Option b) is preferred. [Huawei]: Option c) is preferred.

⇨ Option a) is agreed.

Proposal 5 For RRC_CONNECTED UEs, upon SL RLF declaration (e.g., expiring of T310), the UE informs NW via Sidelink UE Information. FFS if we need explicit failure indication in Sidelink UE information or if it's enough for the UE to inform it by excluding the corresponding destination L2 id.

[Ericsson]: NW should be informed if SRLB is not used. [Qualcomm, Apple, Intel, Samsung, Nokia, ZTE]: Why not use SL UE information message? [LG]: Dependent on the contents, we can reuse SL UE information or new message. [Ericsson]: If we use Sidelink UE information, the overhead would be big (if full information is always sent). [OPPO]: The information in Sidelink UE

information is associated to BSR, so using Sidelink UE information sounds natural. [Ericsson]: It is ok to use Sidelink UE information, but to include all information in Sidelink UE information sounds not desirable. [Huawei]: It should be FFS whther to include full information or delta information only. [Samsung]: Without explicit failure indication, it still works.

⇨ Agreed.

Proposal 6 FFS whether available measurements and destination L2 ID are also included.

⇨ Measured results is not included in Sidelink UE Information at RLF.

Proposal 7 A new timer (e.g., similar to T310) is specified for SL RLF handling (pending RAN1/RAN4 progresses on the topic).

⇨ Agreed.

Proposal 8 RAN2 working assumption: Upon the PC5-RRC connection release, the UE performs the following actions:

a. Reset MAC;

b. Stop relevant timers specific for sidelink (e.g., new timer for SL RLF handling if agreed);

c. Discard any SL UE context, if any;

d. Discard any security key configured specific for SL, if any;

e. Release all SL radio resources, including release of the RLC entity, the MAC configuration and the associated PDCP entity and SDAP for all established SLRBs;

f. Indicate the release of the PC5-RRC connection to upper layers (e.g. PC5-S entity) together with the release cause.

[ZTE, Vivo]: “Reset MAC” is not clear. Do we reset whole MAC entity when RLF is declared for the given destination L2 id?

Proposal 9 Upon receiving a SL failure indication by the UE, the network does not release the PC5-RRC connection via dedicated signaling. FFS whether the network is allowed to release the PC5-RRC connection for other purpose that are not RLF.

[Ericsson, Interdigital]: Sounds not reasonable in that UE informs NW, but NW is not allowed to release the connection. [Huawei, LG]: Why we need different behavior for idle/inactive and connected? It would be desirable to have common solution.

Proposal 10 In the case of RRC_CONNECTED UEs, the PC5-RRC is not released autonomously by the UE.

Proposal 11 In the case of RRC_CONNECTED UEs, after indicating by upper layers to release the PC5-RRC connection, the UE informs the network via the SidelinkUEinformation message about the release (e.g., for resource handling purpose).

Proposal 12 No need to specify a release procedure over the PC5-RRC at least at RLF.

⇨ Agreed.

Agreements on SL RLM/RLF:

1: In case of SL RLC AM, RLF declaration is triggered by indication from RLC that the maximum number of retransmissions has been reached.
2: RLF triggering condition based on indication by physical layer is supported (pending RAN1/RAN4 progresses on the topic).
3: The RLM/RLF procedure only apply to NR SL unicast.
4: In case of RRC_CONNECTED/INACTIVE/RRC_IDLE/Out-of-coverage UEs, upon SL RLF declaration (e.g., expiring of timer T310) the UE releases the PC5-RRC connection immediately and sends an indication to upper layers.

5: For RRC_CONNECTED UEs, upon SL RLF declaration (e.g., expiring of T310), the UE informs NW via Sidelink UE Information. FFS if we need explicit failure indication in Sidelink UE information or if it's enough for the UE to inform it by excluding the corresponding destination L2 id.
6: Measured results is not included in Sidelink UE Information at RLF.
7: A new timer (e.g., similar to T310) is specified for SL RLF handling (pending RAN1/RAN4 progresses on the topic).
8: No need to specify a release procedure over the PC5-RRC at least at RLF.

⇨ [Offline discussion#810]: Will send LS to SA2 to inform RAN2 agreement to take into account in their work (Ericsson, R2-1914118)

R2-1914118 [DRAFT] LS on SL RLF handling Ericsson To: SA2

⇨ Approved in R2-1914149.

R2-1912815 Single vs. multiple PC5-RRC connection MediaTek Inc. discussion Rel-16 5G_V2X_NRSL-Core

Proposal 1: The PC5-RRC connection is a logical connection between a pair of source and destination L2IDs.

⇨ Agreed.

⇨ [Offline discussion#813]: Send LS to inform RAN2 agreement to RAN1/SA2 (Interdigital, R2-1914143)

Agreements on SL unicast PC5-RRC connection:
1: The PC5-RRC connection is a logical connection between a pair of source and destination L2IDs.

R2-1914143 [DRAFT] LS on Handling Multiple Unicast Links with Peer UE InterdigitalTo: RAN1, Cc:SA2

[Vivo]: Do we need to update "multiple unicast links" to "multiple PC5-RRC connections"? [MediaTek]: "unicast link" is used in SA2. [Interdigital]: Will ask Juha to send this LS to RAN1 as soon as possible.

⇨ Approved in R2-1914150 with the change on the last sentence into "As a consequence, there can be multiple PC5-RRC connections between a pair of UEs, and each PC5-RRC connection can have a different pair of source/destination L2 IDs."

R2-1912873 Handling Multiple Unicast Links in NR V2X InterDigital discussion. Rel-16 5G_V2X_NRSL-Core

Proposal 1: A UE sends the L2 source IDs associated with all ongoing unicast links in PC5-RRC after initiation of a new unicast link by upper layers. FFS which RRC message to use.

[Vivo, Qualcomm, ZTE]: Is there any security issue if the UE informs all ongoing unicast links? [Ericsson]: Ask if gNB can be aware of that inforamtion. [Intel]: If Rx UE receives ids for all ongoing unicast links (including actually for other UEs), how Rx UE can distinguish which one is mine and which one is not mine? [Interdigital]: Rx UE can be aware of it based on the previously recevied id information from peer UE. [Huawei]: Concerns the signaling overhead and do not see the essential need. [OPPO, Samsung, Apple]: Shares the view with Huawei. Also there should be other many impacts in RAN2 specifications if we go towards this direction. [Nokia, Intel, LG]: Considering it works with the pair of L2 ids, further enhancement can be considered in future.

⇨ Noted.

Proposal 2: When a UE has multiple unicast links with the same peer UE, the UE maintains the set of L2 source IDs and L2 destination IDs that are associated with the same peer UE as part of the SL UE context.

R2-1913710 Relationship between PC5-RRC connection and PC5-S connectionHuawei, HiSilicon discussion Rel-16 5G_V2X_NRSL-Core

Proposal 2: The explicit PC5-RRC connection establishment procedure is not needed.

⇨ Agreed.

Proposal 3: For a pair of UEs performing unicast communication, the PC5-S connections and the PC5-RRC connections are 1-to-1 mapping, i.e. each PC5-S connection is associated with a PC5-RRC connection (regardless of whether they are for the same UE or not).

⇨ Agreed.

Proposal 4a: PC5-RRC signaling exchange is started after PC5-S initial connection setup.

[OPPO]: Should it be related to security aspect? [Apple]: Agree with the proposal.

⇨ Agreed (can comeback if any security issue is clarified by SA3).

Proposal 4b: When PC5-S connection is released it informs RRC, the RRC releases the associated PC5-RRC connection and the corresponding SL SRB and SL DRB.

⇨ Agreed.

Proposal 5: Do not define PC5-RRC state for unicast operation.

[Apple]: Agree with the proposal. [Intel, Ericsson]: Is it natural to assume PC5-RRC is connected after PC5-S initial direct setup?

Proposal 6: One SL SRB is configured for each PC5 RRC connection, and a specified configuration is defined for the SL SRB. FFS on PC5-S.

[Apple]: Agree with the proposal. [LG]: First we may consider separate SRB for PC5-S.

Proposal 7: PC5-S messages are transmitted over the STCH.

Agreements on SL unicast PC5-RRC connection:
1: The explicit PC5-RRC connection establishment procedure is not needed.
2: For a pair of UEs performing unicast communication, the PC5-S connections and the PC5-RRC connections are 1-to-1 mapping, i.e. each PC5-S connection is associated with a PC5-RRC connection (regardless of whether they are for the same UE or not).
3: PC5-RRC signaling exchange is started after PC5-S initial connection setup. (Can comback with this direction if any security issue is clarified by SA3)
4: When PC5-S connection is released it informs RRC, the RRC releases the associated PC5-RRC connection and the corresponding SL SRB and SL DRB.

⇨ The above agreements are also included into LS to SA2/3 (R2-1914144)

R2-1913828 Delivery of PC5-S Signaling and PC5-RRC messages LG Electronics Inc. discussion Rel-16 5G_V2X_NRSL-Core R2-1910640

Proposal 1: The Sidelink Control Channel (SCCH) is used to carry PC5-S signaling.

[Samsung]: In LTE, PC5-S is carried over STCH, why we need different option for NR V2X? [LG]: The difference is we need SDAP for NR V2X. [Huawei]: If STCH configuration is specified, there would be no actual difference compared to LTE V2X since we do not need any mapping between PC5-S QoS and SLRB. [Huawei]: Prefer to use STCH for PC5-S. [ZTE]: Agree with the proposal. [Apple]: Is it related to SA3 security issues? [Samsung]: To reserve LCID would be required regardless of which channel (SCCH/STCH) to be used. [MediaTek]: Both can work and it seems modeling issue. Slightly prefer SCCH.

⇨ Agreed.

Proposal 2: The SL-SRB carrying PC5-S signaling is separated from the SL-SRB carrying PC5-RRC messages.

[OPPO]: SL-SRB0 is same or something different compared to Uu SRB1? [LG]: Besides priority and LCID, it would be same or similar. [Huawei]: Do we need more differentiation for the first PC5-S which is signaled via broadcast and other PC5-S signaled via unicast? [Ericsson]: Prefer single SRB regardless of PC5-S and PC5-RRC. [LG]: We do not need differentiation in logical channel point of view, i.e. PC5-S initial direct setup message can be signaled via SCCH. [ZTE]: Only the first PC5-S is signaled via broadcast.

⇨ Agreed.

Proposal 3: PC5-S message is not encapsulated into PC5-RRC message in NR Sidelink.

⇨ Agreed.

Proposal 4: Different SCCHs carrying PC5-S message and PC5-RRC message respectively can be multiplexed into one MAC PDU in NR Sidelink for the same destination, if needed, in the same way with multiplexing of different STCHs, i.e. based on LCID.

⇨ Agreed.

Proposal 5: SCCH and STCH can be multiplexed into one MAC PDU in NR Sidelink for the same destination, if needed, in the same way with multiplexing of STCHs, i.e. based on LCID.

⇨ Agreed.

Proposal 6: PC5-S is located on top of PDCP/RLC/MAC/PHY.

⇨ Agreed.

Proposal 7: Sends a LS to SA2, Cc: SA3 on RAN2 agreements.

⇨ Agreed.

Proposal 8: The logical channel priority of SCCH carrying a PC5-RRC message is specified as a fixed value in 38.331.

⇨ Agreed.

Proposal 9: The logical channel priority of SCCH carrying a PC5-S signaling is specified as a fixed value in 38.331.

[OPPO]: In Uu, there is difference in priority between SRB carrying NAS and SRB carrying RRC. [ZTE]: gNB may configure the priority for each case. [OPPO]: Configurable value is still allowed?

⇨ Agreed.

Proposal 10: UE determines whether or not to prioritize a PC5-RRC message over SL/UL transmissions based on the logical channel priority of SCCH carrying a PC5-RRC message.

Proposal 11: UE determines whether or not to prioritize a PC5-S signaling over SL/UL transmissions based on the logical channel priority of SCCH carrying a PC5-S signaling.

Proposal 12: A specified configuration is used for SCCH and specified in 38.331.

[OPPO]: For parameters required for both TX and RX, it is agreeable, but do we need it for TX or RX only parameters? [Samsung]: Do we need multiple specified configurations for each cast type? [OPPO]: How to handle the first PC5-S is FFS. [Huawei]: Why not just specify all parameters including TX only and RX only parameters? [ZTE]: Want to allow configurable parameters and can replace the default specified configuration.

⇨ Agreed.

Agreements on PC5-S and PC5-RRC:
1: The Sidelink Control Channel (SCCH) is used to carry PC5-S signaling.

2: The SL-SRB carrying PC5-S signaling is separated from the SL-SRB carrying PC5-RRC messages.
3: PC5-S message is not encapsulated into PC5-RRC message in NR Sidelink.
4: Different SCCHs carrying PC5-S message and PC5-RRC message respectively can be multiplexed into one MAC PDU in NR Sidelink for the same destination, if needed, in the same way with multiplexing of different STCHs, i.e. based on LCID.
5: SCCH and STCH can be multiplexed into one MAC PDU in NR Sidelink for the same destination, if needed, in the same way with multiplexing of STCHs, i.e. based on LCID.
6: PC5-S is located on top of PDCP/RLC/MAC/PHY.
7: The logical channel priority of SCCH carrying a PC5-RRC message is specified as a fixed value in 38.331.
8: The logical channel priority of SCCH carrying a PC5-S signaling is specified as a fixed value in 38.331.
9: A specified configuration is used for SCCH and specified in 38.331.

⇨ [Offline discussion#814]: LS to inform RAN2 agreements to SA2 (Cc:SA3) (LG, R2-1914144)

R2-1914144 [DRAFT] LS on PC5-S Signaling and PC5-RRC connection for NR sidelink communication LG
To: SA2, Cc: SA3

⇨ Approved in R2-1914151.

R2-1912439 Bi-directional UE capability transfer procedure for NR V2X unicast Samsung Electronics Co., Ltd discussion Rel-16 5G_V2X_NRSL-Core R2-1911321

Proposal 1: RAN2 is asked to down-select either one-way procedure or two-way procedure for capability transfer in SL unicast regardless of uni-directional and/or bi-directional SL traffic.

Proposal 2: Two-way procedure is only used for capability transfer in SL unicast.

[MediaTek, Intel, Nokia, Ericsson, Vivo]: Agree with the proposal.

⇨ Agreed.

Proposal 3: A UE can send Capability Enquiry message to request peer UE's capability along with its own capability information for SL unicast. When to include its own capabilities is up to UE implementation.

[Ericsson, Convida]: Agree with the proposal. [Nokia]: Including its own capabilities is optional or mandatory behavior? [Samsung]: Optional [Huawei]: In the case, should we specify the condition? [Ericsson]: It should be upto UE implementation. [Apple]: We may not need to include its own capabilities in enquiry.

⇨ Agreed.

Proposal 4: Any UE can intiate two-way procedure for capability transfer in SL unicast, if needed.

Agreements on UE capability transfer:
1: Two-way procedure is only used for capability transfer in SL unicast.
2: A UE can send Capability Enquiry message to request peer UE's capability along with its own capability information for SL unicast. When to include its own capabilities is up to UE implementation.

R2-1912075 Left issues on PC5-RRC based capability transfer procedure OPPO discussion 5G_V2X_NRSL-Core

Proposal 4 RAN2 discuss whether the per-CC/band/band-combination sidelink capability is to be contained in PC5 RRC capability message.

[Ericsson, Nokia, ZTE]: We may have clearer picture once we get detailed capability information from RAN1.

Proposal 5 If RAN2 agrees to introduce per-CC/band/band-combination sidelink capability in PC5-RRC capability message, RAN2 further discuss how to handle the change of per-CC/band/band-combination sidelink capability due to the change of uplink/downlink capability.

R2-1912073 Left issues on PC5-RRC based AS layer configuration procedure OPPO discussion 5G_V2X_NRSL-Core

R2-1912074 Left issues on PC5-S impact on AS-layer OPPO discussion 5G_V2X_NRSL-Core

R2-1912078 Miscellaneous issues on PC5-RRC OPPO discussion 5G_V2X_NRSL-Core

R2-1912161 Discussion on unicast connection setup procedure CATT discussion Rel-16 5G_V2X_NRSL-Core

R2-1912162 RLM / RLF procedure in NR V2X Sidelink CATT discussion Rel-16 5G_V2X_NRSL-Core

R2-1912230 Discussion on capability transfer procedure for NR V2X Spreadtrum Communications discussion

R2-1912259 Left issues for PC5-S messages vivo discussion

R2-1912260 Discussion on sideink radio link management on TX and RX UE vivo discussion R2-1910212

R2-1912261 Remaining issues on PC5-RRC message exchange vivo discussion R2-1910213

R2-1912262 UE ID across multiple PC5-S links vivo discussion R2-1910214

R2-1912385 Discussion on PC5 RRC procedure for unicast ZTE Corporation, Sanechips discussion

R2-1912420 Operation Principles of PC5 RRC Connection Futurewei discussion Rel-16 5G_V2X_NRSL-Core

R2-1912441 AS-layer configuration failure case in SL unicast Samsung Electronics Co., Ltd discussion Rel-16 5G_V2X_NRSL-Core R2-1911324

R2-1912442 Discussion on handling of PC5-S messages for NR V2X unicast Samsung Electronics Co., Ltd discussion Rel-16 5G_V2X_NRSL-Core R2-1911325

R2-1912445 Remaining Issues on SL RLM/RLF Declaration for NR V2X Unicast Samsung Electronics Co., Ltd discussion Rel-16 5G_V2X_NRSL-Core R2-1911329

R2-1912566 PC5-S and Identification on PC5 RRC and RRC Procedures Lenovo, Motorola Mobility discussion 5G_V2X_NRSL-Core

R2-1912567 RLM Procedure and RLF Recovery handling Lenovo, Motorola Mobility discussion 5G_V2X_NRSL-Core

R2-1912623 Remaining aspects on groupcast operation Intel Corporation discussion Rel-16 5G_V2X_NRSL-Core

R2-1912652 Resource Allocation Procedures for NR V2X Fraunhofer HHI, Fraunhofer IIS discussion R2-1910537

R2-1912793 PC5 RRC procedure details for NR V2X Intel Corporation discussion Rel-16 5G_V2X_NRSL-Core

R2-1912813 Support (or not) of PC5-RRC for groupcast MediaTek Inc. discussion Rel-16 5G_V2X_NRSL-Core

R2-1912814 Contents and handling of PC5-RRC configuration MediaTek Inc. discussion Rel-16 5G_V2X_NRSL-Core

R2-1912817 RLM with aperiodic reference signals MediaTek Inc. discussion Rel-16 5G_V2X_NRSL-Core

R2-1912819 RLM and state modelling based on PC5-S connection MediaTek Inc. discussion Rel-16 5G_V2X_NRSL-Core

R2-1912874 RLM/RLF for NR V2X InterDigital discussion Rel-16 5G_V2X_NRSL-Core

R2-1912876 Draft LS on Handling of Multiple Unicast Links InterDigital LS out Rel-16 5G_V2X_NRSL-Core To:RAN1 Cc:SA2

R2-1913149 On PC5 capability transfer and link management Nokia, Nokia Shanghai Bell discussion Rel-16 5G_V2X_NRSL-Core R2-1909283

R2-1913165 RLM/RLF for unicast in NR V2X Fujitsu discussion Rel-16 5G_V2X_NRSL-Core

R2-1913321 Discussion on SL link management Ericsson discussion Rel-16 5G_V2X_NRSL-Core

R2-1913333 Handling of capability transfer in sidelink Ericsson discussion Rel-16 5G_V2X_NRSL-Core R2-1910134

R2-1913378 PC5 RRC procedure Apple discussion Rel-16 FS_NR_V2X

R2-1913510 PC5-RRC and PC5-S interactions and their security in NR V2X Qualcomm Incorporated discussion Rel-16 5G_V2X_NRSL-Core R2-1910831

R2-1913660 PC5-RRC state considerations Kyocera discussion

R2-1913661 PC5 L2/L3 protocols for unicast and groupcast Kyocera discussion

R2-1913665 SL RLF handling Qualcomm Incorporated discussion Rel-16

R2-1913703 Further details of UE assistance information procedure for NR SL Huawei, HiSilicon discussion Rel-16 5G_V2X_NRSL-Core R2-1911166

R2-1913708 Further details of Uu RRC procedures for sidelink Huawei, HiSilicon discussion Rel-16 5G_V2X_NRSL-Core

R2-1913770 Discussion on sidelink RLM indication ASUSTeK discussion Rel-16 5G_V2X_NRSL-Core

R2-1913829 Proposed LS on PC5-S Signaling for NR Sidelink LG Electronics Inc. LS out Rel-16 5G_V2X_NRSL-Core R2-1910641 To:SA2

R2-1913830 PC5-RRC connection and procedures with PC5-S and Uu RRC LG Electronics Inc. discussion Rel-16 5G_V2X_NRSL-Core

R2-1913884 Remaining issue on PC5 RLM/RLF LG Electronics Inc. discussion Rel-16 5G_V2X_NRSL-Core

R2-1913885 Discussion on PC5 RRC Connection LG Electronics Inc. discussion Rel-16 5G_V2X_NRSL-Core

6.4.6 L2/3 protocols for QoS support

Including output of email discussion [107#73][NR/V2X] SDAP (Vivo), [107#74][NR/V2X] QoS flows in SLRB (Apple), identification of the required L2/3 procedures, information to be sent NW/UE or peer UE, UE behaviours, etc.

R2-1913948 Report of 107#73 NR V2X SDAP(vivo) vivo discussion

Proposal 1: SDAP layer is supported for NR SL groupcast and broadcast

⇨ Agreed

Proposal 2: For NR SL unicast, groupcast and broadcast, PDU session concept/PDU session ID is not supported by SDAP sublayer

⇨ Agreed

Proposal 3: SDAP entity is configured per destination L2 id and cast type in the UE

[Apple, LG, Convida]: For the given destination L2 id, it is not feasible to have different source L2 id. [CATT, Huawei, Vivo]: Has different understanding to Apple and LG. It is feasible. Also we need to consider different cast type since for the different cast types, same destination L2 id can be used.

⇨ Agreed

Proposal 4: For NR SL unicast Tx and Rx SDAP entity, both establishment and release are requested by upper layers (i.e., follow NR Uu as baseline).

⇨ Agreed

Proposal 5: For NR SL groupcast and broadcast Tx SDAP entity, both establishment and release are requested by upper layers (i.e., follow NR Uu as baseline).

⇨ Agreed

Proposal 6a: Leave to the UE implemtation for NR SL groupcast and broadcast, when Rx SDAP entity is established.

[Chair]: Why not just to apply the same principle of Rx PDCP establishment? [Futurewei]: PDCP entity and SDAP entity are different in that PDCP entity is per SLRB but SDAP entity is cross PDCP entities.

Proposal 6b: RAN2 to discuss whether for NR SL groupcast and broadcast Rx SDAP entity is released up to UE implementation.

Proposal 7: RAN2 to discuss whether the following SDAP parameters should be contained in SLRB configuration

- Source Destination info (for the dedicated SLRB configurations):
- SDAP header
- MappedQoS-flowsToAdd
- MappedQoS-flowsTorelease

Proposal 8: For all casts, marking QoS flow ID in SDAP packets is supported

[OPPO]: In-order delivery can be supported like Uu DL, i.e. implementation option. Also it is not clear how to define RX UE side if we have marking QoS flow id. [Huawei]: For groupcast and broadcast, it does not work.

Proposal 9: For SL unicast, SDAP in-order delivery is supported when remapping between a QoS flow and a DRB occurs. FFS for SL groupcast and broadcast.

Proposal 10: SDAP-PDU with header is supported for all casts

Proposal 11: For all casts, RDI field is not supported in NR SL SDAP PDU header

⇨ Agreed.

Proposal 12: For all casts, QFI/PFI (PC5 Flow ID) field is supported in NR SL SDAP PDU header

Proposal 13: For all casts, D/C field is supported in NR SL SDAP PDU header

⇨ Offline discussion#807: discuss proposal8/9/11/12/13 (e.g. whether in-order delivery can be supported without marking QoS flow id in SDAP packets, whether QoS remapping needs to be considered and if so, marking QoS flow id is really required, how to define Rx UE side, etc.) (Vivo, R2-1914119)

Agreements on SL SDAP:
1: SDAP layer is supported for NR SL groupcast and broadcast.
2: For NR SL unicast, groupcast and broadcast, PDU session concept/PDU session ID is not supported by SDAP sublayer.
3: SDAP entity is configured per destination L2 id and cast type in the UE.
4: For NR SL unicast Tx and Rx SDAP entity, both establishment and release are requested by upper layers (i.e., follow NR Uu as baseline).
5: For NR SL groupcast and broadcast Tx SDAP entity, both establishment and release are requested by upper layers (i.e., follow NR Uu as baseline).
6: For all casts, RDI field is not supported in NR SL SDAP PDU header.

R2-1914119 Summary of RAN2#107bis Offline-807 Vivo

Proposal 1: For NR SL unicast:

i. In order delivery in case of remapping is achieved by using SDAP PDU with header (Using end marker).

⇨ Agreed.

ii. No enhancement for Rx behavior to be specified compared to Uu solution. FFS whether the Rx behavior is left to UE implementation.

⇨ Agreed.

Proposal 2: For NR SL groupcast and broadcast, in order delivery in case of remapping is achieved by Tx side implementation and only the SDAP PDU format without header will be used.

⇨ Agreed.

Proposal 3: For NR SL Unicast, QFI/PFI (PC5 Flow ID) field is supported in NR SL SDAP PDU header. Note: In Rel-16 in case this field is present, it is only used for QoS flow to SLRB remapping.

⇨ Agreed.

Proposal 4: For NR SL unicast D/C field is supported in NR SL SDAP PDU header

⇨ Agreed.

Agreements on SL SDAP:
1a: For NR SL unicast, in order delivery in case of remapping is achieved by using SDAP PDU with header (Using end marker).
1b: For NR SL unicast, no enhancement for Rx behavior to be specified compared to Uu solution. FFS whether the Rx behavior is left to UE implementation.
2: For NR SL groupcast and broadcast, in order delivery in case of remapping is achieved by Tx side implementation and only the SDAP PDU format without header will be used.
3: For NR SL Unicast, QFI/PFI (PC5 Flow ID) field is supported in NR SL SDAP PDU header. Note: In Rel-16 in case this field is present, it is only used for QoS flow to SLRB remapping.
4: For NR SL unicast D/C field is supported in NR SL SDAP PDU header.

R2-1913376 Report on [107#74] QoS flow in SLRB Apple discussion Rel-16 FS_NR_V2X Late

Proposal 1: Confirm the observation that based on SA2 progress, the NG-RAN has no knowledge about the PC5 QoS parameters of each PC5 QoS flow if UE does not report.

⇨ Agreed

Proposal 2: In order to let NG-RAN know about the QoS parameters of each QoS flow, for all cast types, UE is required to report the PC5 QoS parameters per QoS flow per destination per cast type.

⇨ Agreed

Proposal 3: For standardized PQI in UE report message, the following parameters should be included inside the PC5 QoS parameters.

- PQI: for unicast, broadcast and groupcast (Section 5.4.1.1.1. TS23.287)
- PC5 flow bit rates (GFBR/MFBR) for GBR QoS flows: for GBR QoS flows in unicast (Note 1 in Table 5.4.4-1 in TS23.287)
- Range: for groupcast (Section 5.4.1.1.1. TS23.287)

⇨ Agreed

Proposal 4: In RRCReconfiguration message, to avoid repeating the QoS parameters reported by UE, an ID can be used to represent the QoS profile or QoS flow mapped to the SLRB. The ID

used in RRCReconfiguration message should be the ID reported by the UE associating with the QoS profile.

⇨ Agreed

Proposal 5: To support non-standardized PC5 QoS characteristics, UE should report all the parameters listed as below.

1) Resource Type (GBR, Delay critical GBR or Non-GBR);
2) Priority Level;
3) Packet Delay Budget;
4) Packet Error Rate;
5) Averaging window (for GBR and Delay-critical GBR resource type only);
6) Maximum Data Burst Volume (for Delay-critical GBR resource type only).

⇨ Agreed

Proposal 6: For standardized PQI, the following parameters should be carried in SIB to describe the QoS flow carried inside the SLRB.

- PQI: for all cast types
- range: for groupcast

[Intel]: If PQI is non-standardized one, what should be UE behavior? [Apple]: Either to go to connected or to apply a kind of default configuration. [Interdigital]: Is it acceptable to apply default configuration for all non-standardized PQI? [ZTE]: How to signal range information? [Interdigital, Ericsson]: Better to ask SA2. [OPPO]: First wants to discuss possible value range in RAN2 and 38.331 rapporteur can provide candidate considering SA1 requirements.

⇨ Agreed.

Proposal 7: For standardized PQI, the following parameters should be carried in pre-configuration message to describe the QoS flow carried inside the SLRB.

- PQI (for all cast types)
- range (for groupcast)

⇨ Agreed.

Agreements on QoS information:

1: Confirm the observation that based on SA2 progress, the NG-RAN has no knowledge about the PC5 QoS parameters of each PC5 QoS flow if UE does not report.
2: In order to let NG-RAN know about the QoS parameters of each QoS flow, for all cast types, UE is required to report the PC5 QoS parameters per QoS flow per destination per cast type.
3: For standardized PQI in UE report message, the following parameters should be included inside the PC5 QoS parameters.
   - PQI: for unicast, broadcast and groupcast (Section 5.4.1.1.1. TS23.287)
   - PC5 flow bit rates (GFBR/MFBR) for GBR QoS flows: for GBR QoS flows in unicast (Note 1 in Table 5.4.4-1 in TS23.287)
   - Range: for groupcast (Section 5.4.1.1.1. TS23.287)
4: In RRCReconfiguration message, to avoid repeating the QoS parameters reported by UE, an ID can be used to represent the QoS profile or QoS flow mapped to the SLRB. The ID used in RRCReconfiguration message should be the ID reported by the UE associating with the QoS profile.
5: To support non-standardized PC5 QoS characteristics, UE should report all the parameters listed as below.
   - Resource Type (GBR, Delay critical GBR or Non-GBR)
   - Priority Level
   - Packet Delay Budget
   - Packet Error Rate
   - Averaging window (for GBR and Delay-critical GBR resource type only)
   - Maximum Data Burst Volume (for Delay-critical GBR resource type only)

6: For standardized PQI, the following parameters should be carried in SIB/preconfiguration to describe the QoS flow carried inside the SLRB.
- PQI (for all cast types)
- Range (for groupcast)

R2-1912170 SLRB configurations handling during UE states transition CATT discussion Rel-16 5G_V2X_NRSL-Core

Proposal 1: When UE performs state transition, the mapping between PC5 QoS profile and SLRB should follow the SLRB configurations of the new UE state. FFS for the UE behavior before the acquisition of new configuration.

[ZTE]: Until SLRB reconfiguration is completed, the old SLRB configuration may be continued for the service continuity. [Ericsson, ZTE]: We need to discuss case by case and from connected to idle, the UE may continue old SLRB configuration. [Intel, OPPO]: Do not see the need of different behavior case by case. [Intel]: Agree with the proposal.

⇨ Agreed.

Proposal 2: For SL Tx UE for all cast type, once UE performs the state transition, it should apply the SLRB remapping based on the SLRB configurations of the new UE state.

Proposal 3: For SL unicast, once Tx UE changes the SLRB configurations, it should inform the Rx UE and Rx UE can update the corresponding SLRB configurations once the end marker is received.

Proposal 4: For SL broadcast and groupcast, once Tx UE changes the SLRB configurations, it should send end marker to the Rx UE, once Rx UE receives the end marker. The Rx UE can release the old SLRBs and establish new SLRBs based on the newly received SL packet.

Agreements on SLRB configuration and UE state transition:
1: When UE performs state transition, the mapping between PC5 QoS profile and SLRB should follow the SLRB configurations of the new UE state. FFS for the UE behavior before the acquisition of new configuration.

R2-1912077 Discussion on congestion control and admission control OPPO discussion 5G_V2X_NRSL-Core

Proposal 1 Reuse LTE congestion control scheme as baseline, based on input of SL LCH priority and CBR. FFS on other input factor like range (based on further inputs).

Proposal 2 RAN2 does not purse admission control.

R2-1912877 Admission Control for NR SL InterDigital, Ericsson, MediaTek, CATT, ITL, Xiaomi, Fraunhofer, LG discussion Rel-16 5G_V2X_NRSL-Core

Proposal 1 SL QoS flow/SLRB level QoS management, i.e. admission control, is used for NR SL.

[OPPO]: What input should be considered in admission control? [Interdigital]: It is up to NW for the connected, for idle it would be based on CBR. [LG]: Latency requirement can be also considered as one of inputs. [Huawei, Nokia, Intel, Samsung, OPPO, ZTE]: Considering the limited time, it would be hard to introduce complicated admission control in Rel-16. [Apple, Nokia, Intel, Samsung, OPPO, ZTE]: Also just with the admission control based on CBR, not sure how much helpful/beneficial on top of congestion control based on CBR. [Samsung]: SLRB is configured by NW, which means some kind of admission control is still feasible.

- Need of admission control on top of congestion control
  - Yes (9)
  - No (12)

[Indigital]: Perhaps, we may continue the discussion since some companies consider it would be feasible by some manner. [Futurewei]: If QoS flow is not mapped to any SLRB, it goes to the default SLRB. [Ericsson]: NW is not forced to set SLRB configuration for all QoS flows.

⇨ No consenus on the need of admission control in Rel-16.

R2-1912076 Left issues on SLRB configuration for NR-V2X OPPO discussion 5G_V2X_NRSL-Core
R2-1912174 Admission Control for NR SL CATT discussion Rel-16 5G_V2X_NRSL-Core
R2-1912233 Discussion on communication range in V2X Spreadtrum Communications discussion
R2-1912263 Report of 107#73 NR V2X SDAP(vivo) vivo discussion
=> Revised in R2-1913948
R2-1912264 Left issues on SLRB configuration vivo discussion
R2-1912265 Admission and Congestion control in NR V2X vivo discussion R2-1910220
R2-1912266 Mode switch for QoS guarantee in NR V2X vivo discussion R2-1910221
R2-1912267 Remaining issues about NR SL QoS handling vivo discussion R2-1910226
R2-1912386 Discussion on remaining issues on SLRB parameters ZTE Corporation, Sanechips discussion
R2-1912440 Remaining Issues on Handling of SLRB configuration Samsung Electronics Co., Ltd discussion Rel-16 5G_V2X_NRSL-Core
R2-1912489 SLRB Reconfiguration Handling Samsung discussion Rel-16 5G_V2X_NRSL-Core
R2-1912562 Apparent contradiction in Zone Configuration Lenovo, Motorola Mobility discussion Rel-16 5G_V2X_NRSL-Core
R2-1912565 HARQ feedback impact on RAN2 Lenovo, Motorola Mobility discussion 5G_V2X_NRSL-Core
R2-1912631 Discussion on Default SLRB and HARQ configuration Samsung discussion Rel-16 5G_V2X_NRSL-Core R2-1911122
R2-1912647 SLRB configuration for NR V2X UE Lenovo, Motorola Mobility discussion Rel-16 R2-1910292
R2-1912648 Discussion on QoS management for NR V2X Lenovo, Motorola Mobility discussion Rel-16 R2-1910289
R2-1912702 Congestion Control in NR V2X Fraunhofer IIS, Fraunhofer HHI discussion
R2-1912878 QoS-Based SLRB Establishment Decision InterDigital discussion Rel-16 5G_V2X_NRSL-Core
R2-1913150 Network Based Monitoring and Reporting of QoS parameters for NR V2X Sidelink Nokia, Nokia Shanghai Bell discussion Rel-16 5G_V2X_NRSL-Core R2-1909284
R2-1913160 Mobility challenges for NR V2X platooning/groupcast Nokia, Nokia Shanghai Bell discussion Rel-16 5G_V2X_NRSL-Core R2-1909300
R2-1913208 Discussion on Groupcast and Broadcast QoS Report ITRI discussion
R2-1913276 SLRB Management in NR V2X LG Electronics Inc. discussion Rel-16
R2-1913320 Discussion on NR SL QoS management Ericsson discussion Rel-16 5G_V2X_NRSL-Core
R2-1913330 Discussion on NR SL lower layer procedures Ericsson discussion Rel-16 5G_V2X_NRSL-Core
R2-1913377 Discussion on QoS flow in SLRB Apple discussion Rel-16 FS_NR_V2X
R2-1913564 On SL HARQ configuration for NR V2X Intel Corporation discussion Rel-16 5G_V2X_NRSL-Core
R2-1913712 Remaining issues on SLRB configuration Huawei, HiSilicon discussion Rel-16 5G_V2X_NRSL-Core
R2-1913771 Discussion on requesting and releasing SLRB configuration ASUSTeK discussion Rel-16 5G_V2X_NRSL-Core R2-1911225
R2-1913807 Use of range parameter MediaTek Inc. discussion Rel-16
R2-1913867 Consideration on Default SLRB ITL discussion R2-1911423
R2-1913873 Remaining issue on NR SL QoS and SLRB configurations ITL discussion R2-1911420

6.4.7 L2/3 protocols for cross-RAT resource allocation

Including L2/3 aspects for i) NR sidelink mode 1 scheduling by LTE Uu, ii) NR sidelink mode 2 resource allocation by LTE Uu, iii) LTE sidelink mode 4 resource allocation by NR Uu, and iv) LTE sidelink mode 3 resource allocation by NR Uu

R2-1913704 Further discussion on inter-RAT resource allocation Huawei, HiSilicon discussion Rel-16 5G_V2X_NRSL-Core

Proposal 1: The UE judges the cell capabilities of V2X sidelink communication using the presence of LTE/NR V2X associated SIBs.

⇨ Agreed.

Proposal 2: In NR cell, NR SI including LTE V2X SI can be provided on-demand (like any other SI).

[Samsung]: It is clear on-demand is applied to any SI.

⇨ Agreed.

Proposal 3: RAN2 to discuss how to handle the case where the V2X SI is provided on-demand and the UE is not able to judge whether there is only anchor carrier configuration.

Proposal 4: The UE can use a preamble configuration to simultaneously request both LTE V2X SIBs (i.e. Systeminformationblocktype21 and Systeminformationblocktype26), regardless of whether they can be mapped to a SI message.

[Ericsson]: Both proposal3 and proposal4 should be discussed in the main session.

⇨ Noted for proposal3 and proposal4.

Proposal 5: LTE Sidelink UE information and LTE UE Assistance Information are defined as containers (OCTET STRING) in NR RRC.

⇨ Agreed.

Proposal 6: RAN2 to introduce two separate uplink messages for LTE and NR Sidelink UE Information.

[OPPO]: UplinkInformationTransferMRDC can be reused.

⇨ Can be discussed in 38.331 running CR.

Proposal 7: RAN2 to introduce new IE(s) for inter-RAT UE Assistance Information in LTE and NR UE Assistance Information messages separately.

⇨ Can be discussed in 38.331 running CR.

Proposal 8: The signaling used for eNB configuring NR mode 2 resource pool or SL type 1 configured grant will be defined as a container (OCTET STRING), and actual information is defined in NR RRC.

[Ericsson]: Does eNB generate NR message? [Huawei]: Yes

⇨ eNB/gNB can generate NR/LTE message.

⇨ Agreed.

Proposal 9: When there are carriers supporting LTE V2X SL only and those supporting NR V2X SL only (but no one supporting both), and if the UE is configured to perform V2X communication on both SL RATs, the UE may prioritize the carrier which supports the SL RAT required by the V2X services with a higher priority between LTE SL and NR SL.

Proposal 10: When there are more than one candidate cells that satisfy the cell reselection conditions, and at least one of them is within the validity area of the current resource pool provided by the SIB, the UE should reselect to a cell among the candidate cells having the same validity area.

Agreements on inter-RAT SL resource allocation:
1: The UE judges the cell capabilities of V2X sidelink communication using the presence of LTE/NR V2X associated SIBs.
2: In NR cell, NR SI including LTE V2X SI can be provided on-demand (like any other SI).
3: LTE Sidelink UE information and LTE UE Assistance Information are defined as containers (OCTET STRING) in NR RRC.
4: The signaling used for eNB configuring NR mode 2 resource pool or SL type 1 configured grant will be defined as a container (OCTET STRING), and actual information is defined in NR RRC.
5: eNB/gNB can generate NR/LTE message.

R2-1913322 Discussion on SL cross-RAT scheduling and configurations Ericsson discussion Rel-16 5G_V2X_NRSL-Core
R2-1912172 NR Uu controlling LTE sidelink SPS CATT discussion Rel-16 5G_V2X_NRSL-Core
R2-1912390 Consideration on NR V2X cross RAT support ZTE Corporation, Sanechips discussion
R2-1912563 BSR and SR reporting in Cross RAT V2X operation Lenovo, Motorola Mobility discussion Rel-16 5G_V2X_NRSL-Core
R2-1912564 Cross RAT SL Configuration Lenovo, Motorola Mobility discussion 5G_V2X_NRSL-Core
R2-1912624 Cross-RAT scheduling for NR V2X SL Intel Corporation discussion Rel-16 5G_V2X_NRSL-Core
R2-1913809 Inter-RAT BSR MediaTek Inc. discussion Rel-16

6.4.8 Others

Support of simultaneous configuration of mode1 and mode2 (we may need to wait for the complete design of mode1 and mode2), other working group procedures which require RAN2 discussion, etc.

R2-1912378 Discussion on multi-mode co-existence ZTE Corporation, Sanechips discussion
R2-1912568 Subtopics to be addressed in Sim M1M2 Lenovo, Motorola Mobility discussion 5G_V2X_NRSL-Core
R2-1912791 On the support of simultaneous configuration of mode1 and mode2 Intel Corporation discussion Rel-16 5G_V2X_NRSL-Core
R2-1912875 RAN2 Aspects of Simultaneous Configuration of Mode 1 and Mode 2 InterDigital discussion Rel-16 5G_V2X_NRSL-Core R2-1909591
R2-1913127 Discussion on SL radio link management Nokia, Nokia Shanghai Bell discussion 5G_V2X_NRSL-Core R2-1910031
R2-1913238 Support of simultaneous mode 1 and mode 2 MediaTek Inc. discussion Rel-16 5G_V2X_NRSL-Core
R2-1913277 Simultaneous Mode 1 and Mode 2 Configuration LG Electronics Inc. discussion Rel-16
R2-1913319 Inter-node resource coordination in NR SL Ericsson discussion Rel-16 5G_V2X_NRSL-Core
R2-1913498 UE Mobility for Simultaneous Mode 1 & Mode 2 configuration Apple discussion Rel-16 5G_V2X_NRSL-Core
R2-1913499 Resource allocations for UEs with simultaneous mode 1 & mode 2 configurations Apple discussion Rel-16 5G_V2X_NRSL-Core
R2-1913700 Discussion about mode coexistence for NR sidelink Huawei, HiSilicon discussion Rel-16 5G_V2X_NRSL-Core
R2-1913772 Discussion on association between sidelink data and resource allocation modes ASUSTeK discussion Rel-16 5G_V2X_NRSL-Core R2-1911226
R2-1913856 Considerations on simultaneous configuration of mode 1 and 2 ITL discussion Rel-16 R2-1911404
R2-1913943 Simultaneous use of mode 1 and mode 2 KT Corp. discussion R2-1910965

6.5 Optimisations on UE radio capability signalling

(RACS-RAN-Core; leading WG: RAN2; REL-16; started: Mar 19; target; Mar 20; WID: RP-191088). Documents in this agenda item will be handled in a break out session

Time budget: 0.5 TU

Tdoc Limitation: 2 tdocs

6.5.1 Organisational

Including incoming LSs, rapporteur inputs, running CRs, etc

R2-1912811 Work plan for RACS-RAN work item RACS-RAN-Core — MediaTek Inc., CATT — discussion — Rel-16
- ⇨ Noted

R2-1912005 LS on encoding of UE radio capabilities (C3-193147; contact: Qualcomm) — CT3 — LS in — Rel-16 RACS-RAN-Core — To:RAN2 — Cc:CT4, SA2
- ⇨ Noted

R2-1912807 Introduction of RACS [36.300] RACS-RAN-Core — MediaTek Inc. — draftCR — Rel-16 — 36.300 — 15.7.0 — B
- ⇨ Endorsed in principle

R2-1912808 Introduction of RACS [38.300] RACS-RAN-Core — MediaTek Inc. — draftCR — Rel-16 — 38.300 — 15.7.0 — B
- ⇨ Endorsed in principle

6.5.2 UE radio capability signalling using UE capability identity

Other aspects, if any, can also be covered here

Support of delta signalling

R2-1912809 Decision on support of delta signalling — MediaTek Inc. — discussion — Rel-16 — RACS-RAN-Core
- Mediatek thinks we need to take a decision
- Ericsson/Spreadtrum/Nokia/QC don't see the need for delta signalling. Mediatek still thinks there are use cases where delta signalling is needed. CATT thinks it's acceptable not to have this in rel-16, although they agree there would be some use cases. Samsung is also fine not to have this in Rel-16
- ⇨ Offline discussion 205 - LS to SA2 on No support of delta signalling (MediaTek)

Agreements:
1. Delta signalling is not supported in Rel-16
2. Send a LS to SA2 to inform them of our decision

R2-1914016 Draft LS to SA2 on No support of delta signalling — MediaTek Inc
- ⇨ LS approved in R2-1914022

R2-1914022 LS to SA2 on No support of delta signalling — MediaTek Inc
- ⇨ Approved unseen

RRC Stage 3 impacts?

R2-1912832 Remaining aspects on Capability ID — Ericsson — discussion — Rel-16 — RACS-RAN
- Regarding proposal 3, Mediatek wonders why CT3 needs this information, will this change what they do? Nokia agrees the use of the filter can be questionable.
- ⇨ No consensus to send this information to CT3
- Proposal 2 discussed together the next paper

R2-1912672 Consideration on UE radio capability ID signaling in inter-node RRC messages ZTE Corporation, Sanechips discussion Rel-16 RACS-RAN-Core
- Ericsson is fine with proposal 1, other aspects are up to RAN3.
- CATT agrees with observations 1 and 2.
- QC wonders how the capability ID is delivered to the RAN and how this is encoded.
- Ericsson agrees the capability ID needs to be exchanged over X2/Xn interface, but not within an RRC message
- Intel thinks we need to take care of backwards compatibility and RAN3 should first discuss this.
- CATT thinks there might be an issue due to the fact that the current fields for UE capability are mandatory

⇨ RAN2 understands the capability ID needs to be exchanged over X2/Xn interface.
⇨ Offline discussion 206 - Draft LS to RAN3 on exchange of Capability ID (Nokia)

Agreement:
1. Send an LS to RAN3 to ask them whether an X2/Xn solution would be sufficient or if we need to impact RRC

R2-1914017 Draft LS to RAN3 on exchange of Capability ID Nokia
⇨ LS approved in R2-1914023

R2-1914023 LS to RAN3 on exchange of Capability ID Nokia
⇨ Approved unseen

R2-1912673 Introduction of UE radio capability ID in inter-node RRC messages ZTE Corporation, Sanechips draftCR Rel-16 38.331 15.7.0 B RACS-RAN-Core

Association of PLMN assigned ID

R2-1912406 Remaining issues on UE capability ID Huawei, HiSilicon discussion Rel-16 RACS-RAN-Core

PLMN-wide filter

R2-1912206 Re-consideration on PLMN-wide Filter CATT discussion Rel-16 RACS-RAN-Core

R2-1912207 Draft LS on PLMN-wide Filter CATT LS out Rel-16 RACS-RAN-Core To:SA2 Cc:RAN3

Other aspects

R2-1912249 Some remaining issues on UE capability ID Spreadtrum Communications discussion R2-1909091

R2-1912250 Filter ID for the selection of UE capability ID Spreadtrum Communications discussion R2-1909090

6.5.3 Segmentation of UE radio capabilities

Stage 3 CR

R2-1912810 Introduction of UECapabilityInformation segmentation in 36.331 MediaTek Inc., CATT, Ericsson, Spreadtrum Communications, ZTE Corporation, Sanechips, OPPO, Qualcomm Incorporated draftCR Rel-16 36.331 15.7.0 B RACS-RAN-Core
- ZTE has a comment on the 38.331 CR endorsed last time: the segmentEndIndication should be optional.
- Mediatek confirms this is optional in this 36.331 CR
- remove the addition to the field description for UECapabilityInformation

⇨ endorsed in principle in R2-1914018 with the change above
⇨ update 38.331 CR correspondingly in R2-1914019

R2-1914018 Introduction of UECapabilityInformation segmentation in 36.331 MediaTek Inc., CATT, Ericsson, Spreadtrum Communications, ZTE Corporation, Sanechips, OPPO, Qualcomm Incorporated_
⇨ endorsed in principle

R2-1914019 Introduction of UECapabilityInformation segmentation in 38.331 ZTE Corporation
⇨ endorsed in principle (unseen)

RRC processing delay and other aspects

R2-1912407 Remaining issues on UE capability segmentation Huawei, HiSilicon discussion Rel-16 RACS-RAN-Core
- Discussed together with next paper

R2-1912831 Remaining issues for RRC Segmentation Ericsson discussion Rel-16 RACS-RAN
- Samsung has some sympathy for this but not ready to take a decision now
⇨ No agreement yet. Companies need more time to check. Come back in the future

R2-1912513 Further considerations for the segmented UECapabilityInformation Samsung discussion Rel-16 RACS-RAN-Core

6.6 Study on NR non-terrestrial network

(FS_NR_NTN_solutions; leading WG: RAN3; REL-16; started: Jun 18; target; Dec 19; SID: RP-190710). Documents in this agenda item will be handled in a break out session

Time budget: 0.5 TU

Tdoc Limitation: 6 tdocs

6.6.1 General

Rapporteur input

Including output of email discussion [107#61][NR/NTN] Rapporteur Running TP (Thales)

Contributions in this AI are reserved for WI rapporteur inputs and/or spec rapporteur inputs and do not count towards the tdoc limits.

R2-1913406 [107#61][NR/NTN] Rapporteur Running TP THALES pCR Rel-16 38.821 0.7.0 FS_NR_NTN_solutions Late
=> TP is revised R2-1913969

R2-1913969 [107#61][NR/NTN] Rapporteur Running TP THALES pCR Rel-16 38.821 0.7.0 FS_NR_NTN_solutions Late
=> The TP is agreed

R2-1914165 Outcomes of NTN offline1 discussion Thales
=> Noted

R2-1914166 Outcomes of NTN offline2 discussion Thales
=> Noted

✉ **[107bis#66][NTN] Running TP (Thales)**
Running TP capturing new agreements in this meeting and removing editor's notes
Incorporate new pedestrian requirement changes
Intended outcome: Running TP
Deadline: Next Meeting

6.6.2 Requirements and Scenarios

Contributions on overall requirements and scenario prioritization. Key issues and requirement related to one of the areas identified below should be submitted in those AIs.

Not treated

R2-1912405 Revision to Non-Terrestrial Networks scenarios HUGHES Network Systems Ltd pCR Rel-16 38.821 0.7.0 FS_NR_NTN_solutions

R2-1912666 Consideration on the limited C-RNTI size in NTN ZTE Corporation, Sanechips discussion Rel-16 FS_NR_NTN_solutions R2-1909258

R2-1912667 [DRAFT] LS on handling the limited size of C-RNTI in NTN (FS_NR_NTN_solutions) ZTE Corporation, Sanechips LS out Rel-16 FS_NR_NTN_solutions R2-1909259 To:RAN1; Cc:RAN3

R2-1913465 Revisions of usage scenarios for NTN THALES pCR Rel-16 38.821 0.7.0 FS_NR_NTN_solutions Late

6.6.3 User Plane

6.6.3.1 MAC Enhancements

Contributions related to MAC enhancements (e.g. DRX, HARQ, RA enhancements) and any other identified issues
Additional timers can be treated in later phases of the work
Impact of HARQ on other procedures and impact of propagation delay to user plane procedures (e.g. RA)
Contributions on aspects that are already covered in the email discussions are highly discouraged
Including output of email discussion [107#60][NR/NTN] RACH capacity evaluation and procedures (ZTE)

R2-1912695 DRX HARQ RTT enhancements for NTN Nomor Research GmbH discussion Rel-16 38.821
=> The TP is revised in R2-1914056

R2-1914056 DRX HARQ RTT enhancements for NTN Nomor Research GmbH discussion Rel-16 38.821
- LG doesn't think the offset for HARQ RTT is not needed
=> The TP is agreed

R2-1913173 Further consideration on HARQ configuration in NTN CMCC,Huawei,HiSilicon,Sony,KT Corp. discussion Rel-16 FS_NR_NTN_solutions R2-1912926
=> Revised in R2-1914197

R2-1914197 Further consideration on HARQ configuration in NTN CMCC,Huawei,HiSilicon,Sony,KT Corp., NEC, Nomor discussion Rel-16 FS_NR_NTN_solutions R2-1912926
=> Noted

R2-1914198 TP on HARQ configuration in NTN CMCC, Nomor Research GmbH, Huawei, HiSilicon, Sony, KT Corp., NEC, Oppo, Nokia, ZTE, Ericsson, ETRI
- Mediatek is concerned if we do this on a per logical channel basis.
=> Change FFS to "can be discussed in WI phase"
=> The TP is agreed with the change above (rapporteur will make the change)

R2-1912664 Report of [107#60] [NR/NTN] RACH capacity evaluation and procedures (ZTE) ZTE Corporation, Sanechips discussion Rel-16 FS_NR_NTN_solutions
=> Noted

R2-1912665 TP on RACH capacity evaluation and procedures ZTE Corporation, Sanechips,China Southern Power Grid Co., Ltd discussion Rel-16 FS_NR_NTN_solutions
=> The TP is revised in R2-1914069

R2-1914069 TP on RACH capacity evaluation and procedures ZTE Corporation, Sanechips,China Southern Power Grid Co., Ltd discussion Rel-16 FS_NR_NTN_solutions

=> CATT will bring a paper to discuss other open
=> The TP is agreed

Not treated

R2-1912159 Discussion on Random Access Procedure for NTN CATT discussion Rel-16 FS_NR_NTN_solutions
R2-1912160 Consideration on the SPS/CG for NTN CATT discussion Rel-16 FS_NR_NTN_solutions
R2-1912232 Asymmetric UL and DL frame timing at gNB side Spreadtrum Communications discussion
R2-1912570 Impact of disabling HARQ on DRX PANASONIC R&D Center Germany discussion R2-1909277
R2-1912654 On Analysis of RACH Capacity in NTN Mediatek India Technology Pvt. discussion R2-1908856
R2-1912698 HARQ process selection and logical channel prioritization Nomor Research GmbH discussion Rel-16 38.821
R2-1912926 Further consideration on HARQ configuration in NTN CMCC,Huawei,Sony, KT Corp. discussion Rel-16 FS_NR_NTN_solutions Revised
R2-1913083 Further consideration on MAC enhancements ZTE Corporation, Sanechips discussion FS_NR_NTN_solutions
R2-1913335 Left issues on random access procedure in NTN OPPO discussion Rel-16 FS_NR_NTN_solutions
R2-1913336 Discussion on DRX operation in NTN OPPO discussion Rel-16 FS_NR_NTN_solutions
R2-1913337 Discussion on UL scheduling enhancement in NTN OPPO discussion Rel-16 FS_NR_NTN_solutions
R2-1913338 Impacts of disabling HARQ on LCP OPPO discussion Rel-16 FS_NR_NTN_solutions
R2-1913388 Discussion on LCP procedure for NTN Nokia, Nokia Shanghai Bell discussion Rel-16 FS_NR_NTN_solutions R2-1911286
R2-1913581 On uplink enhancements for NTN Ericsson discussion Rel-16 FS_NR_NTN_solutions
R2-1913582 DRX adaptions for NTN Ericsson discussion Rel-16 FS_NR_NTN_solutions
R2-1913583 Remaining aspects on Random access for NTN Ericsson discussion Rel-16 FS_NR_NTN_solutions
R2-1913784 Random access without UE location information Huawei, HiSilicon discussion Rel-16 FS_NR_NTN_solutions
R2-1913785 Random access with UE location information Huawei, HiSilicon discussion Rel-16 FS_NR_NTN_solutions
R2-1913786 RACH resource configuration and utilization in NTN Huawei, HiSilicon discussion Rel-16 FS_NR_NTN_solutions
R2-1913844 Scheduling enhancement in NTN LG Electronics Inc. discussion Rel-16 FS_NR_NTN_solutions R2-1904730
R2-1913869 Discussion on DRX operation associated with disabling HARQ feedback LG Electronics Polska discussion Rel-16 FS_NR_NTN_solutions
R2-1913876 Common delay for initial access ETRI other Rel-16

6.6.3.2 RLC and PDCP Enhancements

Contributions on this topic related to RLC reordering (e.g. timers and SN space) and any other identified issues.
Contributions on this topics will not be treated in RAN2#106 until RAN1 has done some progress

R2-1914062 TP editorial corrections Nomor

=> editor notes will be removed from the final version of the TR and the rapporteur will provide the update next meeting
=> Noted

R2-1913584 Remaining aspects on RLC and PDCP Ericsson discussion Rel-16 FS_NR_NTN_solutions
=> Not treated

6.6.4 Control Plane

R2-1913585 Satellite identifier in 3GPP NTN Control Plane THALES discussion Rel-16 38.821 R2-1908843

Proposal 1: UE to search satellite beam/cell/satellite ephemeris by detecting PCI linked NR PSS/SSB.
- ZTE thinks that maybe we can treat this in Ericsson email discussion
- Nokia agrees with what the paper says. Huawei thinks that this is legacy behavior.

=> Noted

R2-1913930 Considerations on the use of satellite Id in NTN Nokia, Nokia Shanghai Bell discussion Rel-16 FS_NR_NTN_solutions R2-1910695
- Ericsson explains that we already have agreed to not have a satellite ID. Nokia explains that this is just to capture it as some companies are still proposing whether it is needed or not.

=> Noted

R2-1913563 Clarification on satellite beam and PCI mapping THALES, ERICSSON pCR Rel-16 38.821 0.7.0 FS_NR_NTN_solutions R2-1908843
=> TP revised in R2-1914055

R2-1914055 Clarification on satellite beam and PCI mapping THALES, ERICSSON, Nokia pCR Rel-16 38.821 0.7.0 FS_NR_NTN_solutions R2-1908843
=> The TP is agreed

Not treated

R2-1912977 Location based mobility enhancement NEC Telecom MODUS Ltd. discussion

R2-1913534 Clarification on satellite beam and PCI mapping THALES discussion Rel-16 38.821 Withdrawn

R2-1913926 UE positioning requirements in NTN Nokia, Nokia Shanghai Bell discussion Rel-16 FS_NR_NTN_solutions R2-1910693

6.6.4.1 Mobility

Solutions addressing additional mobility issues and solutions for GEO and LEO based systems, including CHO specific aspects related to NTN, and positioning.

Contributions on aspects that are already covered in the email discussions are highly discouraged

Including output of email discussion [107#62][NR/NTN] TP Mobility (InterDigital)

Including output of email discussion [107#63][NR/NTN] Feeder link switch TP (Ericsson)

R2-1913604 Summary of Email Discussion [107_62] TP Mobility (InterDigital) InterDigital discussion Rel-16 FS_NR_NTN_solutions Late
=> Noted

R2-1913605 TP on NTN Mobility Issues and Solutions InterDigital discussion Rel-16 FS_NR_NTN_solutions R2-1910962 Late
=> Revised in R2-1914194

R2-1914194 TP on NTN Mobility Issues and Solutions InterDigital discussion Rel-16 FS_NR_NTN_solutions R2-1910962 Late
=> The TP is agreed

R2-1912701 Report of email discussion [107#63][NR/NTN] Ericsson discussion Late
=> Revised in R2-1914196

R2-1914196 Report of email discussion [107#63][NR/NTN] Ericsson discussion Late
=> Check if the references to 8.8 is the right reference and if not delete it.
=> The TP is agreed with the change above (rapporteur will check the reference again)

Location reporting

R2-1913493 UE positioning in legacy satellite communication systems for 5G NTN THALES discussion Rel-16 FS_NR_NTN_solutions R2-1908844
=> Thales will create a TP capturing issues and solutions from the contributions in this meeting
=> Noted

R2-1912595 Make before break for NTN Ericsson discussion Rel-16 R2-1911274
- Huawei is concerned as there is no NR make before break feature. Only LTE.
=> Ericsson will write a TP for next meeting in the mobility section of the TR using a similar structure and the details can be discussed in the WI phase.
=> Noted

R2-1913923 Discussion on fixed vs. steerable beams in NTN LEO Nokia, Nokia Shanghai Bell discussion Rel-16 FS_NR_NTN_solutions
- Thales thinks this is an interesting subject but there is still work to do here as there are a lot assumptions.
- Ericsson thought that the steerable beams were down-prioritized in SI and doesn't understand why we are adding more work at this point in time.
- Nokia explains that there is a desire to add this to the WI so we should discuss it.
- Vodafone also thinks we need more time and is not quite sure what we are adding to the TR as this are well known observations.
- Thales doesn't think that downprioritization mean to not treat it.
=> Noted

Not treated

R2-1912155 Mobility Issue for LEO in NTN System CATT discussion Rel-16 FS_NR_NTN_solutions

R2-1912157 Measurement Issues for NTN System CATT discussion Rel-16 FS_NR_NTN_solutions

R2-1912668 Location report in NTN ZTE Corporation, Sanechips discussion Rel-16 FS_NR_NTN_solutions R2-1909266

R2-1912669 Consideration on measurements in NTN-TN service continuity ZTE Corporation, Sanechips discussion Rel-16 FS_NR_NTN_solutions R2-1909260

R2-1912712 Conditional Handover for Non-Terrestrial Networks Intel discussion Rel-16 FS_NR_NTN_solutions

R2-1912923 Grouping and Automatic Reconfiguration for Handover Enhancement in LEO NTN Mediatek India Technology Pvt. discussion R2-1905702

R2-1912939 Differentiating steerable and moving cells of LEO CMCC discussion Rel-16

R2-1912940 Using beam footprint information for GEO mobility CMCC discussion Rel-16 R2-1909439

R2-1912964 Broadcast Handover in LEO-Satellite based NTN Mediatek India Technology Pvt. discussion R2-1903062

R2-1912973 Service continuity between TN and NTN NEC Telecom MODUS Ltd. discussion

R2-1913339 Discussion on handover procedure for NTN OPPO discussion Rel-16 FS_NR_NTN_solutions

R2-1913346 Considerations on CHO in NTN LG Electronics discussion Rel-16 FS_NR_NTN_solutions

R2-1913354 Location report in NTN Sony discussion Rel-16 FS_NR_NTN_solutions R2-1909903

R2-1913355 Bulk handover signalling for mobility enhancement in NTN Sony discussion Rel-16 FS_NR_NTN_solutions R2-1909908

R2-1913387 Baseline NTN-TN service continuity and mobility mechanism HUGHES Network Systems Ltd discussion Rel-16 Late

R2-1913603 Conditional measurement configuration for LEO NTN InterDigital discussion Rel-16 FS_NR_NTN_solutions

R2-1913791 Service continuity between terrestrial network (TN) and non-terrestrial network (NTN) HUGHES Network Systems Ltd discussion Rel-16 38.821

R2-1913866 Signalling Delay in NTN LG Electronics Inc. discussion Rel-16 FS_NR_NTN_solutions R2-1911110

R2-1913924 Pre-trigger based mobility for NTN LEO with fixed beams Nokia, Nokia Shanghai Bell discussion Rel-16 FS_NR_NTN_solutions R2-1910694

R2-1913925 To agree on the remaining NTN-TN service continuity aspects Nokia, Nokia Shanghai Bell discussion Rel-16 FS_NR_NTN_solutions

R2-1913927 Consideration on LEO mobility in NTN CENC discussion

6.6.4.2 Idle mode

Identify RAN2 specific issues/aspects to address related to tracking area management
Paging capacity analysis and solutions.
Impacts to cell selection reselection.
Contributions should address aspects of LEO and GEO separately (i.e. different sections/proposal within each contribution)
Including output of email discussion [107#64][NR/NTN] Cell selection and reselection (LG)
Contributions on aspects that are already covered in the email discussions are highly discouraged

R2-1913345 Report of email discussion [107#64][NTN] Cell selection&reselection LG Electronics discussion Rel-16 FS_NR_NTN_solutions Late
=> The TP is revised in R2-1914070

R2-1914070 Report of email discussion [107#64][NTN] Cell selection&reselection LG Electronics discussion Rel-16 FS_NR_NTN_solutions Late
- LG explains that we have to discussion cell identification information

Proposal 5: Discuss further whether indication of the satellite type of an NTN cell is required even if different PLMN is deployed between GEO and LEO.

- Thales thinks we should have both option. Vodafone thinks that in the WI phase we will need to be able to distinguish and identify whether we have a GEO cell or LEO cell.
- Ericsson explains that the PLMN ID provides enough distinction.

=> Both options will be captured in the TR and we will leave final decision for WI phase. The TP for this will be provided by LG next meeting
=> The TP is agreed

R2-1912597 Ephemeris data Ericsson discussion Rel-16
=> The TP is revised in R2-1914195

R2-1914195 Ephemeris data Ericsson discussion Rel-16
- Ericsson proposes to continue the discussion over email
- Nokia would like to know what would be the typical size of what would be broadcast.

=> Moved to email discussion

✉ **[107bis#67][NTN] Ephemeris data handling (Ericsson)**
Intended outcome: Agreeable proposals and TP
Deadline: Next Meeting

Tracking area management

R2-1914199 TP on tracking area management in NTN ZTE, Sanchips, Huawei, Ericsson, LG, CATT, Oppo, Hughes
- Nokia would like some time to review
=> The TP will be included in the rapporteur running TP to be reviewed until next meeting
=> Noted

R2-1912670 Further consideration on tracking area management in NTN ZTE Corporation, Sanechips discussion Rel-16 FS_NR_NTN_solutions R2-1909263
=> Noted

Not treated

R2-1912079 Left issue on idle mode mobility for NTN OPPO discussion FS_NR_NTN_solutions

R2-1912156 Cell Selection and Reselection Issue between NTN and TN System CATT discussion Rel-16 FS_NR_NTN_solutions

R2-1912158 Paging Load in Two Sub-options of Fixed TA CATT discussion Rel-16 FS_NR_NTN_solutions

R2-1912655 Improving Cell Reselection using Next Cell Information in NTN Mediatek India Technology Pvt. discussion R2-1908857

R2-1913175 Discussion on TA management and cell reselection in NTN Huawei, HiSilicon pCR Rel-16 38.821 0.7.0 FS_NR_NTN_solutions

R2-1913176 Discussion on inactive state in NTN Huawei, HiSilicon pCR Rel-16 38.821 0.7.0 FS_NR_NTN_solutions

R2-1913345 Report of email discussion [107#64][NTN] Cell selection&reselection LG Electronics discussion Rel-16 FS_NR_NTN_solutions Late

R2-1913348 Remaining issues of tracking area management in NTN LG Electronics discussion Rel-16 FS_NR_NTN_solutions

R2-1913580 Methods of Paging in GEO Satellite-Based 5G Networks HUGHES Network Systems Ltd discussion Rel-16 38.821

R2-1913917 Considerations on satellite location sharing ETRI discussion Rel-16 R2-1911424

6.6.4.3 Other

Not treated

R2-1912696 Multiple PLMN Identities in NTN Nomor Research GmbH discussion Rel-16 38.821 R2-1908988

R2-1912697 System Information in NTN Nomor Research GmbH discussion Rel-16 38.821 R2-1908989

R2-1913174 Service continuity and feeder link switch in NTN Huawei, HiSilicon pCR Rel-16 38.821 0.7.0 FS_NR_NTN_solutions

R2-1913347 Dual connectivity use cases in NTN LG Electronics discussion Rel-16 FS_NR_NTN_solutions

6.7 NR Industrial Internet of Things (IoT)

(NR_IIOT-Core; leading WG: RAN2; REL-16; started: Mar 19; target; Mar 20; WID: RP-192324)
Time budget: 3 TU
Tdoc Limitation: 12 tdocs

6.7.1 General

Rapporteur input etc.

LS in

R2-1912027 Reply LS on propagation delay compensation for reference time information delivery (R1-1909906; contact: Nokia) RAN1 LS in Rel-16 NR_IIOT-Core To:RAN2, RAN4, RAN5
- Nokia indicate that R1 are still working on propagation delay compensation and suggest we wait for further updates from R1.
- CMCC think that R1 is finished on the high level work and have concluded that TA is used, and the rest in R1 and R4 is mainly accuracy work.
- Samsung think R1 hasn't agreed to use TA, this is just an example.
- Oppo think it is clear from R1 that TA based method is used and think we can wait.

⇒ **noted**

Work Plan

R2-1913450 Updated Work Plan for NR Industrial IoT WI Nokia, Nokia Shanghai Bell discussion Rel-16 NR_IIOT

✉ **[107bis#05][IIOT] Running CR 38300 (Nokia)**
Intended outcome: Endorsed Running CR, Capture agreements incl 107bis
Deadline: 2 weeks
=> Endorsed in R2-1914009

✉ **[107bis#41][IIOT] Running CR 38331 (Ericsson)**
Intended outcome: CR submitted to next meeting, Capture agreements incl 107bis, include the whole WI
Deadline: Next Meeting

✉ **[107bis#42][IIOT] Running CR 38321 (Samsung)**
Intended outcome: CR submitted to next meeting, Capture agreements incl 107bis
Deadline: Next Meeting

✉ **[107bis#43][IIOT] Running CR 38323 (LG)**
Intended outcome: CR submitted to next meeting, Capture agreements incl 107bis
Deadline: Next Meeting

6.7.2 TSC

6.7.2.1 Accurate reference timing

Accurate reference timing delivery from gNB to UE using broadcast and unicast RRC signalling (with EUTRA Rel-15 signalling solution as baseline) for synchronization requirements defined in TS 22.104)

Propagation Delay compensation

Chair: We wait for further input from R1

R2-1913267 Propagation Delay Compensation by the gNB MediaTek Inc. discussion Rel-16 NR_IIOT-Core R2-1910073

R2-1912311 Propagation delay compensation for reference time vivo discussion

R2-1912549 On downlink delay compensation Ericsson discussion NR_IIOT-Core

R2-1912927 Analysis on RAN1 LS on propagation delay compensation CMCC discussion Rel-16 NR_IIOT-Core

R2-1913645 Discussion of RAN1 LS on propagation delay compensation and way forward Qualcomm Incorporated discussion

R2-1913470 Propagation delay compensation for accurate reference timing Huawei, HiSilicon discussion NR_IIOT-Core
=> Revised R2-1913962

R2-1913962 Propagation delay compensation for accurate reference timing Huawei, HiSilicon discussion NR_IIOT-Core

General

R2-1912897 Signalling aspects for accurate reference timing delivery in TSC China Southern Power Grid Co., Ltd discussion Rel-16 NR_IIOT-Core R2-1908859 DISCUSSION

P3

- Intel are not sure this is needed, and also do not know if it works. QC agrees, and think the timing would not be different in any reasonable deployment. Xiaomi agrees.
- Docomo think we might need to take mobility into account, but think there is extra Xn latency.
- Oppo think we should not discuss handover.
- MTK wonder if the intention is to change master clock. ZTE think that only he cell is changed. Ericsson think that the gNBs are synchronized to the same clock.
- Nokia support the ZTE intention to take handover into account, but think this may be for the next release. Samsung also support the intention. CMCC also support this intention, but agrees it can be addressed in the next release.

P4

- Ericsson think this is too course and think it is better to indicate as a integer number. Huawei support Ericssons principle but think we don't need 10ns granularity. Nokia wold be ok either way, but think the range should be wider up to 1ms or 0.5ms.
- CATT think we can use the LTE way but need more bits for wider range.
- CMCC think we don't need to extend the range
- QC wonders why 10ns granularity would be good. Ericsson think that fine grained granularity is needed in the lower end of the range.
- Nokia think that in IEEE uncertainty is specified similar to the LTE way.
- Chair we will decide the encoding for the uncertainty without much discussion next meeting. The majority view seems to be the ZTE proposal.

⇒ **SIB9 is used for accurate reference timing delivery by broadcast.**

⇒ ***DLInformationTransfer* message is used for serving cell's accurate reference timing delivery by unicast.**

⇒ **R2 assumes there will be no particular functionality to ensure accurate timing distribution at the moment of handover in Rel-16**

R2-1912548 Remaining issues for reference time delivery Ericsson discussion NR_IIOT-Core

- ZTE wonders how many bits for uncertainty. Ericsson replies 17bits.
- Samsung think 17 bits is too much. CMCC agrees, and think 11 or 12 bits are sufficient, and think 1ms uncertainty is not required.
- Nokia think we just need to decide on something.
- Docomo think the safe approach is the LTE way with 12 values
- Nokia proposes 12 bits times 25ns granularity.

P1

- CMCC think this value is too large.

P7

- Samsung think that the gNB can determine this by reception of TSC assistance info.
- Nokia think the gNB will need to know which UE need time, but think also non-TSC use cases can be supported if time ref can be requested by the UE.
- Samsung think it would be ok to ask SA2.
- QC support proposal 7 but would be ok with a UE request method
- Two ways a) Ue request unicast reference time (e.g. by RRC), b) gNB determine that reference time need to be provided by some other way.
- CATT think that we need a capability bit
- Ericsson think we can just ask SA2 without requesting new work.
- Huawei think we should rely on UE request.

⇒ **The uncertainty of reference time info is unspecified, if the uncertainty field is absent.**

⇒ **We send an LS: RAN2 asks SA2 to provide information on whether and how the need for reference time information can be determined for any given connected UE**

Offline 36, Draft LS to SA2 on Reference time delivery in R2-1914185 (Ericsson)

R2-1914185 [DRAFT] LS to SA2 on reference time delivery Ericsson LS out Rel-16 NR_IIOT To:SA2

⇒ **Add ", in Rel-16" to the end of the 3rd paragraph.**

⇒ **With this change, approved, in R2-1914213**

R2-1913451 Remaining issues for accurate reference time delivery Nokia, Nokia Shanghai Bell, NTT DOCOMO discussion Rel-16 NR_IIOT

⇒ **noted**

R2-1912208 Open Issues of Reference Timing Delivery CATT discussion Rel-16 NR_IIOT-Core R2-1908822

⇒ **noted**

R2-1912498 Leftover Issues on Accurate Timing Delivery Samsung discussion Rel-16 NR_IIOT-Core

P1

- QC wonder why we need to specify. Chair wonder if we then require all cells e.g. in DC to be SFN synchronized.
- Samsung think the Pcell and Scell may result in different timing.
- Ericsson think that for broadcast there is no issue, as the SIB is received on Pcell.
- MTK think we don't keep track of which cell the message arrived on so we should have a reference.
- Huawei support that the Pcell is the reference.

⇒ **FFS if The referenceSFN field indicates the time at the ending boundary of the SFN indicated by referenceSFN of PCell.**

R2-1912951 Discussion on IE design of TimeReferenceInfo used for IIOT CMCC discussion Rel-16 38.331 NR_IIOT-Core R2-1909442

⇒ **Noted**

R2-1913471 Remaining issues of reference time delivery Huawei, HiSilicon discussion NR_IIOT-Core

=> Revised R2-1913963

R2-1913963 Remaining issues of reference time delivery Huawei, HiSilicon discussion NR_IIOT-Core

P2

- Ericsson think this is not needed as we have a unicast method.

⇒ **Noted**

R2-1913643 Reference timing delivery determination by RAN Qualcomm Incorporated discussion

⇒ **Noted**

R2-1913648 Draft LS on signalling of reference timing delivery determination information Qualcomm Incorporated LS out To:RAN3, SA2

R2-1912900 TP for accurate reference timing delivery in TSC ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd draftCR Rel-16 38.331 15.7.0 B NR_IIOT-Core R2-1908886

Further optimizations

R2-1912898 Other issues related to accurate reference timing delivery in TSC ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd discussion Rel-16 NR_IIOT-Core R2-1908860

6.7.2.2 Scheduling Enhancements

6.7.2.2.1 CG and SPS for TSC - General and configuration impact

Including output of email discussion [107#55][NR IIOT] CG/SPS for TSC (Oppo). Including support for TSC message periodicities with non-integer multiple of NR supported CG/SPS periodicities, configuration and ranges and limits.

Email Discussion

R2-1912726 Email discussion summary of [107#55][IIOT] CG/SPS for TSC OPPO discussion Rel-16 Late
=> Revised in R2-1913952

R2-1913952 Email discussion summary of [107#55][IIOT] CG/SPS for TSC OPPO discussion Rel-16 Late
DISCUSSION
P1
- Ericsson think we should wait for R1 reply to understand if 16 is possible. It should be possible.
- LG think that for SPS DL 8 should be sufficient as time requirements can be met also by dynamic sched.
- Nokia think we can assume 16 for the signalling.
- Docomo indicate that in R1 didn't think it was needed as dyn sched can meet the time requirements. R1 has replied that 8 is sufficient.
- Ericsson think R1 replied something different than what we asked.
- Oppo think R1 didn't analyse up to 16.

P7
- QC wonders what is the use case for this. Samsung think that when we have 2 flows where one is CBR, and the other is CBR with silence periods. ZTE think that type 2 is for continuous traffic and type 1 for event triggered traffic. Huawei think we don't need to restrict.
- Ericsson also don't see any benefit with allowing both.

P8
- Nokia agrees with the proposal and think we can even have finer granularity e.g. n*2symbols, and think it doesn't cause any additional cross slot boundary issues. MTK think that then P14 is a consequence.
- Huawei think that the integer slot is a starting point.
- CATT would like to check with R1 on the slot boundary potential issue for the N*2symb or 7 symb.

P10
- MTK would like to ensure that HARQ processes are not shared between CG. Otherwise the timer handling gets complicated. QC agrees there maybe an issue, so there may need to be a restriction.
- Docomo think that for configurations where the UE anyway only can use one CG in a group, the group can share HARQ process. LG agrees and think this is network implementation.
- CATT think there is an issue of HARQ process pool fragmentation, and would like to avoid frequent RRC reconfiguration. LG think this is a small problem

P12
- QC wonders what is the assumed unit for periodicity. Samsung think it is symbol for UL and slot for DL.
- QC would like to check

P13
- Huawei would prefer the legacy confirmation as there may be signalling load concerns with the new MAC CE.

⇒ **R2 assumes to support 8 as the maximum number of simultaneously activated SPS configurations per BWP per serving cell.**

⇒ **Introduce SPS/CG index to identify each SPS/CG among multiple SPS/CG configurations, i.e., as in Rel-15 LTE.**

⇒ **The association between "state" (used in the joint release DCI) and the CG configuration(s) for type-2 CG is configured via RRC message.**

- ⇒ **Each CG configuration is always configured independently, as in Rel-15 LTE.**
- ⇒ **The association between "state" (used in the joint release DCI) and the SPS configuration(s) is configured via RRC message, if RAN1 working assumption for joint release for multiple SPS configuration is confirmed.**
- ⇒ **Each SPS configuration is always configured independently, as in Rel-15 LTE.**
- ⇒ **Support simultaneous Type 1 & 2 CG configurations in a BWP.**
- ⇒ **CG periodicities of any integer-multiple of one slot (FFS if we go even lower, e.g. 2 symb, 7 symb) below a maximum value should be supported. FFS on the maximum value of integer N.**
- ⇒ **SPS periodicities of any integer-multiple of one slot below a maximum value should be supported in Rel-16. FFS on the maximum value of integer N.**

- ⇒ **R2 assumes that HARQ offset parameter is explicitly configured by the network for each CG/SPS configuration.**
- ⇒ **For CG, HARQ Process ID = [floor(CURRENT_symbol/periodicity)] modulo nrofHARQ-Processes + harq-procID-offset.**
- ⇒ **FFS (for checking) if For SPS, HARQ Process ID = [floor(CURRENT_slot/periodicity)] modulo nrofHARQ-Processes + harq-ProcID-offset, Where CURRENT_slot = [(SFN × numberOfSlotsPerFrame) + slot number in the frame].**
- ⇒ **Introduce a new confirmation MAC CE format in Rel-16, which reflects the confirmation of multiple configured grant configurations**

Traffic CG/SPS alignment

R2-1913622	Configured Grant enhancements for TSC traffic Rel-16 FS_NR_IIOT R2-1911380	Sequans Communications	discussion
R2-1913453	Support for arbitrary TSC message periodicities Rel-16 NR_IIOT	Nokia, Nokia Shanghai Bell	discussion
R2-1912928	Support on TSN periodicities of non-integer multiple CG-SPS periodicities Rel-16 NR_IIOT-Core	CMCC	discussion

On the 3 tdocs above:

S Support configuration of "pseudo-periodic" pattern, matching as far as possible traffic pattern (either from modifying existing CG, or selecting subset of existing CGs)

N: Cyclic SPS/CG shifting should be used as basis for further work on support for arbitrary TSC periodicities.

C: it is proposed to extend the function of the current PDCCH DCI of activation of Type 2 CGs/SPS configuration to update the start offset in time domain of CG/SPS configuration, which demands RAN1's investigation as well.

DISCUSSION

- Chair point out that we already have agreed that overprovisioning / multiple CG/SPS can address the traffic misalignment issues.
- MTK wonder if the resource waste of overprovisioning is really a problem as the network will know when the traffic will happen. Nokia think there will be collisions between UEs and think there will be some jitter.
- Samsung think we don't need any of these solutions. LG agrees with Samsung. Intel also. ZTE too, Ericsson also think there is no need, and think it would be difficult to agree.
- Oppo think that the overhead is an issue and we need additional solution, and prefer S,
- Docomo think the additional solutions has lower priority. Overprovisioning etc is not perfect solution but will resolve the issues.
- CMCC think that in the TSN network the UE is a hub or gateway, and think without additional solutions there will be a lot of resource waste ..
- Nokia think that overprovisioning requires many configurations, more that the currently planned 8/12.

- CATT think we should also consider this in the light of SFN wraparound, and a UE autonomous adjustment approach can resolve this. Huawei think that a pattern solution could address this.
- Nokia think that for DL something is needed, SPS cannot resolve this by over provisioning. MTK think for DL dynamic scheduling is ok. ZTE and LG also think DL is not an issue.

- Chair summary: there is significant support to have some additional solution, at current meeting, the pattern approach (S) seems to have the strongest support. However there is also strong support to not do anything, i.e. resolve the Traffic/CG-SPS misalignment by overprovisioning / multiple configurations (which we already agreed earlier)
- Samsung proposes to have the working assumption to not look for additional solutions further in this release.

⇒ **3 docs above noted**

R2-1912929 Draft LS on support of the activation DCI of Type 2 CGs/SPS to adjust the start offset CMCC LS out Rel-16 NR_IIOT-Core To:RAN1

R2-1913468 Solutions to mitigate the periodicity misalignment between TSC traffic and CG/SPS Huawei, HiSilicon discussion NR_IIOT-Core

R2-1912246 Handling of periodicity misalignment between CG periodicity and TSN traffic periodicity Spreadtrum Communications discussion

R2-1913043 Remaining issue on scheduling ehancement for TSN ZTE Corporation, Sanechips discussion Rel-16 NR_IIOT-Core R2-1910396

R2-1912318 SPS and CG configuration issue on the partial overlapping TSN traffic pattern vivo discussion R2-1910010

R2-1912724 Scheduling enhancements for TSC network OPPO discussion Rel-16

R2-1913133 Periodicity misalignment between TSN traffic and SPS/CG LG Electronics Inc. discussion NR_IIOT-Core

R2-1912316 Discussion on the periodicity misalignment between TSC traffic and SPS/CG vivo discussion R2-1910006

Collisions

R2-1913455 SPS collisions with multiple SPS configurations Nokia, Nokia Shanghai Bell discussion Rel-16 NR_IIOT R2-1909491

Configuration etc

R2-1912550 SPS and UL CG remaining configuration aspects Ericsson discussion NR_IIOT-Core

R2-1912494 Support of Multiple Active CG/SPS Configuration Samsung discussion Rel-16 NR_IIOT-Core

R2-1912715 Support of multiple SPS and CG configurations Intel discussion Rel-16 NR_IIOT-Core

R2-1912915 Further discussion on scheduling enhancement for TSN traffic Lenovo, Motorola Mobility discussion Rel-16 R2-1910288

6.7.2.2.2 CG and SPS for TSC - L2 impacts

Including CG SPS Confirmation, LCP impact if any etc.

LCP restrictions CG

R2-1913134 LCP enhancements for mapping between LCH and CG LG Electronics Inc. discussion NR_IIOT-Core

DISCUSSION
P3

- Ericsson comment that that if there is no configuration for a LCH, then there should be no restriction. Nokia think this is stage-3 details.

⇒ **A single LCH can be map to multiple CG configurations.**

⇒ **Multiple LCHs can be map to a single CG configuration.**

R2-1913664 LCP restrictions for configured grant Intel Corporation discussion Rel-16 NR_IIOT-Core

R2-1913266 Misalignment Between TSC and SPS/CG Periodicities MediaTek Inc. discussion Rel-16 NR_IIOT-Core R2-1910074

LCP restriction DG

R2-1912502 LCP Restriction on Reliability Samsung discussion Rel-16 NR_IIOT-Core

R2-1913458 LCP restrictions enhancements Nokia, Nokia Shanghai Bell discussion Rel-16 NR_IIOT

R2-1913642 LCP restriction enhancements for Industrial IoT Qualcomm Incorporated discussion

DISCUSSION on the three tdocs above

- LG think MCS-C-RNTI is not a good condition. QC agrees, CATT think that a MCS threshold should be used as a condition, the gNB can configure this as the gNB knows the coverage situation of the UE. Oppo think MCS-C-RNTI is a good.
- Docomo think MCS-C-RNTI is not a good condition, and support Nokia proposal 4. IDT Ericsson and Lenovo also support Fujitsu agrees that MCS-C-RNTI is not only for URLLC but can be used also e.g. for bad coverage.
- CMCC think R1 has introduced a new DCI format for URLLC.
- Samsung don't want to agree DCI indication in R2 but want to use R1 outcome of discussion.
- Chair: it seems the configured LCP restriction based on MCS or MCS-C-RNTI condition it not acceptable to a number of companies.

⇒ **R2 think it would be useful to introduce a new LCP restriction in the following way: The DCI that is scheduling PUSCH may include a specific indication. LCH configuration in RRC contains information on whether the LCH can utilize grant with this indication or not. R2 intends that this mechanism can be used to differentiate grants for traffic that requires high reliability.**

Offline 38, DRAFT LS to RAN1 on LCP restriction for Dynamic Grant in R2-1914187 (QC)

R2-1914187 [DRAFT] LS to RAN1 on LCP restriction for Dynamic Grant Qualcomm LS out Rel-16 NR_IIOT To:RAN1

⇒ **Approved in R2-1914214**

CG confirmation

R2-1912725 Discussion on confirmation MAC CE for TSC network OPPO discussion Rel-16

R2-1913143 Confirmation MAC CE for multiple CG configurations LG Electronics Inc. discussion NR_IIOT-Core R2-1911201

R2-1913472 Further discussion on Configured Grant Confirmation MAC CE Huawei, HiSilicon discussion NR_IIOT-Core

Other

R2-1912551 L2 aspects of SPS and UL CG Ericsson discussion NR_IIOT-Core

R2-1913738 L2 impacts on supporting IIoT traffic NTT DOCOMO, INC. discussion Rel-16 NR_IIOT-Core

R2-1913469 Remaining issues of LCP enhancement for TSC traffic Huawei, HiSilicon discussion NR_IIOT-Core

R2-1912930 Repetitions Transmission for SPS configurations CMCC discussion Rel-16 NR_IIOT-Core

R2-1912886 Scheduling enhancements for TSC traffic InterDigital discussion Rel-16 FS_NR_IIOT R2-1909601

R2-1912209 Remaining Issues on Multiple Active SPS/CGs CATT discussion Rel-16 NR_IIOT-Core

R2-1913454 CG and SPS occasions determination for new periodicities Nokia, Nokia Shanghai Bell discussion Rel-16 NR_IIOT

R2-1913353 Consideration on activation/deactivation for CG Type 1 Sony discussion Rel-16 NR_IIOT-Core R2-1909911

6.7.2.2.3 Other

Including systems aspects such as TSC assistance information, other L2 impacts if any,

TSC assistance info

R2-1913452 Periodicity and burst arrival encoding in TSCAI Nokia, Nokia Shanghai Bell discussion Rel-16 NR_IIOT
=> Revised in R2-1913934

R2-1913934 Periodicity and burst arrival encoding in TSCAI Nokia, Nokia Shanghai Bell discussion Rel-16 NR_IIOT

- CMCC think similar papers were submitted to R3 and think R3 will consider this. Ericsson agrees that R3 can discuss based on input and ask by LS if they need to ask
- Ericsson wonders why we can't use Cg and SPS configurations as a baseline.
- Nokia think this is not sufficient.
- Vivo think TSC info should include absolute time info, not SFN. Samsung also think absolute time is used.
- Nokia think he SFN is only needed over the air, but the rest is an absolute time.
- QC think R2 should provide input on granularity, which is symbol level granularity, i.e. a few us.
- CMCC think we should discuss the unit.
- QC would be ok with the Nokia proposal.
- Nokia think that as we have non-integer periodicities 1us would make sense
- Ericsson wonder if we need uncertainty information as the granularity is very fine.

⇒ **Granularity of burst arrival time and periodicity signalled to RAN should be preferably 1 us.**

CB, Ericsson would like to check if FFS can be removed.

- Ericsson confirms that remove of FFS is ok

R2-1913636 DRAFT LS on granularity of periodicity and burst arrival time in TSCAI Qualcomm Incorporated LS out To:RAN3 Cc:SA2

- Nokia think we should remove the explanations on symbol duration
- Nokia think we should include something on absolute time, and suggest to recommend using RRC IE *referencetimeinfo*. QC think these are different things, are not certain that uncertainty is needed, think we should not be too specific
- Ericsson don't want to inform on anything beyond the agreement.
- Nokia think we can just send an LS with the agreement then.

Revised in R2-1914215, only include our agreement (QC)

R2-1914215 DRAFT LS on granularity of periodicity and burst arrival time in TSCAI Qualcomm Incorporated LS out To:RAN3 Cc:SA2

⇒ **Approved in R2-1914223**

R2-1913637 TSCAI Encoding: Granularity of burst arrival time and periodicity Qualcomm Incorporated discussion

R2-1912716 TSC assistance information Intel discussion Rel-16 NR_IIOT-Core

Miscellaneous

R2-1913646 More granularity for PDCP discardTimer Qualcomm Incorporated discussion R2-1910763

R2-1913467 On Layer 2 parameter values to support delay critical GBR QoS flows Huawei, HiSilicon discussion NR_IIOT-Core

R2-1912552 Miscellaneous issues with L2 impact Ericsson discussion NR_IIOT-Core

R2-1913135 Measurement gap skipping for TSN traffic LG Electronics Inc. discussion NR_IIOT-Core R2-1909831

6.7.2.3 Ethernet Header Compression

Specify Ethernet header compression based on structure-aware algorithm.
Including output of email discussion [107#54][NR IIOT] EHC (Vivo)

LS in

R2-1912006 Liaison response on Ethernet header compression (liaison-response-3GPP-RAN2-Ethernet-header-compression-0719-v01; contact: Ericsson, Nokia) GSMA LS in NR_IIOT To:RAN2

⇒ **noted**

Email Discussion

R2-1912312 Email discussion summary on EHC vivo discussion

DISCUSSION

P2

- Ericsson think more details may be needed. Ericsson think some part of EHC control info is in PDCP header, i.e. before SDAP.
- Vivo think there is no EHC information in the PDCP header.
- LG think that for UDC we agreed that UDC header is ciphered and we should apply the same here.
- Ericsson wonders if all EHC control info would then be ciphered.

P3

- Oppo think that PAD can be reconsidered and if PAD is removed the length field can be removed. Vivo think we can still keep the length field.
- Nokia think that Pad and length removal can be up to compressor implementation. Intel support this.
- QC think that we don't need to do padding removal.
- LG also think removal of padding is not important.
- Huawei think that Pad removal could be significant and that length field can be dynamic.
- Intel think we don't need to spend time on length field. CATT agrees and also think padding removal is not important.
- MTK think the main reason to do the EHC is because the packets are small, and pad removal is significant.
- Huawei think that compressor always need to do parsing to interpret the fields so padding removal should be possible.
- Oppo think e.g. ARP packet have different type and PCP and DEI subfields in Q-TAG cannot be compressed. Ericsson agrees that sometimes we might need to not compress some subfields.
- LG think the main discussion is if we have multiple formats or not. Nokia agrees.
- Nokia think we can have a single profile and if there are some packets that don't fit this profile we don't compress for those packets. Nokia would be ok to have multiple profiles but they should be static. LG agrees.
- Ericsson think that the format can be updated when context is updated. LG are ok with multiple formats but think we have not much time, and think a single format is ok.
- Vivo agree with Nokia. Intel also prefer to have a single format and we don't indicate a profile ID.
- ZTE think that we should have multiple formats differentiated by profile ID. Huawei would support multiple formats, we don't need many but only one is very restrictive. QC agree with Huawei. Samsung are ok with multiple formats.
- CATT don't know how many formats would need to be supported and think the Nokia proposal would work.

- LG think we should limit to static hardcoded formats. Futurewei agrees.
- MTK think we don't need to settle the format rigidly.
- Ericsson think that when the context is setup, it would be indicated which fields are static and which fields are sent. Then no particular profiles are needed.
- QC think at least 3 formats should be supported.
- Oppo think at least 4 formats. ZTE agrees.
- Intel think that Q-Tag is self decodable and need no separate format.
- LG think if we remove source and destination, we have removed most overhead with this, and this would be super simple. MTK think we can additionally compress type,

P6

- QC wonders if we need to have length field in order to remove padding.
- Ericsson think padding removal is complex. LG agrees. Nokia think the specification is simple.
- Huawei think that if we remove the type field, it means we interpret the type, and know the length and padding removal should be very simple.
- Futurewei think that for the most common formats there is no length field and padding can be removed regardless length fileld.

P9

- Ericsson think that transmission would typically be reliable and repetitions would resolve the problem. Huawei think that feedback should be used. Intel agrees feedback is not needed. LG too and think PDCP duplication can be used. Samsung are concerned what happens at packet loss even if rare so we should have feedback. QC agrees.
- Docomo think it could depend on the scenario. Is it used only for URLLC scenario. Oppo wonders if there will always be a reverse link, and think we may need to support two cases. Nokia think there is always two directions.
- Nokia think the feedback would be very simple.
- Ericsson think if we have feedback then we need to tolerate delay and would typically be for low reliability. Samsung think no delay is added.
- LG think that proponents of feedback are assuming ack while ROHC uses nack.
- vivo think that the repetition solution is also not simple, e.g. when handling reestablishment.
- QC wonders what the concerns are for the feedback solution.
- MTK think the concerns with feedback were a) delay, b)
- Nokia think that we can start sending packets earlier with feedback.
- Ericsson wonder about the complexity, do we need more PDU format, feedback request etc.
- CATT also think feedback is good.
- LG think we need to allow unidirectional EHC
- Ericsson wonder if the PDCP SN is included in the feedback.
- Ericsson think that if we have feedback it would be nice to not have feedback for every uncompressed packet.

P12

- Ericsson think they are independent

P10

- QC think that if we avoid using control PDU we can port this solution and it is generic.

⇒ **The EHC function is in PDCP**

⇒ **The EHC header is located after the SDAP header, and it is ciphered**

⇒ **The EHC can removes the following fields: SOURCE/DESTINATION ADDRESS, TYPE, and EHC do not support multiple formats**

⇒ **FFS: Pad removal**

⇒ **For context establishment the compressor send the full header and the context ID via PDCP data PDU**

⇒ **ROHC and EHC are independent, e.g. from specification point of view they could both be configured for a DRB.**

⇒ **FFS if for context establishment the explicit feedback is sent via PDCP control PDU.**

Baseline feedback mechanism, enhancements not precluded:

⇒ **For context establishment the de-compressor sends an explicit feedback to the compressor after the establishment of the context, i.e. when a full header packet is received with a context id.**

⇒ **For context establishment the explicit feedback includes the "Context ID".**

⇒ **When the compressor receives the feedback it is confident that the context is successfully established, and from this time compressed header packets can be transmitted.**

⇒ **FFS if EHC is allowed to be configured for a unidirectional link.**

General

R2-1913881 Handling of new flow when the number of stored contexts are already equal to the MAX_CID SHARP Corporation discussion Rel-16 NR_IIOT-Core

R2-1912717 Details for Ethernet header compression solution Intel discussion Rel-16 NR_IIOT-Core

R2-1912901 Remaining issues for EHC in TSC ZTE Corporation, Sanechips discussion Rel-16 NR_IIOT-Core R2-1908862

R2-1912528 EHC header handling for IIoT Samsung Research America discussion NR_IIOT R2-1911001

R2-1912313 Remaining issues for EHC vivo discussion

R2-1912314 TP on TS 38.323 of EHC vivo discussion

R2-1912315 TP on TS 38.331 of EHC vivo discussion

R2-1912553 Ethernet header compression Ericsson discussion NR_IIOT-Core

R2-1912727 Discussion on Ethernet Header Compression OPPO discussion Rel-16

R2-1913265 Ethernet Header Compression Message Format MediaTek Inc. discussion Rel-16 NR_IIOT-Core R2-1910075

R2-1913456 Padding removal Nokia, Nokia Shanghai Bell discussion Rel-16 NR_IIOT

R2-1913473 Discussion on EHC header format Huawei, HiSilicon discussion NR_IIOT-Core

R2-1913644 Principles for EHC header design Qualcomm Incorporated discussion

Feedback

R2-1912307 Remaining Issues on Ethernet Header Compression China Telecommunications discussion

R2-1912527 Feedback for EHC algorithm Samsung Research America discussion NR_IIOT R2-1910982

ROHC and EHC

R2-1913836 Discussion on performing ROHC LG Electronics Inc. discussion Rel-16 NR_IIOT-Core R2-1907557R2-1913457 Joint IP and Ethernet Header compression Nokia, Nokia Shanghai Bell discussion Rel-16 NR_IIOT

6.7.3 Intra-UE prioritization and multiplexing

NOTE RAN2 will deprioritize work on Intra-UE prioritization and multiplexing until R1 has made more progress, except for handling of deprioritized transmission (expectation that normal priority can be assumed for R2#108). Resource conflicts between dynamic grant (DG) and configured grant (CG) PUSCH and conflicts involving multiple CGs. UL data/control and control/control resource collision according to WID.

6.7.3.1 Handling of deprioritized transmissions

Including Summary on Deprioritized PDUs (CATT), deadline Tuesday Oct 8th.

R2-1912214 [107#80][NR IIOT] Summary on Deprioritized PDUs (CATT) CATT discussion Rel-16 NR_IIOT-Core Late
=> Revised in R2-1913955

R2-1913955 [107#80][NR IIOT] Summary on Deprioritized PDUs (CATT) CATT discussion Rel-16 NR_IIOT-Core Late

DISCUSSION
Simplest solution, rely on gNB to schedulde
- QC think that the gNB will not know if there is a de-prioritized transmission in the buffer as the timeline is not specified
- LG think both the option of network approach and UE approach may be needed. If a lot of CG resources can collide the UE approach seems better, but in other cases gNB approach is ok. Nokia agrees and think autonomous trex could be ok. Sequans agrees that both options may be needed and think CG should be used for autonomous retransmission. Docomo agrees. CMCC agrees as well. CMCC think that there may be cases when network don't recognize this.
- ZTE think autonomous transmission may increase the delay, and think the network approach is sufficient. Oppo think gNB only solution is ok, and think retransmission grant can be used for new transmission. Samsung think gNB solution is sufficient. A smart gNB will generate a grant when there is another transmission detected that can have collided with a CG. Samsung think that there can be configurations with which there are not so many collision.
- Ericsson agrees with a network based solution, and think a collision is only for high priority data transmissions and should not be ffrequent.
- Lenovo think we should allow the UE to retransmit in CG resource
- Sony think a UE solution is needed, and the UE behaviour is different, what will a UE do with grant but no data in the buffer. MTK think in this case the UE just ignores.
- IDT think a timeline based approach could be ok, but have been agreed to not do this. Autonomous retransmission is there for NR-U and can be used with small impact.
- Intel also think the network solution is sufficient. Vivo think so too.
- CATT think that if we go with network based solution, there should not be any enhancements.

  ⇒ **We don't do the solution where the UE indicate explicitly to the network that there is data for a deprioritized PDU**

DISCUSSION on the complexity of the UE autonomous retransmission in CG
- LG think this is already agreed for NR-U, so there is no specification effort.
- CMCC would prefer to let the UE use another HARQ process to not have additional latency. Lenovo think we may need some conditions in addition, to avoid using a HARQ process that is already in use. Nokia think this is possible. Think that if using the same HARQ process maybe a mechanism to discard is need. Docomo think that this could be up to UE impl. CATT think that the only condition is to avoid that the HARQ timer is running for the timer. Ericsson think NR-U has another timer, not sure wewant this. Vivo think it would be complex to use another HARQ process. IDT think NR-U uses the same HARQ process which would be ok as this is deprioritized data. Huawei think we can use the same HARQ process. Vivo and MTK think we shall use the same HARQ process as NR-U if we need autonomous retransmission. MTK think autonomous retransmission is not resource efficient. LG think that only using the same HARQ process is allowed. Lenovo think that a new TB need to be generated so there is no resource problem. CATT agrees with Lenovo, and think that CG in any case need to be over provisioned. Sony agrees with CATT and Lenovo that a new TB need to be generated. Samsung think that gNB need to provide a retransmission grant asap.
- ZTE think that the network will not know that a CG retransmission is a retransmission, it will think it is a new transmission. CATT think that this is true and UE shall generate a new transmission in a CG. Sequans wonder what is means to generate a new transmission, not a new PDU right? Lenovo and Nokia agrees. LG point out that for NR-U, retransmission is generated after a blocked first transmission.
- Sony think there are two cases, either when it is in the HARQ buffer, for which retransmission is good, and also the case when a PDU has not been generated yet,
- CMCC think that if we change HARQ process we should generate a new transmission, if same HARQ process retransmission.
- Oppo wonder if this will impact prioritization in MAC.
- Ericsson wonder if gNB can generate a retransmission grant with the autonomous retransmission solution? Nokia think that for CG case we cannot always rely on gNB for retransmission .. IDT think the gNB could indeed trigger retransmission. CMCC think that

autonomous retransmission is needed. LG think that if the UE receives grant from gNB the UE can retransmit, but if not then the UE can autonomously retransmit.
- Ericsson and QC think we should wait with decision.

Chair summary:
- Everyone think that gNB scheduled retransmission of a deprioritized transmission shall be supported (acc to earlier agreement).
- There is significant support to allow "UE autonomous retransmission in a CG resource". For this case MAC will not re-generate a PDU, but it is open whether the transmission would be considered a HARQ new transmission or a HARQ retransmission.
- There is no consensus to make additional effort if needed to speed up a retransmission by using another HARQ process.
- It seems not clear if the NR-U solution could be reused.

⇒ **There is support to have "UE autonomous retransmission in a CG resource". Allow checking of complexity to next meeting.**

=> Noted

R2-1912215	Handling of Dropped MAC PDU	CATT	discussion	Rel-16	NR_IIOT-Core	R2-1908831
R2-1912501	Transmission of Deprioritized Data	Samsung	discussion	Rel-16	NR_IIOT-Core	
R2-1912554	Handling of de-prioritized MAC PDUs	Ericsson	discussion	NR_IIOT-Core		
R2-1912728	Other issue on intra-UE prioritization in IIoT	OPPO	discussion	Rel-16		
R2-1912884	Handling of deprioritized PDUs in MAC	InterDigital	discussion	Rel-16	FS_NR_IIOT	
R2-1912933	Handling of deprioritized transmissions	CMCC	discussion	Rel-16	NR_IIOT-Core	
R2-1913084	Handling of de-prioritized MAC PDUs	III	discussion	Rel-16	NR_IIOT-Core	
R2-1913091	Handling of De-prioritized MAC PDUs	Nokia, Nokia Shanghai Bell	discussion	Rel-16	NR_IIOT-Core	
R2-1913242	Handling of de-prioritized MAC PDU due to intra-UE prioritization	Huawei, HiSilicon, SIA	discussion	Rel-16	NR_IIOT-Core	
R2-1913352	Handling a deprioritized PDU for uplink Intra-UE prioritization in IIoT	Sony	discussion	Rel-16	NR_IIOT-Core	
R2-1913624	Handling of collisions with a CG	Sequans Communications	discussion	Rel-16	FS_NR_IIOT	R2-1911383
R2-1913625	Enhanced rescheduling for dropped CG	Sequans Communications	discussion	Rel-16	FS_NR_IIOT	R2-1911384
R2-1913641	Views on handling of PDUs and data of deprioritized grants	Qualcomm Incorporated	discussion			
R2-1913746	Recovery for deprioritized data transmission	NTT DOCOMO, INC.	discussion	Rel-16	NR_IIOT-Core	
R2-1913848	Discussion on de-prioritized MAC PDU on CG resource	LG Electronics Polska, LG Uplus	discussion	Rel-16	NR_IIOT-Core	R2-1910976

=> All discussion documents in this AI are noted.

6.7.3.2 Data Data prioritization with CG

R2-1912211	Data/data prioritization	CATT	discussion	Rel-16	NR_IIOT-Core	
R2-1912212	Equal-priority handling	CATT	discussion	Rel-16	NR_IIOT-Core	R2-1908828
R2-1912216	The prioritization between MAC CEs and UL data	CATT	discussion	Rel-16	NR_IIOT-Core	
R2-1912217	LCP restriction enhancement for reliability	CATT	discussion	Rel-16	NR_IIOT-Core	
R2-1912247	Discussion on CG and CG collision of equal priority	Spreadtrum Communications	discussion			

R2-1912320 Discussion on the MAC PDU recovery procedure vivo discussion
R2-1912323 Discussion on the PUSCH priority based on MAC CE vivo discussion
R2-1912500 Priority of MAC PDU and MAC CE Samsung discussion Rel-16 NR_IIOT-Core
R2-1912555 Main functions of intra-UE data-data prioritization Ericsson discussion NR_IIOT-Core
R2-1912556 Reliability aspects in LCP restriction enhancement Ericsson discussion NR_IIOT-Core
R2-1912718 Intra UE prioritization of UL Data and Data Intel discussion Rel-16 NR_IIOT-Core
R2-1912729 Intra-UE prioritization involving configured grant OPPO discussion Rel-16
R2-1912883 Intra-UE Prioritization for overlapping PUSCHs InterDigital discussion Rel-16 FS_NR_IIOT
R2-1912934 Handling for CG resource collision of equal priority CMCC discussion Rel-16 NR_IIOT-Core
R2-1912945 Discussion on LCP restriction enhancements for DG CMCC discussion Rel-16
R2-1912950 Handling of de-prioritized MAC PDU CMCC discussion Rel-16 38.321 NR_IIOT-Core Withdrawn
R2-1913047 Consideration on HARQ conflict between configured grant and dynamic grant ZTE Corporation, Sanechips discussion Rel-16 NR_IIOT-Core R2-1910402
R2-1913241 Solution for intra-UE prioritization Huawei, HiSilicon discussion Rel-16 NR_IIOT-Core
R2-1913662 Some Considerations on intra-UE data-data prioritization China Telecommunications discussion

6.7.3.3 SR Data prioritization

R2-1912213 SR/PUSCH prioritization CATT discussion Rel-16 NR_IIOT-Core R2-1908829
R2-1912322 Remaining issue for the priority of PUSCH and SR vivo discussion
R2-1912495 Prioritization of SR Transmission for URLLC Samsung discussion Rel-16 NR_IIOT-Core R2-1911463
R2-1912557 Intra-UE Control-Data prioritization - SR over PUSCH Ericsson discussion NR_IIOT-Core
R2-1912730 Discussion on SR cancelling on intra-UE prioritization involving SR OPPO discussion Rel-16
R2-1912885 Intra UE prioritization between SR and PUSCH InterDigital discussion Rel-16 FS_NR_IIOT
R2-1913092 Remaining Issues for Resource Conflicts Involving SR Nokia, Nokia Shanghai Bell discussion Rel-16 NR_IIOT-Core
R2-1913136 Impact of intra-UE prioritization on SR cancellation LG Electronics Inc. discussion NR_IIOT-Core R2-1911207
R2-1913243 Prioritization issues for MAC Ces Huawei, HiSilicon, SIA discussion Rel-16 NR_IIOT-Core

6.7.3.4 Other

R2-1912317 URLLC transmission within measurement gap vivo discussion R2-1910009
R2-1912319 Reliability-based LCP Restriction Enhancement for DG vivo discussion
R2-1912731 Intra-UE prioritization between multiple SRs OPPO, Huawei, HiSilicon discussion Rel-16
R2-1912732 Draft LS on intra-UE prioritization for multiple SRs OPPO LS out Rel-16 FS_NR_IIOT To:RAN1
R2-1913046 Consideration on the multiplexing BSR MAC CE and URLLC data ZTE Corporation, Sanechips discussion Rel-16 NR_IIOT-Core R2-1910398

6.7.4 PDCP duplication enhancements

PDCP duplication with up to 4 RLC entities configured by RRC. Mechanisms or enhancements relating to dynamic control of how a set or subset of configured RLC entities or legs are used for PDCP duplication, duplication activation/deactivation.

6.7.4.1 Network Controlled Duplication

Primary path

R2-1913093 On Primary Path of PDCP Duplication Nokia, Nokia Shanghai Bell, NTT Docomo, Samsung, CATT, NEC, III, Qualcomm, Lenovo discussion Rel-16 NR_IIOT-Core

- Huawei don't understand why this is needed. R16 is different to R15. Now we will have a MAC CE to activate/deactivate all legs.
- Ericsson think this would simplify and support.
- LG think there are no technical reasons for primary path. LG think the main reason was to tell where data below split threshold where to be transmitted and tell where PDCP control PDU is sent. LG think PDCP control PDU shall be duplicated or can be sent on any path. MTK agree with LG.
- Vivo think we need nothing specified if the MAC CE control everything. Intel agrees.
- CMCC think PDCP control PDU shall not be duplicated or otherwise duplicates need to be handled. Samsung think duplication of control PDU shall not be done.
- Oppo think we don't need primary path.
- LG think then we can have no primary path for Data PDUs.
- MTK think that if we go this way we need to resolve if Data PDU duplication can be deactivated for primary path.
- CATT support this.
- CMCC think that a primary path need to be reconfigured frequently.

⇒ **The mechanism of primary path defined for Rel-15 PDCP duplication should be retained for Rel-16 (FFS if allowed to deactivate a primary path ie to not send data PDU).**

R2-1913837 Need for Primary path LG Electronics Inc., LG Uplus discussion Rel-16 NR_IIOT-Core

R2-1912953 Discussion of primary path configuration for PDCP duplication CMCC discussion Rel-16 38.321 NR_IIOT-Core

R2-1912558 PDCP Control PDUs and primary path Ericsson discussion NR_IIOT-Core

LCH-to-cell Restriction

R2-1912461 LCH-to-cell Restriction for CA Duplication Deactivation Apple, Nokia, Nokia Shanghai Bell discussion Rel-16 NR_IIOT-Core

DISCUSSION

- LG think this should be avoided
- Futurewei think there is a problem if the Scell is reserved for certain service. Futurewei agree there is an issue for duplication disable/enable, but think that network can use explicit configuration.
- Oppo think the rel-15 behaviour is ok.
- Samsung think we can also keep the LCH restrictions always.
- Google agrees we can keep Rel-15 behaviour and also think RRC reconfig. can be used.
- Lenovo think that we should change in any case.

⇒ **noted**

R2-1913838 Discussion on LCH-to-Cell restriction for PDCP duplication LG Electronics Inc. discussion Rel-16 NR_IIOT-Core

- LG think that we can keep the restriction statically
- Apple think this is even worse.

- Huawei

  ⇒ **noted**

R2-1913245 Cell restriction for PDCP duplication with up to 4 legs Huawei, HiSilicon discussion Rel-16 NR_IIOT-Core
- LG think also this is complex.
- Ericsson think that something is needed, and would prefer the Apple proposal.
- LG think network can configure if specific configurations are needed.

  ⇒ **noted**

MAC CE

R2-1913638 MAC CE structure for PDCP duplication enhancement Qualcomm Incorporated discussion

R2-1913166 MAC CE structure for PDCP duplication activation deactivation Fujitsu discussion Rel-16 NR_IIOT-Core

R2-1912559 Open issues related to MAC CE for PDCP duplication Ericsson discussion NR_IIOT-Core

R2-1912719 PDCP duplication with multiple RLC entities Intel discussion Rel-16 NR_IIOT-Core

R2-1913761 MAC CE format for PDCP duplication activation/deactivation LG Electronics Inc. discussion Rel-16 NR_IIOT-Core

R2-1912503 MAC CE Format for RLC Activiation Samsung discussion Rel-16 NR_IIOT-Core

R2-1912931 Down selection on the PDCP Duplication MAC CE Structure CMCC discussion Rel-16 NR_IIOT-Core

R2-1913094 MAC CE Format and Network Coordination for Uplink PDCP Duplication Nokia, Nokia Shanghai Bell discussion Rel-16 NR_IIOT-Core

General

R2-1912496 Split Bearer Fallback at Deactivation of PDCP Duplication Samsung discussion Rel-16 NR_IIOT-Core R2-1911462

R2-1912460 Leg Selection for Non-duplicated Data Transmission Apple discussion Rel-16 NR_IIOT-Core

R2-1912497 Configuration and initial state of PDCP duplication Samsung discussion Rel-16 NR_IIOT-Core R2-1911458

R2-1912733 Discussion on data duplication enhancement in IIoT OPPO discussion Rel-16

R2-1912971 PDCP Duplication Configuration Mediatek Inc. discussion R2-1909239

R2-1912219 PDCP Duplication Configuration and Activation/Deactivation CATT discussion Rel-16 NR_IIOT-Core

R2-1912235 Consideration on activation/deactivation of PDCP duplication Spreadtrum Communications discussion

R2-1912321 Remaining issues of the network-controlled duplication vivo discussion

R2-1913044 Considerations on support of split bearer in the case of PDCP duplication with multiple copies ZTE Corporation, Sanechips discussion Rel-16 NR_IIOT-Core

R2-1913167 NW-based per-packet PDCP duplication Fujitsu discussion Rel-16 NR_IIOT-Core

R2-1913244 Activation/deactivation of PDCP duplication of up to 4 legs Huawei, HiSilicon discussion Rel-16 NR_IIOT-Core

R2-1912218 On the number of activated legs CATT, Fujitsu discussion Rel-16 NR_IIOT-Core

R2-1913640 PDCP duplication enhancements and RLC AM Qualcomm Incorporated discussion

R2-1913676 Discussion of Guarantee PDCP Duplication Transmission III discussion Rel-16 NR_IIOT-Core

6.7.4.2 UE controlled Duplication

NOTE that UE based mechanisms has lower priority.

R2-1912220 Discussion on UE based Duplication Activation/Deactivation CATT discussion Rel-16 NR_IIOT-Core

R2-1912248 Consideration on packet based duplication Spreadtrum Communications discussion

R2-1912462 Selective PDCP Duplication Enhancement Apple discussion Rel-16 NR_IIOT-Core R2-1909857

R2-1912463 UE based PDCP Duplication Enhancement Apple discussion Rel-16 NR_IIOT-Core R2-1909856

R2-1912499 Discussion on UE Autonomous PDCP Duplication Samsung discussion Rel-16 NR_IIOT-Core R2-1911465

R2-1912720 UE based PDCP duplication activation/deactivation Intel discussion Rel-16 NR_IIOT-Core R2-1910453

R2-1912734 Discussion on UE-based data duplication enhancement OPPO discussion Rel-16

R2-1913045 Discussion on UE based PDCP Duplication activationdeactivation ZTE Corporation, Sanechips discussion Rel-16 NR_IIOT-Core

R2-1913639 Value of UE-based PDCP duplication Qualcomm Incorporated discussion

6.7.4.3 Other

R2-1913759 Redundant retransmission in PDCP duplication LG Electronics Inc., LG Uplus discussion Rel-16 NR_IIOT-Core R2-1909814

R2-1913760 Handling of RLC stuck problem with PDCP duplication LG Electronics Inc. discussion Rel-16 NR_IIOT-Core R2-1909817 Withdrawn

R2-1913805 Handling of RLC stuck problem with PDCP duplication LG Electronics Inc., LG Uplus discussion Rel-16 NR_IIOT-Core R2-1909817

6.8 NR Positioning Support

(NR_pos-Core; leading WG: RAN1; REL-16; started: Mar 19; target; Mar 20; WID: RP-191156). Documents in this agenda item will be handled in a break out session

Time budget: 1 TU

Tdoc Limitation: 5 tdocs

6.8.1 Organisational

Including incoming LSs, rapporteur inputs, etc

Including output of email discussion [107#69][NR/Positioning] Running stage 2 CR on positioning (Intel)

R2-1912011 LS on DL/UL Reference Signals and Measurements for NR Positioning (R1-1909796; contact: Intel) RAN1 LS in Rel-16 NR_pos To:RAN2 Cc:RAN3, RAN4

Nokia understand that the third column in the table is informational, and wonder if we in RAN2 will take the decision about which measurement applies to which technique. Intel understand that we will decide how to group them in the protocol.

⇨ Noted

R2-1912703 Running stage 2 CR on NR positioning 107#69 Intel Corporation, ESA draftCR Rel-16 38.305 15.4.0 NR_pos-Core

Nokia wonder if we should merge in the RAN3 endorsed changes. Intel understand that they are available in a contribution to this meeting (R2-1913396).

⇨ Endorsed as the current running CR

✉ **[107bis#78][NR Pos] Running stage 2 CR on NR positioning (Intel)**
Intended outcome: Update of the running CR to reflect decisions of RAN2#107bis
Deadline: Next Meeting

R2-1913396 TP for 38.305 Baseline CR: Transmission Measurement Function in NG-RAN Qualcomm Incorporated discussion

Huawei think in section 5.1, there is some confusion in the terminology since the ng-eNB cannot have TRPs. Qualcomm agree the TRPs should be only applicable to the gNB, but note that a TRP can have TP or RP functions or both.
Nokia think we shouldn't show the split architecture in RAN2 specs. Qualcomm think it's necessary in the positioning context and further details introduced in RAN3 can be captured in 38.401.
Nokia wonder in section 5.1.1 why "gNB-CU terminates NRPPa protocol" was removed. Qualcomm clarify it was a duplicate sentence: We already have it in section 6.3.1 and it is not really an architectural point.
Intel wonder if we should notify RAN3, and whether they will update their TP in this meeting or the next. Nokia think we are not changing what's proposed for 38.401 and RAN3 can still edit that.
Qualcomm think 38.305 is under RAN2 responsibility and we should make the changes to it, and it would be good to update RAN3.
Ericsson think section 6.7 has a problem because TRP is not a logical node. Qualcomm think this can be fixed once we have more input, but they understand that the LMF may need to address a TRP and think this reflects the current discussion in RAN3.
⇨ To be included in the email discussion of the 38.305 CR

R2-1913412 Running CR for the introduction of NR positioning Ericsson draftCR Rel-16 38.331 15.7.0 B NR_pos-Core

Intel wonder if on-demand SI request will be captured in this CR. Ericsson understand that we do not have related agreements, and considering the discussion of the main session we need to have some further discussion of that topic.
Qualcomm think the CR is missing some aspects, e.g. the GNSS IDs.
⇨ For review by email

✉ **[107bis#79][NR Pos] Running CR to 38.331 on NR positioning (Ericsson)**
Intended outcome: Endorsable running CR
Deadline: Next Meeting

6.8.2 Architecture and protocol aspects

6.8.2.1 Support of NR RAT-dependent positioning

Procedures and protocol design

R2-1912200 Discussion on procedures in RAT-Dependent positioning methods CATT discussion Rel-16 NR_pos-Core

- Follow LPP flows for the positioning methods
- Introduce beam and timestamp info into measurements
- SRS configured by gNB
- Do not group the positioning methods by DL/UL

Discussed jointly with the next document

R2-1912704 Support of NR dependent positioning methods Intel Corporation discussion Rel-16 NR_pos-Core

- Follow LPP flows for positioning methods where possible
- UE Rx-Tx obtained by LPP, gNB Rx-Tx by NRPPa
- SRS configured by gNB

- Do not group the positioning methods by DL/UL; in stage 2, refer to the positioning techniques listed by RAN1, and in stage 3, categorise based on measurements
    - Network asks UE to provide specific measurements and provides corresponding AD
    - No separate procedures for e.g. DL-TDOA; only one procedure for NR RAT-dependent positioning

Qualcomm share the view of CATT that we need to introduce the NR positioning methods as they are listed in the WI rather than grouping them, because the content of the data will be different for different methods even if the high-level procedures are similar. They think this reduces the ASN.1 overhead because of not needing the same message to support all possibilities. The assistance data for DL-TDOA will be different from that for DL-AoD, for example. Also the UE behaviour is different for each method.

Qualcomm think there may be LPP impact to support UL-TDOA: at least capability transfer to inform the LMF that the UE supports UL-PRS, and potentially assistance data related to the SSB configurations of neighbouring cells.

Ericsson share Intel's view that it makes sense to have one procedure (with the exception of E-CID which could be captured separately). They do not see the same level of complexity as described by Qualcomm. In terms of capability they think it would make more sense to support specific measurements rather than specific methods.

Huawei agree with Qualcomm, and think if we adopt Intel's approach it will be a complete shift of paradigm compared to LPP. They think there may be issues in the future that we are not able to identify yet. They also think that for the MO case the gNB may need to know what the positioning method in use is.

Intel think for the MO case the positioning method can still be transparent to the gNB.

Nokia ask for clarification of proposal 13 of the Intel paper; would we capture some aspects as method-specific? Intel clarify the requested measurements would be identified by the required measurement only and the AD would correspond to what was needed for those measurements.

Qualcomm think for measurements of DL-RSRP, a single method does not work, because the UE behaviour for measuring DL-RSRP for E-CID is different from DL-AoD. They understand that for E-CID the UE is not required to make any measurements, only to report what is already available.

Ericsson think it is reasonable in the case of E-CID to extend the existing procedure, and this is the one area where we have full details of RAN1 so far.

Intel think based on current RAN1 status there is no DL-PRS-based RSRP for E-CID, only DL RSRP.

Qualcomm wonder how multi-RTT would be supported with a single method. In the Intel contribution it depends on Rx-Tx time difference which would require AD for E-CID.

Ericsson think measurement of UE Rx-Tx is open in RAN1.

Intel understand that for E-CID, RAN1 did not agree to have UE Rx-Tx-based E-CID. Ericsson understand that the Intel contribution assumes this. Qualcomm think UE Rx-Tx is necessary to support TA type 1.

CATT think there is no conclusion from RAN1 about the UL-PRS design and we should not take detailed decisions about the procedures e.g. configured by RRC vs. LPP, without knowing the design.

Intel think how to use and transfer the UL-PRS configurations can be decided by RAN2. Huawei agree and think we could come to a conclusion about how to transfer them; they support the use of RRC.

Huawei also think we need to discuss whether Rel-15 SRS can be used as UL-PRS. They understand that RAN1 left this for RAN2 to discuss.

Intel think whether Rel-15 SRS can be used is outside RAN2 scope. Huawei understand that RAN1 concluded it would not impact their specifications.

Nokia think we are not tasked to decide what reference signal to use; we should refer to the LS.

Intel think we could discuss by email whether there are serious problems with either approach to categorising the positioning techniques (one method or separate methods), and provide two sets of CRs.

Nokia wonder if DL-TDOA now has two measurements (RSTD and RSRP), are both mandatory to provide or is one optional? Intel understand it would depend on what the LMF requested, and a reasonable LMF would request both of them if it wants to do DL-TDOA.

Huawei wonder if AoA and ZoA would be optional or mandatory for multi-RTT. Qualcomm think it depends what the LMF requests.
CATT understand that RSRP indicates the direction of RSTD, and allows the LMF to select the correct RSTD. So a reasonable LMF would request both.
Ericsson agree that both RSTD and RSRP would be needed, and that the LMF indicates which measurements it would like to use. They think the UE will not support methods but measurements.
Qualcomm think support indications for methods are needed because the measurements are different depending on the method. E.g. what it means to support RSRP is different depending on what method uses the measurement. So they think that the UE needs to know what the purpose of the measurements and AD is.
Ericsson do not see that knowing the method would be needed, or why RSRP measurements would be different depending on what the server would use them for. Intel have the same view but think an LS could be sent to RAN1 for clarification of this point.
Qualcomm clarify if the UE is measuring RSRP for DL-AoD, it receives certain AD that forces it to use the same Rx beam for RSRP, as compared to beam sweeping measurements for RRM. They think RAN1 cannot resolve this question more than RAN2 can.
CATT think we need to determine what the LMF needs based on the positioning technique. They suggest an LS to RAN3 about the measurement and RS requirements, to align.
Intel think RAN1 need to be the ones to determine how RAT-dependent positioning works. They think they should be able to answer whether RSRP measurements are different for different positioning methods, etc.
Ericsson agree we could detail the situations that require different AD, but it might take a round of contributions to converge.
Intel would like to ask RAN1 if there are situations where the measurements and/or RS configurations are different for different positioning techniques.
Qualcomm think as an example, the UE should only measure synchronous cells for DL-TDOA but could measure asynchronous ones for DL-AoD. Intel think this is related to assistance data, which would be different for DL-TDOA than DL-AoD, but not to the measurements. Ericsson think that in this case the LMF would still configure the same measurements. Qualcomm wonder how hybrid positioning would work: Would the LMF indicate to measure RSTD for some cells and AoA for others?
Qualcomm think there is more flexibility and future-proofing if we treat the methods separately. They think there needs to be clear procedural guidance in order to support e.g. UL+DL cases.
Huawei see that AD for DL-TDOA and DL-AoD would be different in that DL-AoD does not require a reference cell, and in this sense the AD cannot be totally agnostic to the positioning techniques.
Ericsson think even for AoD you would need a timestamp.
Qualcomm do not see the advantage of having a generic NR method; they consider that it would introduce more complexity and limit our future extensions. They agree it can be done but doubt if it is beneficial.
Ericsson wonder if we can agree that capability is by measurements, not methods. Qualcomm cannot agree to this.
Intel suggest starting to capture a draft CR with separate techniques and we can see if it's feasible to combine them.
Qualcomm think it would not help us if we just capture the equivalent of PRS-Info based on an update from RAN1. So waiting for RAN1 will not help.
Intel suggest that we start a discussion to capture the RAN1 parameters in LPP, and further discuss based on contributions whether to merge the methods.

Intel wonder if we can conclude on how UL-PRS are configured. Qualcomm think this will be clarified by the parameter update from RAN1. Huawei have the same understanding that RAN1 will indicate whether they are in LPP or RRC. Ericsson think this would be more of a RAN2 issue, and think it is natural that we would configure them in RRC.
Qualcomm agree RAN1 will let RAN2 decide where the parameters go, but think we need to see what is in the configuration in order to know which node can provide it. E.g. the legacy SRS can be configured entirely from the gNB, but the UL-PRS may require input from the LMF.
CATT understand from RAN1 that the DL-PRS should be configured by LMF, not gNB.

⇨ We do not extend the LTE IEs for OTDOA or E-CID to include NR measurements/AD.

⇨ The high-level LPP procedures (Request/Provide Assistance Data, Location Information, Capabilities) are extended (as already agreed).
⇨ There will be one or more new methods for NR RAT-dependent positioning.
⇨ For stage 2, we do not group the NR RAT-dependent techniques with the existing methods.
⇨ For stage 2, capture the RAT-dependent measurements and RS types.
⇨ For stage 2, capture the six RAT-dependent techniques described in the RAN1 LS (R2-1912011).

✉ **[107bis#80][NR Pos] Capturing RAN1 parameters for positioning (Intel)**
Generate a draft CR based on any LS from RAN1 regarding their agreed positioning parameters.
Intended outcome: Draft CR to next meeting
Deadline: Next Meeting

R2-1913423 RAT dependent positioning methods - architecture and protocol aspects Ericsson discussion Rel-16
R2-1913365 Discussion on RAT dependent NR Positioning techniques Sony discussion Rel-16 NR_pos-Core

Downlink

R2-1913395 DL and UL NR Positioning Procedures Qualcomm Incorporated discussion
R2-1913037 Consideration on DL positioning method in NR Huawei, HiSilicon discussion Rel-16
R2-1912080 Discussion on DL-TDOA positioning ZTE Corporation discussion Rel-16
R2-1912534 Consideration of beam for NR OTDOA Samsung R&D Institute UK discussion
R2-1913593 Angle of Departure UE positioning technique Nokia, Nokia Shanghai Bell discussion Rel-16 NR_pos-Core

Uplink

R2-1912081 Discussion on UL-TDOA positioning in NR ZTE Corporation discussion Rel-16
R2-1913039 Consideration on UL positioning method in NR Huawei, HiSilicon discussion Rel-16

E-CID

R2-1913422 Stage-3 structure details for RAT-dependent NR positioning Ericsson discussion Rel-16
R2-1913041 Consideration on E-CID in NR Huawei, HiSilicon discussion Rel-16
R2-1912533 considerations for NR ECID Samsung R&D Institute UK discussion
R2-1912082 Discussion on multi-cell E-CID in NR ZTE Corporation discussion Rel-16

Multi-RTT

R2-1913040 Consideration on Multi-RTT positioning in NR Huawei, HiSilicon discussion Rel-16

PRS

R2-1913278 On PRS Information for NR Positioning LG Electronics Inc. discussion Rel-16

Others

R2-1913594 On-demand and dynamic PRS configuration for DL-TDOA Nokia, Nokia Shanghai Bell discussion Rel-16 NR_pos-Core R2-1907657

Withdrawn/Not available

R2-1912083 Discussion on multi-cell E-CID in NR ZTE Corporation discussion Rel-16 Late

6.8.2.2 Support of SSR phase 2 (PPP-RTK)

R2-1913397 GNSS SSR Assistance Data Qualcomm Incorporated discussion

✉ **[107bis#81][NR Pos] Update of SSR phase 2 running CRs (Qualcomm)**
Intended outcome: Draft CRs for 36.355 and 36.331 for next meeting
Deadline: Next Meeting

R2-1912519 SSR Atmospheric Correction Points Area Definition u-blox AG discussion Rel-16

R2-1912520 Text Proposal for addition of SSR Atmospheric Correction Points Area Definition u-blox AG discussion Rel-16

Ericsson think we could compare to the Qualcomm approach. Qualcomm understand that there are two issues: where to put the correction points and whether we need to have both a list of coordinates and a grid. They would like to confirm if we have common understanding on the need for both.
u-blox understand that we agreed to have both options (as a reduction from an original proposal with three different representations). They consider that an array of correction points in a grid is a common use case, and the list is useful for sets of disjoint correction points such as clusters of islands.
Nokia thought we agreed to have a simple list of coordinates as opposed to an array definition.
Ericsson think in the case of a cluster of islands you could separate the islands into several small grids.
Qualcomm think you can use a list of coordinates to mimic a grid, but a grid cannot emulate a list of coordinates. If the size is small there is not much efficiency difference.
Swift agree that a list can represent a grid, but think that in many deployments a large grid is applicable and much more efficient. They understand that there are real deployments approaching the maximum of 64 points.
ESA think the point of the grid was the efficiency in the larger cases.
Nokia understand that we would not broadcast based on national coverage but the points around a gNB coverage area.
u-blox think for most cellular networks the number of points broadcast would be small, but if we limit to that we constrain the implementation, thus they would prefer to keep both alternatives.
Qualcomm think significant optimisations are possible on top of the implementation given here. They also think there are some unclear identifiers in the proposal, e.g. the networkID.
u-blox clarify the network ID is in the compact SSR definition and service providers expect to use it.
⇨ Offline discussion to converge the details of the implementation. Offline discussion 402, u-blox. Update of the document in R2-1914073.

⇨ Implement both a list of coordinates and a grid definition for the correction points.

R2-1914073 [RAN2#107bis Offline-402] Converge on details of SSR Correction Points definition u-blox AG discussion Rel-16
⇨ TP to be incorporated into the running CR for email discussion
⇨ Noted

R2-1912325 Adding the Phase Bias Indicator to the SSR Phase Bias message Swift Navigation discussion

R2-1913424 GNSS Integer Ambiguity Level Indications Ericsson discussion Rel-16

R2-1913415 Introduction of additional posSIBs for QZSS PPP-RTK Phase 2 Ericsson draftCR Rel-16 36.331 15.7.0 B NR_pos-Core

6.8.2.3 Broadcast assistance data

Note, documents on on-demand system information in connected mode should be submitted to 6.21. Documents on positioning related SI content should be submitted here.

R2-1913398 Broadcast of Location Assistance Data by NG-RAN Qualcomm Incorporated discussion

Ericsson think we could wait on defining specific posSIBs.
Nokia think we need to discuss the on-demand SI generally and resolve the related open issues.
Huawei wonder if the Msg1/Msg3 on-demand approach is intended to be applicable for connected mode in this proposal. Ericsson understand that it is only for idle/inactive. Chair has the same understanding. Nokia agree.
Nokia suggest we could agree a baseline broadcast support CR and add on-demand later.
Huawei think we have not discussed whether to support posSIB on-demand request for idle/inactive.
Qualcomm think requesting on-demand SI is fundamental as a part of the broadcast feature; otherwise we depend on the assumption that broadcast is always on.
Huawei think GNSS could be supported in idle mode but not RAT-dependent.
Intel wonder if the idle UE needs the posSIBs; if so, it would make sense to include the request at least for GNSS.
T-Mobile would like to be able to do UE-based positioning in idle mode.
Huawei think idle/inactive positioning is not in the scope of the WID. Qualcomm think there is also nothing to prohibit it; we have the objective for broadcast AD. If we limit to connected mode it's not clear why we need broadcast AD at all.
Qualcomm think it doesn't make sense to keep the UE in connected mode to receive the broadcast in an ongoing way for RTK. Ericsson agree and think if we do not have the Msg1/Msg3 based request it would force the broadcast to be always on.
Qualcomm think it could work to have the UE go to RRC_CONNECTED for the request, but there may not be a mechanism to do that. They see no need to prohibit idle/inactive UEs from making the request.
Huawei think the content of the broadcast is clearly FFS, and for the idle mode case we need to understand the use case especially for the RAT-dependent methods.
T-Mobile think the WID identifies UE-based positioning, and the use case is indoor operation when GNSS is not available.
Nokia would like to see a baseline CR providing always-on broadcast support similar to what we have in LTE, and on-demand can be considered in a future meeting. Intel agree.
⇨ Noted

R2-1913038 Discussion on broadcasting of positioning assistance data Huawei, HiSilicon discussion Rel-16
R2-1912201 Considerations on Broadcast Positioning Assistance Data CATT discussion Rel-16 NR_pos-Core
R2-1913410 New SIB for hosting posSI Scheduling Information Ericsson discussion Rel-16

6.8.2.4 UE-based positioning

R2-1912705 Assistance data for UE based DL only positioning Intel Corporation discussion Rel-16 NR_pos-Core R2-1909407
R2-1913399 Assistance Data for DL-only UE-based mode Qualcomm Incorporated discussion
R2-1913416 UE-based configuration options Ericsson discussion Rel-16
R2-1913228 NR UE-based Positioning Modes and Geographical Information ITRI discussion NR_pos-Core

6.8.3 Other

6.9 NR mobility enhancements

(NR_Mob_enh-Core; leading WG: RAN2; REL-16; started: Jun 18; target; Mar 20; WID: RP-192277). Documents in this agenda item will be handled in a break out session
Treated together with 7.3,
Joint 6.9 and 7.3 Time budget: 3 TU
Joint 6.9 and 7.3 Tdoc Limitation: 12 tdocs

6.9.1 Organisational

Including incoming LSs, running CRs, rapporteur inputs, etc
Note: The running NR Stage-2 CR was endorsed as outcome of email discussion [107#13][NR/Mob-enh] Running stage 2 CR (Intel) in R2-1911559.

R2-1912041 Reply LS on simultaneous RX/TX for NR (R4-1909992; contact: Ericsson) RAN4 LS in Rel-16 NR_Mob_enh-Core To:RAN1, RAN2
⇨ Noted.

R2-1912781 Running CR for the introduction of NR mobility enhancement Intel Corporation CR Rel-16 38.300 15.7.0 0172 - B NR_Mob_enh-Core
⇨ Already endorsed in email discussion, but contains some editorial changes. Will be updated with this meeting changes.

CBF: Offline 105 (Intel): Capturing agreements in running CR. Running CR can be provided in R2-1913995

⇨ Handled in main session
=> To Email [107bis#08][NR MobE] Updated Stage-2 running CR for NR mobility (Intel).
=> Endorsed in R2-1913995

6.9.2 Reduction in user data interruption during handover

No documents should be submitted to 6.9.2. Please submit to 6.9.2.x
Contributions on RUDI handovers using DAPS for LTE and NR are treated jointly in under 7.3.2. Do not use this AI for any item that can be discussed jointly.

6.9.3 Handover robustness improvements

Contributions on conditional handover for LTE and NR are treated jointly under 6.9.3 except where otherwise noted.
No documents should be submitted to 6.9.3. Please submit to 6.9.3.x

6.9.3.1 Conditional handover – configuration and execution details

This AI jointly addresses NR and LTE.
Including outcome of email discussion [107#30][NR/LTE/Mob-enh] Configuration of CHO and execution condition (Intel)
Including Stage-3 details that are either not handled or are left open in the conclusion of the email discussion 107#30 (should also provide TPs to illustrate the required Stage-3 specification changes).

Outcome of email discussion [107#30][NR/LTE/Mob-enh] Configuration of CHO and execution condition (Intel)

R2-1912779 Report of [107#30][NR/LTE/Mob-enh] Configuration of CHO and execution condition Intel Corporation discussion Rel-16 LTE_feMob-Core, NR_Mob_enh-Core Late

Agreements
1 From RAN2 perspective, both source and target can trigger the modification of CHO configuration, and leave the final decision to RAN3.
2. When source configuration needs to be changed, it is up to network to update the UE stored CHO configurations so it remains valid. From RAN2 perspective, whenever source configuration needs to be changed, source sends the updated configuration to target if a new CHO configuration is needed and ask RAN3 to confirm.

3. The handling of CHO configuration can be split into 2 steps as below and inform RAN4 about RAN2 agreements:

Step 1: Decode the RRCReconfiguration/RRCConnectionReconfiguration including source configuration, if present, and CHO execution conditions (both decode and configure upon reception of RRCReconfiguration/RRCConnectionReconfiguration).

Step 2: Apply the target cell configuration (i.e. a stored RRCReconfiguration/RRCConnectionReconfiguration prepared for the selected target), the UE can only do this upon meeting the CHO execution condition for the cell.

Show of hands

1) Do not trigger re-establishment and do early check: 10

2) Do not trigger re-establishment and do late check: 0

3) Trigger re-establishment and do early check: 13

4) Trigger re-establishment and do late check: 3

⇨ **Stick to current specification (to be clarified which option that means).**

Discussion:

Proposal 1

- Ericsson wonders if only CHO cancellation is needed.Intel clarifies target may need to modify some configuration based on load conditions. Charter thinks CFRA -> CBRA change may need modification. Ericsson thinks this is not possible.
- Nokia thinks we should just continue and leave RAN3 to consider their workload.

Proposal 2:

- OPPO wonders how source knows CHO configuration update is needed – only target would know? MediaTek agrees. Intel thinks not all configurations impact the target CHO configuration. Some might not. Futurewei thinks source update makes sense.
- Samsung wonders if UE behaviour is based on this assumption. Intel thinks this is up to network implementation and doesn't affect UE.

Proposal 3:

- Mtek wonders how network knows this. Intel thinks this was discussed over email and most companies left it up to network to solve the problem. Ericsson thinks this just means network provides configuration that UE can use. This doesn't require any additional effort to specify and doing something else would be optimizations. Samsung thinks this is a network restriction to ensure valid CHO configuration. NEC agrees.

Proposal 6

- Qualcomm thinks this is problematic. vivo thinks the proposal is useful. Intel clarifies that the benefit for UE is that there will be more problems upon handover and not while radio conditions to source are still valid. Xiaomi thinks only the timing differs. If we check later, UE can't recover. IDT also agrees. Ericsson thinks this shouldn't impose any restrictions on number of target cells for CHO.

Proposal 9

- Ericsson thinks this is problematic. Futurewei agrees as this is only target configuration, not source. Would cause source to fail even if the link is still good. Nokia agrees this is problematic. IDT agrees. Samsung wonders what is the problem for the network. Ericsson thinks HO doesn't happen immediately. LGE has concern on this. vivo thinks UE could indicate the problem to source and not do re-establishment.
- Intel thinks this is about whether the failure is a rare case or not. Huawei thinks this is a rare case. OPPO agrees. CATT agrees. Ericsson thinks this might be more common in NR.
- Nokia thinks that for RUDI, most didn't want a re-establishment, but now the same companies do want re-establishment.
- Ericsson thinks any solution should ensure network is aware of what caused the problem.

R2-1912780 TS38.331 TP of 107#30 NR_Mob_enh-Core | Intel Corporation | draftCR | Rel-16 | 38.331 | 15.7.0 | Late

⇨**To be handled in email discussion**

- ✉ **[107bis#54][NR MobE] 38.331 RRC running CR NR mobility (Intel)**
  Update running CR based on this meeting's agreements (not including conditional PSCell aspects).
  Intended outcome: Running CR for next meeting.
  Deadline: Next Meeting

CHO execution and CHO signalling structure (at least partly repeating the email discussion)

R2-1913483 Further issues for CHO configuration and execution ZTE Corporation, Sanechips discussion Rel-16 NR_Mob_enh-Core

R2-1912632 Open issues from email discussion [107#30][NR/LTE/Mob-enh] Ericsson discussion NR_Mob_enh-Core

R2-1912136 Discussion on Signaling Structure of CHO Configuration Message CATT discussion Rel-16 NR_Mob_enh-Core

R2-1913863 ReportConifg ID for CHO Condition LG Electronics Inc. discussion Rel-16 NR_Mob_enh-Core

CHO compliance checking:

R2-1913152 On RRC processing and CHO command compliance check Nokia, Nokia Shanghai Bell discussion Rel-16 NR_Mob_enh-Core

R2-1912740 Discussion on execution aspect for CHO Huawei, HiSilicon discussion Rel-16 NR_Mob_enh-Core, LTE_feMob-Core

R2-1913590 CHO configuration/ execution, remaining aspects Samsung Telecommunications discussion Rel-16 NR_Mob_enh-Core

R2-1912909 Discussion on configuration of CHO China Telecommunications discussion
(moved from 7.3.3)

R2-1913862 Consideration on Invalid Cell Handling in CHO LG Electronics Inc. discussion Rel-16 NR_Mob_enh-Core

Number of configured CHO target cells

R2-1912342 Discussion on the number of prepared cells for CHO vivo discussion Rel-16 NR_Mob_enh-Core R2-1909537

R2-1912736 On Maximum Number of CHO Candidate Cells and Nodes Charter Communications, Inc discussion Rel-16 NR_Mob_enh, LTE_feMob, NR_Mob_enh-Core, LTE_feMob-Core

R2-1912739 Discussion on configuration aspect for CHO Huawei, HiSilicon, China Telecom discussion Rel-16 NR_Mob_enh-Core, LTE_feMob-Core

Release of CHO configurations (at configuration change, HO command reception, state transition, security key change, re-establishment...):

R2-1912340 Discussion on CHO release vivo discussion Rel-16 NR_Mob_enh-Core

R2-1913668 Validity of CHO configurations based on security configuration Sharp discussion Rel-16

R2-1912633 Handling of a HO command while UE is monitoring CHO Ericsson discussion NR_Mob_enh-Core

R2-1913151 On RRC Reconfigurations in CHO-prepared state Nokia, Nokia Shanghai Bell discussion Rel-16 NR_Mob_enh-Core

R2-1913909 CHO UE behaviour upon transitioning to RRC_INACTIVE/RRC_IDLE Samsung Electronics Polska discussion
(moved from 6.9.3.3)

R2-1913675 Discussion on a configuration mismatch between a UE and a target gNB KDDI Corporation discussion

R2-1912637 Further details on CHO failure handling Ericsson discussion NR_Mob_enh-Core

R2-1912634 Suspend while monitoring CHO in NR Ericsson discussion NR_Mob_enh-Core

R2-1913860 Consideration of CHO Configuration Update LG Electronics Inc. discussion Rel-16 NR_Mob_enh-Core

R2-1913861 Draft LS on CHO Configuration Update LG Electronics Inc. LS out Rel-16 NR_Mob_enh-Core To:RAN3

R2-1912464 Consecutive Conditional Handover Apple discussion Rel-16 NR_Mob_enh-Core R2-1909862

R2-1913792 Problems in Evaluation of CHO Execution Condition ETRI discussion Rel-16 NR_Mob_enh-Core R2-1909228

CHO and measurements (e.g. s-Measure applicability, measurement reporting while CHO is configured,...)

R2-1912529 measurement aspects for CHO Samsung R&D Institute UK discussion

R2-1913001 Measurement Report for Conditional Handover Procedures MediaTek Inc. discussion R2-1908947

(moved from 6.9.3.3)

R2-1912240 Measurement report enhancement in conditional handover Spreadtrum Communications discussion R2-1909083

(moved from 6.9.3.3)

R2-1912693 Discussion on the leaving conditions for CHO PANASONIC R&D Center Germany discussion R2-1909255

(moved from 6.9.3.3)

R2-1912339 Conditional Handover without explict trigger condition vivo discussion Rel-16 NR_Mob_enh-Core R2-1910684

TPs to 38.331 on CHO:

R2-1912636 TP for 38.331 on CHO Ericsson discussion NR_Mob_enh-Core

6.9.3.2 Conditional handover – failure handling

This AI jointly addresses NR and LTE.
Including confirmation, or otherwise, of the working assumption from last meeting on handling of RLF and HO failure.

Resolution to the WA on CHO failure handling:

R2-1912784 Confirmation of WA for failure handling Intel Corporation, InterDigital Inc., China Telecom, OPPO, MediaTek, Lenovo, Motorola Mobility, vivo, Spreadtrum, ITRI, Sharp, Panasonic, Xiaomi, ZTE Corporation, Sanechips, LG Electronics, CATT, NEC, Ericsson, Google Inc., Apple discussion Rel-16 LTE_feMob-Core, NR_Mob_enh-Core

Agreements

1. Confirm the working assumption as an optional feature:

At RLF/HO failure/CHO failure, the UE performs cell selection and if the selected cell is a CHO candidate then the UE attempts CHO execution, otherwise re-establishment is performed.

If the CHO performed during failure handling procedure fails, the UE will perform re-establishment, i.e. we do not allow multiple attempts of CHO during failure case.

FFS on how to capture it in specification;

If UE doesn't support this capability, it does re-establishment (just as now). Network can configure what UE does.

Discussion

- MediaTek thinks this allows the other proposed options as well.
- Qualcomm thinks this is an optimization but would like that this is an optional capability. If UE doesn't support, it does re-establishment (just as now)
- Nokia thinks this is too complex and doesn't provide benefits. Could have just a single target. Samsung agrees and thinks this increases delay. Futurewei agrees.
- Samsung thinks the technical merits were not discused.

R2-1913908 Discussion on Performing CHO instaed of RRE in CHO Samsung, Nokia, Nokia Shanghai Bell, Qualcomm Incorporated discussion Rel-16 NR_Mob_enh-Core

R2-1912132 Discussion on the Working Assumption Related Issues CATT discussion Rel-16 NR_Mob_enh-Core

Additional discussion about the WA interpretation and what to do after (C)HO failure:

R2-1912741 Discussion on failure handling for CHO Huawei, HiSilicon discussion Rel-16 NR_Mob_enh-Core, LTE_feMob-Core

R2-1912972 Discussion on the use case of CHO failure recovery Beijing Xiaomi Software Tech discussion

R2-1913000 Mobility Failure Handling with Conditional Handover Candidates MediaTek Inc. discussion

R2-1913057 Failure handling and RLF report for CHO NEC discussion Rel-16 NR_Mob_enh-Core

R2-1913153 Failure handling in the presence of prepared CHO candidates Nokia, Nokia Shanghai Bell discussion Rel-16 NR_Mob_enh-Core

R2-1912454 Discussion on the timer design for CHO vivo discussion Rel-16 NR_Mob_enh-Core

R2-1913089 Failure handling with CHO candidate Lenovo, Motorola Mobility discussion Rel-16 R2-1910615 Late

R2-1912812 Access handling for multiple candidate cells in CHO Futurewei Technologies discussion Rel-16

(moved from 6.9.3.1)

T312 instead of WA on CHO failure:

R2-1913904 Discussion on Fast failure recovery alternatives to WA Samsung Electronics Polska discussion

CHO failure with fast MCG recovery:

R2-1913484 Discussion on fast RLF recovery when applying CHO and fast MCG recovery ZTE Corporation, Sanechips discussion Rel-16 NR_Mob_enh-Core

Withdrawn:

R2-1912341 Discussion on the HOF for CHO vivo discussion Rel-16 NR_Mob_enh-Core R2-1909538 Withdrawn

6.9.3.3 Conditional handover - other aspects

This AI jointly addresses NR and LTE.
Aspects not addressed by the 3 previous agenda items, e.g. UE capabilities, combining RUDI HO and CHO, etc.

UE capabilities for CHO

R2-1913015 UE capabilities for CHO Nokia, Nokia Shanghai Bell discussion Rel-16 NR_Mob_enh-Core, LTE_feMob-Core R2-1909010

R2-1912137 UE Capability Issue for CHO CATT discussion Rel-16 NR_Mob_enh-Core

R2-1912742 Discussion on UE capabilities for mobility enhancements Huawei, HiSilicon discussion Rel-16 NR_Mob_enh-Core, LTE_feMob-Core

Other aspects (RRC size limitations, security key derivation, phases of CHO...)

R2-1913513 Timing of Key Derivation in Conditional Handover Futurewei discussion Rel-16 NR_Mob_enh-Core

R2-1913514 Draft LS on the Timing of AS Key Derivation in Conditional Handover Futurewei LS out Rel-16 NR_Mob_enh-Core, LTE_feMob-Core To:SA3 Cc:RAN3

R2-1912241 RRC signaling size restriction in CHO Spreadtrum Communications discussion R2-1909084

R2-1913068 Discussion on phase of the LTE CHO procedure China Telecommunications discussion

(moved from 7.3.3)

Combining RUDI HO and CHO

R2-1912881 On Combining RUDI and CHO InterDigital discussion Rel-16 NR_Mob_enh-Core

R2-1913145 Discussion on simultaneous connectivity in CHO vivo discussion Rel-16 NR_Mob_enh-Core

R2-1913154 Mobility Robustness for DAPS eMBB handover Nokia, Nokia Shanghai Bell discussion Rel-16 NR_Mob_enh-Core R2-1909039

R2-1913677 LTE Mobility Robustness Enhancements for DAPS eMBB HO Qualcomm Incorporated discussion Rel-16 LTE_feMob-Core R2-1909844

R2-1913793 Combination of CHO and RUDI Handover ETRI discussion Rel-16 NR_Mob_enh-Core

R2-1912743 Discussion on combination of simultaneous connectivity and CHO Huawei, HiSilicon discussion Rel-16 NR_Mob_enh-Core, LTE_feMob-Core

R2-1912135 Coexistence of Simultaneous Connectivity and CHO CATT discussion Rel-16 NR_Mob_enh-Core

6.9.3.4 Fast handover failure recovery

Including discussion on how to define the T312 timer functionaility for NR.

Details of NR T312 support:

R2-1913905 Discussion on Remaining issues related to T312 Samsung Electronics Polska discussion

Proposal 1: In NR, T312 is configured for the source frequency and not for the target frequency.

Proposal 2: RAN2 to discuss which of the below signalling options is preferred to configure T312 based on source cell frequency (PCell) in NR

ALT 1: Reuse the LTE baseline - T312 is configured as part of measurement object. All applicable measurement object is configured with the same value.

ALT 2: PCell specific value of T312 is configured

Proposal 3: Use of T312 (useT312) is event specific and configured as part of reporting configuration

Proposal 4: RAN to discuss which of the below triggering conditions to start T312 is preferred

ALT 1: Reuse the LTE baseline – Start timer T312 when T310 is running, and a measurement report is triggered for an event that is configured to use T312.

ALT 2: Start timer T312 when T310 starts running, if measurement report has already been triggered for an event that is configured to use T312, and the condition for triggering the measurement report still holds at the start of T310.

Proposal 5. Introduce T312 based mechanism on PSCell for fast declaration of SCG failure.

Agreements

1 Reuse the LTE baseline for T312 functionality. Can discuss specific optimizations based on company contributions.

Working assumption

2 Introduce T312 based mechanism on PSCell for fast declaration of SCG failure.

=> Proponents should provide CRs for PSCell T312 for next meeting.

Discussion

Proposal 1

- OPPO wonders why we would deviate from LTE. T310 triggers in the source already.
- Qualcomm thinks we should follow LTE baseline. vivo agrees.
- Nokia thinks only MRs triggered after T310 are taken into account and would like to extend MRs triggered before T310.
- Samsung doesn't understand why T312 has different values for different frequencies. CATT has some sympathy for this but re-establishment is done for target. Doesn't understand why source frequency should be used because of that.
- OPPO thinks we spent a long time with this in LTE so shouldn't repeat that. Network can use same value in source and target. MediaTek agrees. Intel agrees. LGE agrees.

- Samsung is fine to follow LTE baseline for configuration but would like the same value for all MeasObjects. Qualcomm thinks FR1 and FR2 values could be discussed.

Proposal 5:
- CATT thinks we don't need T312 for PSCell. Futurewei agrees that network can do this. Ericsson agrees. Intel agrees. Huawei agrees.
- OPPO thinks conditional PSCell change motivates T312 for PSCell. Nokia would like to introduce it for SRB3. Qualcomm would also like SRB1 and EN-DC is a good use case. Samsung thinks we should do this.

R2-1912744 Discussion on fast handover failure recovery Huawei, HiSilicon discussion Rel-16 NR_Mob_enh-Core
R2-1912402 Discussion on T312 for PSCell OPPO discussion Rel-16 NR_Mob_enh-Core

CHO and T312:

R2-1913155 Further thoughts on RLF detection in NR Nokia, Nokia Shanghai Bell discussion Rel-16 NR_Mob_enh-Core
R2-1913650 Considerations on T312 enhancements for fast RLF recovery in NR Potevio discussion Rel-16 NR_Mob_enh-Core

Draft CRs for T312 support:

R2-1912530 T312 further enhancement Samsung R&D Institute UK discussion

Other topics (Combining re-establishment and reconfiguration, Early UE context fetch, Event-based faster pseudo-RLF trigger):

R2-1912932 Further discussion on fast HO failure recovery in NR CMCC discussion Rel-16 NR_Mob_enh-Core
R2-1912946 Discussion on fast handover failure recovery CMCC discussion Rel-16
R2-1913794 Faster Handover Failure RecoveryETRI discussion Rel-16 NR_Mob_enh-Core R2-1909230

6.9.3.5 Conditional handover - beam specific aspects

This AI only addresses NR.
Including discussion on beam-related aspects for CHO. New proposals should provide TPs illustrating the required Stage-3 specification changes.

R2-1912134 Further Discussion on Cell Evaluation for CHO Cell Selection CATT discussion Rel-16 NR_Mob_enh-Core
(moved from 6.9.3.3)

6.9.4 Conditional PSCell addition/change

Including CP and UP aspects of the solution: How much can we reuse of the basic CHO agreements for conditional PSCell addition/change? Are there any differences in the procedures for different MR-DC architectures?

Basic procedures conditional PSCell addition/change

R2-1912133 Conditional PScell Addition/Change CATT discussion Rel-16 NR_Mob_enh-Core
Proposal 1: Maintain Rel-15 principle that only one PScell is active at a time even with conditional PScell addition/change.
Proposal 2: For conditional PScell addition, the MN decides on the conditional PScell addition execution condition. The condition is defined by a measurement identity, given by a measurement configuration provided by the MN.
Proposal 3: For conditional PScell change, execution condition:-
A) is decided by the MN and the condition is defined by a measurement identity, given by a measurement configuration provided by the MN or

B) is decided by the SN and the condition is defined by a measurement identity, given by a measurement configuration provided by the SN.
Proposal 4: For conditional PScell change, A3/A5 execution condition should be supported while for conditional PScell addition, A4/B1 like execution condition should be supported.
Proposal 5: For conditional SN change, the source SN configuration can be used as the reference in generation of delta signalling for the candidate SNs.
Proposal 6: RAN2 is requested to discuss whether use of MN configuration as reference is adequate in generation of delta signalling for the candidate SN in conditional SN addition.
Proposal 7: The UE informs the execution of conditional PScell addition/change directly to the MN using SRB1.
Proposal 8: Baseline that the configurations of all candidate SN configurations are released upon the successful completion of conditional PScell addition/change.
Proposal 9: No optimisation is required for handling of SCG failure for conditional PScell addition/change. Ie. SCG failure information procedure is used.
Proposal 10: During the execution of conditional PScell addition/change, the UE does not take into account modification of conditional PScell addition/change configuration, if received.

Discussion
P1-P3:
- Futurewei wonders if inter-RAT is supported. Qualcomm clarifies EN-DC was the original use case.
- Samsung thinks SN-initiated change is the main use case and we could prioritize that. Ericsson agrees. Intel agrees because SN change impacts UE the least. OPPO also agreed. MediaTek agrees but wonders if we will do the rest later.
- DCM wonders if the SN is source or target SN.

P4-10:
- LGE wonders of Network knows about the execution via RACH. Ericsson thinks this could be done via other ways.

Agreements
0 We will prioritize work in SN-initiated PSCell change for conditional PSCell change.
1 Maintain Rel-15 principle that only one PScell is active at a time even with conditional PScell addition/change.
2 For conditional PScell addition, the MN decides on the conditional PScell addition execution condition. The condition is defined by a measurement identity, given by a measurement configuration provided by the MN.
3 For conditional PScell change, execution condition may be decided by MN (MN-initiated) or SN (SN-initiated)
4 For conditional PScell change, A3/A5 execution condition should be supported while for conditional PScell addition, A4/B1 like execution condition should be supported.
5 For conditional SN change, the source SN configuration can be used as the reference in generation of delta signalling for the candidate SNs.

✉ **[107bis#52][NR MobE] Open issues Conditional PSCell addition/change (CATT)**
Determine open issues that need to be resolved for the feature to be completed.
Intended outcome: Report (may include TPs of proposals).
Deadline: Next Meeting

R2-1913916 Study on application of CHO mechanism to Conditional PSCell addition change NTT DOCOMO INC. discussion NR_Mob_enh-Core
R2-1912242 PSCell Conditional Change Considerations Spreadtrum Communications discussion
R2-1912882 Conditional PSCell addition/change InterDigital discussion Rel-16 NR_Mob_enh-Core
R2-1913036 Conditional PSCell addition and change Nokia, Nokia Shanghai Bell discussion Rel-16 NR_Mob_enh-Core
R2-1912343 Conditional PSCell addition and change vivo discussion Rel-16 NR_Mob_enh-Core

R2-1912344 Text proposal for conditional PSCell addition and change vivo discussion Rel-16 NR_Mob_enh-Core

R2-1912401 PCell monitoring during conditional PSCell addition/change OPPO discussion Rel-16 NR_Mob_enh-Core

R2-1912635 Conditional PSCell addition/change Ericsson discussion NR_Mob_enh-Core

R2-1912745 Discussion on CHO for Pscell change Huawei, HiSilicon discussion Rel-16 NR_Mob_enh-Core

R2-1912816 Procedure and configurations for conditional SN change Futurewei Technologies discussion Rel-16

R2-1912818 Discussion on RLM & RLF reduction for conditional PSCell addition/change Futurewei Technologies discussion

R2-1912983 Applicability of CHO agreements to conditional PSCell change NEC discussion Rel-16 NR_Mob_enh-Core

R2-1913485 Discussion on conditional PSCell addition/change ZTE Corporation, Sanechips discussion Rel-16 NR_Mob_enh-Core

R2-1913515 Handling of Key Derivation in Conditional PSCell Addition/Change Futurewei discussion Rel-16 NR_Mob_enh-Core

R2-1913591 Introducing condition for SN (re-)configurations Samsung Telecommunications discussion Rel-16 NR_Mob_enh-Core

R2-1913656 Inter-node interaction for Conditional PScell addition/change CATT discussion Rel-16 NR_Mob_enh-Core

R2-1913657 Draft LS on Conditional PSCell addition_change CATT LS out Rel-16 NR_Mob_enh-Core To:RAN3

R2-1912400 PCell monitoring during conditional PSCell addition/change OPPO discussion Rel-16 LTE_feMob-Core
(moved from 7.3.3)

R2-1912297 Conditional NR PSCell addition/change procedures Qualcomm Incorporated discussion

R2-1912298 Conditional NR PSCell addition/change failure handling Qualcomm Incorporated discussion

6.10 DC and CA enhancements

(LTE_NR_DC_CA_enh-Core; leading WG: RAN2; REL-16; started: Jun 18; target; Mar 20; WID: RP-192336, see also guidance in RP 192326)
Time budget: 2 TU
Tdoc Limitation: 8 tdocs

6.10.1 Organisational

Including incoming LSs, running CRs, rapporteur inputs, etc
Including output of email discussion [107#33][NR/DCCA] 38.331 running CR (Ericsson)
Including output of email discussion [107#34][NR/DCCA] 36.331 running CR (Ericsson)

LS in

R2-1912019 LS on DL HARQ timing for FDD Scell for LTE TDD-FDD CA with TDD Pcell, applied to FDD Pcell, for Dual Uplink EN-DC (R1-1909880; contact: Vodafone) RAN1 LS in Rel-16 LTE_NR_DC_CA_enh-Core To:RAN2 Cc:RAN

⇒ **noted**

R2-1912022 Reply LS on NR fast SCell activation (R1-1909893; contact: Qualcomm) RAN1 LS in Rel-16 LTE_NR_DC_CA_enh-Core To:RAN2, RAN4

⇒ **noted**

R2-1912053 Reply LS on NR fast SCell activation (R4-1910574; contact: Huawei) RAN4 LS in Rel-16 LTE_NR_DC_CA_enh-Core To:RAN1, RAN2

⇒ **noted**

R2-1912042 Reply LS on maximum allowed SCell activation delay for Rel16 CA (R4-1909995; contact: Nokia)
RAN4 LS in Rel-16 LTE_NR_DC_CA_enh-Core To:RAN1 Cc:RAN2

⇒ **noted**

Running CRs

R2-1912538 Running CR for 38.331 on CA/DC Enhancements Ericsson draftCR Rel-16 38.331 15.7.0 LTE_NR_DC_CA_enh-Core Late
- Ericsson explains these docs are work in progress with lots of comments, with not so many companies inputting.

=> Revised in R2-1914188

R2-1914188 Running CR for 38.331 on CA/DC Enhancements Ericsson draftCR Rel-16 38.331 15.7.0 LTE_NR_DC_CA_enh-Core

⇒ **endorsed as baseline (resume/stored ctx need further discussion)**

R2-1912539 Running CR for 36.331 for CA/DC Enhancements Ericsson draftCR Rel-16 36.331 15.7.0 LTE_NR_DC_CA_enh-Core Late

=> Revised in R2-1914189

R2-1914189 Running CR for 36.331 for CA/DC Enhancements Ericsson draftCR Rel-16 36.331 15.7.0 LTE_NR_DC_CA_enh-Core

⇒ **endorsed as baseline (resume/stored ctx need further discussion)**

Offline 39, clear up the CRs, revisions in R2-1914188 and R2-1914189 (ericsson)
- Ericsson has removed controversial aspects and replaced them with comments instead and think the updated versions are agreeable. They don't yet contain agreements from this meeting.
- MTK wonder if these need to be endorsed. MTK think there are still controversial items in the CRs. MTK think this main issue is on the resume procedure and the stored context.

R2-1912268 Running CR to 37.340 for CA_DC enhancements vivo, Ericsson draftCR Rel-15 37.340 15.7.0 LTE_NR_DC_CA_enh-Core
- Intel point out that there is a coversheet tdoc allocation problem the CR should be rel-16.

R2-1912540 Running CR for 36.300 on CA/DC Enhancements Ericsson draftCR Rel-16 36.300 15.7.0 LTE_NR_DC_CA_enh-Core

R2-1912541 Running CR for 38.300 for CA/DC Enhancements Ericsson draftCR Rel-16 38.300 15.7.0 LTE_NR_DC_CA_enh-Core
- Ericsson explains that the stage-2 CRs are just provided as baseline ref.

✉ **[107bis#06][DCCA] 36300 38300 (Ericsson)**
Intended outcome: Endorsed Running CRs, capturing agreements incl 107bis
Deadline: 1 week

=> Endorsed in:
R2-1914004 (36.300)
R2-1914005 (38.300)

✉ **[107bis#44][DCCA] Running CRs 38331 36331 (Ericsson)**
Intended outcome: Draft agreeable CRs for next meeting, capturing agreements incl 107bis
Deadline: Next Meeting

✉ **[107bis#45][DCCA] Running CR 37340 (Vivo)**
Intended outcome: Draft agreeable CR for next meeting, capturing agreements incl 107bis
Deadline: Next Meeting

6.10.2 NR-NR Dual Connectivity

RAN2 aspects related to NR-NR Dual Connectivity, to be discussed after RAN1 has made some progress.

Power Control NR-DC

R2-1912269	Power control for NR-DC	vivo	discussion	R2-1909193	
R2-1912542	NR-DC power control	Ericsson	discussion	Rel-16	LTE_NR_DC_CA_enh-Core

Further Enhancements

R2-1912120	Bearer type negotiation	CATT	discussion	Rel-16	LTE_NR_DC_CA_enh-Core	R2-1908893

6.10.3 Early measurement reporting

Early measurement reporting for MR-DC, NR-DC, and CA in IDLE, INACTIVE.
Including output of email discussion [107#35][NR/DCCA] Remaining aspects of early measurement configuration (Vivo)

R2-1912270 Report of [107#35][NR/DCCA] Remaining aspects of early measurement configuration (vivo)
vivo discussion

DISCUSSION
- Ericsson think this is not exactly as the current agreement.
- Nokia wonders if it is possible to have SSB configuration in release message. Vivo think all info is in the release message.
- Samsung wonders if the UE moves to an area with different timing, what do the UE do, just stop measure. Vivo think validity area can resolve this. LG don't think validity area can guarantee that this works. QC think there are problems also with UE changing camping freq.
- Nokia think there is an issue. Nokia think it is not so nice to have to provide SMTC in RRC release.
- Huawei think that if the UE can adjust its timing it would work.
- Oppo think there are issues also for the sycn SSB.
- ZTE and Intel prefer to not have the timing in the release message. QC agrees and think we can reconsider. MTK also prefer to have timing info not in dedicated signalling. Nokia agrees. Vivo think this is different to last meeting.
- Oppo think we can agree P1, but remove the last part, and think the SMTC issue can be discussed separately.
- Intel would be ok with P1 if the UE can stop measuring if broadcast config is not consistent with dedicated information.
- Samsung think that a UE can use the broadcast configuration even if he has a valid dedicated configuration.
- LG think the proposed text is unclear

P3-4
- Nokia think maybe we don't need the validity area. Samsung also think we should not have it.
- Vivo think a majority want this.
- China telecom and CMCC think validity area is useful.
- LG think we can reuse what we have in LTE
- Oppo think Validity area is ok, Spreadtrum too.
- Nokia think we cannot just copy-paste from LTE and then we don't really have time, copy paste would be ok.
- Huawei think the main intention is that the UE shall not measure where it is not needed. It can be kept simple.
- Samsung wonder if this is per UE or per frequency. If we keep it simple it should be per UE.
- QC think this is ok.
- Ericsson think the validity area should be per frequency.
- Chair: there seems to be some doubts on the RAN notification areas

FFS if the following can be agreed:
- **There is a validity area, and the action when the UE exits the validity area is that the UE stops all early measurements.**
- **Validity area is configured by means of dedicated RRC signaling**
- **Validity area can be configured by means of: Lists of PCIs; Lists of CellIdentity;**

- **When UE reselects to a cell that is not part of the validity area (for any of the configured frequencies/cells) while *measIdleDuration* is running, UE should stop measurement. UE stops the timer and clears the entire early measurement configuration.**

Offline 41, Check the above (Ericsson)
- Ericsson report there was no proper offline
- Ericsson still have doubts. Nokia also have doubts, but if we need to agree something the above proposal could be ok.
- Ericsson think the last bullet is controversial. MTK think that this is the same behaviour as LTE. Ericsson could compromise if the very last part is removed. Samsung think many companies think this is not so useful at all so for many companies only the simplest way is acceptable. Nokia and ZTE agrees.
- Samsung proposes the very last part to be WA

⇒ **There is a validity area, and the action when the UE exits the validity area is that the UE stops all early measurements.**

⇒ **Validity area is configured by means of dedicated RRC signaling**

⇒ **Validity area can be configured by means of: Lists of PCIs; Lists of CellIdentity;**

⇒ **When UE reselects to a cell that is not part of the validity area (for any of the configured frequencies/cells) while *measIdleDuration* is running, UE should stop measurement. UE stops the timer. WA that the UE also clears the entire early measurement configuration.**

R2-1913247 Remaining aspects on early measurement configuration Samsung, MediaTek Incorporated, ZTE Corporation, Sanechips, Qualcomm Incorporated discussion Rel-16
LTE_NR_DC_CA_enh-Core

Proposal 3 When it comes to the signalling options (broadcast/ dedicated) used for the different fields, the UE only needs to support a limited set of combinations. The following limitations apply:
- *a) If UE receives the frequency list by dedicated signalling, it may for non-camping frequencies receive the SSB measurement config (includes SMTC) by dedicated or broadcast signalling*
- *b) If UE receives the frequency list by broadcast, for non-camping frequencies it will receive the SSB measurement config (includes SMTC) by broadcast signalling also*
- *c) If UE receives the frequency list by broadcast, for all frequencies it will receive the common control signalling and cell info by broadcast signalling also*
- *d) If UE receives the frequency list by dedicated signalling, for all frequencies it will receive the common control signalling and cell info by dedicated signalling also*

DISCUSSION
- Vivo wonders what is a camping frequency? ZTE think this is from the point of the releaseing cell. Huawei think it doesn't matter if we have the last part of P1 or not. Nokia think camping frequency is the frequencies broadcasted for cell reselection.
- Intel think that as the timing information is provided in dedicated signalling it should be usable a certain area.

P2
- Ericsson think that the UE should continue measuring based on SIB configuration for cell reselection in such case. QC think that if the network doesn't provide a dedicated configuration the measurements will be based on SIB. MTK agrees with QC
- ZTE think that SIB information for early measurement can be both cell reselection configuration and/or new configuration not for cell reselection. Oppo think existing SIBs doesn't work ..
- Intel also think that only the frequencies may be provided by RRC release, and the UE uses the broadcast configuration.

3
- vivo think we already agreed this.

⇒ **The RRC release message can include SSB measurement configuration. It is assumed that information provided for cell reselection by broadcast is not provided in the RRC release message.**

⇒ **No UE requirements will be specified for what UE shall do upon reselection to a cell broadcasting for some frequency an SSB measurement configuration that differs from the values received in the RRC release message i.e. UE may stop early performing measurements for concerned frequency**

⇒ **If the UE has not received a dedicated SSB configuration, the UE does early measurements based on SIB.**

Offline 40, some companies need to think about P3 (Samsung)

R2-1914212 Report of offline discussion 040 on Signaling options for early measurement configuration Samsung report Rel-16 LTE_NR_DC_CA_enh-Core
- Samsung report that the document is not provided but think P3 is now agreeable.
- Ericsson think the proposal text may need to be rewritten. After modification Ericsson indicate that the proposal in the document is OK.

⇒ **Proposal is agreed**

R2-1912192 Remaining issues of NR early measurements Qualcomm Incorporated discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912282 SMTC for sync SSB frequency and non-sync SSB frequency OPPO discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912115 Remaining issues of early measurement configurations CATT discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1913615 Idle/inactive NR measurements in LTE and in NR Huawei, HiSilicon discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1913246 Configuration of early measurments by SN Samsung Telecommunications discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1913342 Handling early meaurment results upon cell reselection LG Electronics discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912989 Details of early measurement configuration Nokia, Nokia Shanghai Bell discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1913344 Considerations on ways to provide SSB configuration in early measurements LG Electronics discussion Rel-16 LTE_NR_DC_CA_enh-Core

Resume

R2-1912524 Fallback procedure for INACTIVE mode Samsung Research America discussion LTE_NR_DC_CA_enh R2-1910975

R2-1912545 Applicability of early measurement solutions for LTE Ericsson discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912543 Idle measurement configuration in UE Inactive AS context Ericsson discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912271 Early Measurement Reporting for INACTIVE State vivo discussion R2-1909195

IRAT mob State trans

R2-1913835 Discussion on early measurement configuration upon state transition MediaTek Inc. discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912990 Early measurements and Inter-RAT Nokia, Nokia Shanghai Bell discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912544 Handling of early measurement configuration and results Ericsson discussion Rel-16 LTE_NR_DC_CA_enh-Core
R2-1913488 On Inter-RAT Operation ZTE Corporation, Sanechips discussion Rel-16 LTE_NR_DC_CA_enh-Core
R2-1912272 UE measurement behaviour regarding autonomous state transition vivo discussion R2-1909196

Misc

R2-1913487 Remaining Issues on Early Measurements ZTE Corporation, Sanechips discussion Rel-16 LTE_NR_DC_CA_enh-Core
R2-1912114 Available Cell Reselection Measurement Result Reporting CATT discussion Rel-16 LTE_NR_DC_CA_enh-Core
R2-1912236 Consideration on early measurement reporting Spreadtrum Communications discussion R2-1909086
R2-1913343 Validity area enhancements in NR LG Electronics discussion Rel-16 LTE_NR_DC_CA_enh-Core
R2-1912293 Open issues for early measurement OPPO discussion Rel-16 LTE_NR_DC_CA_enh-Core
R2-1913919 Further consideration on capability reporting LG Electronics Inc. discussion Rel-16
R2-1912283 UE measurement behavior due to lower priority frequency and OOS OPPO discussion Rel-16 LTE_NR_DC_CA_enh-Core

New Cases

R2-1912546 Extended use cases for early measurement other than fast CA/DC setup Ericsson discussion Rel-16 LTE_NR_DC_CA_enh-Core
R2-1912547 On further aspects of early measurement Ericsson discussion Rel-16 LTE_NR_DC_CA_enh-Core
R2-1912237 Early measurement in NR-U Spreadtrum Communications discussion R2-1909107

UE capability

R2-1912991 UE capabilities for early measurements Nokia, Nokia Shanghai Bell discussion Rel-16 LTE_NR_DC_CA_enh-Core

Not to be treated

R2-1912273 IDC impact for early measurement vivo discussion R2-1909198

6.10.4 Efficient and low latency configuration signalling

Minimizing signalling overhead and latency needed for initial cell setup, additional cell setup and additional cell activation for data transmission. Contributions related to early measurement reporting should not be submitted in this AI.
No documents should be submitted to 6.10.4. Please submit to 6.10.4.x

6.10.4.1 Direct SCell activation

Further details related to direct SCell activation by RRC upon SCell addition or after a handover. Support of MCG SCell and SCG Configuration with RRC Resume (AI 6.10.4.3) should be concluded before discussing whether direct SCell activation by RRC is applicable to RRC Resume (outstanding FFS from RAN2#105).

R2-1912116 Considerations on Direct SCell activation in DC/CA Scenarios CATT discussion Rel-16 LTE_NR_DC_CA_enh-Core
R2-1912288 SCell or SCG activation in RRC_INACTIVE OPPO discussion Rel-16 LTE_NR_DC_CA_enh-Core
R2-1913489 On directly donfiguring SCell as activated ZTE Corporation, Sanechips discussion Rel-16 LTE_NR_DC_CA_enh-Core

6.10.4.2 Fast SCell activation

Solutions for fast SCell activation including 'dormancy' like behaviour, provision of temporary RS resources at SCell activation, etc. This topic will be discussed again by RAN2 after receiving input from RAN1/4 on the feasibility and benefit of the potential solutions in response to LS R2-1908483 sent from RAN2#106.

SCell Dormancy

R2-1912195 Discussion on fast SCell activation based on RAN1 / RAN4 reply LS Qualcomm Incorporated, Verizon, Vodafone, Sprint, MediaTek Inc., Charter Communications discussion Rel-16 LTE_NR_DC_CA_enh-Core

DISCSUSSION
- Vivo think we should support “sparse” PDCCH monitoring acc to R1 LS. QC think R2 understanding is acc to the proposal. ZTE agrees,
- Oppo think P1 we already agreed. Intel think we can agree.
- QC think R2 can agree.
- Vivo think R1 is looking at ways to bring Scell out of dormancy and sparse PDCCH monitoring is a way to bring Scell out of dormancy.
- Samsung wonders if beam mgmt involves CSI reporting. QC think yes.
- Intel wonder if we really need to say more than stops PDCCH monitoring.

P2
- MTK think the dormancy behaviour is on top of active/deactivated state.

P3
- Intel think we can also just let L1 handle this without BWP handling overhead in L2/L1. MTK think R1 can decide this.
- Nokia think R1 has already agreed this. Ericsson think this is not the case.
- Chair think we can in R2 possibly agree that we see benefits with X and Y etc. R1 input is needed for real decision.
- ZTE think the proposals represents simple solutions.
- Xiaomi think this has no spec impact.

⇒ **Based on RAN1/RAN4 reply LS, introduce ‘dormancy’ behaviour for NR SCell, i.e. the UE stops monitoring PDCCH on SCell but continue performing CSI measurements, AGC and beam management, if configured.**

⇒ **RAN2 confirms that UE “dormancy” operation is part of SCell activated state (i.e. not as part of SCell deactivated state)**

⇒ **Chair: R2 will need to wait for R1 progress**

R2-1912285 Introduction of dormancy behavior in NR OPPO discussion Rel-16 LTE_NR_DC_CA_enh-Core
=> Revised in R2-1913942

R2-1913942 Introduction of dormancy behavior in NR OPPO discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912992 Dormant behaviour Nokia, Nokia Shanghai Bell discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912275 Behavior of dormancy SCell and Scell activation vivo discussion

R2-1912465 UE Measurement in SCell Dormant State Apple discussion Rel-16 LTE_NR_DC_CA_enh-Core R2-1909865

R2-1913142 Consideration on dormancy behavior LG Electronics Inc. discussion LTE_NR_DC_CA_enh-Core

R2-1913490 Further Consideration on fast SCell activation ZTE Corporation, Sanechips discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1913531 Further RRC impact due to dormancy behaviour Ericsson discussion

R2-1913618 Discussion on dormancy-like behaviour Huawei, HiSilicon discussion Rel-16 LTE_NR_DC_CA_enh-Core

Fast Scell Activation

R2-1912476 To reduce SCell activation delay in NR LTE_NR_DC_CA_enh-Core Samsung discussion Rel-16 R2-1909126

R2-1912284 Fast Scell activation in sTAG OPPO discussion Rel-16 LTE_NR_DC_CA_enh-Core

Temporary RS

R2-1912117 Temporary RS utilization for SCell and SpCell LTE_NR_DC_CA_enh-Core CATT discussion Rel-16

6.10.4.3 MCG SCell and SCG Configuration with RRC Resume

Support of CA/DC configuration with RRC resume.

Including output of email discussion [107#32][NR/DCCA] MCG SCell/SCG resume (Interdigital)

R2-1912880 Summary of Email Discussion [107#32]NR/DCCA] MCG Scell/SCG Resume InterDigital discussion Rel-16 LTE_NR_DC_CA_enh-Core Late

DISCUSSION

P1

- MTK think this is not useful
- Chair wonder how this can work. Samsung indicate that Network based validation cannot work as it would be too late.
- Ericsson think the baseline is the question whether we can do better than blind resume, based on a configuration received in the release. LG has the same understanding.
- Vivo think the UE can do validation without notifying the network.
- CATT think all of this is not useful.
- Intel think SCG is many cells, and think the UE should only check the PScell.
- Oppo think measurement report is too late to resume SCG so this is useful and support P1.
- Huawei think 10 companies were against and 6 supported this in the email discussion.

DISCUSSION with removal of FFS

- ZTE think still this is not useful as the network likely need to do L1 reconfiguration.
- MTK think that reconfiguration can anyway be done after MSG5.
- QC think this indication need to provided before early measurements
- LG think the check is necessary. Vivo agrees but think it doesn’t need to be reported.
- Samsung wonder if the indication in MSG5 would be an optimization. Samsung think the early measurements shall be used to resume the SCG.
- Ericsson think there is no problems with this, and it is similar to conditional handover.
- Huawei think the measurement report in MSG5 would be the same thing as this. MSG3
- MTK cannot agree to this proposal. Nokia agree and think the MSG3 proposal is complex.
- Oppo reminds that this is similar to conditional handover/conditional PScell addition .. ZTE think this is different as here there is no pre-measurement report.
- IDT and Xiaomi think the procedure can reduce the latency compared to blind resume, and latency for failure and reconfiguration to a better configuration can be faster.

P5

- Oppo think the network will not have any measurement results at the time of resume and think this is required. QC agrees and think this would be a blind operation. R4 can probably not activate Scell, there would need to be a timeline requirement. LG has concerns as well. Nokia think we can send an LS. QC agrees to send an LS.
- Huawei think this is possible. Blind HO can be done. Huawei think that by deployment the network can know that the coverage of certain cells is at least as good as the resume Pcell. Catt, Ericsson, ZTE, Nokia support.
- Xiaomi wonder if the network can do the scheduling. Nokia assumes that the network will not schedule until the UE has sent a CSI report.

P7

- IDT report that the views were split. IDT explains that the purpose is power consumption.
- Intel think there is no further benefits specification wise. Nokia as well. CATT.
- Chair: not enough support.

P10

- LG think that if we confirm dormancy behaviour and discuss this later. IDT think that this is about dormancy for PScell.
- MTK think most companies want to wait until dormancy is specified

- Oppo think this is same as inactive state.
- Several companies think we should await dormancy progress. CATT think this is not so related to Scell dormancy.

P12
- Ericsson and QC think we can make it simple for this release.

P14
- Oppo think this need to be clarified. Oppo claims that the UE can have both LTE and NR serving cells simultaneously in RRC_INACTVE. Huawei don't understand, the UE just camp on one cell.

⇒ **The benefit of P1 seems to be to avoid the potential failure that occur if the UE resumes SCG out of coverage of the SCG (SCG failure)**

⇒ **Direct SCell activation (setting the SCell state to activated or deactivated) in resume message is supported, if R4 can confirm that there are no blocking issues from their point of view**

⇒ **When the UE resumes to a cell included in the stored SCG, particular functionality for swapping of MCG and SCG configurations is not considered for Rel16**

⇒ **New conditions/triggers for resuming directly to the SN are not considered in Rel16.**

R2 assumes the following (can be slightly modified due to progress on Scell dormancy):

⇒ **The UE supports network-controlled suspension of the SCG in RRC_CONNECTED.**

⇒ **UE behaviour for a suspended SCG is FFS**

⇒ **The UE supports at most one SCG configuration, suspended or not suspended, in Rel16.**

⇒ **In RRC_CONNECTED upon addition of the SCG, the SCG can be either suspended or not suspended by configuration.**

Offline 49, Draft LS to R4 on direct Scell activation in R2-1914210 (QC)

R2-1914210 [DRAFT] [LS to RAN4 on Direct Scell Activation] Qualcomm LS out Rel-16 LTE_NR_DC_CA_enh-Core To:RAN4
- QC report that this is the wrong version.

Revised in R2-1914216

R2-1914216 [DRAFT] [LS to RAN4 on Direct Scell Activation] Qualcomm LS out Rel-16 LTE_NR_DC_CA_enh-Core To:RAN4
- Huawei think we don't need to copy paste the whole discussion in the LS. MTK suggest we copy the agreement only, and not the discussion.

⇒ **Remove the R2 discussion box, remove "discussion notes and" in the line above the box.**

⇒ **With the change above, the LS is approved in R2-1914217**
- [MCC]: Removed "draft" from the LS title

⇒ **Approved in R2-1914227**

R2-1913921 Discussion on UE behavior for stored SCG/SCell configuration MediaTek Inc. discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1913491 On SCG suspension ZTE Corporation, Sanechips discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912194 Further discussion on NR SCG resume procedure Qualcomm Incorporated discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1913918 Conditional resumption with validity check LG Electronics Inc. discussion Rel-16

R2-1912238 Enhancements of resuming MR-DC configuration for RRC_INACTIVE Spreadtrum Communications discussion

R2-1912287 RRC Resume for MR-DC with 5GC OPPO discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912399 Consideration on the blind SCG configuration Beijing Xiaomi Mobile Software discussion Rel-16

R2-1913915 Further consideration on SCG resumption LG Electronics Inc. discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912118 Dormant SCG state CATT discussion Rel-16 LTE_NR_DC_CA_enh-Core

Other

R2-1912119 Signalling enhancement for Inactive state CATT discussion Rel-16 LTE_NR_DC_CA_enh-Core

6.10.4.4 Other

Other enhancements not addressed in the AIs above

Common Configurations

R2-1912121 Common Cell Configuration for Signaling Reduction in NR CATT discussion Rel-16 LTE_NR_DC_CA_enh-Core

DISCUSSION

- Chair wonder is there is interest
- QC, Nokia, ZTE, Oppo and Huawei support this. QC think we should apply also for BWP
- Ericsson has concerns on using LTE as a baseline and this is not stable, and this could take time. Vivo agrees. Samsung agrees with Ericsson but have some interest. Nokia think it should be simple, and think it can be kept simple. Huawei also think it could be ok.
- MTK think signalling priority has low priority. Intel agrees on this.
- Docomo think that for NR there is so much optionality and configurations in NR also for the common parts so it is not clear what the benefits.
- NR RRC rapporteur doesn't like the proposal.

⇒ **We don't attempt this kind of enhancements (Common Cell Configuration for Signalling Reduction) in Rel-16 in WI CADC enh.**

R2-1912196 Discussion on common SCell configuration Qualcomm Incorporated discussion Rel-16 LTE_NR_DC_CA_enh-Core R2-1908678

R2-1913230 Efficient RRC configuration with low latency Nokia, Nokia Shanghai Bell discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1913248 CA/ DC enhancements, signalling reduction Samsung Telecommunications discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912276 Minimize signaling overhead for cell setup of MR-DC vivo discussion R2-1909202

R2-1913492 Signalling overhead reduction for cell configuration and BWP configuration ZTE Corporation, Sanechips discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1913530 Use of group signaling for NR-CA Ericsson discussion

R2-1913742 NR group specific cell configuration Huawei, HiSilicon discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1913161 Latency reduction enhancements for SCG RACH procedure Qualcomm Incorporated discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912197 Introducing suspension of SCG Qualcomm Incorporated discussion Rel-16 LTE_NR_DC_CA_enh-Core R2-1908679

6.10.5 Fast MCG link Recovery

Further details of fast recovery of MCG link by utilizing the SCG link for recovery during MCG failure while operating under MR-DC. Including output of email discussion [107#31][NR/DCCA] MCG fast recovery (Ericsson)

R2-1913296 Summary of email discussion [107#31][NR/DCCA] MCG fast recovery discussion Rel-16 LTE_NR_DC_CA_enh-Core Ericsson

DISCUSSION
- Ericsson proposes to not treat P2-P7

P9
- LG think the guard timer was introduced for interaction problems network – UE, and think for this, the UE can resolve it by itself.
- Ericsson think there is no serious problem.
- Samsung think this may happen quite often. LG think we don't want to do reestablishment very often.
- Vivo think this is a corner case. QC think this is a rare case. MTK also think this is not serious.

P12
- Intel think we should discuss a framework rather than particular messages.

P14
- Nokia think that when SRB1 is configured with CA duplication the SRB3 is more reliable.
- Oppo think the purpose is fast recovery and think SRB choice can be left for implementation.
- IDT support the proposal.
- Samsung think that for split SRB there is the reordering problem and think SRB3 should be used if available.
- LG think network will configure which one will be used. ZTE agrees, because for the split SRB1 there is some drawback, but for SRB3 internode message upgrade is required, and the network may not support SRB3 this way. Vivo support. Huawei think the network shall configure.
- QC support the proposal.

P15
- Oppo think even though the network and UE is mismatched there is no problem as we have the guard timer. Ericsson think this deteriorates the UE reestablishment performance in all networks that do not support this. Vivo think the guard timer is anyway configured.

⇒ **Fast PCell recovery via SCell is not introduced in Rel-16.**

⇒ **We add no functionality for optimized RRC re-establishment to SN RAT in Rel-16**

⇒ **No further mechanisms are introduced to resolve outstanding UL/DL RRC deadlock messages situation upon the triggering of MCG failure recovery**

⇒ **For MCG fast recovery via SRB3, the MCGFailureInformation message in UL is encapsulated in the ULInformationTransferMRDC message**

⇒ **A new RRC message, i.e., DLInformationTransferMRDC, is introduced in order to allow the SN to encapsulate (for SRB3) the MN response (i.e., RRCReconfiguration or RRCRelease message) to be send to the UE**

⇒ **The RRC procedure on these encapsulated messages are the same as if they had been received by SRB1**

⇒ **When receiving a MN RRCRelease message encapsulated within an SN RRC message via SRB3, the UE does not send any complete message**

⇒ **Split SRB1 is always used for the transmission of the MCGFailureInformation message. SRB3 is used only if split SRB1 is not configured**

⇒ **MCG failure recovery can be configured by the network.**

R2-1912198 Remaining issues of Fast MCG Recovery LTE_NR_DC_CA_enh-Core Qualcomm Incorporated discussion Rel-16

R2-1912274 Discussion on fast radio link recovery vivo discussion R2-1909199

R2-1912277 Remaining issues on MCG fast recovery vivo discussion R2-1909203

R2-1912286 Supporting RRC reestablishment to SN RAT cell LTE_NR_DC_CA_enh-Core OPPO discussion Rel-16

R2-1912308 Fast Recovery with CA Nokia, Nokia Shanghai Bell discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912449 Further discussion on MCG failure recovery via SRB3 SHARP Corporation discussion

R2-1912466 PCell Fast Recovery Apple discussion Rel-16 LTE_NR_DC_CA_enh-Core R2-1909864

R2-1912490 Discussion on MCG Fast Recovery Samsung discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912491 Discussion on FailureInformation Samsung discussion Rel-16 LTE_NR_DC_CA_enh-Core R2-1911457 Withdrawn

R2-1912492 DL Reordering Problem at MCG Link Recovery Samsung discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912521 MCG RLF reporting via SCell Samsung Research America discussion LTE_NR_DC_CA_enh-Core R2-1910909 Withdrawn

R2-1912879 Remaining Aspects of Fast MCG Link Recovery using SRB3 InterDigital discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912984 Configuration of fast MCG recovery NEC discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1912993 Aspects of MCGFailureInformation over SRB3 Nokia, Nokia Shanghai Bell discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1913596 RRC Framework for handling MN failure indication and recovery over SRB3 Intel Corporation discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1913617 Handling of primaryPath when fast MCG link recovery via split SRB1 fails Huawei, HiSilicon discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1913745 Other recovery mechanisms for MCG fast recovery Huawei, HiSilicon discussion Rel-16 LTE_NR_DC_CA_enh-Core R2-1907496

R2-1913839 PDCP SN gap issue in fast MCG link recovery LG Electronics Inc. discussion Rel-16 LTE_NR_DC_CA_enh-Core

6.10.6 Cross-Carrier scheduling with different numerologies

RAN2 aspects related to cross-carrier scheduling, to be discussed after RAN1 has made some progress.

R2-1912193 CR to 38.331 on support of cross-carrier scheduling with different numerology Qualcomm Incorporated, ZTE Corporation, Sanechips draftCR Rel-16 38.331 15.7.0 F LTE_NR_DC_CA_enh-Core

R2-1912941 Impact analysis of NR CA frame timing relaxation CMCC discussion Rel-16

R2-1912994 CR on how to introduce x-scheduling with different numerologies Nokia, Nokia Shanghai Bell draftCR Rel-16 38.331 15.7.0 LTE_NR_DC_CA_enh-Core

R2-1913743 RAN2 impact to support cross-carrier scheduling with different numerologies Huawei, HiSilicon discussion Rel-16 LTE_NR_DC_CA_enh-Core R2-1911155

6.10.7 Other

Including any RAN2 aspects related to the objectives 6, 7 and 8 (for which the WID did not identify RAN2 impact)

R2-1912477 Support of unaligned frame boundary for inter-band TDD CA Samsung discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1913616 UE capabilities for DC and CA enhancements Huawei, HiSilicon discussion Rel-16 LTE_NR_DC_CA_enh-Core

R2-1913744 Clarification on RAN2 impact to support DL HARQ timing for dual UL EN-DC Huawei, HiSilicon discussion Rel-16 LTE_NR_DC_CA_enh-Core R2-1910194

6.11 UE Power Saving in NR

(NR_UE_pow_sav-Core; leading WG: RAN1; REL-16; started: Mar 19; target; Mar 20; WID: RP-191607, See also guidence in RP-192326). Documents in this agenda item will be handled in a break out session. NOTE: "SCell dormancy" like behaviour will be discussed in MR-DC WI.

Time budget: 1 TU

Tdoc Limitation: 6 tdocs

6.11.1 Organisational

Including incoming LSs, running TS, rapporteur inputs, etc

Including output of email discussion [107#65][NR/Power Saving] Running CR for 38.300 (CATT)

Contributions in this AI are reserved for WI rapporteur inputs and/or spec rapporteur inputs and do not count towards the tdoc limits.

R2-1912107 RAN2 work plan for UE Power Saving WI CATT (rapporteur) discussion Rel-16 NR_UE_pow_sav-Core
=> Noted

R2-1912108 [107#65][NR/Power Saving] Running CR for 38.300 (CATT) CATT (rapporteur) discussion Rel-16 NR_UE_pow_sav-Core Late
=> RAN2 will wait for RAN1 to provide stage 2TP this week on the RAN1 specific enhancements e.g. dynamic cross-slot
- Ericsson thinks that it would be great to choose a simple name for WUS.
- Xiaomi asks if the intention was that the UE triggers the measurement relaxation if any of the conditions were triggered.

=> The CR is endorsed

R2-1914183 LS on PDCCH-based Power Saving Signal/Channel carrying indication of UE wakeup before DRX ON (R1-1911475; contact: CATT)
- Ericsson explains that from a RAN2 perspective we can have it.

=> Noted

R2-1914192 LS on UE adaptation to maximum number of MIMO layers (R1-1911528; contact: vivo)
=> Noted

✉ **[107bis#69][PowerSaving] Running CR 38.300 (CATT)**
Scope: Capture agreements up to RAN2#107bis
Intended outcome: Running CR
Deadline: Next Meeting

✉ **[107bis#70][PowerSaving] Running CR 38.331 (Mediatek)**
Scope: Capture agreements up to RAN2#107bis at least for MIMO and SCell Identify and discuss open issues related to stage-3 modelling aspects if needed
Intended outcome: Running CR
Deadline: Next Meeting

✉ **[107bis#71][PowerSaving] Running CR 38.321 (Huawei)**
Scope: Identify and Discuss open issues related to stage-3 modelling aspects, with the aim to capture agreements up to RAN2#107bis
Intended outcome: Proposals on open issues and potential running CR
Deadline: Next Meeting

6.11.2 PDCCH-based power saving signals/channel Additional stage-3 RAN2 aspects

NOTE: 3. As per plenary guidance (RP-192289), RAN2 is not expected to discuss any aspects related to whether additional UE behavior is needed when UE is also configured for receiving PDCCH based power saving signal/channel outside active time. No contributions on this topic should be submitted under power savings.

Short DRX cycle

R2-1912330 WUS impact on Short DRX cycle vivo, Qualcomm Inc., Spreadtrum, Huawei, Hisilicon
discussion Rel-16 FS_NR_UE_pow_sav
=> Noted

R2-1912910 Simulations on PDCCH-WUS not applying to the DRX short cycles Xiaomi Communications
discussion
=> Noted

Discussion on DRX short cycles

- Vivo indicates that RAN1 has made a working agreement that DRX short cycles will not be supported
- Qualcomm thinks that DRX is a RAN2 topic and there is simulations showing that there is gains. Interdigital agrees and xiaomi's paper has shown the benefits.
- Intel explains that in RAN1 evaluations have been discussed and we should support RAN1. Samsung agrees. Oppo respects RAN1 agreements.
- Ericsson thinks from RAN2 perspective it should be supported and if there is a problem from RAN1 perspective we can re-discuss.
- Nokia is also is wondering how RAN1 makes this working assumptions. We should support short DRX cycle and have it configurable.
- LG doesn't support short DRX cycle.
- CATT doesn't hear any argument in support of short DRX and it requires a huge overhead in the DL which network vendors were concerned and there is some concerns in RAN1.
- Vivo explains that in RAN1 there was no study and that's why it was a working assumption.

R2-1914057 LS to RAN1 to ask about feasibility of short DRX vivo
=> Delete CSI/SRS reporting part
=> Update actions to RAN1 as "RAN2 kindly ask RAN1 if there are technical feasibility concerns to support WUS for short DRX"
=> The LS is approved in R2-1914060 with the change above

R2-1914061 LS to RAN1 on question related to CSI/SRS reporting Vivo
- indicate RAN2 agreements on active time and ask RAN1 if they have concerns
=> Update: "Based on the above RAN2 agreements, as a consequence, RAN2 understands the UE would not report P/SP SRS and CSI during the next on-duration if PDCCH-WUS does not wake the UE up. RAN2 did not explicitly discuss whether this is the desired behaviour or not regarding P/SP SRS and CSI reporting and would like to check if RAN1 has any views/concern on this behaviour.
=> The LS is approved with the changes above in R2-1914200

Agreements
=> From RAN2 perspective, it is desirable to support WUS for both short and long DRX and it can be configurable by the network. However, RAN2 will follow the final RAN1 decision.
=> Ask RAN1 if there are technical feasibility concerns to support WUS for short DRX
=> Ask RAN1, what is the assumption regarding whether the UE considers also PDCCH-WUS during WUS occasion(s) to determine when/whether to report P/SP SRS and CSI (i.e. CSI/SRS are performed only during active time).

Misdetection

R2-1912785 RAN2 details of the wake-up signal Intel Corporation discussion Rel-16 NR_UE_pow_sav
- Ericsson asks whether the UE has to read the WUS. Intel understands that if it is group specific the UE has to read it, but UE specific is only sent to wake up the UE. Ericsson would like to have some discussion on wording.
=> wait for RAN1 to progress misdetection issues
=> Noted

Not treated

R2-1913787 Further discussion on the impact of PDCCH-WUS Huawei, HiSilicon discussion Rel-16 NR_UE_pow_sav-Core
R2-1913197 RAN2 impact of WUS in connected mode Ericsson discussion Rel-16 NR_UE_pow_sav-Core

CSI/SRS

R2-1913050 Remaining issues on the impact from WUS signal ZTE Corporation, Sanechips discussion Rel-16 NR_UE_pow_sav-Core R2-1910403
=> Noted
R2-1912689 CSI/SRS reporting for WUS Lenovo, Motorola Mobilty discussion Rel-16 NR_UE_pow_sav-Core
- Lenovo think that we should agree that we consider WUS signal to report CSI
=> Noted
R2-1913259 Periodic CSI and SRS with wake-up indication MediaTek Inc. discussion Rel-16 FS_NR_UE_pow_sav R2-1910085
=> Noted

Discussion
- Lenovo thinks that we should consider reporting upon reception of WUS. Nokia thinks that we should tie WUS with SRS transmission. Ericsson agrees.
- Qualcomm thinks that the rel-15 agreement still applies, UE reports in active time. Lenovo has the same view. Apple agrees.
- Mediatek thinks that the reporting should take place regardless of WUS. LG has a similar view.
- Ericsson thinks this is not ok as we will lose the UE. CATT explains that the network still has the ability to wake up the UE.

Not treated
R2-1912090 Remaining issues on configuration of PDCCH-WUS OPPO discussion
R2-1912089 Remaining issues on UE behaviours when PDCCH-WUS is configured OPPO discussion
R2-1912091 Impacts of power saivng signalling on CSI reporting OPPO discussion Late
R2-1912109 Stage-3 aspects of PDCCH-WUS CATT discussion Rel-16 NR_UE_pow_sav-Core
R2-1912331 WUS impact upon BWP switching vivo discussion Rel-16 FS_NR_UE_pow_sav
R2-1912694 SI update notification and PWS notification in WUS PANASONIC R&D Center Germany discussion R2-1909237
R2-1912918 Discussion on PDCCH-WUS missing problems during BWP switching and handover Xiaomi Communicationsdiscussion
R2-1912919 Some issues on the PDCCH-WUS working with C-DRX Xiaomi Communicationsdiscussion
R2-1912920 Considerations on UE power saving for BWP scenarios Xiaomi Communicationsdiscussion
R2-1913107 Further details on WUS Nokia, Nokia Shanghai Bell discussion Rel-16 NR_UE_pow_sav-Core
R2-1913140 Discussion on the impact of WUS on drx-onDurationTimer LG Electronics Inc. discussion NR_UE_pow_sav-Core
R2-1913141 Consideration on PDCCH-based power saving signals LG Electronics Inc. discussion NR_UE_pow_sav-Core
R2-1913606 Further considerations for the WUS InterDigital discussion Rel-16 NR_UE_pow_sav-Core
R2-1913892 Configuration aspects of wakeup signaling Qualcomm Inc discussion Rel-16 Late
R2-1913899 Configuration aspects of wakeup signaling Qualcomm Inc discussion Rel-16

6.11.3 Efficient transition from RRC_CONNECTED to RRC_IDLE/RRC_INACTIVE

Stage 3 details of report mechanisms for a UE to indicate its preference of transitioning out of RRC_CONNECTED state

R2-1912493 Remaining Issues on Efficient Transition Samsung discussion Rel-16 NR_UE_pow_sav-Core
=> Noted

R2-1913198 UE assistance for RRC connection release Ericsson discussion Rel-16 NR_UE_pow_sav-Core
=> Noted

Discussion whether we need to specify something
- Ericsson would like to specify when the UE is expected to send this and that the network should be able to supress.
- Mediatek explains that for RAI we did define that the UE is not expected to send or received data in the near future. Intel explains that in LTE we had a long discussion.
- Nokia would like to define the future with explicit time configured by the network.
- LG thinks in NR we should come up with a more testable terminology. Ericsson thinks that by copying the RAI we are showing that this is similar feature.

Whether the network can configure the Preferred state
- Huawei asks why it needs to be configurable as the network can just ignore it. Ericsson thinks that the UE doesn't have to send it if the network will not use it. Huawei asks if we need two separate capabilities for this.
- Ericsson thinks that we should have a capability and if the UE is configured the UE should report state preference.
- LG and mediatek think that this preferred state should be optional as the UE may not know anyways.

R2-1914058 Summary of offline discussion Ericsson
- Qualcomm doesn't see the need for a timer that is larger than the inactivity timer.

=> Noted

Agreements:
1. UE assistance information for release request is network configurable.
2. Preferred state is optionally included in Release Request in UE assistance information
3. Triggering condition of Release Request in the UE assistance is up to UE implementation and we will specify what we expect from the UE.
4. Specify that UE may signal via UE assistance that it prefers to be released when the UE may expect not to send or receive more data on near future (like NB-IoT).
5. Introduce a RRC prohibit timer for the release request.
6. A prohibit timer value = 0 can be configured for UE assistance information for release indication.
7. A prohibit timer with value infinity can be configured and large values don't have to be introduced. FFS on the additional values and try to keep the values shorter

Not treated

R2-1913104 On efficient transition from RRC_CONNECTED to RRC_IDLE/RRC_INACTIVE Nokia, Nokia Shanghai Bell discussion Rel-16 NR_UE_pow_sav-Core

R2-1912110 Remaining issues on UE RRC state transition request CATT discussion Rel-16 NR_UE_pow_sav-Core

R2-1912674 Introduction of efficient transition out of RRC_CONNECTED by UE assistance in TS38.331 ZTE Corporation, Sanechips,China Southern Power Grid Co., Ltd draftCR Rel-16 38.331 15.7.0 B NR_UE_pow_sav-Core

R2-1912786 Efficient RRC state transition out of RRC_CONNECTED Intel Corporation discussion Rel-16 NR_UE_pow_sav

R2-1913138 Need for fast transition to RRC_IDLE LG Electronics Inc. discussion NR_UE_pow_sav-Core

R2-1913788 Discussion on efficient RRC state transition Huawei, HiSilicon discussion Rel-16 NR_UE_pow_sav-Core

6.11.4 MIMO layer adaptation

stage-3 related aspects of per-BWP DL MIMO layer configuration

R2-1912111 Maximum MIMO layers configuration in power saving CATT discussion Rel-16 NR_UE_pow_sav-Core

- Ericsson points out that according to RAN1 nothing new is needed for UL MIMO in the specs.

=> This will be included in the running CR

=> Noted

Not treated

R2-1913199 UE adaptation to maximum number of MIMO layers Ericsson discussion Rel-16 NR_UE_pow_sav-Core

R2-1912092 MIMO layer adaptation for power saving OPPO discussion

R2-1912332 Stage-3 design for per-BWP MIMO layer adaptation vivo discussion Rel-16 FS_NR_UE_pow_sav

R2-1912787 Configuration of MIMO layers per DL BWP Intel Corporation discussion Rel-16 NR_UE_pow_sav

R2-1913109 On adaptation of maximum number of MIMO layers Nokia, Nokia Shanghai Bell discussion Rel-16 NR_UE_pow_sav-Core

R2-1913789 Further discussion on the MIMO layer adaptation Huawei, HiSilicon discussion Rel-16 NR_UE_pow_sav-Core

6.11.5 UE assistance

Details related to C-DRX UE assistance and whether DRX on duration and offset are included.

C-DRX

R2-1912788 UE assistance for C-DRX configuration Intel Corporation discussion Rel-16 NR_UE_pow_sav

=> Noted

R2-1913200 UE Assistance Information for cDRX configuration Ericsson discussion Rel-16 NR_UE_pow_sav-Core

=> Noted

R2-1912333 UE assistance information for power saving vivo discussion Rel-16 FS_NR_UE_pow_sav

=> Noted

Discussions

To discuss how UE provides "UE's preferred C-DRX configuration" information: option (1) UE provides its preference based on any value of the corresponding parameter range, or option (2) UE provides its preference based on pre-defined values or set of configurations that were previously conveyed to the UE by the network.

- Ericsson thinks this is a good question and would like to think. Qualcomm doesn't think we should restrict and option 1 gives enough flexibility. Mediatek thinks we should report what the network wants us to report (e.g. option 2). Option 1 is more flexible and we should go that way. LG has similar view. Xiaomi prefers option1. Nokia thinks that flexilbility doesn't help the network as at the end it is up to network implementation. ZTE has similar view as Nokia and would like to think further. CMCC prefers option 2.

If UE has a preferred C-DRX information, UEAssistanceInformation message includes that as discussed in proposal 5. Otherwise (i.e. UE does not have a preferred C-DRX information),

UEAssistanceInformation message is sent without including "UE's preferred C-DRX configuration".

- Qualcomm doesn't see why otherwise is needed. If the UE has no preference it keeps the existing configuration and this seems to mandate UE behaviour.
- LG thinks the UE preference is optional. Intel would like to be able to tell the network it no longer has a preference. LG thinks that if the UE doesn't send a preference it means it doesn't have a preferred state.
- Ericsson and mediatek don't understand what is the network action. ZTE also doesn't think this is needed as it is up to network to decide for how long the previous preference was valid for.

Agreements

1. UE assistance of C-DRX configuration will not include UE's preference for "DRX on duration" and "DRX start offset".
2. FFS how UE provides "UE's preferred C-DRX configuration" information: option (1) UE provides its preference based on any value of the corresponding parameter range, or option (2) UE provides its preference based on pre-defined values or set of configurations that were previously conveyed to the UE by the network
3. Prohibit timer will be used as the general framework for UE assistance information and configured per UE assistance type.
4. FFS UEAssistanceInformation message can be sent without including "UE's preferred C-DRX configuration" (i.e. if the UE doesn't have a preference anymore)

SCell

R2-1912112 UE assistance for SCell CATT, Qualcomm Inc., Apple, Huawei, HiSilicon, vivo, Samsung, Intel, MediaTek discussion Rel-16 NR_UE_pow_sav-Core

Proposal 1: RAN2 is kindly requested to specify SCell-related information as part the UE assistance information in Rel-16.

- LG and Nokia thinks that this should be out of scope. Qualcomm thinks that number of cells is already in the overheating UE assistance information. Apple also thinks we can reuse UE assistance.
- ZTE doesn't want to have any SCells information. Ericsson is open to discuss aggregated bandwidth provided that it is clarified. Nokia is ok to re-use the overheating.

=> Noted

R2-1914059 Summary of offline discussion on UE assistance for SCell CATT

- agreeable proposals where overheating information are re-used

Proposal 5: Introduce a new I.E. in UEAssistanceInformation message including the above selected fields from overheatingAssistance I.E.

- Nokia thinks this is not efficient and an indicator may be more efficient if the UE supports both. Ericsson was hoping that if the UE supports both there would be no overheating. Intel explains that overheating is a temporary situation.
- Samsung agrees with Nokia. LG thinks that it would be simpler to have an additional IE and this would allow us to set a separate prohibit timer.

=> Noted

Agreements:

1 The network should be able to distinguish from the received message whether it is for overheating or power saving purpose.
2 The maximum aggregated bandwidth DL/UL (FR1 and FR2) from Rel-15 overheatingAssistance I.E is re-used for power saving.
3 The total number of DL/UL SCells from Rel-15 overheatingAssistance I.E is re-used for power saving
4 The maximum number of MIMO layers DL/UL (FR1 and FR2) from Rel-15 overheatingAssistance I.E is re-used for power saving.
5 Introduce a new I.E. in UEAssistanceInformation message including the above selected fields from overheatingAssistance I.E.
6 The new type of UE assistance information in support of power saving has its own prohibit timer

R2-1913790 UE assistance information in MR-DC Huawei, Huawei Device, CMCC, MediaTek Inc., China Telecom, vivo discussion Rel-16 NR_UE_pow_sav-Core
Proposal 2: For the MR-DC with NR as SN, to enable the transfer of UE assistance information for power saving to NR SN, the UE assistance information for power saving is either conveyed via the NR SRB3 or included as a container in the LTE message ULInformationTransferMRDC
- Samsung indicates that this issue was discussed in the main session for overheating.
=> Noted

Agreements:
1 RAN2 confirms that the UE power saving in NR network in MR-DC scenarios are within the scope of the WID.
2 The solution on how to transfer UE assistance information to NR SN should be discussed together with other UE assistance information (e.g. overheating) in main session.

Not treated

R2-1912093 UE assistance information for power saving OPPO discussion
R2-1912458 On Reusing Overheating Assistance Information for UE Power Saving Samsung discussion NR_UE_pow_sav-Core
R2-1912467 UE Assistance Information for EN-DC Apple discussion Rel-16 NR_UE_pow_sav-Core R2-1909868
R2-1913105 On UE assistance for C-DRX configuration Nokia, Nokia Shanghai Bell discussion Rel-16 NR_UE_pow_sav-Core
R2-1913139 Consideration on UE assistance information LG Electronics Inc. discussion NR_UE_pow_sav-Core
R2-1913201 UE Assistance Information for SCell configuration Ericsson discussion Rel-16 NR_UE_pow_sav-Core
R2-1913358 Power Saving techniques, UE assistance information Sony discussion Rel-16 NR_UE_pow_sav-Core R2-1909907
R2-1913894 UE indication on expected data Qualcomm Inc, Apple discussion Rel-16 R2-1911304 Late
R2-1913901 UE indication on expected data Qualcomm Inc, Apple discussion Rel-16 R2-1911304

6.11.6 RRM measurement relaxation

Contributions should focus on additional enhancements to LTE relaxed monitoring criteria that are specific to NR and whether neighbour cell RSRP should also be considered in cell-edge criterial.
Discuss type of RRM measurement relaxation by allowing measurements with longer intervals, and/or by reducing the number of cells/carriers to be measured. NOTE: this topic should be considered together with RAN4.

Triggering criteria

R2-1912113 Considerations on the criterions of RRM measurement relaxation CATT discussion Rel-16 NR_UE_pow_sav-Core
R2-1912459 On Triggering RRM Measurement Relaxation Samsung discussion NR_UE_pow_sav-Core
R2-1913002 Power Saving for RRM Measurements in NR MediaTek Inc. discussion
=>Noted

Agreements:
1. Network can configure the triggering criteria independently (i.e. either cell-edge or low mobility or both)
2. Cell-edge criteria will not consider neighbour cell measurements

✉ **[107bis#68][PowerSaving] RRM measurement relaxation (Mediatek)**

Intended outcome: Report, possibly Draft LS
- Stage 3 details for the triggering criterion based on papers from RAN2#107bis
- Summarize and discussion of RRM measurement relaxation based on papers from RAN2#107bis
- Agreable proposals and possible LS to RAN4
Deadline: Next Meeting

Not treated

RRM measurement relaxation

R2-1912789	Relaxation of RRM measurements	Intel Corporation	discussion	Rel-16	NR_UE_pow_sav
R2-1912094	RRM relaxation for power saving	OPPO	discussion		
R2-1912334	RRM measurement relaxation criteria	vivo	discussion	Rel-16	FS_NR_UE_pow_sav
R2-1912335	UE Power Consumption Reduction in RRM Measurement	vivo	discussion	Rel-16	FS_NR_UE_pow_sav
R2-1912531	relaxed RRM support	Samsung R&D Institute UK	discussion		
R2-1912691	Considerations on the RRM measurement relaxation	PANASONIC R&D Center Germany	discussion		
R2-1912959	Discussion on power saving in inter-frequency measurements	CMCC	discussion	R2-1909432	
R2-1913106	Dedicated RRM Measurement Relaxation	Nokia, Nokia Shanghai Bell	discussion	Rel-16	NR_UE_pow_sav-Core
R2-1913108	Further details on RRM measurement relaxation	Nokia, Nokia Shanghai Bell	discussion	Rel-16	NR_UE_pow_sav-Core
R2-1913202	RRM measurement relaxation	Ericsson	discussion	Rel-16	NR_UE_pow_sav-Core
R2-1913340	Considerations on performing and criteria of measurement relaxation	LG Electronics	discussion	Rel-16	NR_UE_pow_sav-Core
R2-1913341	Considerations on reporting measurement relaxation upon access => Revised in R2-1913940	LG Electronics	discussion	Rel-16	NR_UE_pow_sav-Core
R2-1913940	Considerations on reporting measurement relaxation upon access	LG Electronics	discussion	Rel-16	NR_UE_pow_sav-Core
R2-1913359	UE power saving for inter frequency measurements	Sony	discussion	Rel-16	NR_UE_pow_sav-Core
R2-1913360	Relaxed monitoring for beam measurement	Sony	discussion	Rel-16	NR_UE_pow_sav-Core
R2-1913361	Details of Relaxed monitoring for NR UE power saving	Sony	discussion	Rel-16	NR_UE_pow_sav-Core
R2-1913568	Remaining issues on time domain measurement relaxation	Huawei, HiSilicon	discussion	Rel-16	NR_UE_pow_sav-Core
R2-1913569	Reducing the number of neighbour cells/carriers to measure	Huawei, HiSilicon	discussion	Rel-16	NR_UE_pow_sav-Core

6.12 SON/MDT support for NR

(NR_SON_MDT-Core; leading WG: RAN3; REL-16; started: Jun 19; target; Mar 20; WID: RP-191776). Documents in this agenda item will be handled in a break out session

Time budget: 1 TU

Tdoc Limitation: 10 tdocs

6.12.1 General

Including LSs, work plan, rapporteur inputs, running TS

Including output of email discussion [107#46][NR/MDT] Running 37.320 CR (CMCC, Nokia)

Including output of email discussion [107#47][NR/MDT] Running 38.331 CR for introducing logged MDT (Huawei)
Including output of email discussion [107#48][NR/MDT] Running 38.331 CR for introducing imm MDT and other MDT functions (Ericsson)
Including output of email discussion [107#49][NR/L2 measurement] Running TS38.314 (CMCC)

6.12.2 MDT

The procedure, signaling and corresponding measurement quantities for MDT
Stage 2 running CR:

R2-1912962 Running TS 37.320 CR CMCC draftCR Rel-16 37.320 15.0.0 B NR_SON_MDT-Core
=> Revised in R2-1913950

R2-1913950 Running TS 37.320 CR CMCC, Nokia draftCR Rel-16 37.320 15.0.0 B NR_SON_MDT-Core
=> endorsed as the running CR baseline after this meeting.

R2-1913949 Some open issues for TS 37.320 to support NR MDT CMCC discussion Rel-16 NR_SON_MDT-Core

Agreements:
1 The maximum logging area for NR MDT is the same with that of LTE, i.e. 8 TAs.

✉ **[107bis#82][NR MDT] 37.320 running CR (CMCC, Nokia)**
Intended outcome: Running CR, to be endorsed next meeting
Deadline: Next Meeting

Stage3 running CRs:

R2-1912746 Reprot of email discussion 107-47 Huawei discussion Rel-16 NR_SON_MDT-Core Late

Agreements:
1 For reporting the IE locationInfo should be common for logged MDT and immediate MDT.
2 The following IEs should be common for logged MDT and immediate MDT:
- the uncompensated barometric pressure measurement
- UE speed
- UE orientation
3 For inter-RAT measurements configuration in logged MDT:
- for SA scenario, the inter-RAT measurements includes LTE neighbour cells

R2-1912823 Report on [107#48][NR/MDT] Running 38.331 CR for introducing Immediate MDT and other MDT functions Ericsson discussion Rel-16 NR_SON_MDT
=> Noted

R2-1912747 Running 38.331 CR for introducing logged MDT Huawei draftCR Rel-16 38.331 15.7.0 NR_SON_MDT-Core Late

R2-1912824 Running 38.331 CR for introducing Immediate MDT and other MDT functions Ericsson CR Rel-16 38.331 15.7.0 1276 - B NR_SON_MDT

=> R2-1912747 and R2-1912824 are endorsed as baseline and merged into one running CR for MDT.

✉ **[107bis#83][NR MDT] Running 331 CR for introducing MDT (Huawei)**
Capture agreements from this meeting
Including stage3 details event triggered MDT
Divided into 2 phases. Phase1 is targeted to provide a merged MDT CR in one week.
Intended outcome: Report and Running CR to be endorsed next meeting

Deadline: Next Meeting

Everything mixed together:

R2-1912749 Discussion on remaining aspects on logged MDT and Accessibility measurements Huawei, HiSilicon discussion Rel-16 NR_SON_MDT-Core

Agreements:

1 FFS: Introduce state indications (i.e., inactive and idle) in the logged measurement results.
2 Introduce the logged MDT measurement frequencies and cell IDs (i.e. PCI) for neighbour cell measurement in the area configuration. UE only need to log and report measurement results for the configured frequencies if the results available. FFS the serving cell case.
3 If the signalling based logged MDT received by the NG-RAN when UE is in RRC_INACTIVE:
- The NG-RAN stores the logged MDT configuration in the UE context.
- When the UE resumes the RRC connection in the last serving NG-RAN, the NG-RAN can configure the MDT configuration for the UE.
- When the UE resumes the RRC connection in one new NG-RAN, the last serving NG-RAN can propagate the logged MDT configuration to the new NG-RAN.
This agreement should be confirmed by RAN3.
4 If the management based logged MDT received by the NG-RAN when UE is in RRC_INACTIVE,
- No requirement for the NG-RAN to store the logged MDT configuration in the UE context
- When the UE resumes the RRC connection in the last serving NG-RAN, the NG-RAN can configure the MDT configuration for the UE.
- When the UE resumes the RRC connection in another NG-RAN, the source NG-RAN will not propagate the management based logged MDT configuration. The source NG-RAN should inform the target NG-RAN of UE consents.
5 Introduce the available indicator(s) (e.g. connEstFailInfoAvailable) for the accessibility measurements in the following RRC message:
- RRCSetupComplete
- RRCResumeComplete
- RRCReestablishmentComplete
- RRCReconfigurationComplete message
6 Use the UEInformationRequest/UEInformationResponse message to request and report the accessibility measurements.
7 Use the same available indicator for failure of sending RRCSetupRequest/ RRCResumeRequest/RRCResumeRequest1.
8 The information (e.g. ConnEstFailReport-r11) included in Connection establishment failure reporting of LTE is the baseline of the 5G accessibility measurements. The structure is the baseline and others are FFS.

R2-1912750 Discussion on remaining aspects on immediate MDT Huawei, HiSilicon discussion Rel-16 NR_SON_MDT-Core
=> noted

R2-1912827 Leftover issues for Logged MDT Ericsson discussion Rel-16 NR_SON_MDT

Agreements:
1 A UE can be configured with the periodical logging or the event-triggered logging.
2 For Logged MDT, the report IE for the both periodical logging and event-triggered logging MDT through the same IE (i.e., LogMeasReport).
3 introduction of a greater value of the maximum number of MDT logged measurements entries that can be stored by the UE in NR compared to LTE maxLogMeas-r10. The value of maxLogMeas-r16 is FFS.

MR DC:

R2-1913072 Discussion on MDT in DC scenario ZTE Corporation, Sanechips discussion Rel-16 NR_SON_MDT-Core R2-1909803

R2-1912826 Logged MDT Configuration & Reporting handling in DC scenarios Ericsson discussion Rel-16 NR_SON_MDT

R2-1913250 Logged MDT, inter-node aspects (SN configuration) Samsung Telecommunications discussion Rel-16 NR_SON_MDT-Core

R2-1913658 Logged MDT for NR-DC and EN-DC Kyocera discussion

R2-1912142 Issues for Log MDT Configuration in DC Scenario CATT discussion Rel-16 NR_SON_MDT-Core R2-1908758

R2-1912245 Consideration on Logged MDT Report in MR-DC Spreadtrum Communications discussion

R2-1912578 Logged MDT Configuration and Reporting for MR-DC Qualcomm Incorporated discussion Rel-16 NR_SON_MDT

✉ **[107bis#84][NR MDT] MR DC related issue (Ericsson)**
How to handle MDT in DC scenario
Intended outcome: Report
Deadline: Next Meeting

Out of coverage:

R2-1913546 Logged MDT configuration events Nokia, Nokia Shanghai Bell discussion Rel-16 NR_SON_MDT-Core Late

R2-1912143 Detection and Reporting of Out-of-coverage CATT discussion Rel-16 NR_SON_MDT-Core R2-1908759

R2-1912144 [Draft] LS on MDT Configuration of Event triggered Out-of-coverage CATT LS out Rel-16 NR_SON_MDT-Core R2-1908760 To:RAN3

R2-1912483 Details on Event-triggered Logged MDT Samsung discussion NR_SON_MDT-Core

R2-1913075 Discussion on out-of-coverage measurement and report ZTE Corporation, Sanechips discussion Rel-16 NR_SON_MDT-Core R2-1909806

User consent:

R2-1912748 Discussion on user consent for MDT Huawei, HiSilicon, LG Uplus discussion Rel-16 NR_SON_MDT-Core R2-1909711

Mobility history:

R2-1912825 Mobility history information reporting from the UE Ericsson discussion Rel-16 NR_SON_MDT

R2-1912152 Mobility History and State in NR CATT discussion Rel-16 NR_SON_MDT-Core R2-1908762

R2-1912487 On Providing Mobility State and Mobility History Information in NR Samsung discussion NR_SON_MDT-Core Withdrawn

R2-1912488 On Providing Mobility State and Mobility History Information in NR Samsung discussion NR_SON_MDT-Core

✉ **[107bis#85][NR MDT] Mobility history (CATT)**
Intended outcome: report
Deadline: Next Meeting

Accessibility:

R2-1912482 Accessibility Measurements for NR MDT Samsung discussion NR_SON_MDT-Core

Area scope:

R2-1912830 Area Scope in MDT configuration Ericsson discussion Rel-16 NR_SON_MDT

RLF report:

R2-1912486 NR RLF Report Samsung discussion NR_SON_MDT-Core

R2-1912579 Cross-RAT RLF Report Qualcomm Incorporated discussion Rel-16 NR_SON_MDT

Continuity of imm MDT:

R2-1913074 Immediate MDT continuity upon handover procedure ZTE Corporation, Sanechips discussion Rel-16 NR_SON_MDT-Core R2-1909804

Inactive state:

R2-1912571 Management based MDT configuration Handling for RRC Inactive state Qualcomm Incorporated discussion Rel-16 NR_SON_MDT

R2-1912574 Signalling Based MDT Configuration Handling for RRC_INACTIVE Qualcomm Incorporated discussion Rel-16 NR_SON_MDT

R2-1913073 MDT activation for INACTIVE&IDLE mode UE ZTE Corporation, Sanechips discussion Rel-16 NR_SON_MDT-Core R2-1909805

Capabilities:

R2-1912829 UE Location Report capability indication for MDT Ericsson discussion Rel-16 NR_SON_MDT

R2-1912751 Discussion on UE impacts and UE capabilities due to MDT Huawei, HiSilicon, LG Uplus discussion Rel-16 NR_SON_MDT-Core

R2-1912278 UE capability parameters for SON_MDT vivo discussion

R2-1912279 Running CR to 38.306 for NR_SON_MDT vivo discussion 38.304 NR_SON_MDT-Core

R2-1912828 CR on introducing UE capability for MDT in NR Ericsson CR Rel-16 38.306 15.7.0 0173 - B NR_SON_MDT

Others:

R2-1913547 Impact of SNPN on PLMN check for MDT Nokia, Nokia Shanghai Bell discussion Rel-16 NR_SON_MDT-Core Late

R2-1912395 Indication of contentionDetected per SSB Beijing Xiaomi Mobile Software discussion Rel-16

R2-1913292 Further consideration on logged MDT CMCC discussion R2-1909451

R2-1912485 Further Logged Information in NR MDT Samsung discussion NR_SON_MDT-Core

R2-1912397 Consideration on MDT in NR Xiaomi Communicationsdiscussion Rel-16 R2-1909213

R2-1912594 Periodical logged measurements and event-triggered logged measurements configuration Qualcomm Incorporated discussion Rel-16 NR_SON_MDT

R2-1912963 LS on Logged Measurements CMCC LS out Rel-16 NR_SON_MDT-Core To:RAN4

R2-1913076 Restriction on MDT measurement and report ZTE Corporation, Sanechips discussion Rel-16 NR_SON_MDT-Core R2-1909807

R2-1913249 Immediate MDT, inter-node aspects Samsung Telecommunications discussion Rel-16 NR_SON_MDT-Core

R2-1913251 MDT for early measurments (Logged, immediate) Samsung Telecommunications discussion Rel-16 NR_SON_MDT-Core

R2-1913545 Logged MDT for RRC_INACTIVE state Nokia, Nokia Shanghai Bell discussion Rel-16 NR_SON_MDT-Core Late

6.12.3 L2 measurements

Definition of L2 measurements in TS 38.314

Runing CRs of 38.314:

R2-1912957 Draft TS 38.314 v002 CMCC draft TSRel-16 38.314 0.0.2 NR_SON_MDT-Core
=> the skeleton is endorsed and used as the baseline running CR after this meeting.

Everything mixed together:

R2-1913441 Open issues of L2 measurements in NR Ericsson discussion Rel-16 NR_SON_MDT-Core

Agreements:
1 LTE's definition of received random access preambles is the baseline for NR L2 measurements.
2 The time of successful reception of a transport block at the MAC layer is considered for the calculation of UL over-the-air transmission delay.

R2-1912754 Discussion on new L2 measurements Huawei, HiSilicon, LG Uplus discussion Rel-16 NR_SON_MDT-Core
=> Noted

R2-1912956 [107#49][NR L2 measurement] Running TS38.314 CMCC discussion NR_SON_MDT-Core

=> Noted

Agreements
1 For SA case, introduce the following measurements for number of users for RRC_CONNECTED:
- number of active UEs in the DL per mapped 5QI per cell
- number of active UEs in the UL per mapped 5QI per cell
- number of active UEs per cell
- number of active UEs per mapped 5QI per cell
LTE definitions on number of active UEs can be a baseline.
2 Introduce both mean and max number for active UE.
3 Introduce both mean and max number for stored inactive UE contexts. The level is per at least gNB.
4 For SA case, reuse the DL/UL throughput measurement in the RLC entity in SA5.

=> Draft LS to SA5 to indicate the above agreement 4 on DL/UL throughput measurement. (Offline#888, R2-1914086, Huawei)

R2-1914086 Reply LS on PDCP end user throughput measurements Huawei LS out Rel-16 NR_SON_MDT-Core To:SA5 Cc:RAN3
=> Approved in R2-1914089

✉ **[107bis#86][NR L2 meas] running 38.314 (CMCC)**
Capture the related agreements from this meeting
Intended outcome: Report and running CR for next meeting
Deadline: Next Meeting

PRB usage:

R2-1913081 Discussion on PRB usage of a cellZTE Corporation, Sanechips discussion NR_SON_MDT-Core R2-1909222

Number of UEs:

R2-1913079 Further consideration on INACTIVE UE counting ZTE Corporation, Sanechips discussion NR_SON_MDT-Core
R2-1912958 TP for TS 38.314 on number of Ues CMCC pCR Rel-16 38.314 0.0.2 NR_SON_MDT-Core
R2-1913755 Discussion on per beam number of active UEs measurement NTT DOCOMO INC. discussion Rel-16 NR_SON_MDT-Core
R2-1913551 Counting number of inactive Ues Nokia, Nokia Shanghai Bell discussion Rel-16 NR_SON_MDT-Core Late

UL delay:

R2-1912755 Discussion on delay measurement and collection Huawei, HiSilicon discussion Rel-16 NR_SON_MDT-Core
R2-1912145 Clarification of UL Delay Measurement CATT discussion Rel-16 NR_SON_MDT-Core R2-1908763
R2-1913080 Correction on the definition of over-the-air delay in UL ZTE Corporation, Sanechips discussion NR_SON_MDT-Core
R2-1912752 Discussion on L2 measurements based on SA5 TS 28.552 Huawei, HiSilicon discussion Rel-16 NR_SON_MDT-Core R2-1909723

Throughput:

R2-1913907 L2 Throughput measurement Samsung Electronics Polska discussion

Others:

R2-1912146 Uncertainty of L2 Measurement Result Related to URLLC CATT discussion Rel-16 NR_SON_MDT-Core R2-1908764
R2-1912753 Draft LS on L2 measurements in TS 28.552 Huawei LS out Rel-16 NR_SON_MDT-Core To:SA5, RAN3
R2-1913855 Discussion on L2 measurement in EN-DC NTT DOCOMO INC. discussion Rel-16 NR_SON_MDT-Core

6.12.4 SON

UE reporting necessary to enhance the network configuration for MRO, MLB and RACH optimization
Including output of email discussion [107#45][NR/SON] RACH and Mobility Robustness optimisation checking (CATT)

R2-1912147 Output of Email Discussion [107#45][NRSON] RACH and Mobility Robustness Optimisation Checking CATT discussion Rel-16 NR_SON_MDT-Core

Agreements
1-1 One indicator is needed to differentiate the uplink carrier type, e.g.NUL/SUL for one RACH procedure. RAN2 can further discuss which of the following option is more desirable to capture the requirement through implicit method. NUL/SUL RACH carrier related info is included in the RACH report to implicitly indicate the uplink carrier type.
1-2 ‘Contention detection indication’ is included in the RACH report. ‘Contention detection indication’ is per RACH attempt granularity.
1-3 ‘Indexes of the SSBs and number of RACH preambles sent on each tried SSB listed in chronological order of attempts’ is included in the RACH report.
1-4 ‘The frequency (NR ARFCN) of tried SSBs’ is not included in the RACH report.
1-5 RAN2 confirm ‘Indication whether the selected SSB is above or below the rsrp-ThresholdSSB threshold’ is included in the RACH report and this indication is per RACH attempt granularity.
1-6 RAN2 confirm ‘Elapsed time from the last measurement prior to the beam selection time’ is not included in the RACH report.
1-7 All RACH scenarios are applicable for RACH report.
For RLF report:
2-1 Reuse the following RLF report parameters inherited from LTE for NR RLF report:

- The CGI of the last cell that served the UE (in case of RLF) or the target of the handover (in case of handover failure).
- The CGI of the cell towards which the UE wants to initiate re-establishment attempt.
- The CGI of the cell that served the UE at the last handover initialization.
- Time elapsed since the last handover initialization until the RRC connection failure.
- An indication whether the RRC connection failure was due to RLF or handover failure.
- C-RNTI allocated for the UE in the last serving cell.
- RLF trigger of the last RLF that was detected.
- Time elapsed from the RRC connection failure till RLF Report signalling.

2-2 Add a new cause “BeamFailure RecoveryFailure” for RLF branch which in parallel with “t310-Expiry”, “randomAccessProblem” and “rlc-MaxNumRetx” and no BFR specific records are needed in RLF report.
2-3 RAN2 confirm the beam level measurement associated to SSB/CSI-RS of both serving cell and neighbour cells can be included in RLF report.
2-4 Only support SSB/CSI-RS based measurements records and no more measurements will be collected in RLF report based on other RS types.
2-5 RAN2 confirm that at least the available uncompensated barometric pressure measurement, UE speeds and UE orientation can be reported as sensor information.
2-6 Working assumption: the UE speed state info (i.e., just flag) if available is included in RLF report. The feasibility and the details depending the email discussion on mobility history.
2-7 LTE RLF can be reported in NR. How to support this is FFS.
2-8 Support available Bluetooth and WLAN measurements report in RLF report.

CB on Friday:=> Draft LS in R2-1914087 to RAN3 to indicate our agreements on SON aspect. (Offline 886, CATT)

R2-1914087 Reply LS on RACH Optimization and Mobility Robustness Optimization RAN2 LS out Rel-16 NR_SON_MDT-Core To:RAN3
=> Approved.

✉ **[107bis#87][NR SON] Running 331 CR for introducing SON (Ericsson)**
Capture agreements from this meeting
The merged MDT running CR should be taken as baseline
Intended outcome: Report and Running CR for next meeting
Deadline: Next Meeting

R2-1912148 [Draft] Reply LS on RACH Optimization and Mobility Robustness Optimization CATT LS out Rel-16 NR_SON_MDT-Core To:RAN3
R2-1912149 RACH Report Optimization CATT discussion Rel-16 NR_SON_MDT-Core
R2-1912150 Recording and Reporting of RACH Failure CATT discussion Rel-16 NR_SON_MDT-Core R2-1908767
R2-1912151 Consideration on Successful HO Report CATT discussion Rel-16 NR_SON_MDT-Core R2-1908768
R2-1912438 UE reporting for mobility optimization vivo discussion
R2-1912592 UE History Information Qualcomm Incorporated discussion Rel-16 NR_SON_MDT
R2-1912593 Discussion about Successful HO in MRO Qualcomm Incorporated discussion Rel-16 NR_SON_MDT
R2-1912756 Discussion on RLF report and RACH report for SON Huawei, HiSilicon discussion Rel-16 NR_SON_MDT-Core
R2-1913077 Discussion on RLF & CEF report ZTE Corporation, Sanechips discussion Rel-16 NR_SON_MDT-Core R2-1909802
R2-1913078 Further consideration on RACH optimization ZTE Corporation, Sanechips discussion NR_SON_MDT-Core
R2-1913442 Open issues related to RACH report Ericsson discussion Rel-16 NR_SON_MDT-Core

R2-1913443 Open issues related to RLF report Ericsson discussion Rel-16 NR_SON_MDT-Core
R2-1913444 Successful handover report Ericsson discussion Rel-16 NR_SON_MDT-Core
R2-1913548 RACH Scenarios and their presence in the RACH Report Nokia, Nokia Shanghai Bell discussion Rel-16 NR_SON_MDT-Core Late
R2-1913549 RACH Fallback from NUL to SUL Nokia, Nokia Shanghai Bell discussion Rel-16 NR_SON_MDT-Core Late
R2-1913550 TP to 38.300 on SON support Nokia, Nokia Shanghai Bell discussion Rel-16 NR_SON_MDT-Core Late
R2-1913777 Discussion on UE location information in SCG failure report NTT DOCOMO INC. , Ericsson discussion Rel-16 NR_SON_MDT-Core

6.12.5 Others

R2-1912757 Discussion on mobility history information Huawei, HiSilicon discussion Rel-16 NR_SON_MDT-Core R2-1909741
R2-1913252 General framework to harmonise transfer of UE information Samsung Telecommunications discussion Rel-16 NR_SON_MDT-Core
R2-1913552 Measurement event for interference-forced inter-RAT/inter-freq HO Nokia, Nokia Shanghai Bell discussion Rel-16 NR_SON_MDT-Core Late

6.13 2-step RACH for NR

(NR_2step_RACH-Core; leading WG: RAN1; REL-16; started: Dec 18; target; Mar 20; WID: RP-192330). Documents in this agenda item will be handled in a break out session

Time budget: 1 TU

Tdoc Limitation: 6 tdocs

6.13.1 General

Running CRs, Incoming LSs, Including output of [107#66][NR/2-step RACH] Running CR for 38.300 (Nokia). Including output of [107#67][NR/2-step RACH] Running CR for 38.321 (ZTE)

Contributions in this AI are restricted for WI rapporteur inputs and/or spec rapporteur inputs and do not count towards the tdoc limits.

R2-1912009 LS Reply on overall procedure for 2-step RACH (R1-1909554; contact: ZTE) RAN1 LS in Rel-16 NR_2step_RACH To:RAN1 Cc:RAN2
=> Noted

R2-1913291 Stage-2 running CR for 2-step RACH Nokia (rapporteur), Nokia Shanghai Bell draftCR Rel-16 38.300 15.7.0 B NR_2step_RACH-Core
=> The CR is endorsed
✉ **[107bis#74][2step RACH] Running 38.300 CR for 2-step RACH (Nokia)**
Intended outcome: Running MAC CR to be endorsed
Deadline: Next Meeting

R2-1913370 Running MAC CR for 2-step RACH ZTE Corporation (email rapporteur) draftCR Rel-16 38.321 15.7.0 B NR_2step_RACH-Core
=> The CR will be used as a baseline for the next email discussion

✉ **[107bis#75][2step RACH] Running MAC CR for 2-step RACH (ZTE)**
Intended outcome: Running MAC CR to be endorsed
Deadline: Next Meeting

R2-1913448 Discussion on some open issues in running MAC CR Email discussion rapporteur (ZTE Corporation) discussion

Proposal 1: The RSRP threshold for 2-step vs 4step CBRA can be configured separately for NUL and SUL
- CATT wants to understand why the thresholds are different. ZTE explains it is because the coverage will be different for NUL and SUL

Proposal 2: Use MSG3 buffer to store the MSGA payload in case of 2-step RACH
- Samsung thinks that to have a msgA buffer would be clearer. Nokia thinks it's simpler to use msg3 as we may need to fallback to 4-step RACH. LG thinks for readability it may be better in the MAC spec.
- Oppo thinks that we should have a msgA terminology. Vivo thinks that we can use separate buffer but in implementation we can use the buffer. Qualcomm thinks that msgA buffer is better.
- Lenovo thinks that msg3 is simpler.

Proposal 3: gNB response addressed to C-RNTI of the UE need not be considered as MSGB. The current wording in the running CR can be kept as is for this case.
- Oppo is concerned that for CFRA there will be no msgB

=> Noted

Agreements:
1. The RSRP threshold for 2-step vs 4step CBRA can be configured separately for NUL and SUL
2. Use MSGA buffer to store the MSGA payload in case of 2-step RACH, unless the implementation in the MAC spec it becomes too complex.
3. UE monitors the MSGB window regardless of the occurrence of the measurement gap
4. The name of the new timing advance command MAC CE is: Absolute Timing Advance Command MAC CE

R2-1913449 Summary of running MAC CR review issue list report — ZTE Corporation (email disc Rapporteur)

=> Not treated

6.13.2 Stage-2 open issues

HARQ aspects of msgB, How to distinguish between msg2 and msgB (RNTI design and coreset/search space aspects of RAN2)

msgB and msg2 differentiation

R2-1912432 2 Step RACH_RNTI for Receiving Network Response — Samsung Electronics Co., Ltd
discussion Rel-16 NR_2step_RACH-Core

Discussion

Option 1: RA-RNTI is used as MsgB-RNTI. Search space for monitoring PDCCH for MsgB can be configured differently from search space configured for monitoring Msg2.

Option 2: Modify RA-RNTI formula such that RA-RNTIs used for 2 step RACH and 4 step RACH are different.
- Samsung prefers to have search space as it is simpler and we already define several search spaces. Huawei has similar view and according to rel-15 we can configure many search spaces and there is no overhead issue.
- Nokia prefers RA-RNTI as after speaking to RAN1 colleagues there may be difficulty to have orthogonality between 2-step and 4-step RACH. If we want to go with search space we should ask RAN1 if this is feasible. ZTE clarifies that this can be coreset and if there is overlap in time domain there is also the frequency domain.
- LG thinks option 2 gives more scheduling flexibility and resource efficiency.
- Intel prefers option 1 and being able to configure different search spaces is not difficult.
- Oppo and CATT also prefer option 1 and there is no resource efficiency use.
- Lenovo and Qualcomm prefers option 2 and option 1 can be decided by RAN1.
- Ericsson prefers option 2.
- ZTE is concerned that if we use RA-RNTI we can't expand RA-RNTI space in the future and the question is if we are willing to take the risk of exhausting the space. Interdigital explains that we had a discussion in NR-U and decided to not extend RA-RNTI.

- Ericsson had a proposal to have a UE specific RNTI. CATT thinks that we don't need to have this discussion. Ericsson explains that this allows the network to send multiple SRBs to multiple UEs in the same slot.

=> Send LS to RAN1 asking about feasibility of having different search space and explain the RAN2 concern

=> Noted

R2-1914051 LS to RAN1 on 2-step RACH ZTE

- Send LS to RAN1 asking about feasibility of having different search space/coreset and explain the RAN2 concern

=> Update "RAN2 notes that Alt1 will consume more of the available RNTI space for random access response ~~and might limit the possibility of doing such extensions for potential future use cases~~

=> The LS is approved in R2-1914067 with the change above.

- [MCC]: replaced the tdoc header with the correct meeting header

=> Approved in R2-1914191

Not treated

R2-1912186 Differentiation Between 2-step and 4-step RACH vivo discussion

R2-1913366 Differentiating between MSG2 and MSGB ZTE Corporation, Sanechips discussion Rel-16

R2-1913870 RNTI design for msgB LG Electronics Inc. discussion Rel-16 NR_2step_RACH-Core R2-1909826

R2-1913009 Discussion on MsgB reception Huawei, HiSilicon discussion Rel-16

R2-1913217 RNTI design for MsgB reception Nokia, Nokia Shanghai Bell discussion Rel-16 NR_2step_RACH-Core

R2-1913218 Draft LS on MsgB RNTI design Nokia, Nokia Shanghai Bell LS out Rel-16 NR_2step_RACH-Core To:TSG RAN WG1

R2-1912085 msgB MAC PDU format in 2-step RACH OPPO discussion

R2-1912468 MsgB Retransmission Scheme Apple discussion Rel-16 NR_2step_RACH-Core

Preamble grouping

R2-1912086 Remaining stage-2 open issues OPPO discussion

Proposal 2 For load-balancing purpose, UE shall randomly select between 2-step RACH and 4-step RACH, with equal probability or according to the broadcasted probability.

- Panasonic thinks that if time allows we can try to discuss.

Proposal 5 When msgB contains only one successRAR, the legacy HARQ feedback for msg4 can be re-used.

Proposal 6 When msgB contains multiple successRARs, it's up to RAN1 how to design the HARQ feedback. RAN2 assumes there is no impact to msgB MAC PDU format.

- Oppo highlights that we should ensure that there is no impact to MAC PDU format for multiple success RAR.
- Nokia thinks that we should clarify to RAN1 that we only expect them to provide ACK and not NACK.
- ZTE thinks that we need something new anyways in msgB.
- Oppo explains that for proposal 5 it is like legacy. Intel explains that it is only for C-RNTI case.
- Intel thinks we should leave it up to RAN1 whether we should have implicit or explicit (i.e. impact MAC PDU).
- Nokia would like to at least minimize the size of the response.

=> Leave the design up to RAN1

=> Noted

R2-1913221 Preamble groups for 2-step RACH Nokia, Nokia Shanghai Bell discussion Rel-16 NR_2step_RACH-Core

Proposal 1: Introduce preambles group A and B for 2-step RACH.

Proposal 2: Apply the same selection formulas to select between 2-step preambles group A and B as specified for 4-step in Rel-15. For the purpose of data threshold, ra-MsgASizeGroupA parameter can be introduced.
- Vivo thinks that the pathloss selection is not clear. Huawei and oppo don't think the message size is needed. Interdigital explains that in the fallback case you need the message size and the pathloss.

Proposal 3: Support configuration where fallback from 2-step RA to 4-step RA after 'N' retries over 2-step RACH is only allowed for one of the preamble groups A or B in 2-step RA.
- ZTE thinks that we should have same configuration for 2-step and 4-step RACH. Nokia explains that we may have different sizes for msgA and msg3. Nokia would like to support same configuration or configuration only one preamble group can fallback.
- Ericsson would be fine to support a scheme like this for the cases where it is not feasible to support same configuration.

Rebuilding:
- Lenovo thinks that this discussion needs to be taken with rebuilding. Nokia thinks that the problem with rebuilding is that we can segment CCCH. ZTE thinks that we can't segment but we can remove padding if we added the padding.

Proposal 4: Support configuration where fallback from 2-step RA to 4-step RA is not allowed, ie., when the number 'N' is not configured.
- Oppo thinks that we need this proposal. Lenovo thought it was already agreed as it could be set to infinity or not configured. CATT agrees.

=> Noted

R2-1912795 Preamble grouping selection or PUSCH TBS size selection for 2-step RACH Intel Corporation discussion Rel-16 NR_2step_RACH-Core
=> Noted

Discussion on preamble groups
- Huawei thinks that preamble group is needed and RAN1 has already agreed

R2-1914052 Summary of discussion on rebudiling and fallback Nokia

Proposal 4: No UE specific RNTI will be designed for 2-step RACH in case CCCH SDU was included in MsgA.
- Ericsson would like to note that they still have a concern that the impact for NR-U is an additional LBT. Qualcomm explains that the gNB can send within the same COT.
- Ericsson points out that RAN1 has concluded that there is no new coreset and possibly no separate search space.

=> Noted

Agreements:
1. Introduce preambles group A and B for 2-step RACH.
2. Apply the same selection formulas to select between 2-step preambles group A and B as specified for 4-step in Rel-15. For the purpose of data threshold, ra-MsgASizeGroupA parameter can be introduced.
3. Support configuration where fallback from 2-step RA to 4-step RA is not allowed
4. TB size offered in UL grant in the Msg2 RAR in 4-step RACH shall be the same as the TB size offered for payload transmission in MsgA in 2-step RACH; otherwise, the UE behavior is not defined (i.e. it is up to UE implementation). Rebuilding is not supported in the specification (i.e. it is up to UE implementation).
5. If switching to 4-step RACH is expected to be supported, then support network configuration where the same TB sizes offered for 2-step RACH preamble groups are the same with those of 4-step RACH preamble groups.
6. No UE specific RNTI will be designed for 2-step RACH in case CCCH SDU was included in MsgA.
7. Confirm the Working Assumption: SRB RRC messages of multiple UEs cannot be multiplexed in same MsgB (i.e. same MAC PDU).
8. RAN2 will work on specifying a new RA-RNTI design for msgB

RA prioritization support

R2-1912431 2 Step RA_RACH prioritisation Samsung Electronics Co., Ltd discussion Rel-16 NR_2step_RACH-Core
=> Noted

R2-1913402 Prioritized 2-step RACH Qualcomm Incorporated discussion Rel-16 NR_2step_RACH-Core
Proposal 1. The same random access prioritization in four-step RACH can be applied to two-step RACH when triggered by handover and beam failure recovery.
Proposal 2. When UE transmits a msgA, it can indicate the priority of its request in the payload of the msgA.
- Mediatek asks why this is a 2step RACH specific problem. ZTE explains that the UE already includes the payload so there is no need to indicate priority.

=> Noted

Discussion on RA prioritisation
- Vivo agrees.
- Oppo agrees but notes that there are new cases being discussed in TEI16

Discussion on RA prioritisation
- Oppo asks why separate parameters. Samsung explains that it depends on network configuration. Vivo explains that we have a new parameter for msgA that doesn't exist for msg1.

Agreements
1. For 2 step CBRA, RA prioritisation is supported at least for handover and beam failure recovery.
2. RA prioritisation for 2 step CBRA is controlled by networkRA prioritisation parameters are separately configured for 2 step CBRA and 4 step CBRA. -ra-Prioritization2Step is optionally added to BeamFailureRecoveryConfig IE and RACH-ConfigDedicated IE.

Other

R2-1913914 Clarification on criteria selection for 2-step RACH and 4-step RACH Qualcomm Incorporated discussion Rel-16 NR_2step_RACH-Core
=> We will come back to this if we decided on a new criteria
=> Noted

R2-1913367 Remaining Stage 2 issues for 2-step RACH ZTE Corporation, Sanechips discussion Rel-16
Proposal 6: For the RACH procedure triggered by BFR (if supported in Rel-16):
- *Once the MsgA is transmitted, the UE should monitor for a PDCCH transmission identified by the C-RNTI on the search space indicated by recoverySearchSpaceId of the SpCell while ra-ResponseWindow is running.*
- *The RACH procedure will be considered as successfully completed if notification of a reception of a PDCCH transmission on the search space indicated by recoverySearchSpaceId is received from lower layers and the PDCCH transmission is addressed to the corresponding C-RNTI*

- Nokia thinks that we should support it just like in Rel-15. LG doesn't understand why we need a MAC CE. ZTE asks how the network will know that this is for BFR. Huawei explains that similar to Rel-15 this is up to network implementation. Oppo agrees with Nokia as this is similar to 4step BFR.
- Nokia explains that the searchspace is not needed as the network may not know that the UE is sending BFR. ZTE thinks that if we do nothing we may have a false positive and this is ok. Ericsson thinks that we should wait for eMIMO discussion.
- Qualcomm thinks that it is up to UE implementation whether it includes it or not and if it includes it we need to define behaviour as per proposal 6.

=> Noted

Agreements:

1. 2-step RACH resources can only be configured on SpCell
2. The 2-step RACH resources can be configured on a BWP where 4-step CBRA resources are not configured. In that case we will not have 4-step switch.
3. The PDCCH triggered 2-step CFRA RACH will not be supported in Rel-16
4. The 2-step CBRA for SpCell BFR is supported in Rel-16.

R2-1912679 RNTI design and HARQ aspects for 2-step RA Ericsson discussion Rel-16 NR_2step_RACH-Core

Proposal 1 Adopt the coding of the E/T/R/R/BI subheader in Figure 2 to prevent legacy UEs to parse beyond the subheader and use it as identifier of NR-U RAR or msgB.

- Nokia thinks that we can agree that legacy UEs are not required to decode msgB
- Oppo explains that this is linked to the previous discussion on RA-RNTI

Proposal 2 MsgB scrambling for Idle and Inactive UEs can be done by a msgB-RNTI which allows multiplexing.

- Ericsson thinks that this related to specifying UE specific ID for msgB. ZTE thinks that we should design a common solution for multiplexed and one for non-multiplexed.
- Ericsson would like to be able to schedule CCCH messages in same slot as we can't multiplex the messages. Nokia explains that this is related to the working assumption and doesn't understand why we can't just multiplex the CCCH messages. Ericsson explains that by being able to schedule them separately we don't have to create the large TB size and have the coverage issue that led to the agreement last time.
- Google has sympathy for this proposal.

=> Noted

Agreements:
1. Legacy UEs are not required to decode msgB

Not treated

R2-1913357 HARQ support for MsgB of 2-Step RACH Sony discussion Rel-16 NR_2step_RACH-Core

R2-1912224 Load balancing between RACH Types CATT discussion Rel-16 NR_2step_RACH-Core

R2-1912692 Loading Control in the RACH Type Selection PANASONIC R&D Center Germany discussion R2-1909238

R2-1912794 Further consideration on the SucessRAR design and Fallback RAR Intel Corporation discussion Rel-16 NR_2step_RACH-Core

R2-1912947 HARQ feedback for MsgB CMCC discussion Rel-16

R2-1912954 Further discussion on RA type selection CMCC discussion

R2-1913008 Discussion on the MsgA transmission Huawei, HiSilicon discussion Rel-16

R2-1913144 Discussion on HARQ and RNTI design for msgB Google discussion

R2-1913168 Considerations on MsgB reception Fujitsu discussion Rel-16 NR_2step_RACH

R2-1913401 Discussion on HARQ feedback for msgB and RNTI design for msgB Qualcomm Incorporated discussion Rel-16 NR_2step_RACH-Core

6.13.3 MAC PDU formats

Including output of [107#68][NR/2-step RACH] MAC PDU format for msgB (Qualcomm)

Contributions dealing with MAC PDU format for msgB that were covered in the email discussion are discouraged

Design of new TA MAC CE and other open issues related to MAC PDU formats

R2-1913403 Report of email discussion [107#68] [NR/2-step RACH]: MAC PDU format for msgB Qualcomm Incorporated discussion Rel-16 NR_2step_RACH-Core

=> Noted

Agreement
1. The 12-bit TA command, 16-bit C-RNTI and 48-bit UE Contention Resolution Identity are included in successRAR MAC subPDU.
2. The UE Contention Resolution Identity field should be placed in the payload of the successRAR MAC subPDU. As a baseline, UE Contention Resolution Identity field is in front of the payload of MAC subPDU.
3. We will discuss whether we include SFN after NR-U design is completed.
4. As a baseline, the indication for presence of RRC message following the successRAR MAC subPDU is needed. The detailed indication method is FFS.
5. For the case of msgB with RRC message, the SRB RRC message is included in a separate MAC subPDU, not inside the successRAR subPDU.
6. More than one RRC message for a given UE can be included in msgB (i.e. for re-establishment case). FFS whether we need to indicate number of RRC messages
7. The fallbackRAR MAC subPDU is composed of 12-bit TA command, 16-bit TC-RNTI, 27-bit UL grant, and 6-bit RAPID. The RAPID is in the MAC subheader of fallbackRAR subPDU.
8. For NR 2-step RACH, the payload of fallbackRAR MAC subPDU should reuse msg2 RAR format.
9. The sub-header should differentiate the different types of MAC subPDU (e.g. fallback, success, backoff). FFS how to indicate.
10. The MAC subheader for SRB MAC subPDU should use a full LCID field (6-bit)
11. The MAC subheader for SRB MAC subPDU should reuse the Rel-15 MAC subheader which supports both 8-bit and 16-bit Length field with additional F indicator field
12. As a baseline, the RAPID field is not included in the MAC subheader for successRAR MAC subPDU.

Proposal 10: As a baseline, two fields in msgB subheader are needed for indicating the different types of MAC subPDU. RAN2 can further study the detailed design.
- Nokia thinks we need a field but whether it is one or two fields.

Proposal 11: As a baseline, the RAPID field is not included in the MAC subheader for successRAR MAC subPDU.

Proposal 12: As a baseline, the 'E' bit is included in msgB MAC subheader. Detailed definition of 'E' bit is FFS.
- Nokia thinks that if we get rid of the E bit we can save a byte. Oppo thinks that we can use the subheader to differentiate the padding. Ericsson also thinks that we don't need the E bit.

✉ **[107bis#76][2-step RACH] MSG B format design (Samsung)**
- Discuss remaining open issues (e.g. E bit)
- Design MAC PDU format based on agreements made on RAN2#107bis and possible outcome of E bit discussion

Intended outcome: TP on agreeable MAC PDU format for MsgB
Deadline: Next Meeting

Not treated

R2-1913404	msgB MAC PDU format	Qualcomm Incorporated	discussion	Rel-16	NR_2step_RACH-Core
R2-1912251	Discussion on the SuccessRAR for SI request	Spreadtrum Communications	discussion		
R2-1912430	2 Step RA_12bit Timing Advanced Information	Samsung Electronics Co., Ltd	discussion	Rel-16	NR_2step_RACH-Core
R2-1912678	Open issues for msgB formats for 2-step RA	Ericsson	discussion	Rel-16	NR_2step_RACH-Core
R2-1913006	PDU format for msgB	Huawei, HiSilicon	discussion	Rel-16	
R2-1913219	Further design aspects of MsgB MAC subheader formats	Nokia, Nokia Shanghai Bell	discussion	Rel-16	NR_2step_RACH-Core
R2-1913220	New TAC MAC CE for 2-step RACH	Nokia, Nokia Shanghai Bell	discussion	Rel-16	NR_2step_RACH-Core
R2-1913264	MsgB format proposal for 2-step RACH	MediaTek Inc.	discussion	Rel-16	NR_2step_RACH-Core

R2-1913756 MAC PDU format of Success RARETRI discussion

R2-1913874 MAC PDU formats for msgB LG Electronics Polska discussion Rel-16 NR_2step_RACH-Core R2-1909828

R2-1913875 Need for RAPID MAC CE in payload of msgA LG Electronics Inc. discussion Rel-16 NR_2step_RACH-Core R2-1909825

6.13.4 RRC stage-3 related aspects

Initial discussion on configuration of 2-step RACH (dedicated signalling, SIB signalling etc)

R2-1912680 Configuration of 2-step RA Ericsson discussion Rel-16 NR_2step_RACH-Core
=> This will move to an email discussion

✉ **[107bis#77][2-step RACH] RRC details and Running CR (Ericsson)**
Intended outcome: Agreeable proposals for configuration of 2-step RACH according to proposals submitted in RAN2#107bis and Running RRC CR capturing agreements from this meeting
Deadline: Next Meeting

Not treated

R2-1912084 Remaining issues on supporting only 2-step RACH configuration on a UL BWP OPPO discussion
=> moved from 6.13.2

R2-1913369 Configuration aspects of 2-step RACH ZTE Corporation, Sanechips discussion Rel-16

R2-1912433 2 Step RA_RACH Configuration Samsung Electronics Co., Ltd discussion Rel-16 NR_2step_RACH-Core

R2-1912683 2-step RA 38.331 Draft CR Ericsson draftCR Rel-16 38.331 15.6.0 B NR_2step_RACH-Core

R2-1912955 System information for 2-step RACH resources configuration CMCC discussion

R2-1913007 msgA resource configuration and selection Huawei, HiSilicon discussion Rel-16

6.13.5 Stage-3 aspects

Remaining stage-3 aspects and details of overall procedures that are not covered by other AIs.

R2-1912087 Stage3 issues on contention resolution for 2-step RACH OPPO discussion

R2-1913405 Remaining issue on contention resolution and fall back procedure Qualcomm Incorporated discussion Rel-16 NR_2step_RACH-Core

R2-1912188 Remaining Issue on Fallback from 2-step to 4-step RACH vivo discussion

R2-1912223 On the remaining open issues of 2-step RACH CATT discussion Rel-16 NR_2step_RACH-Core

R2-1912187 Remaining Issue on Contention Resolution in 2-step RACH vivo discussion

R2-1912189 Resource Selection for MsgA vivo discussion

R2-1912225 Remaining Issue of RA Type Selection CATT discussion Rel-16 NR_2step_RACH-Core

R2-1912478 TA handling in 2-step RACH Samsung discussion Rel-16 NR_2step_RACH-Core R2-1909127

R2-1912682 PUSCH selection and MsgA payloads in 2-step RA Ericsson discussion Rel-16 NR_2step_RACH-Core

R2-1912948 PUSCH segmentation and repetition CMCC discussion Rel-16 R2-1909454

R2-1912949 Discussion of the PUSCH transmission of MsgA CMCC discussion Rel-16 R2-1909453

R2-1913010 fallback procedure for 2-step RACH Huawei, HiSilicon discussion Rel-16
R2-1913011 Differentiation for two-step random access Huawei, HiSilicon discussion Rel-16
R2-1913356 Fallback to 4-step RACH with BI Sony discussion Rel-16 NR_2step_RACH-Core
R2-1913872 Remaining issues on 2-step random access resource LG Electronics discussion NR_2step_RACH-Core

6.13.6 Other

CFRA for 2-step RACH for HO if time permits as per plenary guidance

R2-1913368 Support of CFRA with 2-step RACH ZTE Corporation, Sanechips, Qualcomm, Fujitsu discussion Rel-16
- Rapporteur suggests an email discussion to just align some understanding between companies
- Ericsson is concerned that this is a lower priority from the plenary

=> The intention is to provide a single paper that summarizes the open issues and solutions and set of agreeable proposals to be presented next meeting
=> Noted

Not treated

R2-1912226 Open issues of 2-step CFRA CATT discussion Rel-16 NR_2step_RACH-Core
R2-1912088 Contention free 2-step RACH OPPO discussion

R2-1912469 2-step CFRA Apple discussion Rel-16 NR_2step_RACH-Core
R2-1913169 On open questions to 2-step CF-RACH Fujitsu discussion Rel-16 NR_2step_RACH

R2-1912190 Prioritized RA Parameters for 2-step RACH vivo discussion R2-1908705
R2-1912191 Discussion on the 2-step CFRA vivo discussion
R2-1912681 2-step CFRA Ericsson discussion Rel-16 NR_2step_RACH-Core
R2-1912796 Support of CFRA in 2-step RACH Intel Corporation discussion Rel-16 NR_2step_RACH-Core
R2-1913222 CFRA for 2-step RACH Nokia, Nokia Shanghai Bell discussion Rel-16 NR_2step_RACH-Core
R2-1913877 Logical channel based RA type selection LG Electronics Inc. discussion Rel-16 NR_2step_RACH-Core R2-1909827
R2-1913879 Consideration on 2-step CFRA LG Electronics discussion NR_2step_RACH-Core

6.14 Single Radio Voice Call Continuity from 5G to 3G

(SRVCC_NR_to_UMTS-Core; leading WG: RAN2; REL-16; started: Dec 18; target; Mar 20; WID: RP-190713). Documents in this agenda item will be handled in a break out session
Time budget: 0.5 TU
Tdoc Limitation: 2 tdocs

6.14.1 Organisational

Including incoming LSs, running CRs, rapporteur inputs, etc

R2-1912043 LS Reply on measurements for SRVCC from 5G to 3G (R4-1910026; contact: Huawei) RAN4 LS in Rel-16 SRVCC_NR_to_UMTS-Core To:RAN2
⇨ Noted
⇨
R2-1912643 Running CR for introduction of SRVCC from 5G to 3G Ericsson draftCR Rel-15 38.300 15.7.0 SRVCC_NR_to_UMTS-Core

- Huawei suggests to improve the wording of "Inter RAT measurements are limited to E-UTRA and UTRA." in the last section
- Oppo suggests to highlight that this is for UTRA-FDD
- Intel suggests to change NG-RAN into NR
- Nokia notes this uses a previous version of the spec

⇨ Endorsed in principle with the comments above

R2-1913126 Running CR for the introduction of SRVCC from 5G to 3G Huawei, HiSilicon, China Unicom draftCR Rel-16 38.331 15.7.0 SRVCC_NR_to_UMTS-Core

- Nokia/QC think that some aspects differ from the outcome of the email discussion. Huawei thinks this is also due to the remaining FFS
- QC thinks the procedural text is missing, also some text is missing in the part of capabilities and ASN.1 does not allow FR1/FR2 split

⇨ Revised in R2-1914014
Offline discussion 203 (Huawei) - Revised 38.331 CR taking meeting agreements into account and trying to resolve the FFSs

R2-1914014 Running CR for the introduction of SRVCC from 5G to 3G Huawei, HiSilicon, China Unicom draftCR Rel-16 38.331 15.7.0 SRVCC_NR_to_UMTS-Core

⇨ CR to be used a baseline for a resubmission at the next meeting considering latest comments received offline

6.14.2 Inter RAT handover to UTRAN for SRVCC

R2-1912641 Outstanding issues for SRVCC from 5G to 3G Ericsson discussion SRVCC_NR_to_UMTS-Core

- ZTE/Huawei/Mediatek are fine with proposal 1
- ZTE supports to support both quantities, the suggestion to remove reportQuantityUTRA-FDD is because only one filter is allowed. Huawei also supports to support both quantities.

Agreements:
1: Introduce new branches for event B1 and B2 for UTRAN in EventTriggerConfigInterRAT.
2. Support both quantities by including filter coefficients for both in QuantityConfigUTRA-r16. FFS further ASN.1 aspects
FFS whether to define the range for utra-Q-OffsetRange as (-24..24). FFS whether this is defined as INTEGER or ENUMERATED

R2-1912773 Remaining issues on UTRAN measurement ZTE Corporation, Sanechips discussion Rel-16 SRVCC_NR_to_UMTS-Core

R2-1912774 Corrections on UTRAN measurement ZTE Corporation, Sanechips draftCR Rel-16 38.331 15.7.0 F SRVCC_NR_to_UMTS-Core

⇨ Noted

R2-1913124 Discussion on leftover issues of Inter-RAT measurement Huawei, HiSilicon, China Unicom discussion Rel-16 SRVCC_NR_to_UMTS-Core

6.14.3 Other

R2-1913125 Discusion on the SRVCC capability Huawei, HiSilicon discussion Rel-16 SRVCC_NR_to_UMTS-Core

R2-1912642 Measurements for SRVCC from 5G to 3G Ericsson discussion SRVCC_NR_to_UMTS-Core

6.15 Cross Link Interference (CLI) handling and Remote Interference Management (RIM) for NR

(NR_CLI_RIM; leading WG: RAN1; REL-16; started: Dec 18; target; Dec 19; WID: RP-191997) Documents in this agenda item will be handled in a break out session.

Time budget: 0.5 TU

Tdoc Limitation: 2 tdocs

Including output of email discussion [107#36][NR/CLI] draft CR for 38.331 (LG)

Including output of email discussion [107#37][NR/CLI] draft CR for 38.306 (Ericsson)

Including output of email discussion [107#38][NR/CLI] draft CR for 38.300 (Huawei)

Incoming LS

R2-1912039 Reply LS on measurement gap for SRS-RSRP or CLI-RSSI measurements (R4-1908777; contact: LGE) RAN4 LS in Rel-16 NR_CLI_RIM-Core To:RAN2 Cc:RAN1

- QC wonders whether RAN4 decision to apply scheduling restriction for CLI measurement symbols has Xn impacts. ZTE thinks this is similar to scheduling restrictions for SSB (semi-static restrictions). Nokia thinks there are no Xn impacts, it relates to restrictions between CLI and PDSCH

⇨ Noted

New Incoming LS

R2-1914168 LS on CLI measurement reporting range (R4-1911416; contact: LGE) RAN4 LS in Rel-16 NR_CLI_RIM-Core To:RAN2

Draft CRs

R2-1913714 Introduction of cross link interfernce management Huawei, HiSilicon draftCR Rel-16 38.300 15.7.0 B NR_CLI_RIM

- VC thinks we should add abbreviations for RSRP and RSSI
- QC suggests to remove changes on changes

⇨ Endorsed in principle with the addition of new abbreviations and removal of changes on changes

⇨ Submit updated version to the next meeting

R2-1913535 Draft CR on CLI for TS 38.306 Ericsson(rapporteur) draftCR Rel-16 38.306 15.7.0 B NR_CLI_RIM

- ZTE suggests to send LS to RAN1 asking about FR1/FR2 differentiation

⇨ Endorsed in principle

⇨ We will wait before sending an LS to RAN1/RAN4

R2-1913748 draft CR on CLI for TS38 331_v3_Alt1 LG Electronics Inc CR Rel-16 38.331 15.7.0 1342 - B NR_CLI_RIM

R2-1913749 draft CR on CLI for TS38 331_v3_Alt2 LG Electronics Inc CR Rel-16 38.331 15.7.0 1343 - B NR_CLI_RIM

- VC suggests to change "highest SRS resource" with something like "most interfering SRS resource" and correspondingly for RSSI (i.e. "most interfering RSSI resource")
- Intel/QC suggest to use the term "CLI-RSSI resource" when addressing the resource and "CLI-RSSI measurements" for measurements. Ericsson suggests to use a more general term (for future use) and not just refer to CLI-RSSI. QC thinks we don't know how this will look like for NR-U.
- ZTE thinks there are still some ASN.1 issues

⇨ Revised in R2-1914012 (which version depends on the next discussion) with the suggested wording changes above and ASN.1 fix. Offline discussion 201 (LG) - Revised 38.331CR taking new agreements into account

R2-1914012 CR on CLI for TS38 331_v3_AltX LG Electronics Inc CR Rel-16 38.331 15.7.0 1343 1 B NR_CLI_RIM

- Companies agreed there is no need to limit the number of MO for CLI. QC thinks we still need to look exactly at the maximum number
- QC notes there are still changes on changes
- Huawei/QC think we still need to clarify if the number of CLI resources is per UE or per MO. QC/Huawei/LG/Ericsson thinks this should be per UE

⇨ We come back to whether the number of CLI resources is per UE or per MO
⇨ Continue via email discussion

✉ **[107bis#57][CLI] Running RRC CR (LG)**
Update running CR based on the comments and solve remaining issues
Intended outcome: Running CR, to be endorsed next meeting
Deadline: Next Meeting

Main remaining issues

R2-1913747 Remaining issues on CLI LG Electronics Inc discussion Rel-16 NR_CLI_RIM

- Nokia wonders how the serving cell knows about the number of ports used by the aggressor. Is Xn coordination needed for this? QC thinks this is needed, UE measures on single port. Ericsson thinks that RAN3 agreed this can be done via proprietary means. Nokia and ZTE think RAN3 did not discuss this.
- VC wonders whether CLI applies to NR SA only or to MR-DC as well. Huawei thinks we need to further check with RAN1, e.g. about UE capabilities. ZTE thinks this should be supported for NR CA and MR-DC as well.

⇨ Further discussion on whether CLI applies to NR SA only or to NR CA / MR-DC as well is expected in RAN2. RAN1 to be consulted about the impact on UE capabilities after a RAN2 decision.

- QC, ZTE, Nokia, Huawei think we don't need s-measure

Agreements:
1. Multiple CLI measurement objects can be configured for an UE
FFS on the max number
FFS whether each MO applies to a given cell (e.g. Pcell, PScell, Scell), also depending on the decision to apply CLI also to NR CA/ MR-DC or not
2. SRS-RSRP results and CLI-RSSI results cannot be included in the same measurement report. (I.e. report quantity cannot be set to 'SRS-RSRP and CLI-RSSI'.)
3. s-measure is not applicable to CLI measurements.

R2-1912775 Remaining issues on CLI measurement ZTE Corporation, Sanechips discussion Rel-16 NR_CLI_RIM-Core

R2-1913393 Too strong interference during CLI-RSSI/SRS-RSRP measurement Qualcomm Incorporated discussion Rel-16 NR_CLI_RIM

R2-1913536 Remaining issues on CLI Ericsson discussion Rel-16 NR_CLI_RIM

R2-1913537 On s measure for CLI Ericsson discussion Rel-16 NR_CLI_RIM

R2-1913715 Leftover issues on CLI Huawei, HiSilicon discussion Rel-16 NR_CLI_RIM

Other issues and RAN3 involvement

R2-1912408 UE CLI Measurement Configuration, Reporting and NW Signalling Nokia, Nokia Shanghai Bell discussion Rel-16 Late

- QC thinks that RAN1 already agreed that UE only measures the SRS-RSRP resources having the same SCS of active BWP among the all SRS-RSRP resources configured within the measurement object. For CLI-RSSI different SCS are allowed. We can introduce a UE capability for CLI-RSSI measurements with a different SCS. Huawei/Nokia think there is no need for such capability

⇨ FFS whether we introduce a UE capability for CLI-RSSI measurements with a different SCS

- QC/ZTE/Huawei think RAN2 cannot conclude on the timing aspects
- Ericsson think that RAN1 agreed that coordination should be done via proprietary means. Nokia does not think so

⇨ Offline discussion 202 (Nokia) - Discuss the possible content of an LS to RAN3 about standardization of inter-gNB exchange of SRS configurations used in different cells, as well as options for exchange of received UE CLI measurements between network elements over Xn (i.e. between gNBs) and F1 (i.e. between CU-DUs).

R2-1914013 Draft LS to RAN3 For Exchange of Information related to UE CLI measurement configuration and reporting Nokia, Nokia Shanghai Bell LS out Rel-16 To:RAN3
- QC wonders about the RSSI case. Nokia clarifies that this is already part of the mechanisms defined by RAN3.
- change CLI-SRS-RSRP measurements into SRS-RSRP measurements for CLI
- remove "in downlink"
- add "for UE" after "SRS resource configuration" in second paragraph, last sentence

⇨ This LS is not intended to preclude RAN3 work on exchanging information to address RSSI measurements if needed

⇨ LS approved with changes above in R2-1914021

R2-1914021 LS to RAN3 For Exchange of Information related to UE CLI measurement configuration and reporting Nokia, Nokia Shanghai Bell LS out Rel-16 To:RAN3

⇨ Approved unseen

R2-1912409 LS to RAN3 For Exchange of Information related to UE CLI measurement configuration and reporting Nokia, Nokia Shanghai Bell LS out Rel-16 To:RAN3 Late

UE capabilities

R2-1913392 CLI measurements UE capabilities Qualcomm Incorporated discussion Rel-16 NR_CLI_RIM
- Nokia/Huawei/ZTE/Samsung are fine with proposals 3 and 4
- ZTE thinks it's hard to agree on the FFSs about proposals 3 and 4 in RAN2

Agreements:
1. Define a UE radio capability to indicate whether serving cell DL signal/channel (e.g. PDSCH/PDCCH) and SRS-RSRP FDMed reception is supported. FFS - UE behavior when DL signal/channel and SRS RSRP are FDMed for UEs indicating the FDMed reception is not supported.
2. Define a UE radio capability to indicate whether serving cell DL signal/channel (e.g. PDSCH/PDCCH) and CLI-RSSI FDMed reception is supported. FFS - UE behavior when DL signal/channel and CLI RSSI are FDMed for UEs indicating the FDMed reception is not supported.

✉ **[107bis#58][CLI] CLI measurements UE capabilities (Qualcomm)**
Discuss other possible UE capabilities, clarifications on the FFSs and possible questions to RAN1/RAN4 on aspects that cannot be decided by RAN2
Intended outcome: List of agreements regarding UE capabilities and updated running CR for TS 38.306
Deadline: Next Meeting

6.16 Enhancements on MIMO for NR

(NR_eMIMO-Core; leading WG: RAN1; REL-16; started: Jun 18; target; Mar 20; WID: RP-192271). Documents in this agenda item will be handled in a break out session.

Time budget: 0.5 TU

Tdoc Limitation: 3 tdocs

6.16.1 Organisational

Including incoming LSs , rapporteur inputs, running stage 2 CRs , etc

R2-1912013 Reply LS on MAC CE design for SCell BFR (R1-1909833; contact: Apple) RAN1 LS in Rel-16 NR_eMIMO-Core To:RAN2

- Update from RAN1, regarding the case where the SR-like dedicated PUCCH resource for SCell BFR is not configured, RAN1 agrees that the UE performs CBRA on SpCell

⇨ Noted

R2-1912596 [Rapporteur input] RRC parameter list for NR eMIMO Samsung discussion Rel-16 NR_eMIMO-Core

- Samsung also thinks that RAN1 will send a list of updated parameters

⇨ Noted

New incoming LSs

R2-1914207 Reply LS on single PDCCH-based multi-TRP operation (R1- 1911550; contact: Huawei) RAN1 LS in Rel-16 NR_eMIMO-Core To:RAN2

⇨ Noted

R2-1914208 Reply LS on MAC CE design for SCell BFR (R1-1911587; contact: Apple) RAN1 LS in Rel-16 NR_eMIMO-Core To:RAN2

⇨ Noted

6.16.2 Single-PDCCH multi-TRP operation

Issues:

1) RRC configuration vs modified/new MAC CE approach

2) For MAC CE approach: New MAC CE (new LCID) vs modified MAC CE (reusing existing LCID, e.g. using the "R" bit)

3) Options for new MAC CE / modified MAC CE:

- inclusion of 1 or 2 explicit TCI state IDs for each TCI codepoint

- inclusion of mapping relationship between 1 or 2 activated TCI states (as in Rel-15 TCI state MAC CE) and TCI codepoint

- new/modified MAC CE to activate/deactivate TCI states for TRP#2 only

- duplicated bitmap for TRP#1 and TRP#2

Aspects to consider in the discussion:

- Does the UE need to know via MAC CE that a TCI state corresponds to a specific TRP?

- Does the mapping between the TCI codepoints and activated TCI states for TRP#1/TRP#2 need to be flexible enough to support all the possible combination? (e.g. can we assume that TCI codepoint 0 will be mapped to the activated TCI state(s) with smallest TCI state ID(s) in TRP#1 and TRP#2, or not?)

- In case the TCI codepoint is only linked to one TCI state, will it always be a TCI state for TRP#1, or can it also be a TCI state for TRP#2?

R2-1912699 MAC CE signaling impact of enhanced TCI indication framework Ericsson discussion R2-1910144

- Samsung thinks we should rule out the RRC configuration option. ZTE/QC think RAN1 already agreed to go for a MAC CE based approach.
- Ericsson thinks we should not rely on the combination of two MAC CEs. Samsung agrees. ZTE thinks it's too early to decide.

⇨ RAN2 understands that the UE does not need to know via MAC CE that a TCI state corresponds to a specific TRP.

- Docomo/vivo think we could ask RAN1 for confirmation.

⇨ Add RAN2 understanding to the LS to RAN1, clarifying this is for the single PDCCH case (renaming the LS) and ask for confirmation.

Agreements:
1. We will adopt a dynamic MAC CE based approach.

✉ **[107bis#59][NR eMIMO] MAC CE design (Vivo)**
DL MAC CE design to activate/deactivate TCI states for mTRP operation. Both single PDCCH and multiple PDCCH mTRP should be considered
Intended outcome: List of agreeable proposals
Deadline: Next Meeting

R2-1913620 MAC CE signalling enhancement for TCI indication of single-PDCCH based multi-TRP transmission Huawei, HiSilicon discussion Rel-16 NR_eMIMO-Core

R2-1913407 Enhanced TCI States Activation/Deactivation PDSCH MAC CE for Multi-TRP Qualcomm Incorporated discussion Rel-16 NR_eMIMO-Core R2-1911375

R2-1913239 MAC CE format for single PDCCH multi-TRP MediaTek Inc. discussion Rel-16 NR_eMIMO-Core R2-1911129

R2-1913171 Consideration on MAC CE design for single PDCCH based multi-TRP transmission CMCC discussion Rel-16 R2-1909773

R2-1912510 MAC CE format to indicate up to two TCI states OPPO discussion Rel-16 NR_eMIMO-Core

R2-1912511 MAC CE format to indicate up to 2 TCI state per indication OPPO draftCR Rel-16 38.321 15.7.0 NR_eMIMO-Core

R2-1912514 MAC CE design for support of multiple beam indication for single PDCCH-based multiple TRPs Samsung discussion Rel-16 NR_eMIMO-Core R2-1911359

R2-1913049 Consideration on Enhancement of TCI state for Multi-TRP transmission ZTE Corporation, Sanechips discussion Rel-16 NR_eMIMO-Core

6.16.3 Multi-PDCCH multi-TRP operation

Including output of email discussion [107#39][NR/eMIMO] Multi PDCCH multi TRP impact to RAN2 (Ericsson)

Possible Agreements (based on email discussion report):

1. RAN2 assumes that, for Rel-16 normative work, mPDCCH mTRP operation is always intra-gNB/intra-DU and, also in "non-ideal backhaul" scenarios, transmission from two TRPs is always slot/frame/SFN-aligned

2. mPDCCH mTRP operation is supported via a single shared MAC entity

Possible Working Assumption (based on email discussion report):

1. mPDCCH mTRP operation is modelled as a single cell/single HARQ entity operation, with separate HARQ processes for the different TRPs

R2-1912700 Report of email discussion [107#39] [NR - eMIMO] Ericsson discussion Late

⇨ Offline 001, based on the email discussion, to draft questions to R1 (Ericsson). Face to face offline expected Wednesday morning coffee break, see schedule update.

Agreements: 1. RAN2 assumes that also in "non-ideal backhaul" scenarios, transmission from two TRPs is always slot/frame/SFN-aligned 2. mPDCCH mTRP operation is supported via a single shared MAC entity Working Assumption: 1. mPDCCH mTRP operation is modelled as a single cell/single HARQ entity operation. This does not mean that RAN1 has to do anything to support retransmission between TRPs

R2-1914011 Draft LS on multi PDCCH-based multi-TRP operation Ericsson LS out Rel-16 NR_eMIMO-Core To:RAN1

- Futurewei suggests to use the RAN1 wording: If "*multiple-PDCCH based multi-TRP/panel transmission with inter-cell (different Cell IDs)…*"
- Ericsson thinks that we should explain what our working assumption means

⇨ we add the agreements but not the Working assumption to the LS to RAN1

⇨ Offline discussion for reformulating Q3. Offline discussion 204 (Ericsson): Update draft LS to RAN1

R2-1914015 Draft LS on multi PDCCH-based and single PDCCH -based multi-TRP operation Ericsson LS out Rel-16 NR_eMIMO-Core To:RAN1

⇨ remove Q1 and renumber the questions

⇨ remove type "T"

⇨ LS approved with these changes in R2-1914020

R2-1914020 LS on multi PDCCH-based and single PDCCH -based multi-TRP operation Ericsson LS out Rel-16 NR_eMIMO-Core To:RAN1
⇨ Approved unseen

R2-1912515 Further considerations of support for multi-PDCCH based multi-TRP operation Samsung discussion Rel-16 NR_eMIMO-Core

R2-1913619 RAN2 specification impacts of multi-TRP transmission Huawei, HiSilicon discussion Rel-16 NR_eMIMO-Core

✉ **[107bis#60][NR eMIMO] RRC CR (Ericsson)**
Draft running CR for TS 38.331, including ASN.1 details for available RRC parameter list (including rapporteur excel input for the whole WI)
Intended outcome: Initial draft CR for TS 38.331
Deadline: Next Meeting

6.16.4 General beam management enhancements

Other aspects, if any, can also be covered here

R2-1912351 RAN2 specification impacts of SCell BFR vivo discussion Rel-16 NR_eMIMO-Core
⇨ Come back to this on Friday
- At the moment we don't say BFD is performed in the active BWP
- Ericsson wonders about the need for different thresholds
- Ericsson thinks we still need to discuss whether we need a specific BFR-SR configuration
- QC wonders the valid uplink grant has timing restrictions (whether this needs to be valid before a given time). Ericsson thinks this could be an optimization. Nokia thinks this can be discussed later. Lenovo understands the concern from QC.

Agreements:
1. The Scell beam failure detection is per cell.
2. Each DL BWP of a SCell can be configured with an independent SCell BFR configuration (the content is FFS)
3. One SR ID is configured for BFR within the same cell group.
4. The SCell BFRQ MAC CE triggers a SCell BFRQ SR if there is no valid uplink grant which can accommodate the SCell BFRQ MAC CE.
5. FFS whether the transmission of the SCell BFRQ MAC CE cancels the pending BFRQ SR of the failed SCell(s).(depends whether the MAC CE provides info for one or more Scells)
6. When the number of the BFRQ SR transmission reaches the sr-TransMax, the UE triggers a RACH procedure (i.e. reuse Rel-15 behaviour)

✉ **[107bis#61][NR eMIMO] Scell BFR MAC CR (Nokia, Samsung)**
Phase 1: Continue the discussion on details of BFR procedure for Scell (Nokia)
- Beam Failure Detection
- BFR-SR modelling
- MAC CE – transmission and format
Phase 2: Tentatively draft running CR for TS 38.321 (Samsung)
Intended outcome: Initial draft CR for TS 38.321, covering Scell BFR aspects
Deadline: Next Meeting

R2-1913048 Considerations on Beam failure Recovery for SCell ZTE Corporation, Sanechips discussion Rel-16 NR_eMIMO-Core

R2-1913223 BFR procedure for SCell Nokia, Nokia Shanghai Bell discussion Rel-16 NR_eMIMO-Core

R2-1913013 Analysis of RRC impacts from multi-beam enhancements Ericsson discussion Rel-16 NR_eMIMO-Core

R2-1912128 Discussion on multi-beam enhancements CATT discussion Rel-16 NR_eMIMO-Core

R2-1912352 Text proposal for 38.321 of SCell BFR vivo discussion Rel-16 NR_eMIMO-Core

R2-1912353 Text proposal for 38.331 of SCell BFR vivo discussion Rel-16 NR_eMIMO-Core
R2-1912436 RAN2 Aspects of SCell BFR Samsung Electronics Co., Ltd discussion Rel-16 NR_eMIMO-Core
R2-1912470 SCell BFR Operation Apple discussion Rel-16 NR_eMIMO-Core
R2-1912509 Discussion on SCell BFR OPPO discussion Rel-16 NR_eMIMO-Core
R2-1912690 SCell Beam Failure Recovery Procedure Lenovo, Motorola Mobility discussion Rel-16 NR_eMIMO-Core
R2-1913012 MAC aspects of BFR on SCell Ericsson discussion Rel-16 NR_eMIMO-Core
R2-1913137 Discussion on beam failure recovery for SCell LG Electronics Inc. discussion NR_eMIMO-Core
R2-1913224 Candidate detection and MAC CE format for SCell BFR Nokia, Nokia Shanghai Bell discussion Rel-16 NR_eMIMO-Core
R2-1913225 Draft CR on Introduction of SCell BFR Nokia, Nokia Shanghai Bell draftCR Rel-16 38.321 15.7.0 NR_eMIMO-Core
R2-1913240 Support BFR for SCell MediaTek Inc. discussion Rel-16 NR_eMIMO-Core
R2-1913621 Beam failure recovery for SCell Huawei, HiSilicon discussion Rel-16 NR_eMIMO-Core
R2-1913833 Procedures and MAC CE design for BFR for SCells Qualcomm Incorporated discussion Rel-16 NR_eMIMO-Core R2-1911504
R2-1913880 Draft LS on SCell BFR Operation Apple LS out Rel-16 NR_eMIMO-Core To:RAN1

6.18 Private Network Support for NG-RAN

(NG_RAN_PRN-Core; leading WG: RAN3; REL-16; started: Mar 19; target; Mar 20; WID: RP-191563). Documents in this agenda item will be handled in a break out session.
Time budget: 0.5 TU
Tdoc Limitation: 2 tdocs

6.18.1 Organisational

Including incoming LSs , rapporteur inputs, running stage 2 CRs , etc

Workplan

R2-1912841 NPN Work Plan Nokia, China Telecom (Rapporteurs) discussion Rel-16 NG_RAN_PRN-Core R2-1909112
⇨ Noted

Incoming LSs

R2-1912003 LS on sending CAG ID during resume procedure (C1-195157; contact: Samsung) CT1 LS in Rel-16 Vertical_LAN To:SA2 Cc:RAN2
- Huawei thinks we should address this in RAN2. Nokia and CMCC think we should wait for SA2 reply

⇨ Noted

R2-1912035 Reply LS on RAN sharing and Emergency services with Non-Public Networks (R3-194785; contact: Qualcomm) RAN3 LS in Rel-16 Vertical_LAN To:SA2, RAN2 Cc:SA1
⇨ Noted

R2-1912036 LS on clarifications on Private Networks (R3-194786; contact: Nokia) RAN3 LS in Rel-16 NG_RAN_PRN To:SA2 Cc:RAN2
⇨ Noted

R2-1912059 LS on Sending CAG ID in NAS layer (S3-193142; contact: Qualcomm) SA3 LS in Rel-16 FS_Vertical_LAN_SEC To:SA2, RAN2, RAN3 Cc:CT1
⇨ We need to answer this.

Draft Reply LSs and related documents

R2-1912952 [DRAFT] LS to SA3 on privacy concern of transmission of CAG ID CMCC LS out Rel-16 NG_RAN_PRN-Core To:SA3

R2-1913946 Draft Reply LS on Sending CAG ID in NAS layer Qualcomm Incorporated LS out Rel-16 NG_RAN_PRN-Core To:SA3, SA2, RAN3 Cc:CT1

R2-1913721 Discussion on providing CAG ID to AS during resume procedure Huawei, HiSilicon discussion Rel-16 NG_RAN_PRN

R2-1913722 draft Reply LS to CTI on providing CAG ID to AS during resume procedure Huawei, HiSilicon LS out Rel-16 NG_RAN_PRN To:CT1 Cc:SA2

R2-1913906 Transmission of CAG ID during Resume Procedure Samsung discussion

⇨Revised in R2-1913959

R2-1913959 Transmission of CAG ID during Resume Procedure Samsung discussion Rel-16

Draft Stage 2 CR

R2-1912842 NPN Stage 2 Draft CR Nokia, China Telecom (Rapporteurs) draftCR Rel-16 38.300 15.7.0 B NG_RAN_PRN-Core R2-1909113

⇨ We can use this as a baseline for further email discussion

✉ **[107bis#62][PRN] Stage 2 running CR (Nokia)**
Intended outcome: Update the running CR
Deadline: Next Meeting

6.18.2 Idle and inactive mode

Including cell selection and reselection (SNPN and PNI-NPN selection), HRNN (Human Readable Name) and common idle and connected mode aspects (e.g. system information, access control, etc.)

Including output of email discussion [107#40][NR/NPN] SIB1 design (Qualcomm)

Including output of email discussion [107#41][NR/NPN] CSG aspects (Nokia)

R2-1912843 Report of Email Discussion [107#41] on CSG Aspects Nokia (Rapporteur) report Rel-16 NG_RAN_PRN-Core

- QC thinks that with proposal 1A we are undoing an LTE behaviour, having impacts on power consumption. CATT thinks the situation is different in NR and then supports proposal 1A. Huawei agrees but thinks that CAG cells should be prioritized on certain frequencies. ZTE wonders if this means we should have cell specific priorities.
- Regarding 2a, Ericsson thinks we should not override dedicated priorities. Intel thinks this is needed to support the WID objectives. Nokia agrees with Ericsson. ZTE/CATT think the network might not be able to provide information for all the neighbour cells and then we should allow autonomous search, so they don't think dedicated priorities should be overridden
- Samsung thinks that if we have 4a, we don't need 3a. CATT and CMCC don't agree
- Huawei and ZTE think proximity indication is useful. Nokia does not think so, this was used in LTE to solve PCI confusion while this is not needed here. Huawei thinks this also needed for uncoordinated deployments. China Telecom supports agreement 5 as deployments will be under network control. ZTE thinks that PCI confusion might happen in NR-U and then this mechanism might be needed for NR-U as well
- Regarding autonomous search for SNPN, Ericsson thinks we should not have network selection within AS layer. Intel agrees
- Ericsson/Nokia/QC/LG see less need for PCI range/list for SNPN. Sony sees the need for power saving and for inbound mobility. Nokia thinks there is no inbound mobility. Samsung thinks this is useful for UEs that do not support SNPN and in any case this would be up to network.

Agreements:

1. no new mechanism is introduced to handle the priority of a frequency layer of a CAG cell on which the UE is camped (beyond what cellReselectionPriority provides in SIB4 and in RRCRelease).
2. the UE can optionally implement an autonomous search function of CAG cells. FFS on the relationship with dedicated priorities.
3. reserving a PCI range for CAG cells is purely a deployment issue (does not need to be reflected in the spec)
4. the PCI list of CAG cells can optionally be signalled to UEs. FFS on details of the list
5. FFS whether proximity indication in CONNECTED mode is needed
6. no preliminary access check for CAG cells in CONNECTED mode. The Allowed CAG list is provided to the gNB by the AMF.
7. no new mechanism is introduced to handle the priority of a frequency layer of an SNPN cell on which the UE is camped (beyond what cellReselectionPriority provides in SIB4 and in RRCRelease).
8. There is no autonomous search function of SNPN cells.
9. reserving a PCI range for SNPN cells is purely a deployment issue (does not need to be reflected in the spec)
10. FFS whether PCI range of SNPN cells can optionally be signalled to UEs.
11. No proximity indication in CONNECTED mode is needed for SNPN.
12. no preliminary access check for SNPN cells in CONNECTED mode.

R2-1913633 Report of email discussion [107#40][NR/NPN] SIB1 design (Qualcomm) Qualcomm Incorporated report

⇨ Come back to this on Friday

- CMCC/VDF thinks we should support emergency services for Rel-15 UEs in CAG-only cells. Nokia thinks there is an SA2 requirement only for Rel-15 UEs. Ericsson thinks we should anyway have a mechanism to prevent emergency services as well.
- Qc thinks a new Rel-16 IE similar to *cellReservedForOtherUse* should be PLMN specific
- Ericsson/Nokia/LG think that for CAG, all cells should have the same CellID and TAC

⇨ Regarding extending Rel-15 PLMN-IdentityInfoList or adding a new list, RAN2 thinks that sharing aspects could be address by any of the two approaches.

Agreements:

1. SIB1 of NPN-only cell prevents access attempts by Rel-15 UEs for normal services.
2. SIB1/MIB supports prevention of access attempts by Rel-15 UEs on a SNPN-only cell for emergency services.
3. SIB1/MIB supports prevention of access attempts by Rel-15 UEs on a CAG-only cell for emergency services (this does not mean that access attempts by Rel-15 UEs for emergency services on CAG-only cell are always not allowed. This is still FFS.The feasibility of allowing emergency services on CAG-only for Rel-15 UEs will be discussed in the email discussion on RRC aspects/SIB1 design)
4. Access attempts by Rel-15 UEs for emergency services on SNPN-only cell are not allowed.
5. In a NPN-only cell, access attempts for normal services by Rel-16 UEs without support for NPN is not allowed.
6. In a SNPN-only cell, access attempts for emergency services by Rel-16 UEs without support for SNPNs is not allowed.
7. For a PLMN+NPN cell, Rel-15 UEs should be able to access PLMNs associated with the cell for normal and/or limited service.
8. A new Rel-16 IE is needed with a role similar to role of *cellReservedForOtherUse* for Rel-15 UEs (FFS whether this will be PLMN specific)
7. SIB1 allows indication of TAC, RANAC, cellIdentity per SNPN (per PLMN ID + NID). FFS on other IEs. FFS whether Rel-15 IEs or Rel-16 IEs are used for the indication.
8. SIB1 allows indication of TAC, RANAC, cellIdentity for each CAG. FFS on other IEs. The fields are indicated per PLMN-ID. FFS whether Rel-15 IEs or Rel-16 IEs are used for the indication.

Working assumptions:

1. NPN information is outside PLMN-IdentityInfoList as a new Rel-16 IE for NPN-only cell and PLMN+NPN cell (the total number of network IDs is still 12)

2. Access attempts by Rel-15 UEs for emergency services on CAG-only cell could be allowed based on operator's preference

✉ **[107bis#63][PRN] RRC CR (Nokia)**
Continue the discussion on SIB1 design and draft running CR for TS 38.331 including agreeable ASN.1 details
Intended outcome: Initial draft CR for TS 38.331
Deadline: Next Meeting

R2-1912361 Further aspects of PNI-NPN Ericsson discussion Rel-16 NG_RAN_PRN-Core
R2-1913634 Suitable and acceptable NPN cells Qualcomm Incorporated discussion

✉ **[107bis#64][PRN] Suitable and acceptable NPN cells (Qualcomm)**
Discuss remaining issues on suitable and acceptable NPN cells
Intended outcome: List of agreeable proposals and running CR for 38.304
Deadline: Next Meeting

R2-1912360 Further aspects of SNPN Ericsson discussion Rel-16 NG_RAN_PRN-Core
R2-1912153 Cell Selection and Reselection of NPN cell CATT discussion Rel-16 NG_RAN_PRN-Core
R2-1912154 Connection and Mobility Issue for UEs in Idle and Inactive Mode CATT discussion Rel-16 NG_RAN_PRN-Core
R2-1912309 Consideration on idle and inactive mode procedures Huawei, HiSilicon, China Telecom discussion Rel-16 NG_RAN_PRN
R2-1912437 Discussio`2n on (preventing) access to NPN only cell Samsung Electronics Co., Ltd discussion Rel-16 NG_RAN_PRN-Core
R2-1912507 Clarification on HRNN reporting OPPO discussion Rel-16 NG_RAN_PRN-Core
R2-1912508 Discussion on SIB1 design for NPN OPPO discussion Rel-16 NG_RAN_PRN-Core
R2-1912656 Network and cell (re)selection in SNPN access mode Nokia, Nokia Shanghai Bell discussion Rel-16 NG_RAN_PRN-Core
R2-1912675 Further consideration on the System Information of the Private Network ZTE Corporation, Sanechips discussion Rel-16 NG_RAN_PRN-Core
R2-1912676 Considerations on the remaining Idle/Inactive state issues of the Private Network ZTE Corporation, Sanechips discussion Rel-16 NG_RAN_PRN-Core
R2-1912713 Access Control for SNPN and CAG Intel Corporation discussion Rel-16 NG_RAN_PRN-Core
R2-1912714 Suitability criteria for NPN Intel Corporation discussion Rel-16 NG_RAN_PRN-Core
R2-1912924 Left issues in idle and inactive mode for NPN CMCC discussion Rel-16 NG_RAN_PRN-Core
R2-1913005 Discussion on reselection between NPNs and public networks KDDI Corporation discussion
R2-1913052 Discussion on human-readable network name China Telecom, Huawei, HiSilicon discussion Late Not available
R2-1913058 Discussion on human-readable network name China Telecom, Huawei, HiSilicon discussion Late Not available
R2-1913060 Discussion on human-readable network name China Telecom, Huawei, HiSilicon discussion
R2-1913069 Discussion on the deployment for CAG China Telecommunications discussion Late Not available
R2-1913070 Discussion on the deployment for CAG China Telecommunications discussion
R2-1913363 Cell selection/reselection with NPN cells Sony discussion Rel-16 NG_RAN_PRN-Core
R2-1913635 Support for NPN HRNN broadcast Qualcomm Incorporated discussion
R2-1913804 Resue of CSG features for NPN cells LG Electronics France discussion NG_RAN_PRN-Core

6.18.3 Connected mode

Connected mode specific aspects including e.g. measurement report and mobility. This agenda item might be down-prioritized at RAN2#107bis
Other aspects, if any, can also be covered here

R2-1912925 Left issues in active mode for NPN CMCC discussion Rel-16 NG_RAN_PRN-Core
R2-1912310 Consideration on connected mode procedures Huawei, HiSilicon discussion Rel-16 NG_RAN_PRN
R2-1912657 RRC considerations to support SNPNs Nokia, Nokia Shanghai Bell discussion Rel-16 NG_RAN_PRN-Core

6.19 Other NR Rel-16 WIs/SIs

This agenda item is to be used for LSs and documents relating to Rel-16 NR but for which there is no existing RAN WI/SI (e.g. LSs from CT/SA requesting RAN2 action) or for which there is no allocated RAN2 time (e.g. some RAN4 led WIs with no RAN2 time but might require introduction of UE capability signalling).
Time budget: 0.5 TU

LS in – to R2

R2-1912023 Reply LS on maximum value of MDBV (R1-1909894; contact: Qualcomm) RAN1 LS in Rel-16 5GS_Ph1 To:SA2, RAN2, RAN3, CT3, CT4 Cc:SA1

⇒ **Noted**

R2-1912030 Reply LS on LS on maximum value of MDBV (R3-194553; contact: Qualcomm) RAN3 LS in Rel-16 5GS_Ph1 To:SA2, RAN1, RAN2, CT3, CT4 Cc:SA1

⇒ **Noted**

R2-1914177 Reply LS to LS on maximum value of MDBV (C4-194314; contact: Nokia) CT4 LS in Rel-16 5GS_Ph1 To:SA2 Cc:RAN1, RAN2, RAN3, CT3, SA1

⇒ **Noted**

R2-1912060 LS to RAN2 and RAN3 on False Base Station Detection (S3-193175; contact: Huawei) SA3 LS in Rel-16 FS_5GFBS To:RAN2, RAN3

- Huawei think we need t reply. There are discussion papers and draft reply

⇒ **Noted**

R2-1912061 LS on QoE Measurement Collection (S5-195659; contact: Ericsson) SA5 LS in Rel-16 QOED To:CT1, RAN2, RAN3, SA4

- SA5 think this may impact R2 specs and we need to investigate.
- Nokia wonder is this really is TEI with so many groups involved.
- LTE TEI session has treated this LS

⇒ **Noted**

LS in – cc R2

R2-1912029 Reply on radio resource management policy (R3-194550; contact: Huawei) RAN3 LS in Rel-16 eNRM To:SA5 Cc:RAN2

R2-1912031 Reply LS on Data activity reporting (R3-194572; contact: Ericsson) RAN3 LS in Rel-16 5G_SLICE_ePA To:SA5 Cc:RAN2

⇒ **Noted without presentation**

R2-1912062 Reply LS on L1 and L2 measurements (S5-195941; contact: Huawei) SA5 LS in Rel-16 5G_SLICE_ePA To:RAN2, RAN3
- Huawei think we might need to check for R2 impact

⇒ **noted**

URLLC (V2X Uu)

R2-1912025 Response to LS on Combination 2 of Uu QoS characteristics values for V2X services (R1-1909898; contact: Huawei) RAN1 LS in Rel-16 NR_L1enh_URLLC To:SA2 Cc:RAN2, RAN3

R2-1912028 Reply LS on Combinations of Uu QoS characteristics values for V2X services (R3-193258; contact: Huawei) RAN3 LS in Rel-16 NR_L1enh_URLLC To:RAN1 Cc:SA2, RAN2

⇒ **Noted without presentation**

R2-1912038 Reply LS on Enhancements to QoS Handling for V2X Communication Over Uu Reference Point (R3-194795; contact: Vodafone) RAN3 LS in Rel-16 eV2XARC To:SA2, RAN2

⇒ **Noted**

R2-1912057 Reply on Combinations of Uu QoS characteristics values for V2X services (S2 -1906340; contact: Huawei) SA2 LS in Rel-16 eV2XARC, NR_L1enh_URLLC To:RAN1, RAN3 Cc:RAN2

⇒ **Noted without presentation**

Discussions

Related to R2-1908653 LS on Potential improvements for delay critical QoS Flows (S2-1906832; contact: Huawei) SA2

R2-1913724 Postponed discussions on potential improvements for delay critical QoS flows Huawei, HiSilicon discussion Rel-16 5GS_Ph1

R2-1912560 Discussion on Potential improvements for delay critical QoS Flows Ericsson Discussion

R2-1912735 Discussion on potential improvements for delay critical QoS Flows OPPO discussion Rel-16

⇒ **3 tdocs noted**

DISCSUSSION on the 3 docs above
- Huawei think the question is not replied to in P1 in Oppos tdoc
- Futurewei think if we have long delays for high reliability transmission and then there can be higher gains.
- Ericsson think the Huawei analysis is wrong.
- QC think that Q3 reply can be agreed.
- QC think that for Q1 and Q2 Huawei s reply is ok
- Ericsson think we sholdn't enforce such feature.

R2-1913725 Draft Reply LS on potential improvements for delay critical QoS flows Huawei, HiSilicon LS out Rel-16 5GS_Ph1 To:SA2 Cc:RAN3

⇒ **Remove "but more RAN resources can be saved under some circumstances when PER is not met"**

⇒ **With this change, approved in R2-1914201**

R2-1912561 draft reply LS on potential improvements for delay critical QoS flows Ericsson LS out To:RAN3

Related to R2-1912033 LS on full configuration during SN Modification procedure (R3-194758; contact: Huawei)

R2-1912721 Full configuration indication to SN - Feedback on RAN3 LS Intel discussion Rel-16 TEI16, NR_newRAT-Core

Related to R2-1912060 LS to RAN2 and RAN3 on False Base Station Detection (S3-193175; contact: Huawei)

R2-1912722 False base station detection – feedback on SA3 LS Intel discussion Rel-16 FS_5GFBS

R2-1913740 Discussion on potential RAN2 impact to support false base station detection Huawei, HiSilicon discussion Rel-16 FS_5GFBS

DISCSUSSION on the 2 docs above

- For 4, QC think there is significant impact to the UE, e.g. wrt power consumption. For the logged measurements we need to know better what to measure.
- Huawei indicate that with MDT the impact may be not so bad
- Apple think we can reply it is feasible and can also express some concerns e.g. power.
- Vivo wonder if we need to log all SIBs or just MIB and SIB1.
- Ericsson think this would be the SIBs that the UE anyway read in Idle and this is rarely used.
- ZTE agrees this is not frequently used.
- Oppo think the UE can only report MIB and SIB1, but think the UE would follow normal behaviour, i.e. not measure all cells.
- Nokia think this may happen but rarely, and think ANR is the closes functionality, rather than MDT. Docomo agrees, and think ANR could be sufficient. This seems like a corner case.
- Samsung like P1 from Intel.
- QC also like Intel P1 and think UE cannot report more than SIB1 and MIB.
- Intel think that we should ask for more information.
- QC think we shouldn't volunteer to collect even more SIBs.
- Huawei think we can ask whether hash of other SIBs is required.

⇒ **For LSout Include Intel P1 reply. Add that such functionality do not exist today, and it would need to be specified. Ask for more information on what need to be collected. Can ask whether hash of other SIBs is required.**

R2-1913739 [DRAFT] Reply LS to SA3 on FBS detection Huawei, HiSilicon LS out Rel-16 FS_5GFBS To:SA3 Cc:RAN3

Offline 44, LS revision in R2-1914202.

R2-1914202 [DRAFT] Reply LS to SA3 on FBS detection Huawei, HiSilicon LS out Rel-16 FS_5GFBS To:SA3 Cc:RAN3

⇒ **Approved in R2-1914224**

Related to R2-1911499 LS on Recommended Bit Rate/Query for FLUS and MTSI (S4-191031; contact: Qualcomm)

R2-1913598 Recommended Bit Rate/Query for FLUS and MTSI Qualcomm Incorporated discussion Rel-16 E_FLUS

R2-1913599 [Draft] Reply LS on Recommended Bit Rate/Query for FLUS and MTSI Qualcomm Incorporated LS out Rel-16 E_FLUS To:SA4

6.20 NR TEI16 enhancements

Small Technical Enhancements to NR. TEI should be predominantly within a single WG and fully completed within the same quarter in all affected WGs. RAN2 impact of RAN1/4-led TEI shall be limited to RRC signalling of configuration parameters and UE capabilities (no MAC impact, no RRC procedural impact, etc). Please also see RP-191602 endorsed at RAN#84. No documents should be submitted to 6.20. Please submit to 6.20.x.

Time budget: 1 TU

Tdoc Limitation: No Limitation for Operators, 6 tdocs for others. NOTE for TEI, the tdoc limitation applies to new proposals, not to open proposals since previous meeting(s)

6.20.1 RAN2 led TEI16 enhancements - Control plane related

Open proposals

Second SMTC in Idle / Inactive

R2-1913258 Introduction of a second SMTC per frequency carrier in idle/inactive Orange, AT&T, Vodafone, Telecom Italia S.p.A., CMCC, Samsung, Ericsson CR Rel-16 38.331 15.7.0 1218 1 B TEI16 R2-1910673

R2-1913269 Introduction of a second SMTC for inter-RAT cell reselection Orange, AT&T, Vodafone, Telecom Italia S.p.A., CMCC, Samsung, Ericsson CR Rel-16 36.331 15.7.0 4114 - B TEI16

R2-1912995 Multiple SMTC for Idle Nokia, Nokia Shanghai Bell discussion Rel-16 TEI16

R2-1912996 CR on multiple SMTC for idle Nokia, Nokia Shanghai Bell CR Rel-15 38.331 15.7.0 1282 - F TEI16

DISCUSSION without treating any doc above
- Orange suggest to wait for Reply LS. Chair: we wait

Voice fallback

R2-1913389 Introduction of voice fallback indication Qualcomm Incorporated, T-Mobile USA, Verizon, China Telecom, Softbank, Ericsson CR Rel-16 38.331 15.7.0 1312 - C TEI16

R2-1913390 Introduction of voice fallback indication Qualcomm Incorporated, T-Mobile USA, Verizon, China Telecom, Softbank, Ericsson CR Rel-16 36.331 15.7.0 4136 - C TEI16
- QC think interRat is quite difficult and think we could focus on EPS fallback. Ericsson would be ok to do this. Huawei are also ok with this.

R2-1913883 On voice fallback enhancement SHARP Corporation discussion Rel-16
- QC clarifies that IRAT means that we focus on NR fallback to LTE/EPC, by redirection or HO.
- QC think that for establishment cause QC are thinking to not impact NAS.
- Sharp think that this may be difficult without changing NAS.

R2-1913741 HO and redirection from NR to LTE due to EPS fallback Huawei, HiSilicon, China Unicom discussion Rel-16 TEI16
- Huawei have some differences to QC, e.g. would prefer that UE follows legacy reestablishment at HO failure.
- Huawei think that establishment cause specifc to EPS fallback should be considered.

⇒ **We limit to EPS fallback**

✉ **[107bis#46][NR TEI16] Voice fallback (Qualcomm)**
Intended outcome: Agreeable CRs 36331 38331
Deadline: Next Meeting

R2-1913391 Draft LS on RRC establishment cause value in EPS fallback Qualcomm Incorporated LS out Rel-16 TEI16 To:CT1 Late

Overheating

R2-1913689 Signalling design for overheating reporting in (NG)EN-DC scenario Huawei, Huawei Device, China Unicom, MediaTek Inc., Samsung, LG Uplus, vivo discussion Rel-16 TEI16
- Ericsson would like to add one more option a flag from MN to SN so that SN could downgrade the configuration, as releasing SCG would make the UE “loose” the 5G connection.

- Intel think Option 2 is not good.

Offline 48, agreeable solution, prefarbly agreeable CRs (Huawei)
- Huawei reports that 3 options were discussed, where one can be excluded. For the other 2 solutions, the were even support.
- Ericson prefers option 1 because then MN can coordinate this, Nokia agrees and think that in DC we don't have coord SN MN, and Nokia think the purpose is to balance. Huawei think it is ok.
- ZTE prefer option 2, bec overheating is likely related to SN, and would also like to think a bit more.
- QC think that the problem with O1 is that we are putting NR things with LTE. Ericsson think we can fix this in ASN.1
- Huawei think that If postponed then we should have email discussion, and think this is related to power saving, this session have decided to attempt to coordinate.

✉ **[107bis#47][NR TEI16] Signalling design Overheating reporting in (NG)EN-DC (Huawei)**
Intended outcome: Report w agreeable solution, even more preferred: agreeable CRs
Deadline: Next Meeting

R2-1913529 Overheating enhancements for EN-DC Ericsson discussion

R2-1913690 36.331 Draft CR for addressing overheating issue in EN-DC scenario - Option 1 Huawei, Huawei Device draftCR Rel-16 36.331 15.7.0 F TEI16

R2-1913691 38.331 Draft CR for addressing overheating issue in EN-DC sceanrio - Option 1 Huawei, Huawei Device draftCR Rel-16 38.331 15.7.0 F TEI16

R2-1913692 36.331 Draft CR for addressing overheating issue in EN-DC scenario - Option 2 Huawei, Huawei Device draftCR Rel-16 36.331 15.7.0 F TEI16

R2-1913693 37.340 Draft CR for addressing overheating issue in EN-DC scenario - Option 2 Huawei, Huawei Device draftCR Rel-16 37.340 15.7.0 F TEI16

R2-1913694 38.331 Draft CR for addressing overheating issue in EN-DC scenario - Option 2 Huawei, Huawei Device draftCR Rel-16 38.331 15.7.0 F TEI16

MPC/MCS prioritisation

R2-1912921 PRACH prioritization parameters for MPS for Rel-16 Perspecta Labs, ECD, AT&T, FirstNet, T-Mobile, Sprint, Verizon, Qualcomm, Ericsson CR Rel-16 38.331 15.7.0 1279 - B NR_newRAT-Core, TEI16

R2-1912922 PRACH prioritization procedure for MPS Perspecta Labs, ECD, AT&T, FirstNet, T-Mobile, Sprint, Verizon, Qualcomm, Ericsson CR Rel-16 38.321 15.7.0 0663 - B NR_newRAT-Core, TEI16

R2-1912967 PRACH prioritization parameters for MCS for Rel-16 FirstNet, Perspecta Labs, Ericsson, Qualcomm CR Rel-16 38.331 15.7.0 1280 - B NR_newRAT-Core, TEI16

R2-1912969 PRACH prioritization procedure for MCS for Rel-16 FirstNet, Perspecta Labs, Ericsson, Qualcomm CR Rel-16 38.321 15.7.0 0664 - B NR_newRAT-Core, TEI16

DISCUSSION
- Ericsson think the CRs should be merged as they may clash in the implementation.
- Samsung think the IEs should be placed under RACH config common.

⇒ **We will have these changes, but the CRs should be merged, can consider text enhancements in the updates. Updated and merged CRs for next meeting,**

Need for gaps:

R2-1913847 Report of [107#81][NR TEI16] Need-for-Gaps signalling MediaTek Inc. discussion Rel-16 TEI16

R2-1913853 CR on NeedForGap capability for each supported NR band before EN-DC configuration Nokia, Nokia Shanghai Bell draftCR Rel-16 36.331 15.7.0 C TEI16

EN-DC cell reselection (not agreed last meeting)

R2-1913233 Further consideration on EN-DC cell reselection CMCC, Huawei, vivo, ZTE, OPPO, xiaomi discussion Rel-16 R2-1912960

IDC is postponed to February:

R2-1912329 Introduction of NR IDC solution vivo draftCR Rel-16 38.331 15.7.0 F TEI16

New Proposals

R2-1912447 Support of inter-RAT HO from SA to EN-DC in Rel-16 China Telecom, NTT DOCOMO, Huawei, Ericsson, ZTE, OPPO, Mediatek, VIVO discussion Rel-16 Late

R2-1912448 Stage2 CR-Support of Inter-RAT HO between NR to EN-DC in Rel-16 China Telecom, NTT DOCOMO, Huawei, Ericsson, ZTE, OPPO, Mediatek, VIVO CR Rel-16 37.340 15.7.0 0156 - B TEI16 Late

R2-1913272 Support of releasing UL configuration Huawei, HiSilicon, CMCC, China Telecom, MediaTek Inc., Vodafone, Orange, vivo, OPPO, Spreadtrum Communications CR Rel-16 38.331 15.7.0 1168 1 F TEI16 R2-1909853

RRC segmentation DL

R2-1912835 Segmentation in DL Ericsson, DT, AT&T, Vodafone discussion Rel-16 TEI16

R2-1912836 Introduction of RRC Segmentation - Downlink Ericsson, DT, AT&T, Vodafone CR Rel-16 38.331 15.7.0 1277 - B TEI16

R2-1912833 Introduction of RRC Segmentation - Downlink Ericsson CR Rel-16 36.331 15.7.0 4108 - B TEI16

R2-1912834 Introduction of RRC Segmentation - Downlink Ericsson CR Rel-16 36.306 15.6.0 1717 - B TEI16

R2-1912837 Introduction of RRC Segmentation - Downlink Ericsson CR Rel-16 38.306 15.7.0 0174 - B TEI16

ANR Gaps

R2-1913735 DRX configuration coordination in (NG)EN-DC Huawei, HiSilicon discussion Rel-16 TEI16

R2-1912769 Consideration on DRX coordination in ANR ZTE Corporation, Sanechips, NEC discussion Rel-16 TEI16

R2-1912770 Corrections on DRX coordination in ANR ZTE Corporation, Sanechips, NEC CR Rel-16 38.331 15.7.0 1275 - F TEI16

R2-1912280 Autonomous Gap capability for CGI reporting vivo, Ericsson discussion

R2-1912281 [Draft] Reply LS on autonomous gap capability vivo LS out To:RAN4

Other

R2-1912944 Mobility-state-based cell reselection in NR for HSDN CMCC, MediaTek Inc discussion Rel-16 R2-1911253

R2-1913110 On combined RRC procedures Nokia, Nokia Shanghai Bell, Ericsson discussion Rel-16 TEI16

R2-1913111 RRC processing delays for combined procedures Nokia, Nokia Shanghai Bell, Ericsson CR Rel-16 38.331 15.7.0 1288 - F TEI16

R2-1913172 Discussion on the flexible configuration of Maximum Data Rate Enumeration for UP Integrity ProtectionCMCC, Huawei, Hisilicon discussion Rel-16 R2-1912943

R2-1912516 Discussion on the additional UE capability filtering to limit the total number of carriers in NR Samsung discussion Rel-16 TEI16 R2-1911362

R2-1912517 Additional UE capability filtering to limit the total number of carriers in NR Samsung CR Rel-16 38.331 15.7.0 1270 - B TEI16

R2-1912518 Additional UE capability filtering to limit the total number of carriers in NR Samsung CR Rel-16 38.306 15.7.0 0170 - B TEI16

R2-1912723 Updates to reestablishment procedure ZTE Corporation, Sanechips, Intel Corporation CR Rel-16 38.331 15.7.0 1143 2 C TEI16 R2-1911276

R2-1913286 Discussion on support of NR RAN sharing CMCC discussion Rel-16 R2-1912961

R2-1913379 Maximum Data Rate Enumeration for UP Integrity Protection Apple, ZTE Corporation, Sanechips discussion Rel-16 TEI16

R2-1913380 Draft LS on Maximum Data Rate Enumeration for UP Integrity Protection Apple LS out Rel-16 TEI16 To:CT1 Cc:SA3

R2-1913782 Discussion on SFTD measurement between NR PSCell and NR neighbour cells in EN-DC Nokia, Nokia Shanghai Bell discussion Rel-16 TEI16

R2-1912942 Further consideration on PRACH prioritization CMCC discussion Rel-16

R2-1913438 Triggering conditions for A1-A6 events in NR Ericsson discussion Rel-16 TEI16

R2-1913439 CR to 38.331 on Triggering conditions for A1 to A6 events in NR Ericsson CR Rel-16 38.331 15.7.0 1317 - B TEI16

R2-1913440 CR to 38.306 on Triggering conditions for A1 to A6 events in NR Ericsson CR Rel-16 38.306 15.7.0 0183 - B TEI16

R2-1913528 Returning multiple BC+FS in CG-Config Ericsson discussion

R2-1913527 Introducing multiple BC-FS Ericsson CR Rel-16 38.331 15.7.0 1322 - B TEI16

R2-1913695 CR on UE capability for SRS-Tx switch Huawei, HiSilicon CR Rel-16 38.306 15.7.0 0192 - F TEI16

R2-1913003 CN Type Indication for Cell Reselection from NR to LTE MediaTek Inc. discussion R2-1908941

R2-1912292 Discussion on DRB IP failure handling and data recovery OPPO discussion Rel-16

R2-1912289 Security algorithom update in RRC reestablishment message OPPO,Huawei discussion Rel-16

R2-1912291 Discussion on Cached Data Handling for INACTIVE UE OPPO discussion Rel-16 R3 proposal

To be treated in a parallel session

R2-1912203 Introduction of B1C signal in BDS system in A-GNSS CATT, CAICT, CMCC, China Telecom, China Unicom, Huawei, ZTE Corporation, MediaTek Inc CR Rel-16 36.305 15.4.0 0083 - B TEI16

⇨ Endorsed as the current baseline CR

R2-1912205 Introduction of B1C signal in BDS system in A-GNSS CATT, CAICT, CMCC, China Telecom, China Unicom, Huawei, ZTE Corporation, MediaTek Inc CR Rel-16 38.305 15.4.0 0013 - B TEI16

⇨ Endorsed as the current baseline CR

R2-1912204 Introduction of B1C signal in BDS system in A-GNSS CATT, CAICT, CMCC, China Telecom, China Unicom, Huawei, ZTE Corporation, MediaTek Inc CR Rel-16 36.355 15.5.0 0244 - B TEI16

⇨ Revised in R2-1914184

R2-1914184 Introduction of B1C signal in BDS system in A-GNSS CATT, CAICT, CMCC, China Telecom, China Unicom, Huawei, ZTE Corporation, MediaTek Inc CR Rel-16 36.355 15.5.0 0244 1 B TEI16

More time for offline checking. Will need to be updated against v15.6.0 for the February meeting.

⇨ Endorsed as the current baseline CR

Not Available or withdrawn:

R2-1912122 Bearer type negotiation CATT discussion Rel-16 TEI16 Withdrawn
R2-1912960 Further consideration on EN-DC cell reselection CMCC discussion Rel-16 Revised
R2-1912961 Discussion on support of NR RAN sharing CMCC discussion Rel-16 Revised
R2-1912943 Discussion on the flexible configuration of Maximum Data Rate Enumeration for UP Integrity ProtectionCMCC discussion Rel-16 Revised

6.20.2 RAN2 led TEI16 enhancements - User plane related

R2-1913888 L4S support in 5G Ericsson, Vodafone, Nokia, Nokia Shanghai Bell, Sprint discussion Rel-16 NR_newRAT-Core, TEI16

- LG are not familiar with L4S and wonder if the intention is to introduce flow control. Ericsson think no, and that this just reporting of congestion acc to an IETF mechanism.
- Futurewei think this is a systemwide proposal and think SA2 need to be involved.
- Google wonder why the UE need to get involved, cannot this be done by gNB between Du and CU, and google wonder if this would work for RLC UM. Ericsson think it is better to have the mechanism between UE and DU, and think it is most important that it works for RLC AM.
- Sharp think this should be discussed at RP. Recommend submit a WID.
- Apple are interested in this, but wonder how RLC layer can identify what to do, and think three are options to clarify. Ericsson think the cross layer operation can be done in the core network.
- QC also think this is an end-to-end feature and SA2 need to look at this. Huawei also think this need to be treated in SA2, and think this cannot be done in TEI. Apple agrees this need to start in SA2. LG agrees

- Chair: there seems to be interest. There are many questions, not clear that this can be resolved within the scope of TEI. Many companies think this need first to be addressed in SA2 or at RP.

⇒ **noted**

R2-1912844 PDCP Reordering Problems Nokia, Nokia Shanghai Bell, NTT DOCOMO INC. discussion Rel-16 TEI16

- Nokia point out that this problem wasn't in LTE, and can occur whenever a packet may be lost due to procedures.
- Samsung think this is a R3 issue, and think data loss will not happen for AM bearers. Vivo agrees. Apple agrees. QC agrees and think t-reordering will resolve this.
- LG think the problem is not solved by this solution, packets in retransmission may be lost by this proposal.

⇒ **Noted**

R2-1912845 Fixed LCP Restrictions Nokia, Ericsson, Fujitsu, Nokia Shanghai Bell discussion Rel-16 TEI16 R2-1802503

- QC think there are no evidence presented, and LCP is performed in a thigh timeline, and think this need further study.
- Futurewei think this may require deep packet inspection at LCP.
- Vivo are interested and think there could be simple solutions, e.g. network indication.
- Apple think this is about application awareness, but think it is difficult to discuss as not many details are provided.
- LG think LCP procedure is flexible enough.
- Fujitsu think e.g. a MAC CE control could be applied and is not complex, and think there are obvious problems, even though evidence is not shown.
- Huawei has doubts and think there are several aspects to look at. Samsung agrees.
- Chair: many concerns, not so much support.

⇒ **Noted**

R2-1912222 BSR trigger issue for CA duplication CATT discussion Rel-16 R2-1909123

R2-1913623 BSR operation with CA packet duplication Sequans Communications discussion Rel-16 FS_NR_IIOT R2-1911381
DISCUSSION
- LG think the network will know the situation and can schedule on both legs even if the BSR is sent only one one leg.
- Futurewei think a proper configuration may resolve this.
- ZTE think this only is an issue for CA duplication.
- Nokia think doesn't need to be resolved. Samsung agrees.
- Sequans think this is about two different carriers. CATT think the problem is only for CA duplication.
- Huawei support and think a simple soluton to trigger BSR could be done in TEI
- Chair Not so much support.

⇒ **noted**

R2-1913282 Correction on PRACH re-transmission for SRS carrier switching Huawei, HiSilicon, MediaTek CR Rel-16 38.321 15.7.0 0668 - F TEI16
=> Revised R2-1913956

R2-1913956 Correction on PRACH re-transmission for SRS carrier switching Huawei, HiSilicon, MediaTek CR Rel-16 38.321 15.7.0 0668 1 F TEI16
- LG think UE behaviour is changed, and wonder if this LTE agreement is still valid for NR. Huawei think that PRACH will indeed impact UL transmissions, so the motivation is the same for NR.
- QC agree with the intention, but have some concerns on the TP.

⇒ **There is support to do this**

✉ **[107bis#48][NR TEI16] PRACH re-transmission for SRS carrier switching (Huawei)**
Correction on PRACH re-transmission for SRS carrier switching
Intended outcome: Agreeable CR for next meeting
Deadline: Next Meeting

R2-1913196 cDRX enhancement for CA Ericsson, Qualcomm Inc., Samsung, Verizon, Deutsche Telekom discussion Rel-16 TEI16
DISCUSSION
- ZTE think it was agreed in power saving WI to not do this. CATT agrees and think this was also at the plenary.
- Lenovo see some benefits. Kyocera as well. LG as well, but think this was indeed discussed in Pow saving WI. Oppo as well. IDT support. Intel and Apple support. Xiaomi as well. Google as well.
- QC think the proposal is simple.
- Docomo think we can also have other configurations different.
- MTK think Scell dormancy was the agreement for Rel-16 and think the benefits need to be understood and think this need to be better understood.
- LG support this, but think there are many small things to consider and this cannot be done in TEI, and think the reasons for the design need to be understood.
- ZTE think this can be progress in the power saving WI. CATT agrees, and think if we do something it is important to stick to the very minimum, e.g. limited to FR1, FR2 ..
- Chair: There is significant support. The main concern from some companies is complexity. Can consider whether it is possible to agree on the proposal on the table without discussing other proposals.
- Samsung propose to discuss by email.

⇒ **There is support to do this, but concerns on the complexity, only a very simple and restricted solution may be possible.**

✉ **[107bis#49][NR TEI16] cDRX enhancement for CA (Ericsson)**
Intended outcome: Arrive at an agreeable CR
Deadline: Next Meeting

R2-1912847 MDBV Enforcement Nokia, Nokia Shanghai Bell discussion Rel-16 TEI16
R2-1913723 Open issue of uplink MDBV enforcement Huawei, HiSilicon discussion Rel-16 TEI16
R2-1912522 PDCP security issue Samsung Research America discussion TEI16 R2-1910910
R2-1912523 CR on PDCP security issue Samsung Research America CR Rel-15 38.323 15.6.0 0032 1 F TEI16 R2-1910963
R2-1913845 Integrity verification and PDCP duplication LG Electronics Inc. discussion Rel-16 TEI16 R2-1904728
R2-1913823 Retransmission of an RLC SDU with a poll after discard procedure LG Electronics Inc. discussion Rel-16 TEI16
R2-1913226 CFRA resource handling for BFR upon TAT expiry Nokia, Nokia Shanghai Bell, Apple discussion Rel-16 TEI16
R2-1912221 MAC upgrade for SR dropping in PHY CATT discussion Rel-16 R2-1909122
R2-1913903 Enhancements to PHR in multi-beam operation Qualcomm Inc discussion Rel-16 R2-1911308
R2-1913051 Discussion on the ambiguity in calculation of RA-RNTI ZTE Corporation, Sanechips discussion Rel-16 TEI16
R2-1913082 Enhancement on RACH procedure for SI request ZTE Corporation, Sanechips CR Rel-16 38.321 15.7.0 0666 - B TEI16
R2-1913170 SR_COUNTER initialization due to RRC reconfiguration Fujitsu, LG Electronics Inc. discussion Rel-16 TEI16
R2-1912846 QoS Flow Handling Nokia, Nokia Shanghai Bell discussion Rel-16 TEI16 R2-1909119
R2-1913889 New BSR trigger for EN-DC Ericsson discussion Rel-16 NR_newRAT-Core, TEI16
R2-1913674 Enhancement on BSR format for the one LCG case Huawei, HiSilicon CR Rel-16 38.321 15.7.0 0670 - F TEI16
R2-1913902 Backoff indication in multi-beam operation Qualcomm Inc discussion Rel-16 R2-1911307
R2-1913763 Reduced PDCCH monitoring in CA LG Electronics Inc. discussion Rel-16 TEI16
R2-1913900 Cross cell group wakeup message in MR-DC Qualcomm Inc, Futurewei discussion Rel-16
R2-1912525 Unnecessary deciphering for duplicated PDUs Samsung Research America discussion TEI16 R2-1911022
R2-1912526 CR on unnecessary deciphering for duplicated PDU Samsung Research America CR Rel-15 38.323 15.6.0 0034 1 F TEI16 R2-1911052
R2-1912324 Discussion on the LCP restriction for CA duplication vivo discussion
R2-1913128 Report buffer status with one padding byte Google Inc. CR Rel-16 38.321 15.7.0 0654 1 C NR_newRAT-Core, TEI16 R2-1910358
R2-1913806 ON Duration adaptation LG Electronics Inc., LG Uplus discussion Rel-16 TEI16

LCID extension

R2-1913647 Extended MAC CE ID Qualcomm Incorporated discussion
R2-1913846 Extension of the LCID LG Electronics Inc. discussion Rel-16 TEI16

Not available or Witdrawn

R2-1913893 Cross cell group wakeup message in MR-DC Qualcomm Inc, Futurewei discussion Rel-16 Late
R2-1913895 Backoff indication in multi-beam operation Qualcomm Inc discussion Rel-16 R2-1911307 Late
R2-1913896 Enhancements to PHR in multi-beam operation Qualcomm Inc discussion Rel-16 R2-1911308 Late
R2-1913762 ON Duration adaptation LG Electronics Inc. discussion Rel-16 TEI16 Withdrawn

6.20.3 TEI16 enhancements led by other WGs

Documents submitted to this agenda item will only be treated after a decision on the TEI has been made by another group and an LS informing RAN2 of their decision has been received.

LS in

R2-1912024 LS on NR Rel-16 TEI (R1-1909895; contact: NTT DOCOMO) RAN1 LS in Rel-16 TEI16 To:RAN Cc:RAN2

Moved here from 6.20

⇒ **Noted**

R2-1912055 LS to RAN2 on mandatory 90 MHz UE channel bandwidth for n41 and n78 in REL-16 (R4-1910605; contact: Vodafone) RAN4 LS in Rel-16 NR_newRAT-Core To:RAN2 Cc:RAN

Moved here from 5.1

⇒ **Noted**

Misc

R2-1912328 Discussion on LS about beamSwitchTiming value of 224 and 336 vivo, Huawei, Hisilicon discussion Rel-16 TEI16

⇒ **Agreed, expect CR next meeting.**

R2-1913231 Support of multiple LTE CRS rate matching patterns Nokia, Nokia Shanghai Bell, Ericsson CR Rel-16 38.331 15.7.0 1133 1 C TEI16 R2-1909015

- Huawei think the list length should be 6. Nokia think this is just for the non-multi-TRP-case. Nokia think the rest would need to be added when there has been some more progress in eMIMO.
- Intel and Huawei agree with the intention and have detailed comments.

⇒ **postpone**

R2-1913232 Support of multiple LTE CRS rate matching patterns Nokia, Nokia Shanghai Bell, Ericsson CR Rel-16 38.306 15.7.0 0141 1 C TEI16 R2-1909016

⇒ **postpone**

R2-1912653 Inclusion of 90MHz UE Bandwidth Vodafone CR Rel-16 38.306 15.7.0 0171 - C NR_newRAT-Core, TEI16

- Intel think the CR looks good, but wonder if we shold really refer to 38.101. R4 may add bands. Huawei think we can modify the wording.

Offline 45, arrive at agreeable wording, revision in R2-1914203 (VDF)

R2-1914203 Inclusion of 90MHz UE Bandwidth Vodafone CR Rel-16 38.306 15.7.0 0171 1 C NR_newRAT-Core, TEI16

⇒ **agreed in principle**

R2-1913734 Discussion on adding CSI-RS inter-node message Huawei, HiSilicon, China Telecom discussion Rel-16 TEI16

- Huawei indicate that this is based on a R3 agreement. QC think we can anyway wait for R4 to specify requirements as this is useless without those.
- ZTE think we can do this, and wonder why the new field is added instead of add in the existing configuration.

⇒ **Agree to introduce this, need to improve the details**

Offline 46, Provide an agreeable RRC CR in R2-1914204 (CR1350) (Huawei).

R2-1914204 [CR on adding CSI-RS inter-node message] Huawei CR Rel-16 38.331 15.7.0 1350 - F TEI16
- Huawei indicate that there is an expected LS from R3 and companies want more time

✉ **[107bis#50][NR TEI16] Adding CSI-RS information into inter-node msg (Huawei)**
Intended outcome: Agreeable CR to next meeting
Deadline: Next Meeting

Related to RP-191588

R2-1913667 Skipping supportedBandCombinationList of n90 KDDI Corporation CR Rel-16 38.306 15.7.0 0189 - C NR_n41_LTE_41_coex
- Ericsson would like to avoid this kind of optimizations, because if the bands use exacltly the same feature set and they can then refer to same feature set.
- Intel would like to check this.
- Huawei see some gains for this proposal, and think this is in line with R4 agreement
- Nokia also agree that this is acc to R4. QC also support, but think we might need to polish the text. Samsung agrees with QC.
- Docomo don't have a strong opinion but the text need improvement.

Offline 47, agreeable CR revision in R2-1914205 (KDDI)

R2-1914205 Skipping supportedBandCombinationList of n90 KDDI Corporation CR Rel-16 38.306 15.7.0 0189 1 C NR_n41_LTE_41_coex
- Ericsson think this still introduces unfortunate coupling
- Intel agrees, and think we don't need this signalling optimization.
- Docomo agree this is an exception but think it is ok in this case.
- Chair: will revisit this at next meeting.

⇒ **Postpone**

Withdrawn

R2-1912362 Introduction of Multiple LTE-CRS-RateMatchPatterns Ericsson CR Rel-16 38.331 15.7.0 1129 1 B TEI16 R2-1908986 Withdrawn

6.21 On demand SI in connected

On demand SI reception in RRC_CONNECTED may be relevant to several Rel-16 WIs (e.g. V2X, positioning, IIoT, etc). This agenda item is for the discussion of the generic procedure for on demand SI in RRC_CONNECTED; WI specific details of the SI content should be discussed within the appropriate AI for that WI.

Tdoc Limitation: 1 tdoc

Including output of email discussion [107#42][NR/Rel-16] On demand SI in connected (Ericsson)

R2-1913316 Summary of email discussion [107#42][NR-Rel-16] On demand SI in connected report Ericsson Rel-16 TEI16

DISCUSSION
- ZTE don't agree with P1, and think we can request per SI.
- Nokia think we shold keep it simple and only have one option and therefore think per SI may be better.
- Vivo think that for Dedicated mode there is no restrictions and we can be flexible. CATT also think we can use SIB level and think this works also for positioning.
- Huawei think that in the email discussion most companies agreed on SIB level.
- MTK think we can request multiple SIBs and get multiple SIBs in one message regardless, but anyway it is difficult to see what is the benefit. Per SI should be simpler. SI is already grouped logically.
- LG think we can support per SIB, also for positioning.

- Samsung think UE can request per SIB level, no problem. Samsung think we can use the already defined delivery message.
- QC think that for positioning it is not clear that UE need to receive SIBs by unicast. ZTE think he network will deliver per SI.
- Ericsson would like to have the flexibility.
- Apple prefer per SIB.
- Oppo think we should care about overhead, so we should go per SIB.
- Intel think that for request, it doesn't matter so much.
- Huawei think that is the UE has access to CSS and can receive broadcast SIB1 the Rel015 method is ok, but Huawei would not like to transmit the whole SIB1 by unicast to the UE. ZTE think Huawei are proposing an optimization. Vivo agrees with ZTE.
- LG think that we anyway have the legacy mechanism and we can use it without optimization.
- Nokia think that for positioning SI can be delivered by LPP in connected mode and there is no need for this kind of mechanism. Samsung agrees. QC as well. Ericsson think MO LPP is very inefficient. QC think this whole mechanism doesn't work. Samsung share this view.
- Chair wonder what was agreed in the positioning session. Nokia think that SI on request was agreed but the thinking was to deliver the SI by broadcast.

P7

- Ericsson think there is a problem when a Rel-16 UE requests SI from a Rel-15 gNB. Ericsson think the RRC message will be a different one.

⇒ **The on-demand SI request message sent by the UE in RRC_CONNECTED is per SIB. A single message can request multiple SIBs.**

⇒ **<u>For SIBs that need change notification, Rel-15 approach in NR for SI change notification is re-used for on-demand SI request in Rel-16</u>**

⇒ **Upon receiving the on-demand SIB request by the UE, the network responds with an RRCReconfiguration message that includes the requested SIBs (if these are send via dedicated signalling) but no indication about which SIBs are broadcasted.**

⇒ **no mechanism (e.g., prohibit timer) to limit the UE of triggering the on-demand SI procedure too frequently while in RRC_CONNECTED is supported**

⇒ **it is up to network implementation to make sure that the size of a message containing requested SIBs does not exceed the PDCP SDU limitation in NR of 9000 bytes**

⇒ **For now we leave positioning out, it seems unclear whether the above it applicable for positioning, to be ironed out in the positioning session.**

R2-1913317 Running CR on on-demand SI procedure in RRC_CONNECTED Ericsson draftCR Rel-16 38.331 15.7.0 B TEI16
=> Revised in R2-1913945

R2-1913945 Running CR on on-demand SI procedure in RRC_CONNECTED Ericsson draftCR Rel-16 38.331 15.7.0 B TEI16

- Ericsson clarifies that this CR already implements most.

✉ **[107bis#07][NR R16] Running CR On-demand SI in RRC_CONNECTED (Ericsson)**
Intended outcome: Endorsable running CRs for both 38.300 and 38.331, capturing agreements up to now
Deadline: Next Meeting

R2-1913754 SI change indicaiton in RRC_CONNECTED LG Electronics Inc discussion Rel-16

R2-1913042 Further discussion on on-demand SI in RRC_CONNECTED Huawei, HiSilicon discussion Rel-16

R2-1913318 Remaining issues regarding on-demand SI for Positioning Ericsson discussion Rel-16 TEI16
R2-1912202 Open Issues on Broadcast Positioning Procedure CATT discussion Rel-16 NR_pos-Core
R2-1913381 SI Acquisition in Connected Mode Apple discussion Rel-16 TEI16
R2-1913090 Further consideration on On demand SI in RRC_CONNECTED ZTE Corporation, Sanechips discussion Rel-16
R2-1912394 Consideration on the issue of SI update Beijing Xiaomi Mobile Software discussion Rel-16

7 Rel-16 LTE Work Items

Documents in these agenda items will be handled in break out sessions

7.1 Additional MTC enhancements for LTE

(LTE_eMTC5-Core; leading WG: RAN1; REL-16; started: Jun 18; target; Mar 20; WID: RP-191356)
Time budget: 2.5 TU
Documents in this agenda item will be handled in a break out session
Some sub-items in 7.1 and 7.2 may be treated jointly.

7.1.1 Organisational

Including incoming LSs, rapporteur inputs, running CRs

R2-1912002 Reply LS on NAS Aspects of Mobile-terminated Early Data Transmission (C1-195111; contact: Qualcomm) CT1 LS in Rel-16 LTE_eMTC5-Core To:SA2, SA3 Cc:RAN2, RAN3, CT4

- Huawei and LG would like to wait for the response from SA3 regarding the allocation of new 5G-GUTI.

⇒ **Noted**

⇒ **RAN2 will wait for the response from SA3 to decide on whether MT-EDT is supported for 5GC.**

R2-1912010 Reply LS on quality report in Msg3 for LTE-M (R1-1909793; contact: Ericsson) RAN1 LS in Rel-16 LTE_eMTC5-Core To:RAN2 Cc:RAN4

- QC wonders whether configuration for 2-bit or more is implicit from the grant size provided for Msg3. QC assumes the configiration is implcit based on the grant size.
- Ericsson assumes that an explicit indication may still be needed.
- Intel thinks that this is up to RAN2, so there is no need to interpret what RAN1 assumption was regarding this aspect.

⇒ **Need to discuss whether an explicit indication is needed in SIB to indicate if the report is 2-bit or more**

⇒ **Noted**

R2-1912032 Reply LS on LTE-M identification in 5GC (R3-194748; contact: Qualcomm) RAN3 LS in Rel-16 5G_CIoT To:SA2, RAN, RAN2 Cc:SA3

⇒ **Noted**

R2-1912045 LS on signalling measurement thresholds for validating the TA for PUR (R4-1910176; contact: Ericsson) RAN4 LS in Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core To:RAN2 Cc:RAN1

- LG wonders if the values, would be fixed. QC does not think so.

⇒ **Noted**

R2-1912058 Reply LS on Reply LS on Mobile-terminated Early Data Transmission (S3-193059; contact: Nokia) SA3 LS in Rel-16 LTE_eMTC5-Core To:SA2, RAN2, RAN3, CT1

- QC wonders whether the LS is intended for EPS.

⇒ **RAN2 assumes that the LS is intended for EPS.**

⇒ **Noted**

R2-1912414 Running CR for 36.304 -Rel-16 eMTC Enhancements Nokia, Nokia Shanghai Bell discussion Rel-16 Late

⇒ **This will be discussed as part of the discussion in the related AI.**

[CB Offline #304] To update the wording based on the feedback from companies (Nokia) The outcome can be provided in R2-1914042

R2-1914042 Running CR for 36.304 -Rel-16 eMTC Enhancements Nokia, Nokia Shanghai Bell

⇒ **FFS if it is "may/shall" to be used in the following text "If cell selection criteria S in normal coverage is fulfilled for a cell, but SIB1 cannot be acquired in the cell UE may/shall acquire SIB1-BR and consider itself to be in enhanced coverage."**

⇒ **Noted**

✉ **[107bis#27][eMTC R16] 36.304 running CR (Nokia)**
Update 36.304 running CR with agreements from this meeting
Intended outcome: endorsed running CR in R2-1914046
Deadline: 2 weeks
=> Endorsed in R2-1914050

R2-1912864 Introduction of Rel-16 eMTC enhancements Intel Corporation CR Rel-16 36.300 15.7.0 1251 - B LTE_eMTC5-Core

✉ **[107bis#25][eMTC R16] 36.300 running CR (Intel)**
Update 36.300 running CR with agreements from this meeting
Intended outcome: endorsed running CR in R2-1914036
Deadline: 2 weeks
=> Endorsed in R2-1914036

R2-1913100 Introduction of additional enhancements for eMTC Qualcomm Incorporated draftCR Rel-16 LTE_eMTC5-Core

✉ **[107bis#26][eMTC R16] 38.300 running CR (Qualcomm)**
Update 38.300 running CR with agreements from this meeting
Intended outcome: endorsed running CR in R2-1914037
Deadline: 2 weeks
=> Endorsed in R2-1914037

R2-1913601 Introduction of Rel-16 eMTC enhancements Qualcomm Incorporated draftCR Rel-16 36.331 15.7.0 B LTE_eMTC5-Core R2-1911607 Late

✉ **[107bis#29][eMTC R16] 36.331 running CR (Qualcomm)**
Update 36.331 running CR with agreements from this meeting
Intended outcome: endorsed running CR in R2-1914038
Deadline: 2 weeks

=> Endorsed in R2-1914038

R2-1913602 Addressing Editor's Notes and FFSes in RRC running CR Qualcomm Incorporated discussion
Rel-16 LTE_eMTC5-Core Late

Proposal 1. No need to capture procedure to indicate absence of up-CIoT-5GS-Optimisation/ cp-CIoT-5GS-Optimisation to upper layers. Also applicable for NB-IoT CR.

⇒ **For both eMTC and NB-IoT, there is no need to capture procedure to indicate absence of up-CIoT-5GS-Optimisation/ cp-CIoT-5GS-Optimisation to upper layers.**

Proposal 2. For initiating transmission using PUR, the size of the resulting MAC PDU including the total UL data is expected to be smaller than or equal to the TBS configured for PUR.

⇒ **This will be discussed as part of the offline discussion on PUR**

Proposal 3. For initiating transmission using PUR, the interaction with NAS is up to UE implementation. It is up to UE implementation how the UE determines whether the establishment or resumption request and UL data is suitable for transmission using PUR. Capture as NOTEs in 5.3.3.1c.

⇒ **This will be discussed as part of the offline discussion on PUR**

Proposal 4. resumeID is set to the stored resumeIdentity when sending the RRCConnectionResumeRequest message via PUR.
Proposal 5. UE sending RRCConnectionResumeRequest using PUR performs the actions of restoring the PDCP state, re-establish PDCP entities etc. (i.e. steps in 5.3.3.3a for UP-EDT) before submitting the RRCConnectionResumeRequest message to lower layers for transmission.
Proposal 6. UE receiving RRCConnectionResume in response to an RRCConnectionResumeRequest sent using PUR does not perform the actions of restoring the PDCP state, re-establish PDCP entities etc. (i.e. same as steps in 5.3.3.4a for UP-EDT).

⇒ **The proposals above will be discussed as part of the offline discussion on PUR.**

Proposal 7. Confirm RAN2#106 Working Agreement and remove Editor's Note related to crs-ChEstMPDCCH-ConfigDedicated.

Proposal 8. The reference in numDRX-CyclesRelaxed field description is TS 36.213/TS 36.133.

⇒ **The reference in *numDRX-CyclesRelaxed* field description is TS 36.133.**

Proposal 9. Change the capability field ce-RRC-INACTIVE-Short-eDRX to ce-RRC-INACTIVE. Move to 'Other Parameters'. Confirm whether the capability can indicate "short eDRX upto XXs is supported". Update field description to "This field indicates whether UE operating in CE mode supports RRC_INACTIVE when connected to 5GC. Only short eDRX cycles up to XX are applicable for UEs in CE when connected to 5GC."
Proposal 10. Keep earlyData-UP-5GC-r16 in MAC-Parameters-v16xy.
Proposal 11. Capture "optionally followed by uplink data transmission(s)" in MT-EDT definition.
Proposal 12. Include total four candidate values in establishmentCause-r16 including spares.

⇒ **Four candidate values are defined for *establishmentCause-r16* including spares.**

Proposal 13. Discuss whether and how to differentiate CP/UP PUR.
Proposal 14. RAN2 to discuss and resolve: <<FFS (SIB/dedicated)>> includes pur-Enabled; FFS: whether per CE level or per CE mode configurability is needed for mpdcch-CQI-Reporting-r16.

Other email discussions for running CRs until next meeting

✉ **[107bis#28][eMTC R16] 36.321 running CR (Ericsson)**

Update 36.321 running CR with agreements
Intended outcome: endorsed running CR in R2-1914047
Deadline: 2 weeks
=> Endorsed in R2-1914047

7.1.2 Mobile-terminated (MT) early data transmission (EDT)

MT Early Data transmission for MTC and NB-IoT is treated jointly under this AI.

R2-1912606 Discussion on MT-EDT Msg4 based option Huawei, HiSilicon discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core

Proposal 1: Do not pursue the MSG4 based solution.

Proposal 2: Send a LS to plenary and other WGs to indicate that RAN2 has not found satisfactory solution for MT-EDT and that the objective should be removed from the WIDs.

- QC do not agree with both proposals, but prefers a simple solution for Msg-4 based MT-EDT. Intel agrees with QC.
- Gemalto and Sequans support the proposals.
- Ericsson does not support the proposal and thinks this has already been postponed from Rel-15, and now it is time to conclude the discussion. ZTE agrees.
- LG does not support the proposals.
- Vivo has the same view with QC and Intel.

⇒ **Noted.**

R2-1912607 [DRAFT] LS on Mobile-terminated Early Data Transmission Huawei LS out Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core To:RAN, SA2, SA3, RAN3, CT1, CT4

R2-1913112 Remaining issues in Msg4-based MT EDT Ericsson discussion NB_IOTenh3-Core, LTE_eMTC5-Core

Proposal 1 Legacy (i.e., non-EDT) Msg1 and Msg2 are used in MT UP-EDT solution.

⇒ **Non-EDT Msg1 and Msg2 are used in MT UP-EDT solution.**

Proposal 2 Define a new resume cause ‘MT UP-EDT’ in RRCConnectionResumeRequest to distinguish from other resume cases.

⇒ **Introduce a new resume cause for MT UP-EDT in RRCConnectionResumeRequest.**

Proposal 3 When UE is paged for MT-EDT data and NCC value was provided during previous suspend, UE shall restore context, reactivate security, resume bearers, and derive AS keys before Msg3 transmission.

⇒ **Same as in MO-EDT; MT UP-EDT can be initiated only if NCC was provided in the previous connection.**

Proposal 4 RRCConnectionResumeRequest and RRCConnectionResume or RRCConnectionRelease are used in Msg3 and Msg4 for MT UP-EDT, respectively.

⇒ **Same as in MO-EDT; RRCConnectionResumeRequest and RRCConnectionResume or RRCConnectionRelease are used in Msg3 and Msg4 for MT UP-EDT, respectively**

Proposal 5 For UP solution, DL data in Msg4 in MT UP-EDT can be segmented. It is up to the network.

⇒ **Same as in MO-EDT; DL data in Msg4 in MT UP-EDT can be segmented.**

Proposal 6 UL reply to MT EDT data in Msg4 is multiplexed with RRCConnectionResumeComplete.

- Huawei this should be a “may”.

⇒ **UL data can be multiplexed with RRCConnectionResumeComplete.**

Proposal 7 In case of UL reply, the eNB can indicate in Msg4 that the UE can move to RRC_IDLE after receiving a HARQ ACK in response to the transmission that carries the UL response.

Proposal 8 If Proposal 7 is agreed, NCC value in RRCConnectionResume is used by the UE and the message is extended with resumeID.

Proposal 9 For MT CP-EDT, UE transmits Rel-15 EDT preamble and the eNB provides an EDT UL grant in Msg2.

⇒ **For MT CP-EDT, UE transmits Rel-15 EDT preamble and the EDT UL grant is provided in Msg2.**

Proposal 10 RRCEarlyDataRequest is used in Msg3 for MT CP-EDT.

⇒ **Same as MO-EDT; RRCEarlyDataRequest is used in Msg3 for MT CP-EDT.**

⇒ **Add the MT-Data establishment cause to RRCEarlyDataRequest message for MT CP-EDT.**

Proposal 11 For MT CP-EDT, confirm the WA that no new TBS for Msg3 is introduced.

⇒ **For MT CP-EDT, confirm the WA that no new TBS for Msg3 is introduced.**

Proposal 12 For CP solution, in case of UL response is expected RRCConnectionSetup is used in Msg4. In case of no UL response, RRCEarlyDataComplete is used in Msg4.

⇒ **Same as in MO-EDT; RRCConnectionSetup or RRCEarlyDataComplete can be transmitted in Msg4 for MT CP-EDT.**

Proposal 13 If Proposal 12 is agreed, RRCConnectionSetup is extended with dedicatedInfoNAS.

⇒ **For MT CP-EDT, RRCConnectionSetup is extended to optionally include dedicatedInfoNAS.**

Proposal 14 For CP solution, in case of UL response not followed by any further transmission, the eNB can indicate in Msg4 that the UE can move to RRC_IDLE after receiving HARQ ACK in response to transmission in the UL that carries the UL response without a need for release message.

R2-1912856 Remaining issues in MT EDT for UP solution Intel Corporation discussion Rel-16 LTE_eMTC5-Core

R2-1912904 Some remaining issues for Msg4-based MT-EDT ZTE Corporation, Sanechips discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core

R2-1912857 Remaining issues in Msg4-based Control Plane solution for MT EDT Intel Corporation discussion Rel-16 LTE_eMTC5-Core

R2-1913679 DL data delivery for Msg4 fallback case LG Electronics UK discussion Rel-16

R2-1913680 Draft LS on MT data delivery in MT EDT LG Electronics UK LS out Rel-16 NB_IOTenh2-Core, LTE_eMTC4-Core To:SA2 Cc:CT1, RAN3

R2-1912413 Further analysis of Msg4 based MT EDT Nokia, Nokia Shanghai Bell discussion Rel-16 Late

Agreements

- Non-EDT Msg1 and Msg2 are used in MT UP-EDT solution.
- Introduce a new resume cause for MT UP-EDT in *RRCConnectionResumeRequest*.
- Same as in MO-EDT; MT UP-EDT can be initiated only if NCC was provided in the previous connection.
- Same as in MO-EDT; *RRCConnectionResumeRequest* and *RRCConnectionResume* or *RRCConnectionRelease* are used in Msg3 and Msg4 for MT UP-EDT, respectively
- Same as in MO-EDT; DL data in Msg4 in MT UP-EDT can be segmented.
- UL data can be multiplexed with *RRCConnectionResumeComplete*.
- For MT CP-EDT, UE transmits Rel-15 EDT preamble and the EDT UL grant is provided in Msg2.
- Same as MO-EDT; *RRCEarlyDataRequest* is used in Msg3 for MT CP-EDT.
- Add the MT-Data establishment cause to *RRCEarlyDataRequest* message for MT CP-EDT.
- For MT CP-EDT, confirm the WA that no new TBS for Msg3 is introduced.
- Same as in MO-EDT; *RRCConnectionSetup* or *RRCEarlyDataComplete* can be transmitted in Msg4 for MT CP-EDT.
- For MT CP-EDT, *RRCConnectionSetup* is extended to optionally include *dedicatedInfoNAS*.

7.1.3 UE-group wake-up signal (WUS)

UE-group wake-up signal (WUS) for MTC is treated jointly with NB-IoT under AI 7.2.3. Do not use this AI for any item that can be discussed jointly.

7.1.4 Transmission in preconfigured resources

Transmission in preconfigured resources for MTC is treated jointly with NB-IoT under AI 7.2.4. Do not use this AI for any item that can be discussed jointly.

7.1.5 Scheduling multiple DL/UL transport blocks

Scheduling multiple DL/UL transport blocks with or without DCI for SC-PTM and unicast
Scheduling multiple DL/UL transport blocks for MTC and NB-IoT is treated jointly under this AI.

R2-1912612 DRX timers in multiple TBs scheduling of NB-IoT Huawei, HiSilicon discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core

- Ericsson wonders what would be different for eMTC and whether there is anything missing in RAN1 agreements.

⇒ **The discussion below is for the case where HARQ bundling is not configured.**

Proposal 1: Wait for RAN1 to conclude before discussing RAN2 impacts of supporting multiple TBs scheduling with HARQ bundling in NB-IoT.

Proposal 2: In multiple TBs scheduling in NB-IoT, drx-InactivityTimer is only (re-)started when the (UL) HARQ RTT Timer expires.

- Intel wonders why there is a need for change.
- ASUSTek wonders about the single TB case.

⇒ **For NB-IoT when multiple TBs are scheduled, drx-InactivityTimer is only (re-)started when both (UL) HARQ RTT Timers expire.**

Proposal 3: In multiple TBs scheduling in NB-IoT, drx-InactivityTimer is stopped when a scheduling is received.

- Sequans would like to have a working assumption.
- Ericsson supports the proposal.

- QC wonders why we need such behaviour for the multiple TB case. Huawei explains that the behaviour similar when one considers the reception of DCI for multiple TBs.

⇒ **For NB-IoT, drx-InactivityTimer is stopped when NPDCCH indication for transmission of multiple TBs is received.**

Proposal 4: (UL) HARQ RTT timers for both HARQ processes are started in the subframe containing the last repetition of the (PUSCH transmission) PDSCH reception of the last TB.

- AsusTek wonders if it is possible to start single HARQ RTT timer.
-

⇒ **For NB-IoT, (UL) HARQ RTT timers for both HARQ processes are started in the subframe containing the last repetition of the (PUSCH transmission) PDSCH reception of the last TB.**

Proposal 5: Timer length of HARQ RTT timer is set to k+2*N+1+delta.

- DoCoMo wonders about the delta, i.e. should it be called deltaPDCCH or somethingelse?, and where delta is supposed to start.

⇒ **Working assumption: For NB-IoT, the length of HARQ RTT timer is set to k+2*N+1+delta.**

⇒ **FFS if delta is deltaPDCCH**

Proposal 6: Timer length of UL HARQ RTT timer is set to 1+delta.

- Ericsson wonders if it should be 3+delta. Huawei thinks this is the case in legacy, but this would then be for the single HARQ process. But since there are 2 TBs, one needs to consider only the switching time, i.e. 1 msec.

⇒ **Working assumption: For NB-IoT, the length of UL HARQ RTT timer is set to 1+delta**

⇒ **FFS if delta is deltaPDCCH**

R2-1913113 Scheduling enhancements for LTE-MTC and NB-IoT Ericsson discussion
NB_IOTenh3-Core, LTE_eMTC5-Core

⇒ **The discussion below is for the case where HARQ bundling is not configured.**

Proposal 1 For multi-TB scheduling, when HARQ ack bundling is not configured, HARQ RTT timer is not started until the last TB of the corresponding HARQ process has been received for both LTE-M and NB-IoT.

⇒ **For eMTC, (UL) HARQ RTT timers for all scheduled HARQ processes are started in the subframe containing the last repetition of the (PUSCH transmission) PDSCH reception of the last TB.**

Proposal 2 For multi-TB scheduling in LTE-M, the drx-InactivityTimer value is dynamically adjusted based on the number of TBs being scheduled by the DCI.

- AsusTek thinks the second solution discussed in the contribution, i.e., start the *drx-InactivityTimer* when all PDSCH transmissions have been received or all PUSCH transmissions have been sent, seems to be a better solution. Ericsson thinks it is possible, but it would be difficult to configure the timer with a value.
- Intel thinks it would still work with no change with respect to legacy. QC wonders if early termination works in such case. Intel confirms that there was an agreement so that when

early termination is configured, the UE is required to monitor. AsusTek supports the proposal.
- Ericsson wonders if it wouldn't work if the timer is dynamically adjusted.
-

Proposal 3 RAN2 to clarify the interaction and behaviour between scheduling gaps and DRX timers.

Proposal 4 Scheduling gaps for LTE-M multicast multi-TB transmissions are configured in SC-MCCH.
- QC wonders whether RAN1 had some progress on multiple TBs for multicast transnmission. Ericsson explains that there was some progress.

Proposal 5 If configurable, scheduling gaps for NB-IoT multicast multi-TB transmissions are configured in SC-MCCH.

Proposal 6 RAN2 adopts the text proposal in section 3 to update TS 36.331.

R2-1913774	Buffer status indicated by BSR in multi-TB scheduling	ASUSTeK	discussion	Rel-16 LTE_eMTC5-Core
R2-1913773	DRX timer operation in multi-TB scheduling	ASUSTeK	discussion	Rel-16 LTE_eMTC5-Core
R2-1912613	DRX timers in multiple TBs scheduling of eMTC	Huawei, HiSilicon	discussion	Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core Withdrawn

Agreements

- For NB-IoT, when multiple TBs are scheduled, *drx-InactivityTimer* is only (re-)started when both (UL) HARQ RTT Timers expire.
- For NB-IoT, *drx-InactivityTimer* is stopped when NPDCCH indication for transmission of multiple TBs is received.
- For NB-IoT, (UL) HARQ RTT timers for both HARQ processes are started in the subframe containing the last repetition of the (PUSCH transmission) PDSCH reception of the last TB.
- Working assumption: For NB-IoT, the length of HARQ RTT timer is set to k+2*N+1+delta. FFS if delta is deltaPDCCH
- Working assumption: For NB-IoT, the length of UL HARQ RTT timer is set to 1+delta FFS if delta is deltaPDCCH
- For eMTC, (UL) HARQ RTT timers for all scheduled HARQ processes are started in the subframe containing the last repetition of the (PUSCH transmission) PDSCH reception of the last TB.

7.1.6 Quality report in Msg3

R2-1913570	Remaining issues of DL quality report	Huawei, HiSilicon	discussion	Rel-16 LTE_eMTC4-Core

Proposal1: One common MAC CE is used for both the DL quality report in Msg3 and the DL quality report in connected mode
- Ericsson supports the proposal.
- QC wonders what "common MAC CE" means. Ericsson thinks same MAC CE should be used. Intel thinks this means there is no need to specify a different MAC CE for reporting in connected mode.
- Intel assumes 2 LCIDs will be used in Msg3, one for the data and one for the report. QC has a different understanding, i.e. one LCID would be enough. Ericsson explains that this

was dicussed before and the conclusion was that different LCID values would be used for Msg3.

⇒ **For 8-bit DL quality report, same MAC CE is used for reporting in Msg3 and connected mode.**

⇒ **For 8-bit DL quality report; LCID value for the quality report is transmitted in addition to the LCID value for UL-CCCH.**

Proposal2: Confirm that the codepoint/index of "10001" is used for MAC CE based quality report for eMTC.

⇒ **Codepoint/index of "10001" is used for 8-bit DL quality report for eMTC.**

Proposal3: For EDT case, the MAC CE of DL quality report has lower priority than MO data.

- Ericsson thinks the report should have higher priortiy in this case since UE can choose a larger TBS.
- Intel would like to have the same priorty for both EDT and non-EDT case.
- QC thinks it would not be good if the UE falls back to legacy due to the report. Huawei agrees.
-

⇒ **For EDT, 8-bit DL quality report has lower priority than MO data from UL-CCCH.**

- QC thinks it would be better to have higher priority for the non-EDT case.

Proposal4a: In the LCP procedure except for the EDT case, MAC CE of DL quality report has higher priority than the data not from UL-CCCH, but has lower priority than the data from UL-CCCH.

⇒ **For non-EDT, 8 bit DL quality report has higher priority than MO data not from UL-CCCH, i.e., one level above "data from any Logical Channel, except data from UL-CCCH"**

Proposal4b: In the LCP procedure list of relative priorities the MAC CE of DL quality report for the non-EDT case is inserted directly above (higher priority) data from any Logical Channel, except data from UL-CCCH, and for the EDT case just below.

Proposal5: R+F2+E or F2+E in MAC subheader is used for 2-bit DL quality report for non-EDT case.

- QC thinks it is not a good idea to use the "E" bit considering future extension. Intel agrees in principle. ZTE agrees.
-

⇒ **For non-EDT, R+F2+E MAC subheader is used for 2-bit DL quality report.**

- Ericsson suggests to have an indication in SIB to enable the 2-bit DL quality report.

⇒ **2 separate indicators are introduced in SIB to enable 8-bit and 2-bit DL quality report, i.e., FFS if it is possible to indicate 2-bit only.**

R2-1913413	Quality Report in eMTC Remaining Issues	Ericsson	discussion	Rel-16
R2-1913414	Text Proposal for MAC specification on Quality Report	Ericsson	discussion	Rel-16
R2-1913102	TP for downlink channel quality reporting in MSG3 for eMTC	Qualcomm Incorporated	discussion	Rel-16 LTE_eMTC5-Core
R2-1912859	Remaning issues in DL Quality report	Intel Corporation	discussion	Rel-16 LTE_eMTC5-Core

R2-1912906 Remaining issues for DL quality report for eMTC ZTE Corporation, Sanechips discussion Rel-16 LTE_eMTC5-Core

Agreements

- For 8-bit DL quality report, same MAC CE is used for reporting in Msg3 and connected mode.
- For 8-bit DL quality report; LCID value for the quality report is transmitted in addition to the LCID value for UL-CCCH.
- Codepoint/index of “10001” is used for 8-bit DL quality report for eMTC.
- For EDT, 8-bit DL quality report has lower priority than MO data from UL-CCCH.
- For non-EDT, 8-bit DL quality report has higher priority than MO data not from UL-CCCH, i.e., one level above “data from any Logical Channel, except data from UL-CCCH”
- For non-EDT, R+F2+E MAC subheader is used for 2-bit DL quality report.
- 2 separate indicators are introduced in SIB to enable 8-bit and 2-bit DL quality report, i.e., FFS if it is possible to indicate 2-bit only.

7.1.7 MPDCCH performance improvement using CRS

R2-1913114 MPDCCH performance improvement for LTE-M Ericsson discussion LTE_eMTC5-Core

Proposal 1 When configuration in idle mode is not broadcasted, UE shall consider the feature disabled.

- QC wonders whether this would also be valid for the connected mode.
- Huawei prefers to have separate signalling to configure the feature for UEs in idle and connected mode.
- Ericsson assumes this is either enabled in the cell, which would then apply to UEs both in idle and connected mode.
- QC thinks if is it is found out that the feature does not work well, it should be possible to turn it off on separate basis.
-

⇒ **UE shall consider the feature disabled in idle mode when configuration in idle mode is not broadcasted.**

Proposal 2 Confirm the working assumption for the broadcasted configuration to be valid for connected mode if there is no dedicated configuration.

- Ericsson thinks in RAN1 it has been agreed that if configured in idle, it is also valid for the connected mode unless it is configured explicitly.
- Huawei thinks HO should also be considered whick would mean that the corresponding SIB should be provided/acquired.
- QC wonders how many bits would be needed for the signalling so that it is possible to know whether the signalling optimization is worth.

Proposal 3 The dedicated configuration is released when UE is released/suspended and when cell is changed.

⇒ **The dedicated configuration is released when UE is released to idle mode. FFS when UE is suspended.**

Proposal 4 Add CRS-ChEstMPDCCH-Config-r16 in SystemInformationBlockType2-BR.

⇒ **This was already captured in the related running CR.**

Proposal 5 When transmitted in SIB2, CRS-ChEstMPDCCH-Config shall contain both powerOffset to be applied to IDLE and CONNECTED mode and the CRS configuration to be applied at least to IDLE mode.

Proposal 6 When transmitted in RadioResourceConfigDedicated, CRS-ChEstMPDCCH-Config shall contain only the CRS configuration to be applied only for CONNECTED mode.

R2-1913571 MPDCCH performance improvement using CRS Huawei, HiSilicon discussion Rel-16 LTE_eMTC4-Core R2-1910064

Agreements

- UE shall consider the feature disabled in idle mode when configuration in idle mode is not broadcasted.
- The dedicated configuration is released when UE is released to idle mode. FFS when UE is suspended.

7.1.8 Improvements for non-BL UEs

CE mode A and B improvements for non-BL UEs among "enhancements to idle mode mobility", "UE demodulation performance requirements for 2 RX antennas and full duplex FDD", "Dual layer DL reception", "Feedback based on CSI-RS", "ETWS/CMAS in connected mode"

R2-1913115 ETWS/CMAS notification delivery in connected mode for non-BL UEs in CE Ericsson discussion LTE_eMTC5-Core

Proposal 1 It is up to the network to send the ETWS/CMAS indication(s) when UEs configured with DRX are in Active time.

Proposal 2 Non-BL UEs in RRC_CONNECTED are not required to follow any specific time occasions or cycles in order to monitor ETWS/CMAS indication.

- Huawei wonders if the intention is to say that UE continues to monitor as in legacy. Ericsson confirms.
- LG supports the proposals.

⇒ **Non-BL UE supporting ETWS/CMAS in CE mode is required to monitor the same subframes as in legacy, i.e. non-BL UEs in CE, to receive ETWS/CMAS notification when in connected mode.**

Proposal 3 Non-BL UEs in CE Mode B are not required to acquire ETWS notification.

- LG wonders if it is OK not to support the notification for UEs in CE Mode B.
- DoCoMo has concerns regarding non-BL UEs in CE Mode B not being required to acquire ETWS notification.

R2-1913103 Open issues and TP for ETWS/CMAS support by non-BL UE Qualcomm Incorporated discussion Rel-16 LTE_eMTC5-Core

Proposal 1: For UE in CE introduce capability for support of ETWS/CMAS indication reception in RRC CONNECTED by UE supporting CE Mode A.

- LG thinks there is no need to introduce separate capability bit. QC thinks this would be good for testing.
- Ericsson supports both Proposals 1 and 2.

⇒ **Introduce capability for support of ETWS/CMAS indication reception in RRC CONNECTED by UE supporting CE Mode A.**

Proposal 2: For UE in CE introduce capability for support of ETWS/CMAS indication reception in RRC CONNECTED by UE supporting CE Mode B.

⇒ **Introduce capability for support of ETWS/CMAS indication reception in RRC CONNECTED by UE supporting CE Mode B.**

Proposal 3: For UE in CE introduce indication in dedicated signaling whether network supports delivery of ETWS/CMAS indication on the control channel associated with the shared data channel.

⇒ **Introduce in dedicated signalling an indication whether ETWS/CMAS notification is enabled for UE in connected mode.**

Proposal 4: Capture the proposed changes in the eMTC running CRs to TS 36.331 and TS 36.306.

R2-1912858 After the acquisition of ETWS/CMAS by non-BL UEs in connected mode Intel Corporation discussion Rel-16 LTE_eMTC5-Core

R2-1913572 Enhancements to idle mode mobility for non-BL UEs Huawei, HiSilicon discussion Rel-16 LTE_eMTC4-Core

Proposal1: Non-BL UEs with S criterion in normal coverage fulfilled are allowed to (may) camp in coverage enhancement mode.

- QC thinks this would make it more complex for the UE since the UE would need to make sure that it has up to date system information for both normal and enhanced coverage. QC also states that it does not seem this will be beneficial from power saving standpoint. Ericsson agrees and explains that it would increase the load in the network from signalling standpoint.
- Intel thinks the network may anyway need to assume if the UE is in enhanced coverage so it should not matter. Intel supports the proposal.
- Huawei confirms that this, i.e. need to acquire both SIBs, would be more complicated for the UEs.
- Apple wonders about the power that can be saved with such behaviour, i.e., if it is up to the UE to decide in what mode to camp. QC thinks the supporting companies should show if there is any gain by such behaviour.
- Ericsson thinks it would be good to see the gain if this is beneficial.
- ZTE would like to have network control, e.g., bit in SIB to enable, if agreed.

Proposal2: Non-BL UEs can report their preference of camping on CE mode even when S criterion in normal coverage is fulfilled.

- Apple wonders how this would work.

Proposal 3: There should be no requirement for UE to operate in either NC mode or CE mode in IDLE mode after cell selection, but if the UE reports a preference for camping in CE mode then it must behave according to the indicated preference (i.e. be required to camp in CE mode).
Proposal 4: RAN2 confirms that UE can acquire both versions of SIB, after cell selection, in order to achieve the switching between NC mode and CE mode without re-acquiring the SIB in IDLE mode.

R2-1912908 Remaining issue of non-BL UE enhancement ZTE Corporation, Sanechips discussion Rel-16 LTE_eMTC5-Core

R2-1913116 S-Criterion interpretation for non-BL UEs Ericsson discussion LTE_eMTC5-Core

R2-1912867 Non-BL UE in normal and enhanced coverage Intel Corporation discussion Rel-16 LTE_eMTC5-Core

R2-1913101 Outstanding issues and TP for ETWS/CMAS support by non-BL UE Qualcomm Incorporated discussion Rel-16 LTE_eMTC5-Core Withdrawn

Agreements

- Non-BL UE supporting ETWS/CMAS in CE mode is required to monitor the same subframes as in legacy, i.e. non-BL UEs in CE, to receive ETWS/CMAS notification when in connected mode.
- Introduce capability for support of ETWS/CMAS indication reception in RRC CONNECTED by UE supporting CE Mode A.
- Introduce capability for support of ETWS/CMAS indication reception in RRC CONNECTED by UE supporting CE Mode B.
- Introduce in dedicated signaling an indication whether ETWS/CMAS notification is enabled for UE in connected mode.

7.1.9 Stand-alone deployment

Enable the use of LTE control channel region for DL transmission (MPDCCH/PDSCH) to BL/CE UEs

R2-1912863 Non-BL UE operation in standalone deployment Intel Corporation discussion Rel-16 LTE_eMTC5-Core R2-1909551

R2-1913117 Cell Reselection improvement for LTE-M Standalone cells Ericsson discussion LTE_eMTC5-Core

7.1.10 Mobility Enhancements

Improving the DL RSRP and, RSRQ measurement accuracy, through use of RSS, relaxation of RRM measurements for serving cell for UEs using WUS for at least low mobility UEs

R2-1913573 Use of RSS for measurement improvements Huawei, HiSilicon discussion Rel-16 LTE_eMTC4-Core

R2-1913408 Use case and Signaling for RSS Ericsson discussion Rel-16

R2-1913418 RSS Signalling Configuration Ericsson discussion Rel-16

7.1.11 Coexistence with NR

Study NR and LTE specifications to identify possible issues related to coexistence of MTC with NR

7.1.12 Connection to 5GC

7.1.12.1 Support of eDRX in CM-IDLE and EDT

Support of extended DRX in CM-IDLE
Support of EDT for Data over NAS and UP solution (if concluded to be supported based on outcome of LS exchange with SA2)
Support of eDRX in CM-IDLE and EDT for MTC and NB-IoT are treated jointly under this AI.

R2-1912614 Remaining issues to support user plane optimisations for eMTC and NB-IoT connected to 5GC Huawei, HiSilicon discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core

Proposal 1: For NB-IoT and eMTC, adopt early security activation, same as for RRC_INACTIVE, when connected to 5GC.

For NB-IoT and eMTC connected to 5GC;

⇒ **NCC is always provided during suspension.**

⇒ **adopt early security activation for resumption from RRC_IDLE.**

Proposal 2: For eMTC connected to 5GC, adopt I-RNTI as UE identity for UP CIoT 5GS Optimisation and RRC_INACTIVE.

- Ericsson thinks it would be better to use resumeID for for UP CIoT 5GS Optimisation instead. ZTE agrees and thinks that changes will be required in the specifications.
- QC thinks this does not bring any complexity to the specifications.
- Huawei thinks this would require to use the last spare bit in Msg3 which is not justified. Intel agrees and wonders if it is possible to use the last spare bit.
- LG wonders why spare bit is needed in case resumeID is used.
- QC does not see the benefit of using the spare bit for such indication.
- Ericsson explains that indication would help the eNB to identify when Msg3 is received.
- T-Mobile does not see the benefit clearly for either way.

⇒ **RAN2 intends to have the same UE identity, i.e. I-RNTI or resumeID, for UP CIoT 5GS Optimisation for both eMTC and NB-IoT.**

[CB Offline discussion #301] To decide whether I-RNTI is adopted as UE Identity for UP CIoT 5GS Optimisation and RRC_INACTIVE (LG)
The outcome can be provided in R2-1914039.

R2-1914039 Report of offline #301: Discussion on whether I-RNTI is adopted for UP CIoT 5GS LG

If I-RNTI is adopted,
Proposal 1: For NB-IOT and eMTC connected to 5GC, adopt I-RNTI as UE identity for UP CIoT 5GS Optimisation.
Proposal 2: For eMTC connected to 5GC, adopt Rel-15 critical extension version of RRCConnectionResumeRequest for UP CIoT 5GS optimisation, including the I-RNTI, shortResumeMAC-I, and resumeCause.
Proposal 3: For NB-IoT connected to 5GC, define a new critical version of RRCConnectionResumeRequest-NB message for UP CIoT 5GS optimisation, including the I-RNTI, shortResumeMAC-I, resumeCause, and cqi-NPDCCH.

If resumeID is adopted,
Proposal 4. : For NB-IOT and eMTC connected to 5GC, adopt resumeID as UE identity for UP CIoT 5GS Optimisation.
Proposal 5: For eMTC connected to 5GC, define a new Rel-16 non-critical extension version of RRCConnectionResumeRequest for UP CIoT 5GS optimisation, including the I-RNTI, shortResumeMAC-I, resumeCause and the indication (i.e., EPC or 5GC).
Proposal 6: For NB-IoT connected to 5GC, define a new critical version of RRCConnectionResumeRequest-NB message for UP CIoT 5GS optimisation, including the I-RNTI, shortResumeMAC-I, resumeCause, cqi-NPDCCH and the indication (i.e., EPC or 5GC).

- ZTE thinks RAN3 may also need to be involved for this discussion. QC thinks this was already considered and concluded that it is up to RAN2, but there may be impacts to RAN3 specifications.
- Intel wonders whether additional indication is needed if resumeID is used. Intel thinks the indication is needed. ZTE is not sure and thinks this depends on how X2 and Xn selected.
- LG suggests asking RAN3 whether the indication would be needed.
- Ericsson thinks the indication is not necessarily needed, but prefers to have the indication. Huawei thinks this would not be so efficient since it has to be done with trial and error.
- T-Mobile does not see any benefit for using the indication.
- Huawei thinks if resumeID is used flexibility to code eNB ID will be lost.
-

[107bis#65][eMTC R16] UE identifier pros and cons (LG)
To define the problem and compose a list of pros and cons for each UE identifier
Intended outcome: report from the email discussion in R2-1914048
Deadline: Next meeting

Proposal 3: For eMTC connected to 5GC, adopt R15 introduced critical extension version of RRCConnectionResumeRequest for UP CIoT 5GS optimisation, including the I-RNTI, shortResumeMAC-I, and resumeCause.

Proposal 4: For NB-IoT connected to 5GC, adopt I-RNTI as UE identity for UP CIoT 5GS Optimisation.

Proposal 5: For NB-IoT connected to 5GC, create a critical version of RRCConnectionResumeRequest-NB message for UP CIoT 5GS optimisation, including the I-RNTI, shortResumeMAC-I, resumeCause (same causes as agreed for RRCConnectionRequest-NB in 5GC), and cqi-NPDCCH.

Proposal 6: For NB-IoT and eMTC, full configuration in RRCConnectionResume(-NB) is supported when connected to 5GC.

⇒ **For NB-IoT and eMTC connected to 5GC, full configuration in RRCConnectionResume(-NB) is supported.**

Proposal 7: For NB-IoT and eMTC connected to 5GC, introduce a new IE up-CIOT-5GS-OptimisationConfig-r16 in RRCConnectionRelease including the full I-RNTI and nextHopChainingCount for UP CIoT 5GS optimisation.

Proposal 8: The EPS UP-EDT procedure is reused, the changes described in section 2.1.1 apply for UP-EDT when connected to 5GC.

⇒ **For NB-IoT and eMTC connected to 5GC, the EPS UP-EDT procedure is used.**

⇒ **Send a LS to RAN3 to inform about the agreements related to 5GC.**

[CB Offline discussion #302] To provide the draft LS in R2-1914040 (Qualcomm).

R2-1914040 [Draft] LS on RAN2 agreements for 5GC CIoT Qualcomm

- Intel suggests removing the FFSs.

⇒ **Remove the resolved FFSs.**

[CB Offline discussion #305] To provide an updated version of the draft LS based on the comments above. (Qualcomm)
The outcome can be provided in R2-1914044

R2-1914044 [Draft] LS on RAN2 agreements for 5GC CIoT Qualcomm

✓ The LS is approved in R2-1914045

Proposal 9: Security should not be deactivated and SRB1 should not be suspended at EDT fallback for UP-EDT when connected to 5GC.

⇒ **For NB-IoT and eMTC connected to 5GC, security is not deactivated and SRB1 is not suspended at EDT fallback for UP-EDT**

R2-1912854 UE identity for CIoT/5GC UP Optimization and RRC indication to upper layers Qualcomm India Pvt Ltd discussion Rel-16 LTE_eMTC5-Core

R2-1912903 User plane solutions for connecting to 5GC ZTE Corporation, Sanechips discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core

R2-1913118 Remaining issues for UP solution and 5GC Ericsson discussion NB_IOTenh3-Core, LTE_eMTC5-Core

Agreements

- For NB-IoT and eMTC connected to 5GC;
  NCC is always provided during suspension.
  adopt early security activation for resumption from RRC_IDLE.
- RAN2 intends to have the same UE identity, i.e. I-RNTI or *resumeID*, for UP CIoT 5GS Optimisation for both eMTC and NB-IoT.
- For NB-IoT and eMTC connected to 5GC, full configuration in *RRCConnectionResume(-NB)* is supported.
- For NB-IoT and eMTC connected to 5GC, the EPS UP-EDT procedure is used.
- For NB-IoT and eMTC connected to 5GC, security is not deactivated and SRB1 is not suspended at EDT fallback for UP-EDT

7.1.12.2 Support of RRC_INACTIVE and eDRX in CM-CONNECTED

Support of RRC_INACTIVE and extended DRX in CM-CONNECTED with RRC_INACTIVE (support of sleep cycles up to the NAS and SMS retransmission timers)
Support of RRC_INACTIVE and eDRX in CM-CONNECTED for MTC and NB-IoT are treated jointly under this AI.

R2-1912617 Discussion on support of RRC_INACTIVE for eMTC connected to 5GC Huawei, HiSilicon
discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core

Proposal 1: The Rel-15 suspension/ resumption procedure to/from RRC_INACTIVE applies to eMTC UE connected to 5GC.

Proposal 1a: Reuse the R15 critical extension version of RRCConnectionResumeRequest for eMTC in RRC_INACTIVE.

Proposal 1b: Reuse rrc-InactiveConfig-r15 in RRCConnectionRelease message to trigger the transition to RRC_INACTIVE for eMTC UEs connected to 5GC.

Proposal 1c: Reuse I-RNTI as UE identity for eMTC in RRC_INACTIVE.

Proposal 1d: Reuse the UE Inactive AS Context as the UE context for eMTC UEs in RRC_INACTIVE.

Proposal 1e: Reuse the same security principle as eLTE to resume the connection for eMTC UEs in RRC_INACTIVE.

For eMTC when connected to 5GC;

⇒ **The Rel-15 suspension/ resumption procedure to/from RRC_INACTIVE applies.**

Proposal 2: eMTC UEs in RRC_INACTIVE monitor RAN initiated paging and CN initiated paging via I-RNTI and 5G-S-TMSI respectively.

⇒ **eMTC UEs in RRC_INACTIVE monitor RAN initiated paging and CN initiated paging via I-RNTI and 5G-S-TMSI respectively.**

Proposal 2a: If configured with idle mode eDRX, eMTC UEs in RRC_INACTIVE are only required to monitor CN initiated paging during the PTW.

- QC thinks there should be only one set of DRX configuration parameters that UE should follow.

Proposal 2b: Upon reception of CN paging in RRC_INACTIVE, the eMTC UE moves to RRC_IDLE not suspended state.

⇒ **Upon reception of CN paging in RRC_INACTIVE, eMTC UE moves to RRC_IDLE without suspension.**

Proposal 2c: No PTW is introduced for RAN paging in RRC_INACTIVE.

Proposal 2d: eMTC UEs in RRC_INACTIVE are only required to monitor RAN initiated paging according to the RAN paging cycle provided in rrc-InactiveConfig.

Proposal 2e: For eMTC, the ran-PagingCycle is extended with values rf512 and rf1024.

⇒ **For eMTC, *ran-PagingCycle* is extended with values rf512 and rf1024.**

Proposal 2f: Rel-15 WUS and Rel-16 Group WUS are not supported for eMTC UEs in RRC_INACTIVE.

Proposal 3: The RNA configuration and RNA update procedure in Rel-15 RRC_INACTIVE apply to eMTC.

Proposal 3a: The resume cause 'rna-Update' is applicable to eMTC UEs connected to 5GC that support RRC_INACTIVE.

⇒ **The RNA configuration and RNA update procedure in Rel-15 RRC_INACTIVE apply to eMTC.**

⇒ **The resume cause 'ran-Update' is applicable to eMTC UEs connected to 5GC that support RRC_INACTIVE.**

Proposal 4: Cell reselection from RRC_INACTIVE to NR RRC_IDLE and E-UTRA/EPC RRC_IDLE is supported for eMTC UEs. For the case of reselection to EPC, the UE enters RRC_IDLE not suspended state.

Proposal5: The same measurements rules apply in RRC_IDLE and RRC_INACTIVE for eMTC UEs connected to 5GC.

Proposal 5a: Relaxed monitoring is supported in RRC_INACTIVE for eMTC UEs.

Proposal 5b: Ranking is used in RRC_INACTIVE for eMTC UEs in coverage enhancement.

Proposal 6: Introduce a new capability ce-InactiveState to indicate support of RRC_INACTIVE with short eDRX cycles for eMTC UEs.

Proposal 7: Introduce an indication in SIB2-BR to indicate that the eNB supports RRC_INACTIVE.

Proposal 8: If a UE in RRC_INACTIVE moves to an eNB that does not support RRC_INACTIVE, the UE enters RRC_IDLE not suspended state.

Proposal 9: EDT is not supported in RRC_INACTIVE in Rel-16.

[CB Offline discussion #303] To provide a list of proposals that seem to be agreeable in this meeting (Huawei). The outcome can be provided in R2-1914041.

R2-1914041 Summary of Offline discussion #303: RRC_INACTIVE for eMTC UEs connected to 5GC
Huawei

Proposal 1: IDLE mode cell selection/reselection criteria and measurement rules also apply in RRC_INACTIVE state for eMTC UEs connected to 5GC.

⇒ **IDLE mode cell selection/reselection criteria and measurement rules also apply in RRC_INACTIVE state for eMTC UEs connected to 5GC.**

Proposal 2: Neigbhouring cell relaxed monitoring is also applicable in RRC_INACTIVE state for eMTC UEs connected to 5GC.

⇒ **Neighbouring cell relaxed monitoring is also applicable in RRC_INACTIVE state for eMTC UEs connected to 5GC.**

Proposal 3: Introduce an indication in SIB2-BR to indicate that the eNB supports RRC_INACTIVE.

⇒ **Indication in SIB2-BR to indicate that the eNB supports RRC_INACTIVE can be implicit.**

Proposal 4: If a UE in RRC_INACTIVE moves to an eNB that does not support RRC_INACTIVE, the UE enters RRC_IDLE not suspended state.

⇒ **If a UE in RRC_INACTIVE moves to an eNB that does not support RRC_INACTIVE, the UE enters RRC_IDLE, i.e. not suspended state.**

Proposal 5: if UE supports RRC_INACTIVE, it also supports short extended DRX operation in RRC_INACTIVE state.

⇒ **No additional capability is needed to indicate support for short extended DRX operation in RRC_INACTIVE state.**

Proposal 6: EDT is not supported in RRC_INACTIVE in Rel-16.

- LG thinks this would be useful and it can be done in Rel-16 since the impact would be small.
- QC, Huawei, and Ericsson think it may be useful but there is no time to specify in Rel-16.
- ZTE thinks it would not require much work to specify it in this release.
- Intel thinks there is a security issue that needs to be checked with SA3.

⇒ **EDT is not supported in RRC_INACTIVE in Rel-16.**

The following proposals might be agreeable:

Proposal 7: No PTW is introduced for RAN paging in RRC_INACTIVE.

⇒ **No consensus, this is FFS for the next meeting.**

Proposal 8: Rel-15 WUS and Rel-16 Group WUS are not supported for eMTC UEs in RRC_INACTIVE.

⇒ **No consensus, this is FFS for the next meeting.**

The following need further discussions:

FFS: If configured with idle mode eDRX, eMTC UEs in RRC_INACTIVE monitor CN initiated paging only during the PTW.

FFS: UEs in RRC_INACTIVE monitor RAN initiated paging according to the RAN paging cycle provided in rrc-InactiveConfig.

FFS: The paging DRX cycle “T” (to monitor both the RAN paging and CN paging) is set to that value of short extended DRX cycle while UE is in RRC_INACTIVE (instead of selecting the shortest of the configured ones).

R2-1912850 Access stratum changes to support short eDRX for eMTC connected 5GC in RRC_INACTIVE state Qualcomm Incorporated discussion Rel-16 LTE_eMTC5-Core R2-1910468

R2-1912861 Remaining issues in RRC inactive state Intel Corporation discussion Rel-16 LTE_eMTC5-Core

R2-1912902 Support of eDRX in CM-CONNECTED with RRC_INACTIVE for 5GC ZTE Corporation, Sanechips discussion LTE_eMTC5-Core, NB_IOTenh3-Core

Agreements

- For eMTC when connected to 5GC;
  The Rel-15 suspension/ resumption procedure to/from RRC_INACTIVE applies.
- eMTC UEs in RRC_INACTIVE monitor RAN initiated paging and CN initiated paging via I-RNTI and 5G-S-TMSI respectively.
- Upon reception of CN paging in RRC_INACTIVE, eMTC UE moves to RRC_IDLE without suspension.
- For eMTC, *ran-PagingCycle* is extended with values rf512 and rf1024.
- The RNA configuration and RNA update procedure in Rel-15 RRC_INACTIVE apply to eMTC.

- The resume cause '*ran-Update*' is applicable to eMTC UEs connected to 5GC that support RRC_INACTIVE.
- IDLE mode cell selection/reselection criteria and measurement rules also apply in RRC_INACTIVE state for eMTC UEs connected to 5GC.
- Neighbouring cell relaxed monitoring is also applicable in RRC_INACTIVE state for eMTC UEs connected to 5GC.
- Indication in SIB2-BR to indicate that the eNB supports RRC_INACTIVE can be implicit.
- If a UE in RRC_INACTIVE moves to an eNB that does not support RRC_INACTIVE, the UE enters RRC_IDLE, i.e. not suspended state.
- No additional capability is needed to indicate support for short extended DRX operation in RRC_INACTIVE state.
- EDT is not supported in RRC_INACTIVE in Rel-16.

7.1.12.3 Other

MTC specific aspects

7.1.13 Other

R2-1912229 CE Mode Threshold Adjustments for non-BL and BL UE NTT DOCOMO INC. discussion Rel-16

R2-1913757 RRC release after EDT for User Plane CIoT EPS optimization Ericsson discussion Rel-15 LTE_eMTC5-Core, NB_IOTenh3-Core R2-1910897

R2-1913758 RRC release after EDT for User Plane CIoT EPS optimization Ericsson draftCR Rel-15 36.321 15.7.0 B LTE_eMTC5-Core, NB_IOTenh3-Core Late

R2-1913832 RRC release for User Plane EDT III discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core R2-1911132

7.2 Additional enhancements for NB-IoT

(NB_IOTenh3-Core; leading WG: RAN1; REL-16; started: Jun 18; target; Mar 20; WID: RP-192313)
Time budget: 2.5 TU
Documents in this agenda item will be handled in a break out session
Some sub-items in 7.1 and 7.2 may be treated jointly.

7.2.1 Organisational

Including incoming LSs, draft TS, rapporteur inputs, etc

R2-1912004 LS on short MAC-I and ngKSI for 5G-CIoT (C1-195199; contact: Vodafone) CT1 LS in Rel-16 5G_CIoT To:SA3 Cc:RAN2

- Intel wonder if this is also EDT or only the normal connection establishment? Huawei thinks the CPSR is independent of whether EDT or not so assume it does apply to both cases.
- Intel also wonder if it is only for NB-IoT or also LTE-M, because the LS only talks about NB-IoT. LG thinks it is for both.

⇒ **noted**

R2-1912044 Reply to LS on DL channel quality report for configured carrier in RRC connected mode (R4-1910110; contact: Qualcomm) RAN4 LS in Rel-16 NB_IOTenh3-Core To:RAN2 Cc:RAN1

- Huawei wonder if this means that the measurement can be done only during the NPDCCH scheduling the UL. QC have a similar question but understand that UE continues doing the measurement for every NPDCCH because it is unknown whether the grant will be received.

⇒ **noted**

R2-1912054 LS on evaluation of S criteria on non-anchor carrier (R4-1910575; contact: Huawei) RAN4 LS in Rel-16 NB_IOTenh3-Core To:RAN2

⇒ **noted**

R2-1912056 LS on Rel-16 NB-IoT enhancements (RP-192338; contact: Futurewei) RAN LS in Rel-16 NB_IOTenh3 To:SA2, CT1 Cc:RAN2, SA, CT
- Huawei present the LS.

⇒ **Noted**

Agreements summary

R2-1913426 RAN2 agreements for Rel-16 additional enhancements for NB-IoT and MTC Document Rapporteur (BlackBerry) other Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core
- Huawei present the document

⇒ **noted**

✉ **[107bis#11][NB-IoT eMTC R16] RAN2 agreements (Blackberry)**
Update RAN2 agreements for Rel-16 additional enhancements for NB-IoT and MTC
Intended outcome: Endorsed report in R2-1914092
Deadline: 1 week
=> Endorsed in R2-1914102.

Running CRs

R2-1912598 Introduction of additional enhancements for NB-IoT in TS 36.331 Huawei draftCR Rel-16 36.331 15.7.0 B NB_IOTenh3-Core R2-1911592
- Huawei point out that for CQI we need to decide how to name this and how to do the capability, because the proposal in eMTC is using a different name compared to Rel-14 NB-IoT.

⇒ **Can discuss as part of the offline on alignment.**

✉ **[107bis#20][NB-IoT R16] 36.331 running CR (Huawei)**
Update 36.331 running CR with agreements from this meeting
Intended outcome: Endorsed running CR in R2-1914101
Deadline: 2 weeks
=> Endorsed in R2-1914101

Offline discussion #703 (Qualcomm) For alignment of eMTC and NB-IoT 36.331 CR.

R2-1914095 Report of Offline discussion #703 (Qualcomm) For alignment of eMTC and NB-IoT 36.331 CR. report Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core

⇒ **Can take into account when updating the running CRs**

R2-1912599 Introduction of additional enhancements for NB-IoT Huawei draftCR Rel-16 36.300 15.7.0 B NB_IOTenh3-Core R2-1911591 Late
- Huawei think for paging enhancements it is not clear whether to capture here or in 38.300. QC think that the split is currently that if the change is for ng-eNB then the change is in 36.300 but if it is NR specific then it is 38.300, but we should in general put our changes in 36.300 unless there is a good reason.
- Ericsson wonder whether we should use “(ng-)eNB” in all places or make a single definition somewhere. Huawei think when it is eNB communicating with the CN then we should use “ng”. QC think we should use everywhere it is needed, then it is clear and we don’t miss anything as we will check case by case.

✉ **[107bis#21][NB-IoT R16] 36.300 running CR (Huawei)**
Update 36.300 running CR with agreements from this meeting
Intended outcome: Endorsed running CR in R2-1914094
Deadline: 2 weeks
=> Endorsed in R2-1914094

Offline discussion #702 (Intel) For alignment of eMTC and NB-IoT 36.300 CR.

- After offline Intel reports misalignments have been identified and will align in the next versions of the running CRs

R2-1913095 Introduction of additional enhancements for NB-IoT Qualcomm Incorporated discussion Rel-16 38.300 NB_IOTenh3-Core
- QC would like to clarify whether the existing wording on number of slices can be re-used or if it needs to be updated according to the earlier agreements that the maximum number of slices needed to be supported is 8.
- Huawei thinks that the current wording means that the UE may support more than 8 but for NB-IoT this is a maximum.
- Intel think we should align eMTC and NB-IoT running CRs for the next meeting.

⇒ **Can update the text to indicate the maximum slices supported is 8 for NB-IoT and eMTC.**

- QC think in NB-IoT we don't support SDAP so wonder if we should add a note that there is only 1 PDU session per DRB?

⇒ **Can update to add a note that there is only 1 PDU session per DRB**

✉ **[107bis#22][NB-IoT R16] 38.300 running CR (Qualcomm)**
Update 38.300 running CR with agreements from this meeting
Intended outcome: Endorsed running CR in R2-1914093
Deadline: 2 weeks
=> Endorsed in R2-1914093

✉ **[107bis#23][NB-IoT R16] Running CR on 36.321 (Ericsson)**
Running CR on 36.321 with agreements so far
Intended outcome: Endorsed running CR in R2-1914099
Deadline: 2 weeks
=> Endorsed in R2-1914099

✉ **[107bis#24][NB-IoT R16] Running CR on 36.304 (Nokia)**
Running CR on 36.304 with agreements so far
Intended outcome: Endorsed running CR in R2-1914100
Deadline: Next meeting

7.2.2 Mobile-terminated (MT) early data transmission (EDT)

Mobile-terminated Early Data transmission for NB-IoT is treated jointly with MTC under AI 7.1.2. Do not use this AI for any item that can be discussed jointly.

7.2.3 UE-group wake-up signal (WUS)

UE group wake Up signal for MTC and NB-IoT is treated jointly under this Agenda Item.
Including output of email discussion [107#57][NB-IoT/eMTC R16] Configuration details of UE-ID and paging probability based WUS groups (ZTE)

R2-1913831 Report of email discussion [107#57][NB-IoT eMTC R16] WUS configuration ZTE Corporation, Sanechips report Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core Late
- Intel thinks some questions weren't clear so their answer may not be appropriate in all cases.
- Intel and Nokia think there are 3 parts to the discussion. QC thinks we have a lot depending on RAN1 still. QC thinks Rel-15 parameters can be re-used if provided and this is already agreed.

The following proposals can be applied to both NB-IoT and eMTC:
Proposal 1: A new optional R16 WUS configuration, e.g., WUS-Config-NB-r16, can be defined in SIB message.
- QC wonder if this includes all parameters including those in Rel-15 or only new parameters.

Proposal 2: RAN2 needs to discuss whether it should be possible for the eNB to configure only Rel-16 WUS.

- Intel wonders what the motivation for configuring only Rel-16 is. ZTE also wonders.
- QC thinks it depends on the UE population, maybe Rel-15 WUS configuration is redundant. Ericsson agrees with QC, it should be up to the network what to configure. Huawei also agree.
- ZTE thinks it should anyway be possible for NW to configure one or the other or both. Intel agree, the question is whether we have to repeat all the configuration in the Rel-16 IE.
- Nokia thinks we need to clarify what happens if legacy WUS is not configured in TDM case.

Proposal 4: RAN2 needs to discuss whether a location information of R16 WUS resource, e.g., overlapping with legacy WUS resource or being adjacent to the legacy WUS resource need to be defined.

- Huawei thinks the indication is needed if only 1 resource is configured. ZTE thinks even for 2 resources we need the indication. Intel thinks this would be known by the UE based on configuration IE used.
- QC thinks for NB-IoT if there are 2 R16 resources and 1 R15 resource then we need to indicate which R16 resource is in the same time location as the R15 resource, and RAN1 are looking at this. Also in case of only 1 and 1 we need to say whether the same time resource is shared.

Proposal 5: All the parameters, maximum duration, time offset for different gap types, numPOs and transmit power for WUS sequence need to be configurable in at least one R16 WUS resource.

Proposal 5a: If both R15 and R16 WUS are configured, it's allowed to omit these parameters in R16 WUS configuration and the parameters in R15 WUS configuration can be reused for R16 WUS configuration.

- QC thinks that in case the Rel-15 WUS is configured then these values have to be used for Rel-16 also.

Proposal 3: For NB-IoT, RAN2 can take this as working assumption for further discussion: A R16 WUS resource list, e.g., with up to 2 entries is needed in the R16 WUS configuration.

Proposal 6: It should be allowed to configure WUS groups per WUS resource with maximum 8 WUS groups for a WUS resource.

Proposal 7: RAN2 needs to discuss whether WUS groups for each WUS resource can be configured per gap type.

Proposal 8: It's no need to define WUS group ID for a WUS group in RAN2 signalling.

- ZTE indicates the intention of p6 is whether for each WUS resource, whether we need to allow configuration of UE-ID based only, paging probability based only, or both?
- QC thinks we need to agree whether one WUS resource can be used for both UE-ID and service based or not. QC thinks the paging carrier has to be first determined based on UE-ID in any case.
- ZTE thinks even the UE not using service probability based grouping will have a service probability assigned, e.g. default.

Proposal 9: RAN2 needs to discuss whether Rel-16 WUS groups need to be supported on all paging carriers or subset of paging carriers.

Proposal 11: For UE_ID based WUS grouping, it's enough to only configure number of WUS groups.

Proposal 12: RAN2 needs to discuss whether same WUS group can be used for both service and UE ID based schemes, or there should be two separate sets of WUS groups at the same time, e.g., X (>=0) number of UE based groups and Y (>=0) number of paging probability based groups.

Proposal 13: Two-level WUS configuration in which grouping is firstly based on paging probability, and then UE-ID, can be supported.

Proposal 14: An explicit indication is needed for indicating common WUS type, e.g., legacy R15 WUS sequence or new R16 dedicated WUS sequence.

Proposal 15: RAN2 needs to further discuss whether an indication is needed for enabling UE to detect the common WUS. And if yes, RAN2 can further discuss the following options:

Option a): an explicit indication

Option b): an implicit indication when more than one UE groups is configured

Option c): an implicit indication when common WUS type is configured.

Proposal 16: Network capability indication about supporting R16 WUS grouping is not introduced.

The following proposals can be applied to NB-IoT only:
Proposal 3: For NB-IoT, RAN2 can take this as working assumption for further discussion: A R16 WUS resource list, e.g., with up to 2 entries is needed in the R16 WUS configuration.
Proposal 9a: For NB-IoT, for the carriers supporting Rel-16 WUS, the WUS configuration should be the same (except for the maximum duration which is already carrier specific in Rel-15).
Proposal 10: For NB-IoT, an indication is needed for enabling alternation between WUS resources (WUS resource hopping).
Proposal 10a: For NB-IoT, RAN2 needs to further discuss whether this indication is configured per cell.

The following proposals can be applied to eMTC only:
Proposal 9b: For eMTC, for the carriers supporting Rel-16 WUS, the WUS configuration should be the same.
Proposal 17: For eMTC, RAN2 can take this as working assumption for further discussion: A R16 WUS resource list, e.g., with up to 4 entries is needed in the R16 WUS configuration.
Proposal 18: For eMTC, the frequency-multiplexed pattern would be needed for WUS resource configuration.

Agreements:

- Rel-16 WUS can be configured without Rel-15 WUS
- If both R15 and R16 WUS are configured, then maximum duration, time offset for different gap types, and transmit power for WUS sequence need to be configured with the same values for both R15 and R16.
  - FFS: numPOs
- The time locations of R16 WUS resources need to be known by the UE. Signalling details can be discussed as part of stage 3 CR.

- FFS: A WUS group cannot be mapped to both UEs using UE-ID based only and UEs using UE-ID + paging probability based grouping.

Offline discussion #704 (Qualcomm) WUS group configuration and mapping. To produce report including clear list of FFS/open issues and agreeable proposals in R2-1914096

R2-1914096 – Report from offline #704 Qualcomm Incorporated discussion Rel-16 NB_IOTenh3-Core
- Nokia thinks that during the offline the tables were agreed upon so may be better to capture those.

Proposal 1: If both Release 15 WUS and Release 16 WUS are configured then values configured for the following parameters in Release 15 WUS also apply to Release 16 WUS: MaxDurationFactor, numPOs, FrequencyLocation (eMTC only), timeOffsetDRX, timeOffset-eDRX-short, timeOffset-eDRX-Long, numDRX-CyclesRelaxed
Proposal 2: If only Release 16 WUS is configured then values for the following parameters shall be configured: MaxDurationFactor, numPOs, FrequencyLocation (eMTC only), timeOffsetDRX, timeOffset-eDRX-short, timeOffset-eDRX-Long, numDRX-CyclesRelaxed
- Intel wonders what the use-case is for using Rel-16 WUS without Rel-15. QC indicates Rel-16 is more useful and it is possible that there will be more UEs supporting Rel-16. Nokia and Ericsson think that it should be possible.

Proposal 3: FFS: Number of WUS resources can be configured individually for each gap type (DRX, eDRX short, eDRX long)
Proposal 3: The same number of WUS resources can be configured for all gap types (DRX, eDRX short, eDRX long)
Proposal 4: Number of WUS groups can be configured separately for each R16 WUS resource.
Proposal 5: Number of WUS groups can be the same for all R16 WUS resources.
Proposal 6: UE WUS group hopping between WUS resources is configured the same for all R16 WUS resources.

Proposal 7: A single enable/disable of 'common WUS group' applies to gap types configured with 2 or more WUS resources.
Proposal 8: FFS: If 'common WUS group' is not enabled in the cell then how are the UEs notified of SI change.
Proposal 9: FFS: When 'common WUS group' is enabled then is there need to explicitly signal which is the 'common WUS group'.

⇒ **Can check and come back next meeting on the above 3.**

Proposal 10: When R15 WUS is configured then all R16 WUS resources are adjacent to R15 WUS in the time domain and in the frequency domain (for eMTC)

Proposal 11: When only R16 WUS resources are configured, location in time provided for the first R16 resource for each gap type (i.e. timeOffset-DRX, timeOffset-eDRX-short, timeoffset-eDRX-Long).

Proposal 12: When only R16 WUS resources are configured, frequency location provided for the first R16 resource (i.e. FrequencyLocation).

- ZTE think that the above proposals are the current understanding of how RAN1 agreements will impact RAN2 specification.
- ZTE thinks we need an FFS whether we need a parameter to indicate the location in these 3 cases.

Proposal 13: When one or more R16 WUS resources configured, the same WUS Paging probability mapping applies to each gap type (i.e. timeoffset-DRX, timeoffset-eDRX-short, timeoffset-eDRX-long).

Proposal 14: When one or more R16 WUS resources are configured, the WUS Paging probability mapping provided separately for each gap type (i.e. timeoffset-DRX, timeoffset-eDRX-short, timeoffset-eDRX-long).

- Sony are not sure we discussed the paging probability vs. gap type as per p13, 14. QC thinks we need to design the mapping between probability and resources. Sony thinks the probability is mapped to groups, and the groups are configured to resources.

Proposal 15: RAN2 assumes one or more UEs may not be configured at NAS with paging probability.

Proposal 16: If R16 WUS is configured, at least one WUS group will be assigned to UEs that are not configured with paging probability.

- Fraunhofer wonders if it could be the common one. QC thinks no.

Proposal 17: FFS Mapping of paging probabilities to WUS group.

Proposal 18: R16 WUS can be supported on all or subset of the paging carriers/paging narrowbands.

Agreements:

- If both Release 15 WUS and Release 16 WUS are configured then values configured for parameters in Release 15 WUS also apply to Release 16 WUS
- If only Release 16 WUS is configured then values for the following parameters shall be configured: MaxDurationFactor, numPOs, FrequencyLocation (eMTC only), timeOffsetDRX, timeOffset-eDRX-short, timeOffset-eDRX-Long, numDRX-CyclesRelaxed
- FFS: A different number of WUS resources can be configured for each gap type (DRX, eDRX short, eDRX long).
    - FFS: When one or more R16 WUS resources are configured, the WUS Paging probability mapping to WUS group can be provided separately for each gap type (i.e. timeoffset-DRX, timeoffset-eDRX-short, timeoffset-eDRX-long).
- Same or different number of WUS groups can be configured for each R16 WUS resource.
- UE WUS group hopping between WUS resources is configured per cell.
- FFS how to configure the following agreed cases:
    - When R15 WUS is configured then all R16 WUS resources are adjacent to R15 WUS in the time domain (for eMTC and NB-IoT) and in the frequency domain (for eMTC only)
    - When only R16 WUS resources are configured, frequency location provided for the first R16 resource (i.e. FrequencyLocation). (for eMTC only)
    - When only R16 WUS resources are configured, location in time provided for the first R16 resource for each gap type (i.e. timeOffset-DRX, timeOffset-eDRX-short, timeoffset-eDRX-Long). (for eMTC and NB-IoT)
- RAN2 assumes one or more UEs may not be configured at NAS with paging probability.
- If R16 WUS is configured, at least one WUS group will be assigned to UEs that are not configured with paging probability.
- FFS Mapping of paging probabilities to WUS group
- R16 WUS can be supported on all or subset of the paging carriers/paging narrowbands.

R2-1912907 Other remaining issues of UE grouping for WUS ZTE Corporation, Sanechips discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core R2-1908870

R2-1913096 WUS grouping design overview and UE distribution Qualcomm Incorporated discussion Rel-16 NB_IOTenh3-Core

R2-1913776 Group WUS Ericsson discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core

R2-1912916 Paging probability information based UE grouping Lenovo, Motorola Mobility discussion Rel-16

R2-1912917 Consideration on WUS configuration Lenovo, Motorola Mobility discussion Rel-16

R2-1913362 On supporting UE-group wake-up signal for MTC/NB-IoT Sony discussion Rel-16 NB_IOTenh3-Core R2-1909910

Late/withdrawn

R2-1912410 GWUS Configuration and Resource mapping for UE-Group Information Nokia, Nokia Shanghai Bell discussion Rel-16 Late

7.2.4 Transmission in preconfigured resources

Including support for transmission in preconfigured resources in idle and/or connected mode based on SC-FDMA waveform for UEs with a valid timing advance.

Transmission in preconfigured resources for MTC and NB-IoT is treated jointly under this Agenda Item.

Including output of email discussion [107#58][NB-IoT/eMTC R16] RRC messages for D-PUR transmission and response (Huawei)

R2-1913931 Report of email discussion [107#58][R16 NB-IoT/eMTC] RRC messages for D-PUR transmission and response Huawei report Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core

- QC hopes to resolve some of the FFSs. Chair agrees.
- QC think that in general we should try to re-use existing messages unless there is a problem in doing that. Huawei think that re-using existing messages doesn't mean we should not modify them if necessary.

For the CP solution:

Proposal 1. For the CP solution, in the uplink RRC message of D-PUR transmission:

- *D-PUR update request can be included*
- *RAI, BSR, L2/L3 expectation indication and downlink channel quality report are not included*
- *FFS S-TMSI and establishment cause*

- QC wonders what the first bullet means in practise. QC thinks it is better to do only in RRC connected. Gemalto agrees. LG agrees. Sequans thinks there would then need to be a way to trigger UE to go to RRC_CONNECTED. QC thinks the RRC Connection Establishment can be sent using PUR, so no need to include a new indication. Ericsson think it could be useful in some cases.
- LG thinks BSR should be included optionally.
- Gemalto wonders if we should have an optional indication that L2/3 ACK is expected. Sony agrees and think the second bullet should be split. Huawei think a majority in the email discussion did not think this is needed. Nokia think this could be an option as part of the request but we don't need per packet indication. QC agree with Nokia.
- Ericsson point out that all of the options AS RAI, BSR, power headroom, data volume are all indicative of more data and different companies have different preference. QC don't think any of them are useful and in the majority of cases the traffic pattern is already known and that is how the PUR is configured in the first place. QC thinks NW knows whether UE is using non-EDT or EDT based on the preambles so the BSR or RAI etc. isn't needed.
- ZTE, Nokia think even RAI should be per configuration and not per-packet so no need to include that.
- LG think BSR is legacy behaviour if there is space so no need to restrict it.

Proposal 2. For the CP solution, whether to define new uplink RRC message of D-PUR transmission is FFS.

Proposal 3. For the CP solution, extendedWaitTime can be included in the downlink RRC response message.

Proposal 4. For the CP solution, whether to define new downlink RRC response message of D-PUR transmission is FFS.

Proposal 5. For the CP solution, MAC CE for TA update can be sent without downlink RRC response message.

Proposal 6. For the CP solution, in case the UE moves to RRC connection, a new RNTI can be provided. FFS how, i.e. in RRCConnectionSetup message or MAC level along with the RRC message.

- QC thinks RRC or MAC could be used and it should be possible to update the PUR-RNTI to C-CRNTI when moving to RRC_CONNECTED. Intel thinks the PUR-RNTI conversion to CRNTI is only possible if multiple UEs don't share the PUR-RNTI, therefore there needs to be a possibility to update or maintain.
- LG prefers MAC.
- ZTE prefers RRC.
-

For the UP solution:

Proposal 7. For the UP solution, in the uplink RRC message of D-PUR transmission:
- *D-PUR update request can be included*
- *RAI, BSR, L2/L3 expectation indication and downlink channel quality report are not included*
- *FFS Resume ID and establishment cause*

Proposal 8. For the UP solution, whether to define new uplink RRC message of D-PUR transmission is FFS.

Proposal 9. For the UP solution, extendedWaitTime can be included in the downlink RRC response message.

Proposal 10. For the UP solution, RRC connection release message is reused as the downlink RRC response message of D-PUR transmission.

Proposal 11. For the UP solution, in case the UE moves to RRC connection, a new RNTI can be provided. FFS how, i.e. in RRCConnectionSetup/RRCConnectionResume message or MAC level along with the RRC message.

Agreements (for CP and UP solutions unless otherwise stated):

- For PUR transmission and associated response, no new RRC messages are introduced and the existing RRC messages are re-used (S-TMSI and establishment cause for CP, and Resume ID and establishment cause for UP, are mandatory IEs).
    - Existing establishment causes are re-used.
- PUR update request is performed only in RRC_CONNECTED (i.e. not included with PUR transmission). This replaces the previous agreement for UP regarding piggyback of PUR request with the PUR transmission.
- L2/L3 expectation indication and downlink channel quality report are not included with PUR transmission.
- For CP solution AS RAI, BSR are not included with PUR transmission
- FFS for UP solution whether AS RAI, BSR can be included with PUR transmission.
- For the CP solution, MAC CE for TA update can be sent without downlink RRC response message. (For UP RRC response message is always required).
- In case the UE moves to RRC-CONNECTED, a new C-RNTI can be provided in RRC. If absent the UE maintains the PUR-RNTI as C-RNTI.

R2-1913600 Remaining aspects from [106#61] D-PUR Request, (re)configuration and release mechanism
Qualcomm Incorporated discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core

Proposal 1. PUR is indicated as enabled in the cell using a flag in SIB2.

Proposal 2. Upon detecting that SIB indication of PUR support is turned off in the cell, UE shall release all PUR configurations.

- Huawei thinks the PUR request can be enabled/disabled by dedicated signalling, and see these proposals to be related to release of multiple UEs which were provided with the configuration.
- LG supports proposals 1 and 2 to have a similar approach as EDT.
- Intel thinks p1 would be ok. P2 would be OK if it does not trigger paging for SI-change.
- Sequans wonder whether it is important enough to require UEs to read SI before every PUR transmission. Huawei agrees with Sequans.
- QC thinks the UE anyway needs to check SIBs to see if access is allowed.
- Nokia thinks the update via paging should be avoided. QC thinks if it is rare then paging should be OK.
- Huawei think it is unrealistic to expect eNB to know 3 hours in advance to update the SIBs timely. Ericsson thinks it can be done only temporarily for UEs which are waking at that time.

Proposal 3. PUR configuration can be provided without PUR Configuration Request from the UE.

Proposal 4. For UP, introduce optional radio access capability to indicate UE is capable of performing UL transmissions using PUR. FFS for CP.

- Huawei thinks it should be the same for CP

Proposal 5. When UE initiates RACH/EDT, whether it has PUR configuration(s) is not explicitly notified to the network.

- ZTE indicate that this means when UE performs cell reselection there will be resources wasted on the old cell. Huawei indicates there is anyway a timer based mechanism to release so this is temporary

Proposal 6. PUR (re)configuration is not supported in RRCEarlyDataComplete. When PUR (re)configuration is provided in RRC Connection release, no additional explicit success/failure indication is introduced, i.e., existing methods are sufficient for reliable confirmation.

Proposal 7. No further UE behaviour is specified in case successful PUR reconfiguration is not confirmed (i.e., the PUR configuration that the UE considers valid depends on whether UE received the reconfiguration). It is upto the network implementation how to handle this scenario.

Proposal 8. NW releases PUR only upon successful confirmation that UE received the release message.

-

Proposal 9. PUR request includes indication whether L2/L3 ACK is required (or L1 ACK is sufficient). NW makes final decision on configuration.

- ZTE thinks UE can't know whether it needs the L2/3 ACK, only NW knows. QC thinks UE knows better than NW. Ericsson wonders if this is for CP case only because for UP it is always used. For p9 LG thinks if this is sent by the UE then some interface is needed between AS and NAS, support p10 and NW can know this based on communication pattern rather than UE indication.
- Gemalto supports p9 and it depends on the application UE is using and whether it is critical/not critical information.
- Ericsson thinks all UEs need to support L2/3 ACK, so the indication is that UE can live with L1 ACK only, so NW can always send the L2/3 ACK if it wants.

Proposal 10. Discuss whether PUR (re)configuration includes flag indicating whether DL L2/L3 ACK is used for UL data.

- Intel thinks that after L1 ACK the UE goes immediately to Idle so nothing is needed in the configuration. Ericsson agree with Intel.

⇒ **Not agreed**

Proposal 11. RRC Connection Resume Request for EDT is extended to include PUR configuration request. PUR configuration request is not supported in RRCEarlyDataRequest.

⇒ **Already covered in previous discussion/agreements.**

Proposal 12. UE can request PUR release by including number of PUR grant occasions requested = 0 in PUR configuration request.

Agreements:

- Working assumption: PUR is indicated as enabled in the cell using a flag in SIB2. Upon detecting that SIB indication of PUR support is turned off in the cell, UE shall release all PUR configurations. Existing SIB update mechanism is used to update the indication.
- PUR configuration can be provided without PUR Configuration Request from the UE, therefore optional radio access capabilities (separate for UP and CP) to indicate UE is capable of performing UL transmissions using PUR are introduced.
- When UE initiates RACH/EDT, whether it has PUR configuration(s) is not explicitly notified to the network.
- PUR (re)configuration is not supported in RRCEarlyDataComplete.
- In case PUR (re)configuration is provided in RRC Connection release, no additional explicit success/failure indication is introduced, i.e., existing methods are sufficient.
- No further UE behaviour is specified in case successful PUR reconfiguration is not confirmed using the existing methods (i.e., the PUR configuration that the UE considers valid depends on whether UE received the reconfiguration). It is up to the network implementation how to handle this scenario.
- NW releases PUR only upon successful confirmation that UE received the release message using the existing methods.
- PUR request includes optional indication that L1 ACK is sufficient. NW has the final decision whether to

use L1 ACK or not.
- No new RRC message for PUR release request is needed (i.e. PUR configuration request is used for requesting PUR release).

FFS:
- whether any of the following is a precondition for sending PUR request: UE is stationary/quasi-stationary; UL data size is limited to maximum supported TB size.
- whether Requested Time Offset can be included in the PUR request.
- which of the following is included in PUR (re)configurations: Time Offset; UE-specific RNTI; D-PUR config identity/index; timer for D-PUR response; PUR backoff indicator/prohibit timer; TBS size.

Offline discussion #706 (Qualcomm) – To make further progress on PUR. Primary focus is on the FFSs already captured. Try to find other proposals agreeable this week and highlight open points that need to be resolved.

R2-1914098 Summary of offline #706: FFSes on PUR. Qualcomm Incorporated report Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core

Proposal 1. "UE is stationary/quasi-stationary" is not a precondition before sending PUR configuration request.

- ZTE thinks that if there is no restriction it may cause invalid configuration if TA is invalid.

Proposal 2. "UL data size is limited to maximum supported TBS based on the UE category/capability" is a precondition before sending PUR configuration request.

- LG thinks for UP solution the data size doesn't need to be limited. QC and Ericsson think this is about request only.

Proposal 3. More than one simultaneous D-PUR configurations are not supported (i.e., UE cannot be configured with more than one PUR configurations.)

Proposal 4. Time offset of the PUR allocations is provided in PUR configuration.

- QC suggests discussing together with the FFS on request.

Proposal 5. UE-specific RNTI for PUR is provided in PUR configuration.

- Sequans wonders about shared RNTI. QC indicate that from UE point of view this is UE specific.

Proposal 6. PUR config identity/index is not provided in PUR configuration.

Proposal 7. Information about timer for PUR response is provided in PUR configuration. Detail FFS.

- Ericsson thinks this is something RAN1 is looking at in another context. Nokia thinks this is a just timer for response.

Proposal 8. Information on TBS size is provided in PUR configuration. Exact details also depend on RAN1 agreements.

Proposal 9. For CP, similar to EDT, "the size of the resulting MAC PDU including the total UL data is expected to be smaller than or equal to the TBS configured for PUR" is a precondition before initiating UL transmission using PUR. FFS for UP.

- Ericsson thinks it is not clear for all the cases, such as for fallback.

Proposal 10. For UP, refer to PUR messages as "RRCConnectionResumeRequest for PUR" and "RRCConnectionResumeRequest for EDT or PUR" etc. as applicable in the running CRs.

Proposal 11. PUR TA timer is configurable, should be at least larger than the PUR period, in hour(s) level, "disabled" or infinity is possible. Exact values can be concluded as part of running CR discussion.

- Nokia wonders if we really need to say it is larger than PUR period. QC thinks if it is shorter then PUR is better not to be configured at all.

Proposal 12. Configurable value of m = {2, 3, 4, 8}. Not configured means release by "m" skip mechanism is disabled.

- Nokia wonders how NW detects the missed transmission.
- Intel thinks 1 can be misdetection so should be excluded.

Proposal 13. UE shall increase 'm' when (1) PUR occasion is not used while UE is in RRC_IDLE and (2) PUR occasion is used in RRC_IDLE but no ACK is received.

- ZTE thinks there may bbbe a mismatch between UE and NW

Proposal 14. Network shall increase 'm' when no ACK is sent by the network.

Proposal 15. 'm' is not increased (neither by UE nor eNB) while UE is in a dedicated RRC connection.

Proposal 16. Value of 'm' is reset to zero after successful communication between UE and eNB (both in RRC_IDLE or RRC_CONNECTED).

Proposal 17. 'm' is not increased (neither by UE nor eNB) while barring timer is running.

Agreements:
- "UE is stationary/quasi-stationary" is not a precondition before sending PUR configuration request.
- "UL data size is limited to maximum supported TBS based on the UE category/capability" is a precondition before sending PUR configuration request.
- UE cannot be configured with more than one PUR configuration
  - Therefore, PUR config identity/index is not needed in PUR configuration
- Information on TBS size is provided in PUR configuration.
  - Exact details also depend on RAN1 agreements.
- For CP, similar to EDT, "the size of the resulting MAC PDU including the total UL data is expected to be smaller than or equal to the TBS configured for PUR" is a precondition before initiating UL transmission using PUR. FFS for UP.
  - Sending RRC Connection request without the CP data is not excluded due to this
- For UP, refer to PUR messages as "RRCConnectionResumeRequest for PUR" and "RRCConnectionResumeRequest for EDT or PUR" etc. in the specifications.
- PUR TA timer is configurable up to hour(s) level, disabled/infinity is possible.
  - Exact values FFS.
- Configurable value of m. Not configured means release by "m" skip mechanism is disabled.
  - Exact values FFS.
  - Further details on "m" operation are FFS:
    - *UE shall increase 'm' when (1) PUR occasion is not used while UE is in RRC_IDLE and (2) PUR occasion is used in RRC_IDLE but no ACK is received.*
    - *Network shall increase 'm' when no ACK is sent by the network.*
    - *'m' is not increased (neither by UE nor eNB) while UE is in a dedicated RRC connection.*
    - *Value of 'm' is reset to zero after successful communication between UE and eNB (both in RRC_IDLE or RRC_CONNECTED).*
    - *'m' is not increased (neither by UE nor eNB) while barring timer is running.*

✉ **[107bis#90][NB-IoT eMTC R16] Further details on "m" operation for PUR (Qualcomm)**
To progress the FFSs on "m" operation
Intended outcome: Report
Deadline: Next Meeting

R2-1912608	Discussion on RAN1 agreements on D-PUR	Huawei, HiSilicon	discussion	Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core
R2-1912609	FFSes on D-PUR	Huawei, HiSilicon	discussion	Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core
R2-1913121	PUR data transmission - remaining open issues	Ericsson	discussion	NB_IOTenh3-Core, LTE_eMTC5-Core
R2-1913122	PUR configuration - remaining open issues	Ericsson	discussion	NB_IOTenh3-Core, LTE_eMTC5-Core
R2-1912610	Handling of D-PUR configuration for CP solution	Huawei, HiSilicon	discussion	Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core R2-1910174
R2-1912611	[Draft] LS on handling of D-PUR configuration for the CP solution	Huawei	LS out	Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core R2-1910175 To:RAN3
R2-1912862	Additional issues in D-PUR in RRC_IDLE	Intel Corporation	discussion	Rel-16 LTE_eMTC5-Core
R2-1912894	DRX considerations for preconfigured resources	Sequans Communications	discussion	Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core R2-1910237

R2-1912896 Remaining issues for D-PUR in IDLE ZTE Corporation, Sanechips discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core
R2-1913071 Further consideration on D-PUR aspect III discussion Rel-16
R2-1913119 PUR periodicity and UE multiplexing Ericsson discussion NB_IOTenh3-Core, LTE_eMTC5-Core R2-1910437
R2-1913120 PUR with DCI scheduling Ericsson discussion NB_IOTenh3-Core, LTE_eMTC5-Core R2-1910438
R2-1913597 Pre-configured UL Resources Design Considerations Sierra Wireless, S.A., Sony Mobile Communications, Gemalto N.V. discussion Rel-16 R2-1910896
R2-1913681 FFS issues on D-PUR LG Electronics UK discussion Rel-16
R2-1913682 Discussion on D-PUR request and TA validity check LG Electronics UK discussion Rel-16
R2-1913683 Paging response usign D-PUR LG Electronics UK discussion Rel-16
R2-1913684 Support for S-PUR LG Electronics UK discussion Rel-16 R2-1911065
R2-1913775 Remaining issues of D-PUR TA timer ASUSTeK discussion Rel-16 NB_IOTenh3-Core
R2-1913932 Clarification on PUR release upon missing 'm' consecutive Gemalto N.V. discussion Rel-16
R2-1913933 Transmission in preconfigured resources Gemalto N.V. discussion R2-1908990

Late/withdrawn

R2-1912411 Remaining Issues for D-PUR Signalling Procedure Nokia, Nokia Shanghai Bell discussion Rel-16 Late
R2-1912412 D-PUR for Control Plane Solution Nokia, Nokia Shanghai Bell discussion Rel-16 Late
R2-1913349 TA update after PUR transmission via MAC CE Sequans Communications discussion Rel-16 Late

7.2.5 Scheduling multiple DL/UL transport blocks

Including scheduling multiple DL/UL transport blocks with or without DCI for SC-PTM and unicast
Scheduling multiple DL/UL transport blocks for NB-IoT is treated jointly with MTC under AI 7.1.5. Do not use this AI for any item that can be discussed jointly.

7.2.6 Network management tool enhancement

Including SON support for ANR, Random access performance and RLF report
ANR

R2-1912895 Remaining FFSs for ANR report in NB-IoT ZTE Corporation, Sanechips discussion Rel-16 NB_IOTenh3-Core

Proposal 1: In order to avoid too much power consumption for ANR measurement for NB-IoT UE, it suggests RAN2 to discuss whether to introduce an ANR measurement duration or allow neighbour cell relaxed monitoring criteria and Ssearch criteria to be still applied during ANR measurement.

- Huawei agrees with observation 1. For example UE is currently only required to measure 2 carriers, not 8 so the capability should be considered. UE should not need special measurement capability for ANR. However don't understand how this proposal can help. ZTE just considered the time it takes. Gemalto, Sequans, Ericsson agrees with Huawei.
- QC wonder what long term means. We agreed to use the RAN4 requirements and this specifies the time to detect and measure.

Proposal 2: ANR reporting can be applicable for connection to 5GC. The CGI-info in the ANR reporting for connection to 5GC may have two-level PLMN list and need to additionally include RAN-AreaCode information.

- QC thinks ANR is CN independent, so could apply to 5GC.
- Huawei thinks we don't support RRC_INACTIVE in NB-IoT so we don't need RANAC.
- Huawei also proposed to support for 5GC, but we need to specify what information to record based on the CN type.

- Ericsson think this was not part of the WI scope so should focus on completing current scope first and may come back to this later. Nokia agree – the CGI reading alone is not sufficient and we would require additional work. ZTE think there are other impacts from 5CG support which are not in the WID.

Proposal 3: It's suggested to include timeSpent information with a large value range (e.g. INTEGER (0..172800) with unit of minutes) in ANR report to indicates the elapsed time since the generation of ANR record. And the UE can set a timer with the maximum value of timeSpent information for discarding the ANR record.

- Huawei wonders how useful it is. ZTE thinks the ANR measurement may be reported after quite a long time and NW may have already performed some optimisations.
- QC thinks it is simpler to indicate whether the measurement happened soon after configuration or just before report. Nokia think we already agreed that UE should do the measurement when it is configured, so the information seems not to be beneficial for the NW. Sequans think we can do the measurement as QC said, but having e.g. granularity of minutes is not preferable.
- Ericsson thinks a timestamp could be useful.

Proposal 4: In order to avoid unnecessary signaling overhead and UE power consumption, UE doesn't need to send empty ANR report.

- Ericsson think the empty report we agreed in the last meeting is useful. Huawei agree, and it is not really empty it is an indication that no good cell was found.

Agreements
- UE is not required to measure more than 2 carriers
- FFS whether an indication of when the UE performed the ANR measurement is needed

R2-1913419 Remaining Issues for ANR measurements Ericsson discussion Rel-16

Proposal 1 If UE is configured with ANR measurement and PSM has been negotiated with CN, the UE shall locally delay entering the PSM dormant state until the ANR measurements are completed.

- QC thinks eNB doesn't know about PSM support. Also UE may be in PSM for several days so wonder if it is useful to report after such a long time. Intel agrees with QC but wonder if UE has enough time to do the measurement during the reachable timer. Sequans agree with QC.
- Nokia think if UE is configured for PSM then it shouldn't be forced to do the measurement first. Apple agree with Nokia, it should be up to UE when to do the measurement especially if PSM is used.
- Gemalto thinks the eNB would configure multiple UEs so it is not such an important thing to disturb PSM.
- Huawei thinks UE should do the measurement either immediately or not at all when PSM is used.
- Ericsson think that many of the UEs will have PSM, so should be able to prioritise ANR measurement over PSM. At least should be able to store measurements already performed.

Proposal 2 RAN2 to agree on the text proposal below for the addition of PSM in the Note

Proposal 3 Configure an ANR reporting response time to provide the result within certain duration. The configured value is in several hours (48h, 72h, 96h, 120h)

- Gemalto think UE won't go to connected just for reporting. This is just a discard timer.
- Huawei thinks a fixed value is fine for the discard timer, it is not clear how to configure this. Nokia agrees.
- Lenovo supports having the value configurable.

R2-1912603 Discussion on SON ANR remaining open issues Huawei, HiSilicon discussion Rel-16 NB_IOTenh3-Core

RACH/RLF

R2-1912604 Discussion on SON RACH and RLF remaining open issues Huawei, HiSilicon discussion Rel-16 NB_IOTenh3-Core

7.2.7 Improved multi-carrier operation

Including support of Msg3 quality reporting for non-anchor access.

Including signalling to indicate on a non-anchor carrier for paging a set of subframes which will contain NRS even when no paging NPDCCH is transmitted.

Msg3

R2-1912601 Discussion on DL channel Quality remaining open issues Huawei, HiSilicon discussion Rel-16 NB_IOTenh3-Core

Proposal 1*: Update the notes in sections 5.3.3.3, 5.3.3.3a, 5.3.3.3b and 5.3.7.4 according to RAN4 agreements and remove the Editor's note.*

Proposal 2: *The codepoint/index of "10001" is used for MAC CE DL quality report command.*

Proposal 3: *Design the MAC CE DL Channel quality report with 4 reserved bits and one 4 bit field CQI-NPDCCH-NB.*

Proposal 4: *The coding of CQI-NPDDCH-NB follows the same definition as in RRC and is described in a table in MAC.*

- QC suggests a reference could be added to the table in RRC. Huawei thinks the type is enumerated in RRC, but it could be OK.

Proposal 5: *The UE starts the DL channel quality measurement upon reception of the MAC CE DL channel quality report command.*

- QC understands the MAC CE is received to trigger reporting and that is when the measurements start, then at some point the UE will receive a grant + UE measures on the NPDCCH containing the grant and reports this. Huawei agrees and indicates that the proposal is not entirely accurate.

Proposal 6*: For NB-IoT, the new MAC CE DL channel quality report has the next priority after MAC CE for BSR*

Agreements:

- Update the notes in sections 5.3.3.3, 5.3.3.3a, 5.3.3.3b and 5.3.7.4 according to RAN4 agreements and remove the Editor's note.
- The codepoint/index of "10001" is used for MAC CE DL quality report trigger.
- Design the MAC CE DL Channel quality report with 4 reserved bits and one 4 bit field CQI-NPDCCH-NB.
- The coding of CQI-NPDDCH-NB follows the same definition as in RRC, and MAC spec refers to the table in RRC.
- The UE starts to perform DL channel quality measurements upon reception of the MAC CE DL quality report trigger.
- The reporting of DL channel quality measurements occurs when the UE receives a grant. The measurement procedure is defined in RAN4.
- For NB-IoT, the new MAC CE DL channel quality report has the next priority above "data from any Logical Channel, except data from UL-CCCH"

R2-1912905 Remaining issues of quality report for non-anchor access ZTE Corporation, Sanechips discussion Rel-16 NB_IOTenh3-Core]

- Proposal 2 covered in the Huawei paper.

Proposal 1: For non-anchor carrier quality report in idle mode, the RRC-MAC interactions for RRC Msg3 update can be left to UE implementation, which is same as that of anchor carrier.

- Huawei think MAC spec should define the Msg3 buffer is updated, this is not exactly like the RRC report. Ericsson agrees.

Proposal 3: It's no need to specify whether to consider the size of quality report in the BSR, which can be left to UE implementation.

- Huawei and QC think the BSR is clearly defined in the specification so not up to UE implementation, and no issue.

RRM

R2-1912602 Discussion on RRM measurements on non-anchor carrier Huawei, HiSilicon discussion Rel-16 NB_IOTenh3-Core

Proposal 1: Introduce support for idle measurements on non-anchor paging carrier in Rel-16.

Proposal 2: Introduce an indication in SIB2 to enable idle mode measurements on non-anchor paging carriers.

- ZTE thinks it could be implicitly enabled based on NRS configuration on the non-anchor paging carriers. QC think implicit configuration is fine. Nokia agree.
- Ericsson think the separate indication could be useful.

Proposal 3: Support of idle mode RRM measurements on non-anchor paging carriers is optional at the UE without capability reporting.

Proposal 4: Wait for RAN4 to decide whether parameter nrs-PowerOffsetNonAnchor-r14 should be extended to provide a finer granularity.

Proposal 5: There is no need to capture any additional condition related to positioning measurements.

- Ericsson think there might be some impact in 36.305 so would like to double-check.

Proposal 6: When the UE performs NRSRP measurements on a non-anchor carrier, it translates the NRSRP measurements on a non-anchor paging carrier to the equivalent NRSRP measurements of the anchor carrier using the parameter nrs-PowerOffsetNonAnchor.

Proposal 7: introduce a new Srxlev formula in the S criterion for when the UE performs NRSRP measurements on a non-anchor carrier:

Srxlev = (Qrxlevmeas - nrs-PowerOffsetNonAnchor) – (Qrxlevmin + Qrxlevminoffset) – Pcompensation - Qoffsettemp

Proposal 8: Introduce a new S criterion for when the UE performs RRM measurements on a non-anchor carrier that only checks Srxlev > 0.

- Huawei clarifies this means that RSRQ is not checked for suitability based on the non-anchor carrier. QC wonders how we would then check if the cell quality is deteriorating.

Proposal 9: The above rules for performing idle mode measurements on non-anchor carrier are captured in TS 36.304.

R2-1913097 Non-anchor carrier measurements for RRM Qualcomm Incorporated discussion Rel-16 NB_IOTenh3-Core

- P1-4, 7 covered in Huawei paper

Proposal 5: While relaxed monitoring criterion is not meet, UE performs NRSRP measurement at least on anchor carrier.

Proposal 6: While relaxed monitoring criterion is meet, UE may perform NRSRP measurements on non-anchor carrier only.

Proposal 8: While UE performs measurements on non-anchor carrier, it may occasionally perform search/measurement on anchor carrier for the purpose of frequency synchronization.

Agreements

- Introduce support for idle mode serving cell measurements on non-anchor paging carrier in Rel-16.
- Idle mode serving cell measurements on non-anchor paging carriers is implicitly enabled based on presence of the NRS configuration.
- Support of idle mode RRM measurements on non-anchor paging carriers is optional at the UE without capability reporting.
- The UE may use only NRSRP measurements on a non-anchor carrier while the neighbour cell relaxed monitoring criterion is met, otherwise UE uses NRSRP measurement on anchor carrier
- When the UE performs NRSRP measurements on a non-anchor carrier, it translates the NRSRP measurements on a non-anchor paging carrier to the equivalent NRSRP measurements of the anchor carrier using the parameter nrs-PowerOffsetNonAnchor
    - Update Qrxlevmeas in the table in 36.304 to capture this
- When the UE is only performing NRSRP measurements on a non-anchor carrier, the Squal criteria is not applicable.

R2-1913409 NRS Signalling Configuration Ericsson discussion Rel-16

R2-1913417 S-Criterion for Non anchor Carrier based NRS measurements Ericsson discussion Rel-16

7.2.8 Inter-RAT cell selection

Including power efficient NB-IoT mechanism which would assist idle mode inter-RAT cell selection for NB-IoT to and from LTE, LTE-MTC and GERAN

Late/withdrawn

R2-1913626 On Inter-RAT assistance information for NB-IoT and LTE(-eMTC) Sequans Communications discussion Rel-16 NB_IOTenh3-Core R2-1911386 Late

7.2.9 Coexistence with NR

Study NR and LTE specifications to identify possible issues related to coexistence of NB-IoT with NR

7.2.10 Connection to 5GC

7.2.10.1 Indication of supported CIoT features and other common aspects

Additional information in SIB to indicate supported CIoT features; indication of CIoT features supported by the UE in RRC, and other common aspects for NB-IoT and MTC including UAB, Support of restriction of use of Enhanced Coverage and Delivery of Expected UE Behaviour information to the RAN.

Indication of supported CIoT features and other common aspects for MTC and NB-IoT are treated jointly under this AI.

PDCP Type

R2-1913123 PDCP type when connecting LTE-M and NB-IoT to 5GC Ericsson discussion NB_IOTenh3-Core, LTE_eMTC5-Core

- QC think that for eLTE NR PDCP makes sense due to the QoS requirement, but this is not a requirement for eMTC or NB-IoT. SA3 is discussing integrity protection but for now we don't need to consider that. At least for NB-IoT there is no advantage of using NR PDCP. Huawei agrees, and think that NR PDCP would have to be modified to support NB-IoT – by not supporting it we simplify both PDCP and the related configuration. LG agrees that for NB-IoT it is not needed but for eMTC it could be reconfigured by eNB so makes sense to use the same as for eLTE. ZTE agrees.
- Ericsson think that NR PDCP would be better for future compatibility.
- Intel wonder if NR PDCP would be needed for integrity protection. QC think that if integrity protection is introduced by SA3 it will apply to both NR and LTE PDCP, so this is not a motivation to introduce NR PDCP for NB-IoT.
- Ericsson thinks that LTE PDCP would require changes to support integrity protection anyway.

R2-1912619 PDCP for NB-IoT and eMTC connected to 5GC Huawei, HiSilicon discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core

- QC wonders whether the same capability would be shared between EPC and 5GC or whether we should have a separate capability bit.

Agreements:

- Use NR PDCP for LTE-M devices connected to 5GC.
- NR PDCP support is not specified for NB-IoT devices connected to 5GC.
- NB-IoT UE supports a maximum of two DRBs when connected to 5GC.
    - FFS whether this is indicated by a new capability or the existing UE capability, multipleDRB-r13.

R2-1912852 PDCP type to be used for NB-IoT and eMTC connected to 5GC Qualcomm Incorporated discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core R2-1910473

AS RAI

R2-1912849 Access Stratum Release Assistance Indicator for eMTC and NB-IoT connected to 5GC Qualcomm India Pvt Ltd discussion Rel-16 LTE_eMTC5-Core

- LG and ZTE wonders if the legacy BSR=0 can be used. Huawei think this currently would not support. QC think it would require additional bits and so would not be possible so RRC would be the logical way.
- Ericsson agree the legacy BSR is not enough, but it may not be necessary to use RRC.
- QC think that if TBS is not large enough then MAC cannot be used in Msg3.
- Huawei prefer MAC so that we avoid impacting many RRC messages. Ericsson agree.
- QC wonder if we use the same LCID to indicate 2 different values then would we need a codepoint for whether CQI is reported. Huawei think we already have a codepoint which indicates no measurement.
- Huawei think also there is only 1 spare bit in Msg3 for non-EDT case. ZTE think this is for UP solution only and in which case the UE would send this when establishing a connection. Huawei think this is needed for EDT case.
- QC think whatever we agree there should be a single method for all the cases. Ericsson think we just need to introduce and no need to discuss which cases it is supported. Intel think we need to. QC think there is no new procedures needed from CN point of view. Nokia think there is no need to indicate at both NAS and AS, so it is perhaps not needed for the CP case. Huawei think that this is correct but can send only the AS indication if it is applicable. ZTE also don't want 2 indications with possibly conflicting meaning.
- Intel wonders what the RAI is used for.

Proposal 1. Introduce an optional 1bit Release Assistance Indicator (RAI) in RRC messages.

Proposal 2. Absence of the RAI field indicates 'no information', value "0" indicates 'no further UL & DL higher layer PDUs' and value "1" indicates "No further UL, 1 more DL higher layer PDUs expected".

Proposal 3. RRC RAI is applicable for both UP and CP optimization solutions.

Proposal 4. Introduce optional Release Assistance Indicator (RAI) in critical extension of RRCEarlyDataRequest message, RRCConnectionSetupComplete message, ULInformationTransfer, RRCConnectionResumeRequest for UP-EDT, RRCConnectionResumeComplete-r15 message for eMTC/NB-IoT UEs connecting to 5GC.

Proposal 5. Introduce optional Release Assistance Indicator (RAI) in a 'standalone' RRC message, e.g. new RRC message or non-critical extension of UEAssistanceInformation message.

Agreements:
- Introduce a MAC mechanism with 2 bits for RAI

R2-1912616 Access Stratum Release Assistance Indicator for eMTC and NB-IoT connected to 5GC Huawei, HiSilicon discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core

UAC

R2-1912618 Unified access control for NB-IoT and eMTC connected to 5GC Huawei, HiSilicon discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core

Proposal 1: For NB-IoT, up to 64 access categories are defined for support of UAC, same as for eLTE.

Proposal 2: For NB-IoT, barring time and barring factor mechanism in UAC is not used for barring access category and barring bitmap is used for each access category.

Proposal 3: For NB-IoT UAC, adopt a 10 bit bitmap bitmap corresponding to access classes 0-9 (i.e. IMSI mod 10) to allow granular barring within each access identity.

- QC think there is no access class 0-9 in 5GC and we don't need 10 bits, we can just base on access identity and category. LG prefer to re-use the eLTE method.
- Huawei think the proposal is to use 10 bits based on IMSI, not necessarily that access classes are used.
- Huawei thinks that we either need a barring factor and barring time or a bitmap to dstribute UEs.
- Ericsson think this proposal is only for distributing UEs, otherwise we need to bar all UEs or none. IT has no impact on SA or other requirements. We need ssome method for distributing UEs.
- DoCoMo agrees wwith the intention, to distribute UEs and have some granular control of barring. All or none would not be acceptable. Fraunhofer agrees with DoCoMo.
- ZTE thinks the category disributes UEs. Huawei thinks 90% of UEs will be category 1 in NB-IoT.
- QC thinks that the AS doesn't know the UE identity when initiating access.

Proposal 4: For NB-IoT, uac-BarringForAccessIdentity using a 7 bit map barring corresponding to access identities 1, 2, 11 to 15 is re-used.

Proposal 5: For NB-IoT, the parameter uac-AC1-SelectAssistInfo is used to signal whether Access Category 1 applies to the UE.

Proposal 6: For NB-IoT, do not use UAC-BarringInfoSetList, but instead signal uac-BarringBitmap and uac-BarringForAccessIdentity per access category.

- QC thinks that access category and identity are independent. Huawei agree but think this is how to signal in eLTE also. QC thinks NR and eLTE are not implemented correctly and we should not copy/paste the mistake.

Proposal 7 : For NB-IoT, per-PLMN barring is signalled using a simple list of barring parameters for each PLMN.

Proposal 8: For NB-IoT, UAC parameters are provided in SIB14-NB.

- LG thinks a new SIB may be introduced. Huawei thinks this depends on whether we have a bitmap in which case the SBI14 should be used, or a factor in which case it does not need to be.

Proposal 9: For NB-IoT, introduce a separate bit in MIB-NB, ab-Enabled-5GC, to indicate whether UAC is enabled in SIB14-NB.

Proposal 10: For eMTC, SIB25 follows the generic system information update mechanism and there is no need for specific indication.

Proposal 11: Access barring per RSRP is supported for eMTC and NB-IoT.

Proposal 12: For eMTC, ab-PerNRSRP is introduced in SIB25.

Proposal 13: For NB-IoT, the existing ab-PerNRSRP in SIB14-NB can apply to UAC.

Proposal 14: For NB-IoT and eMTC UEs in RRC_CONNECTED, the UE perfoms access barring check based on the UAC parameters acquired prior to entering RRC_CONNECTED.

- Huawei clarifies that until now the barring is only checked prior to entering connected mode and the proposal relates to the UAC requirement to check barring while UE is already in connected.
- Ericsson wonder if we assume the information is broadcast even when not enabled, and whether it meets the intention if the parameters can't be changed in RRC_Connected.

Proposal 15: For eMTC UEs in RRC_INACTIVE, the UE is required to use a valid version of SIB25 to perform access barring check.

Agreements

- For NB-IoT, up to 64 access categories are defined for support of UAC, same as for eLTE.
- For NB-IoT, will support either barring factor as in eLTE or 10 bit bitmap bitmap as in NB-IoT to distribute UEs. FFS which method.
- For NB-IoT, uac-BarringForAccessIdentity using a 7 bit map barring corresponding to access identities 1, 2, 11 to 15 is re-used.
- For NB-IoT, the parameter uac-AC1-SelectAssistInfo is used to signal whether Access Category 1 applies to the UE.
- FFS: For NB-IoT, do not use UAC-BarringInfoSetList.
- FFS: For NB-IoT, uac-BarringBitmap and uac-BarringForAccessIdentity per access category as in eLTE
- Access barring per RSRP is supported for eMTC and NB-IoT.

✉ **[107bis#89][NB-IoT R16] Open issues on UAC in NB-IoT (Huawei)**
Open issues on UAC in NB-IoT
Intended outcome: Report
Deadline: Next Meeting

R2-1912853 UAC information change indication in 5GC Qualcomm Incorporated discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core R2-1910467

R2-1912855 Unified access control for NB-IoT connected to 5GC Qualcomm India Pvt Ltd discussion Rel-16 NB_IOTenh3-Core

Cell reselection

R2-1913364 Mobility enhancements for Connectivity to 5GC for MTC and NB-IoT Sony discussion Rel-16 NB_IOTenh3-Core

R2-1912851 Idle Mode cell reselection based on CN type supported Qualcomm Incorporated discussion Rel-16 LTE_eMTC5-Core, NB_IOTenh3-Core R2-1910469

General

R2-1912860 Remaning issues on the support of 5GCN connectivity Intel Corporation discussion Rel-16 LTE_eMTC5-Core

7.2.10.2 Other

Including support of Inter-UE QoS for data over NAS (resource prioritization between different NB-IoT UEs), signalling to support 5GC in NB-IoT, e.g. RRC establishment, SIBs, and other NB-IoT specific aspects

R2-1912615 Support of RRC connection Re-establishment for the Control plane for NB-IoT connected to 5GC Huawei, HiSilicon discussion Rel-16 NB_IOTenh3-Core

7.2.11 UE specific DRX

Specify support of UE specific DRX and consider expanding the current DRX range

R2-1912600 Introduction of UE specific DRX for NB-IoT Huawei, HiSilicon discussion Rel-16 NB_IOTenh3-Core

Proposal 1: Remove restrictions on using UE specific DRX for NB-IoT UEs in TS36.300, TS36.304 and TS36.331.

Proposal 2: It is up to SA2/CT1/RAN3 to decide whether and how to extend the value range of UE specific DRX cycle.

R2-1913098 Support for UE specific DRX in NB-IoT Qualcomm Incorporated discussion Rel-16 NB_IOTenh3-Core

Proposal 1: At NAS level UE should receive indication whether core network accepted or rejected UE specific DRX.

Proposal 2: For NB-IoT define set of UE specific DRX values same as those defined for NB-IoT cell specific DRX values.
Proposal 3: For NB-IoT define solution to avoid PO overlap due to increased number of repetitions required in extended coverage.
- Sequans wonder if this issue is applicable to both EPS and 5GC. QC confirms.

Proposal 4: For NB-IoT introduce UE specific DRX only for 5GC from Release 16.
Proposal 5: Send LS to SA2/CT1 to highlight the identified issues and request feedback. A draft LS is provided in [5].

Discussion on above 2 papers:
- Sequans agrees with QC that there is a backwards compatibility issue, and there may be additional power consumption at the UE if we just remove the restriction because UEs might have different understanding of paging carrier, paging frame.
- HW thinks it is important to support for EPC, not only 5GC – this is indicated in the LS from RAN. HW think the backwards compatibility issue can be addressed, but the issues raised are NAS level and the relevant groups have already received the LS.
- CMCC support Huawei and think EPS and 5GC should support this. Ericsson agree.
- QC thinks there is significant work for other groups and we should send an LS to make sure the work is triggered, and we can't make the RAN2 changes without that. Huawei thinks there has already been an LS from RAN and contributions in other groups.
- Intel wonders whether we can solve the backwards compatibility issue at RAN without changing NAS.
- Huawei thinks we can only address the RAN part, while other parts will be discussed in the relevant groups. Sequans wonders whether there is more impact in RAN2 than just removal of the restrictions as proposed by Huawei.

⇒ **Will wait for progress from SA2/CT1**

R2-1913099 Draft LS on UE specific DRX in NB-IoT Qualcomm Incorporated LS out Rel-16 NB_IOTenh3-Core To:SA2, CT1

Late/withdrawn
R2-1913627 NB-IoT UE Specific DRX Support Sequans Communications discussion Rel-16 NB_IOTenh3-Core Late

7.2.12 Other

Others

7.3 Even further mobility enhancement in E-UTRAN

(LTE_feMob-Core; leading WG: RAN2; REL-16; started: Jun 18; target; Mar 20; WID: RP-190921)
Tdoc Limitation: see 6.9 above.

7.3.1 Organizational

Including incoming LSs, running CR proposals and rapporteur inputs (if any)

R2-1912034 LS on enhanced Make-Before-Break data forwarding (R3-194768; contact: Ericsson) RAN3 LS in Rel-16 LTE_feMob, NR_Mob_enh To:RAN2

ACTION: RAN3 respectfully asks RAN2 to consider RAN3 agreement on early data forwarding for enhanced Make-Before-Break handover, and to give feedback on the per DRB enhanced Make-Before-Break option. RAN3 also kindly asks RAN2 to study the possible solutions enabling the source node to provide the DL and UL COUNT values, known by the UE, to the target node.

- Nokia thinks we should cover UL/DL COUNT in the LS reply to RAN3. MediaTek agrees.

- Samsung thinks we could have an email disucssion for te RAN3 LS to better consider UL/DL COUNT for the reply
- Ericsson thinks the issue is about HFN to be used for encryption at the UE side.
- Nokia indicates that RAN3 discussion assumed UE knows the HFN and assumed RAN2 would make the decision. RAN3 would appreciate response.

⇨ **What to reply to RAN3 on COUNT to be included in offline discussion 109. (Might require email discussion to resolve the RAN2 aspects.)**

R2-1913207 Further consideration on reply LSs from RAN1 and RAN4 Huawei, HiSilicon,China Telecom discussion Rel-16 LTE_feMob-Core
(moved from 7.3.2.3)

Output of email discussion [107#76][LTE/feMOB] Running Stage-2 CR for LTE mobility (China Telecom)

R2-1912417 Running 36.300 CR for LTE_feMob China Telecom Corporation Ltd. draftCR Rel-15 36.300 15.7.0 LTE_feMob-Core
⇨ Endorsed

R2-1912778 Stage 2 TP for DAPS based RUDI Intel Corporation draftCR Rel-16 38.300 15.7.0 NR_Mob_enh-Core
(moved from 7.3.2.2.1)

✉ **[107bis#10][LTE MobE] Updated Stage-2 running CR LTE mobility (China Telecom)**
Update running CR based on this meeting's agreements.
Intended outcome: Endorsed running CR
Deadline: 1 week
=> Endorsed in R2-1914007.

Output of email discussion [107#77][LTE/feMOB] Running RRC CR for LTE mobility (Ericsson)

R2-1913400 Running CR for Introduction of Even futher Mobility enhancement in E-UTRAN Ericsson India Private Limited draftCR Rel-16 36.331 15.7.0 LTE_feMob-Core
⇨ To be continued in the email discussion

✉ **[107bis#14][LTE MobE] Updated RRC running CR for LTE mobility (Ericsson)**
Update running CR based on this meeting's agreements.
Intended outcome: Endorsed running CR
Deadline: Next meeting

7.3.2 Reduction in user data interruption (RUDI) during handover for dual active protocol stack (DAPS)

RUDI handovers using DAPS for LTE and NR are treated jointly in under this AI.
No documents should be submitted to 7.3.2. Please submit to 7.3.2.x.

7.3.2.1 User plane aspects of RUDI HO

No documents should be submitted to 7.3.2.1. Please submit to 7.3.2.1.x.

7.3.2.1.1 PDCP/RLC aspects of RUDI HO

Companies should provide their views to the email discussion and contributions submitted to this agenda items should focus on aspects that were not covered by the email. Including outcome of email discussion [107#44][LTE and NR /feMOB] Discussion on PDCP details for RUDI HO (MediaTek/Huawei). Including PDCP/RLC aspects not covered by the email discussion.

Outcome of email discussion [107#44][LTE and NR /feMOB] Discussion on PDCP details for RUDI HO (MediaTek/Huawei).

R2-1912966 Report of email discussion: [107#44][LTE and NR /feMOB] Discussion on PDCP details for RUDI HO Mediatek Inc., Huawei, discussion

(moved from 7.3.2.2.1)

Agreements

1 Confirm that the agreements made in RAN2#107 meeting for LTE RUDI handover with DAPS are applicable to NR RUDI handover.

Security handling:

2 During RUDI HO with DAPS, the end-marker packet to differentiate the security keys is not needed.

3 For DRBs, UE derives the security keys for the target cell and configures the lower layer associated to the target cell to apply the security keys/algorithms upon reception of HO command, while maintaining the security keys/configuration of the source cell. FFS whether the same process can be applied to SRBs.

4 For DRBs, UE releases the security keys/configuration of the source cell along with the release of source protocol.

5 For DL and UL data transfer, UE uses the security keys and algorithms of the source cell and the target cell in parallel from HO successful completion to source cell release.

Discussion

Proposal 5

- vivo thinks this can be either after RACH success of PDCP signalling from network. Intel thinks this doesn't matter.

Agreements

ROHC handling:

6 If drb-ContinueROHC is not configured, UE has two separate ROHC instances, one for the source cell and the other for the target cell.

- UE uses one ROHC compressor instance for UL data transfer;
- UE uses two ROHC decompressor instances for DL data transfer.

7 UE is allowed to transmit the ROHC feedback through the source cell UL if there is DL data on-going from the source cell.

8 The potential ROHC failure issues in DL and UL (if they are valid) are addressed by UE/network implementation without spec impact.

9 *drb-ContinueROHC* is not supported for DAPS in Rel-16.

Discussion

Proposal 6:

- LGE wonders if one decompressor could be used for UL if DL uses two. MediaTek thinks only one PDCP is active for UL due to UL switching.

Proposal 7:

- LGE thinks we should discuss this after we decide whether to separate RoHC entities.
- Samsung wonders how this works with proposal 6.

Proposal 8:

- Huawei thinks only IR packets could be used to avoid any issues so we would need to specify something. LGE agrees. Intel thinks we never specified which RoHC packets are used but using IR makes sense. Doin't need to specify anything.
- vivo thinks there is no RoHC decompression failure. OPPO thinks it can happen but agrees with the proposal.

Proposal 10 Stick to current modelling of reordering in LTE and NR that reordering is performed before header decompression.

Proposal 11 For both LTE and NR, the current PDCP reordering function can be reused to reorder the PDCP PDUs received from the source cell and the target cell when DAPS is configured during HO.

Proposal 12 In NR, one common PDCP reordering is used to realize in-order delivery for header decompression and in-order delivery of PDCP SDUs to upper layer. FFS which part of operation is left to UE implementation.

Agreements for NR and LTE

Reordering:

10 Stick to current process of reordering and RoHC in LTE and NR.

11 For both LTE and NR, the current PDCP reordering function can be reused to reorder the PDCP PDUs received from the source cell and the target cell when DAPS is configured during HO.

Agreements for NR

Reordering:

12 One common PDCP reordering is used to realize in-order delivery for header decompression and in-order delivery of PDCP SDUs to upper layer. FFS which part of operation is left to UE implementation.

Discussion

- NEC thinks “current modelling” is misleading. vivo thinks there is no header decompression before reordering. Nokia wonders if we are supporting RoHC for bearer with reordering, which was not supported before. MediaTek thinks this is about RoHC and reordering only.
- Intel thinks duplication detection is done differently in NR and LTE.

Agreements for NR

UL new data transmission switching:

13 The indication to switch the UL new data transmission and will be specified in MAC.

14 After UL new data transmission switching, data available for transmission/the PDCP data volume is indicated to the MAC entity associated to the target eNB/gNB. UE starts retransmission of packets from the earliest unacknowedged SDU of source cell.

FFS how this is done in specification.

FFS if something different is needed for LTE than NR

15 After UL new data transmission switching, the size of the PDCP control PDUs containing the ROHC feedback to the source cell is indicated to the MAC entity associated to the source eNB/gNB as data available for transmission/the PDCP data volume.

Discusssion

P13

- LGE thinks we should specify the indication because PDCP entity has several tasks to perform at the UL switching. vivo agrees and how this is done should be discussed together with the running CRs.

P14:

- LGE thinks we should just follow current specification with this. vivo agrees that selective retransmission is not currently supported.
- Nokia wonders why we HARQ retransmit to source if we retransmit in target anyway.
- Nokia wonders if PDCP re-establishes Tx part but not Rx part. Currently that is not supported.
- Ericsson thinks all unacknowledged PDCP SDUs should be retransmitted.
- ZTE wonders how this affects BSR – could UE send BSR=0 in Msg3? Nokia thinks UE reports at least RRCComplete from RLC buffer and for UL grant of RRC message could include padding BSR.

Agreements

Single PDCP entity supporting DAPS:
16 The single PDCP entity for DAPS is modelled to have separate security/ROHC functions in the specification.
17 At the UE side for DRB, the normal PDCP entity is changed to the single PDCP entity supporting DAPS upon reception of HO command; the single PDCP entity supporting DAPS is changed to normal PDCP entity upon release of the source cell.
18 The change between the normal PDCP entity and the single PDCP entity supporting DAPS need to be captured in both RRC and PDCP. FFS on how to capture.

Working assumption
19 DAPS configuration per DRB is agreed as working assumption as long as the specification impact is small.

Discussion
Proposal 19
- LGE thinks some DRBs might not need DAPS HO. Huawei thinks current configuration is per UE. Intel thinks the specification impact is smaller from per UE handling. Ericsson thinks RAN3 considers most procedures per DRB but this is not essential.
- Nokia thinks this depends on QoS requirement of DRB. Also RLC modes are per DRB.
- Samsung thinks all UM and AM DRBs should be considered jointly.
- vivo thinks MAC needs to differentiate PDCP entities with per DRB.
- CATT thinks defining all actions per DRB create complexity. Nokia thinks many actions are already per DRB.

Agreements
Impact on network and LS to RAN3:
20 Send LS to RAN3 to inform them of RAN2 agreements on PDCP agreements.

Discussion
- Ericsson thinks we don't need to send LS on data forwarding but would be good to inform of the working assumption. Samsung reminds we should treat RAN3 LS as well before responding.

Agreements
Support of UDC
Proposal 21 FFS whether and what will specify UDC for RUDI HO. Papers proposing to support UDC during RUDI HO should provide details for the support.

CBF: Offline discussion 109 (Huawei): Draft LS to RAN3 on RAN2 agreements. Also discuss what we will call this feature (RUDI, DAPS or something else?). (Draft LS in R2-1913992 and offline discussion outcome on feature naming in R2-1913994)

R2-1913992 Draft LS on RAN2 agreements on LTE/NR mobility enhancements Huawei LS out Rel-16 LTE_feMob-Core, NR_Mob_enh-Core To:RAN3
Proposal 2: As there is no consensus, RAN2 don't send reply LS to RAN3 on COUNT.
- Huawei clarifies that COUNT value is not needed due to RAN3 progressing already.
- Nokia thinks we shouldn't assume what RAN3 did or didn't. Should respond to questions.
- Intel thinks we didn't discuss the details of this issue.
- Qualcomm thinks we could just reply we haven't concluded.

✉ **[107bis#15][NR LTE MobE] LS to RAN3 on RAN2 agreements (Huawei)**

Capture RAN2 agreements affecting RAN3 and discuss whether or what to include on COUNT as per RAN3 request earlier.
Intended outcome: Approved LS to RAN3
Deadline: 2 weeks
=> Email summary endorsed in R2-1914024
=> LSout approved in R2-1914025

R2-1913994 Result of offline discussion 109 on RAN2 agreements for interruption reduction feature name Huawei discussion Rel-16 LTE_feMob-Core, NR_Mob_enh-Core

Agreements
1 RAN2 adopts DAPS HO as the feature name used in all running CRs and LSs.

R2-1913726 Draft CR for 36.323 on supporting DAPS handover Huawei, HiSilicon, Mediatek Inc. draftCR Rel-16 36.323 15.4.0 LTE_feMob-Core

R2-1913727 Draft CR for 38.323 on supporting DAPS handover Huawei, HiSilicon, Mediatek Inc. draftCR Rel-16 38.323 15.6.0 LTE_feMob-Core

✉ **[107bis#55][NR LTE MobE] Running LTE and NR PDCP CRs NR mobility (Huawei)**
Update running CR based on this meeting's agreements (not including conditional PSCell aspects).
Intended outcome: Running CRs for next meeting.
Deadline: Next Meeting

R2-1913728 Draft LS on UL data forwarding and COUNT initialization Huawei, HiSilicon, Mediatek Inc. LS out Rel-16 LTE_feMob-Core To:RAN3

Bearer handling:

R2-1912968 Bearer handling for RUDI during HO with DAPS Mediatek Inc., Intel Corporation, Qualcomm Incorporated,Charter Communications, Apple discussion R2-1909180

Agreements for LTE and NR
1 For each DRB configured with DAPS, upon reception of handover command with DAPS, UE establishes a RLC entity, MAC entity and an associated DTCH logical channel for the target cell. UE keeps the RLC bearer configuration for the source cell.
2 For DRBs, upon reception of handover command with DAPS, UE reconfigures the PDCP entity for DAPS instead of performing PDCP re-establishment.
3 Upon reception of handover command with DAPS, UE associates the RLC entities with the security configurations and the ROHC profiles of PDCP configured by the source cell and the target cell respectively.
4 Upon release of the source cell, UE releases the physical channel configuration; reset MAC of the source cell and release the source MAC configuration; release all RLC entities and logical channels associated to the source cell.

Discussion
Proposal 1:
- Intel thinks we should also create target MAC entity.

Proposal 2
- LGE wonders if this is only for DRB. Mtek clarifies that's correct understanding, SRBs are not considered.
- CATT wonders what this means: Do we have two versions of PDCP? Mtek clarifies this is not the case and is mainly about UE modelling.
- Futurewei wonders how we handle dual functions within single PDCP.

Proposal 4:

- vivo thinks UE could autonomosly release the source link. Huawei thinks we first need to agree whether there is a source cell indication of release. Nokia thinks this is only UE behaviour.
- Samsung thinks we should first discuss release of source configuration.

Proposal 5:
- vivo asks why we don't reset MAC: Intel clarifies this is similar to inter-RAT HO. No need to reset if the MAC is gone.

R2-1913795 PDCP/RLC Re-establishment in DAPS Handover ETRI discussion Rel-16 NR_Mob_enh-Core

R2-1913203 Considerations on user plane for DAPS Huawei, HiSilicon discussion Rel-16 LTE_feMob-Core

Data forwarding

R2-1913157 On early data forwarding and per-DRB eMBB Handover Nokia, Nokia Shanghai Bell discussion Rel-16 LTE_feMob-Core

R2-1913800 On the need of earlier packet forwarding LG Electronics France discussion NR_Mob_enh-Core

(moved from 6.9.2)

R2-1912783 DL data forwarding in DAPS based RUDI HO Intel Corporation discussion Rel-16 LTE_feMob-Core, NR_Mob_enh-Core

(moved from 7.3.2.3)

R2-1913796 Data Forwarding Options and Interruption Time ETRI discussion Rel-16 NR_Mob_enh-Core R2-1909233

R2-1912354 Data forwarding in RUDI HO Ericsson discussion Rel-16 NR_Mob_enh-Core

PDCP impacts

R2-1913053 DL PDCP handling for RLC AM NEC discussion Rel-16 LTE_feMob-Core

R2-1912415 Source PS Release of PDCP DAPS during RUDI Handover Nokia, Nokia Shanghai Bell discussion Rel-16 Late

R2-1913841 Discussion on PDCP impacts for eMOB/feMOB LG Electronics Inc. discussion Rel-16 NR_Mob_enh-Core

R2-1912345 Discussion on the selective PDCP retransmission at UL PDCP PDU switching vivo discussion Rel-16 LTE_feMob-Core

R2-1912348 Issue on the potential duplicated PDCP packets at the network side vivo discussion Rel-16 LTE_feMob-Core

R2-1912912 Discussion on details of PDCP for DAPS China Telecommunications discussion

R2-1912130 Remaining PDCP issues for DAPS CATT discussion Rel-16 LTE_feMob-Core

Handling of RoHC

R2-1912346 Discussion on the ROHC failure issue vivo discussion Rel-16 LTE_feMob-Core

R2-1912355 ROHC handling in RUDI HO Ericsson discussion Rel-16 NR_Mob_enh-Core

R2-1913206 Problems of ROHC handling for DAPS Huawei, HiSilicon discussion Rel-16 LTE_feMob-Core

R2-1912347 Clarificaiton on the reordering after ROHC decompression for NR PDCP vivo discussion Rel-16 LTE_feMob-Core

RLC impacts (including RLC UM support)

R2-1912357 Handover interruption reduction for UM bearers Ericsson discussion Rel-16 NR_Mob_enh-Core

Working assumption
1 RLC UM with PDCP SN number continuity is supported for DAPS. We do not attempt to make RLC UM lossless by introducing RLC AM mechanisms.

⇨ Proponents should bring CRs for this to next meeting

Discussion
Proposal 1:
- vivo wonders what the impact of RLC UM is to UE. Ericsson thinks it's mainly related to PDCP status report. LGE agrees.
- OPPO thinks this is not needed. MediaTek agrees.
- Intel would like to see the changes first. Introducing RLC retransmissions would be not desirable as we already have AM mode.
- LGE thinks we only need PDCP retransmissions for RLC UM. Qualcomm agrees.
- ZTE thinks any PDCP implications could be independent of DAPS.
- Nokia thinks we don't need UM to be lossless. NEC agrees. Ericsson agrees.

R2-1913054 DL PDCP handling for RLC UM NEC discussion Rel-16 LTE_feMob-Core
R2-1913227 PDCP handling and RLC UM support for RUDI HO Nokia, Nokia Shanghai Bell discussion Rel-16 LTE_feMob-Core
R2-1913843 Dicussion on RUDI HO for UM DRB LG Electronics Inc. discussion Rel-16 NR_Mob_enh-Core
R2-1913882 On RLC UM for RUDI HO SHARP Corporation discussion Rel-16 NR_Mob_enh-Core
(moved from 6.9.2)
R2-1912970 RLC Impacts analysis with DAPS during HO Mediatek Inc. discussion

7.3.2.1.2 MAC and UL transmission aspects of RUDI HO

Including output of email discussion [107#78][LTE] MAC aspects for LTE mobility (vivo). Companies should provide their views to the email discussion and contributions submitted to this agenda items should focus on aspects that were not covered by the email. Including MAC aspects not covered by the email discussion, e.g. whether LTE design can also apply for NR (where not already covered by email discussion). Including discussion on the requirement of UE RF capability for UL and whether 1Tx is also considered and how (e.g. explicit UL TDM pattern)?
Including discussion on whether the outcome of 107#78 also applies for NR.

Outcome of email discussion [107#78][LTE] MAC aspects for LTE mobility (vivo):
R2-1912336 Summary of EmailDis-78 on MAC aspects for mobility enhancement vivo (rapporteur) discussion Rel-16 LTE_feMob-Core

Discussion
- Futurewei wonders if all proposals can apply for both LTE and NR. vivo thinks all proposals can apply for both.

Proposal 2
- Intel thinks this is only needed due to previous agreement.

Proposal 3
- Nokia agrees and thinks this proposal covers also P1 and P2. CATT agrees. Huawei agrees.
- OPPO thinks the current agreement was not crystal-clear and the clarification is needed. Intel thinks UL grant in RAR only applies for RRCComplete, not for UP data.
- CATT thinks UE behavour can be define without trying it to reception of UL grant. Only point in time is needed. Futurewei thinks we need to specify the switching point clearly. MediaTek agrees and should try to have as short UL interruption as possible.
- Intel thinks we should allow faster UE implementation.

Proposal 5/6
- Futurewei thinks these are for LTE only because of reordering. MediaTek thinks this is a network issue mostly. Nokia thinks this is confusing. Wonders what the benefit is and would liek to turn these off.
- Futurewei thinks these are not applicable for NR.

Proposal 8:

- CATT thinks we can discuss this when we create the CRs.

Agreements for LTE and NR
1 UE switches the UL PDCP data transmission upon successful RACH procedure (Msg2 for CFRA or Msg4 for CBRA).
2 The UE keeps the UL HARQ (re)transmission of the source link after UL data transmission switching to the target eNB.
3 When an uplink grant indicating the HARQ new transmission is received in the source link after UL data switching, the UE is expected to perform the corresponding UL transmission accordingly.
4 During Rel-16 RUDI handover, the UE only supports two links (i.e. the source MCG link and the target MCG link).

Agreements for LTE
1 RACHless applicability can be discused after procedure has progressed more.

Agreements for NR
2 FFS if Msg.B for 2-step RACH works the same.

⇨ **RLC is discussed separately.**

R2-1912337 Summary of EmailDis-78 on Text Proposal for 38321 of mobility discussion Rel-16 LTE_feMob-Core vivo (rapporteur)

R2-1912338 Summary of EmailDis-78 on Text Proposal for 36321 of mobility discussion Rel-16 LTE_feMob-Core vivo (rapporteur)

⇨ *Not discussed (not fully valid after discusion)*

✉ **[107bis#56][NR LTE MobE] Updated MAC running CR NR/LTE mobility (vivo)**
Update running CR based on this meeting's agreements (not including conditional PSCell aspects).
Intended outcome: Running CRs for next meeting.
Deadline: Next Meeting

UL switching:

R2-1913156 Remaining Details on UL User Data Transmission Switching in eMBB Shanghai Bell discussion Rel-16 LTE_feMob-Core Nokia, Nokia

R2-1912356 Uplink handling in RUDI HO Ericsson discussion Rel-16 NR_Mob_enh-Core

R2-1912505 Further details on dual active protocol stack OPPO discussion Rel-16 LTE_feMob-Core

R2-1912403 UL switching time for DAPS HO OPPO discussion Rel-16 LTE_feMob-Core

UL TDM pattern:

R2-1912838 UL TDM aspects of enhanced MBB HO using Dual Active Protocol Stack Qualcomm Inc, Charter communications, Intel Corp, MediaTek Inc, Apple Inc, Google Inc discussion Rel-16 LTE_feMob-Core R2-1909848

Proposal 1. RAN2 agrees to support both Dual Rx/Dual Tx and Dual Rx/Single Tx RF chain UEs as baseline to support simultaneous reception and transmission with both source and target eNBs during HO execution to meet the requirement of reduced HO interruption time close to 0ms.

Proposal 2. RAN2 agree to adopt UL TDM pattern for DAPS based enhanced MBB HO to enable co-ordinated UL UE's transmission to both source and target eNBs.

Proposal 3. Introduce UE capabilities for UL TDM requirement for various use cases.

Proposal 4. RAN2 agrees to configure UL TDM pattern configuration to DAPS HO UE in HO command message sent from source eNB to UE. FFS about need to specify timeline for TDM activation based on UL TDM pattern decision.

Proposal 5. UE releases UL TDM pattern when target eNB indicates release of source cell stack and target eNB scheduling restrictions for UE will be released.

Proposal 6. RAN2 agrees to send an LS to RAN1 and CC: RAN4 about what is UL TDM pattern to be used for DAPS LTE HO.

Proposal 7. Based on network configuration request, if UE is capable of measuring DL timing delta between source and target eNBs then UE will measure and send timing delta information as part of UE measurement reporting. Network uses this timing delta information to determine UL TDM pattern to avoid collisions.

Discussion
- ZTE thinks TDM pattern is fine if it's optional and procedures work also without it. Ericsson thinks this is only for LTE and NR doesn't need TDM pattern. Nokia agrees and thinks RAN1 has no time for LTE WIDs.
- Intel wonders how this works single UL and FR2-FR2 HOs if we don't have TDM pattern.
- Huawei asks if TDM pattern only applies for intra-frequency HO. For async RAN1/4 had no conclusion.
- ZTE thinks we need a solution where TDM pattern is not provided. CATT agrees this is an optimization. Intel thinks this is needed for async intra-frequency and FR2-FR2.
- Ericsson thinks we could just let network coordinate UL scheduling.
- Samsung thinks we shouldn't have TDM pattern.
- MediaTek thinks we should have network coordination.
- Apple thinks we should support FR2 enhancements. Ericsson thinks even dual Rx is not supported in FR2.
- OPPO asks if there are RAN3 impacts and whether we need to handle the collisions if coordination is not done. ZTE thinks there are no RAN3 impacts and we need to specify the collisions.
- Qualcomm thinks TDM pattern is specified for LTE already. Ericsson thinks that's only for EN-DC, not LTE-LTE, and requires RAN1 work.

Agreements for NR
1 We do not support TDM pattern.
2 We leave it up to network implementation how to coordinate UL scheduling.
3 For single UL transmission, we will not specify rules how UE handles which link to transmit if UL should be sent to both source and target.

Coffee break discussion: Discuss what we can adopt for LTE for TDM pattern (QC).
- Qualcomm indicates that optional TDM pattern is not an issue for LTE network
- Vivo thinks CBRA it is difficult to coordinate UL even if it would work for CFRA.

CBF: Offline discussion 106 (Qualcomm): LS draft to RAN1 on TDM pattern feasibility for LTE. indicate RAN2 couldn't conclude and would like to understand the RAN1 feasibility. (R2-1913991)

R2-1913991 [Draft] LS on uplink TDM pattern feasibility for LTE DAPS Qualcomm Incorporated LS out Rel-16 LTE_feMob-Core To:RAN1 Cc:RAN4
- Qualcomm thinks we need to ask RAN1 to specify this if feasible.
- Nokia thinks RAN2 didn't conclude but shouldn't ask RAN1 to specify. Ericsson agrees leave it up to RAN1 whether to specify.
- Futurewei thinks we should communicate RAN2 agreements.

⇨ **Use "respectfully" instead of "kindly"**
⇨ **With these changes, the LS is approved unseen in R2-1913996**

R2-1912359 TDM pattern for single uplink in RUDI HO Ericsson discussion Rel-16 NR_Mob_enh-Core

(moved from 7.3.2.3)

R2-1912848 [Draft] LS on uplink TDM pattern for LTE DAPS based enhanced make-before-break HO Qualcomm India Pvt Ltd LS out Rel-16 LTE_feMob-Core To:RAN1 Cc:RAN4

7.3.2.2 Control plane aspects of RUDI HO

No documents should be submitted to 7.3.2.2. Please submit to 7.3.2.2.x.

7.3.2.2.1 RRC procedures during RUDI HO

Companies should provide their views to the email discussion and contributions submitted to this agenda items should focus on aspects that were not covered by the email.
Including outcome of email discussion [107#29][NR/Mob-enh] CP for DAPS (Vivo)
Including discussion on RRC procedures, SRB handling and RLM procedures not covered by the email discussion e.g. whether NR design can also apply for LTE (where not already covered by email discussion).
Including discussion on whether the outcome of 107#29 also applies for LTE.

Outcome of email discussion [107#29][NR/Mob-enh] CP for DAPS (Vivo)

R2-1912349 Summary of Email Discussion on CP for DAPS vivo (rapporteur) discussion Rel-16 LTE_feMob-Core

Agreements
1 T304 is reused to determine the DAPS handover failure.
2 When the DAPS handover fails, the UE report the DAPS handover failure via the source link without triggering RRC connection re-establishment if the source link is still available (i.e. RLF is not declared).
3 When the DAPS handover fails, the UE resumes the DRB data transmission via the source link if the source link is still available.
4 Before the successful completion of the RACH to the target cell, the UE keeps the source link failure detection.
5 Before the successful completion of the RACH to the target cell, when the source link fails, the UE releases the source link (but not source RRC configuration which may be used for re-establishment) and stops any data transmission or reception via the source link.
6 After the successful completion of the RACH to the target cell and before the release of the source link, the UE does not keep the source link failure detection of the source link.
8 As the legacy handover, the UE continues the RACH to the target cell before the DAPS handover failure is claimed, even though the target MAC entity indicates the random access problem.
9 After the successful completion of RACH to the target cell, the target link RLM is the same as the legacy UE
10 After the target cell RACH completion and before the release of the source cell, when the target link fails, the UE triggers RRC connection re-establishment.
11 If both the handover/target link failure and the source link failure occur, the UE triggers RRC connection re-establishment.
12 The UE has only one RRC state/entity.

Discussion

Proposal 2:
- Nokia thinks this wil only increase complexity as the later proposals show. vivo thinks very clear majority thought this should be supported. Ericsson thinks most re-establishment attempts are for target cell instead of source cell so this might increase failures. LGE thinks that since source cell is available it's good to use it.
- Qualcomm thinks this might happen more often with RUDI HO. ZTE thinks this is still HO and the goal is to move to target cell and not to stay in source. Hence, this could make the performance worse.
- Huawei thinks P2 is needed. Samsung thinks this helps to reduce HOFs in network.
- Ericsson thinks this is intra-fquency and not inter-fequency.
- Nokia wonders what's the criteria for "available" to source cell?
- Ericsson thinks there could be some RAN3 impacts.

Proposal 3
- LGE wonders what "resume" means here as source still continues data transmission. vivo clarifies this applies for per-DRB configuration case when not all DRBs stopped source link.

Proposal 5:
- CATT wonders why UE releases the source link. vivo thinks UE keeps RLM to source cell while T304 is running. CATT thinks UE just needs to stop tx/rx but not release source configuration. Futurewei agrees.

Proposal 6:
- LGE thinks RLC retransmission failure could be handled differently.
- Nokia wonders how source performance is ensured of source RLM stops?
- OPPO thinks UE should continue RLM while sending data to source cell.

General CP details

R2-1912776 Control plane consideration for dual active protocol stack (DAPS) based RUDI HO Intel Corporation, Qualcomm Inc, Charter Communications,Mediatek Inc, Apple discussion Rel-16 LTE_feMob-Core, NR_Mob_enh-Core R2-1910383

R2-1912777 Control plane signaling flow for DAPS based RUDI HO Intel Corporation discussion Rel-16 LTE_feMob-Core, NR_Mob_enh-Core R2-1909572

R2-1912131 Further Considerations on CP of DAPS-RUDI CATT discussion Rel-16 LTE_feMob-Core

R2-1912350 Discussion on the signaling procedures of the RUDI HO vivo discussion Rel-16 LTE_feMob-Core

R2-1912358 Control plane handling in RUDI HO Ericsson discussion Rel-16 NR_Mob_enh-Core

R2-1913205 Considerations on control plane for DAPS Huawei, HiSilicon,China Telecom discussion Rel-16 LTE_feMob-Core

R2-1913798 Source Cell Release in DAPS Handover ETRI discussion Rel-16 NR_Mob_enh-Core

R2-1912294 Lossless Make-Before-Break (MBB) HO support for Low latency, high reliability services Qualcomm Incorporated discussion
(moved from 6.9.2)

R2-1912296 DAPS HO support for simultaneous Tx not feasible scenarios Qualcomm Incorporated discussion
(moved from 6.9.2)

R2-1912299 Supporting per DRB MBB HO configuration Qualcomm Incorporated discussion
(moved from 6.9.2)

R2-1912300 Support Tx sharing during DAPS HO Qualcomm Incorporated discussion
(moved from 6.9.2)

R2-1913799 Control plane management during/after DAPS HO LG Electronics France discussion NR_Mob_enh-Core
(moved from 6.9.2)

R2-1913842 When to apply the target network configurations LG Electronics Inc. discussion Rel-16 NR_Mob_enh-Core
(moved from 7.3.2.3)

Source cell RLM during RUDI HO

R2-1913840 Handling of RLF for eMOB LG Electronics Inc. discussion Rel-16 NR_Mob_enh-Core

R2-1912504 Discussion on RLM for LTE mobility enhancement OPPO discussion Rel-16 LTE_feMob-Core

R2-1913929 Source RLM handling for RUDI HO with DAPS SHARP Corporation discussion Rel-16 LTE_feMob-Core R2-1911421

R2-1912295 Source connection handling during Make-Before-Break (MBB) HO Qualcomm Incorporated discussion
(moved from 6.9.2)

R2-1913797 Bye Message for RUDI Handover ETRI discussion Rel-16 NR_Mob_enh-Core

R2-1913865 RLM Handling of Enhanced MBB HO LG Electronics Inc. discussion Rel-16 NR_Mob_enh-Core R2-1911114
(moved from 6.9.2)

7.3.2.2.2 UE capabilities for RUDI HO

Companies should provide their views to the email discussion and contributions submitted to this agenda items should focus on aspects that were not covered by the email.
Including output of email discussion [107#79][LTE/feMOB] Capability coordination for RUDI HO (QC)
Including discussion on which UE capabilities are defined for RUDI HO (for both LTE and NR).
Including discussion on whether the outcome of 107#79 also applies for NR.

Outcome of email discussion [107#79][LTE/feMOB] Capability coordination for RUDI HO (QC)

R2-1912821 Email discussion report for [107#79] [LTE/feMOB] Capability coordination for RUDI HO Qualcomm India Pvt Ltd discussion Rel-16 LTE_feMob-Core

Proposal 1+2:
- Qualcomm wnwats to ensure both source and target coordination. ZTE thinks UE doesn't know if something is coordinated.
- Ericsson thinks we don't yet know what needs to be coordinated.
- Samsung thinks we never specify UE behaviour for exceeding capabilities Intel and LGE agree.

Proposal 7:
- Ericsson wonders why we would release some and deactivate some SCells. QC thinks network wants to ensure UE capabilities are not exceeded.

Proposal 8:
- Qualcomm thinks source can't send modified configuration to target cell. ZTE thinks it's sufficient to send current configuration to target and let target cell handle it.
- Nokia thinks we sohuld clarify whether source can reconfigure UE during the DAPS or not. Scheduling restrictions could be sufficient. ZTE wonders if target could also reconfigure source configuration. Qualcomm thinks this could be done. Nokia thinks target can just schedule minimum RRC configuration but does not modify source configuration.
- Huawei thinks this is just network implementation: Source can change UE config before sendin HO command. Ericsson would like to avoid frequent reconfigurations to source. Some rules for e.g. dropping SCells would be fine.
- LGE wonders if target cell comprehends source cell configuration or vice versa.
- ZTE thinks we could also send two reconfigurations in the same MAC PDU (one from source, one from target).

Agreements for both NR and LTE
1 If capability coordination is used, source and target cell configurations ensure UE capabilities are not exceeded (like now).
2 If UE capabilities are exceeded, UE behaviour is unspecified.
3 FFS if we specify behaviour for specific capabilities (e.g. UL tx power) or fallback to legacy handover (given that UE doesn't know whether network uses capability coordination). Will diucss these based on company contributions.
4 DAPS HO supports having RRC message(s) containing configuration from source cell and target cell. FFS whether this is done with 1 or 2 RRC messages.

Proposals on UE capability structure:

R2-1912782 Capability design for DAPS based RUDI HO Intel Corporation discussion Rel-16 NR_Mob_enh-Core, LTE_feMob-Core
Proposal 1: UE capability is indicated per CA band combination and per synchronized and asynchronized case.
Proposal 2: For intra-freq case, introduce UE capability to indicate whether there is limitation on time difference and power limitation.

Proposal 3: If RAN1/4 cannot finish analysis of capability requirement more than 2 CCs, in Rel-16, only source PCell and target PCell are supported during DAPS handover, i.e. source SCell(s) are released, and the target PCell(s) can only add SCell after DAPS handover.
Proposal 4: RAN2 to discuss the following 2 options to support DAPS:
- *Option A: extend existing CA band combination structure to support DAPS*
- *Option B: create new structure to support only 2 CCs to support DAPS.*

✉ **[107bis#53][NR LTE MobE] UE capability structure DAPS/RUDI HO (Intel)**
Determine the capability signalling structure on DAPS/RUDI.
Intended outcome: TP on UE capability structure.
Deadline: Next Meeting

CBF: Offline discussion 110 (Intel): Draft LS to RAN1/4 on UE capabilities on RUDI HO (R2-1913993)

R2-1913993 [Draft] LS for DAPS Handover UE capabilities Intel Corporation LS out Rel-16 LTE_feMob-Core To:RAN1, RAN4
- Nokia wonders if we should say something about L2 buffers.Intel thinks this is not necessary.
- Samsung prefers email discussion

⇨ **Use "bandwidth class" for LTE/NR in assumption 2**

✉ **[107bis#09][NR LTE MobE] LS to RAN1/4 on UE capabilities (Intel)**
Send LS to RAN1/4 on UE capabilities for DAPS/RUDI based on R2-1913993.
Intended outcome: Approved LS to RAN1/4
Deadline: 1 week
=> Approved in R2-1913999.

R2-1913016 UE capabilities for RUDI handover Nokia, Nokia Shanghai Bell discussion Rel-16 NR_Mob_enh-Core, LTE_feMob-Core R2-1909312

R2-1912822 UE capability sharing aspects for DAPS based enhanced MBB HO Qualcomm Inc, Charter communications, Intel Corp, Appl Inc, Google Inc discussion Rel-16 LTE_feMob-Core R2-1909875

R2-1913204 Considerations on UE capability coordination Huawei, HiSilicon discussion Rel-16 LTE_feMob-Core

R2-1912129 Further Considerations on Capability Coordination for DAPS-RUDI CATT discussion Rel-16 LTE_feMob-Core

R2-1912506 Further considerations on capability coordination OPPO discussion Rel-16 LTE_feMob-Core

R2-1913055 Capability coordination for DAPS based handover NEC discussion Rel-16 LTE_feMob-Core

R2-1913486 Discussion on capability coordination for RUDI HO ZTE Corporation, Sanechips discussion Rel-16 LTE_feMob-Core

R2-1913592 Capability coordination for DAPS, required UE capability details and signalling Samsung Telecommunications discussion Rel-16 LTE_feMob-Core Late

UE behaviour if UE capabilities are exceeded during RUDI HO:

R2-1913056 Behaviours when handover configuration exceeds UE capabilities NEC discussion Rel-16 LTE_feMob-Core

R2-1913864 Handling Excess of UE Capability in DAPS HO LG Electronics Inc. discussion Rel-16 NR_Mob_enh-Core
(moved from 6.9.2)

LS to RAN1/4 on UE capabilities:

R2-1912839 [Draft] LS for DAPS Handover UE capabilities Qualcomm India Pvt Ltd LS out Rel-16 LTE_feMob-Core To:RAN1, RAN4

7.3.2.3 Other aspects of RUDI HO

Including any other open aspects of RUDI HO not covered by the other agenda items (for both LTE and NR).

Support of LTE Rel-14-like MBB HO for NR:

R2-1912473 On Supporting Make-Before-Break in NR Samsung discussion NR_Mob_enh-Core
(moved from 6.9.2)

R2-1912479 Introducing Make-Before-Break in NR Samsung draftCR Rel-15 38.331 15.7.0 NR_Mob_enh-Core
(moved from 6.9.2)

R2-1913910 Specification Impacts to specify Single Stack solution for NR Samsung Electronics Polska discussion
(moved from 6.9.2)

R2-1913911 Single stack eMOB solution for 1Rx NR Ues Samsung Electronics Polska discussion
(moved from 6.9.2)

7.3.3 Conditional Handover

Contributions on conditional handover for LTE and NR are treated jointly in under 6.9.3. Do not use this AI for any item that can be discussed jointly.

7.4 Further performance enhancement for LTE in high speed scenario

(LTE_high_speed_enh2-Core; leading WG: RAN4; REL-16; started: Jun 18; target; Sep 19; WID: RP-181482)
Time budget: 0.3 TU. Including output of email discussion [107#43][LTE/High speed] UE capabilities for enhanced high speed scenario (DOCOMO)

Outcome of email discussion [107#43][LTE/High speed] UE capabilities for enhanced high speed scenario (DOCOMO):

R2-1913059 Introduction of RRC parameters and UE capabilities for enhanced high speed scenario NTT DOCOMO INC. CR Rel-16 36.331 15.7.0 4095 2 B LTE_high_speed-Core R2-1911471

⇨**Agreed in principle.**

R2-1913066 Introduction of UE capabilities for further performance enhancement for LTE in high speed scenario in Rel-16 CMCC, Huawei, HiSilicon, NTTDOCOMO, INC. CR Rel-16 36.306 15.6.0 1712 2 B LTE_high_speed_enh2-Core R2-1909772

⇨**Agreed in principle.**

⇨**WID is complete from RAN2 viewpoint.**

7.5 Other LTE Rel-16 WIs

This agenda item is to be used for LSs and documents relating to Rel-16 LTE but for which there is no existing RAN WI/SI (e.g. LSs from CT/SA requesting RAN2 action) or for which there is no allocated RAN2 time.

Enhancements for Rel-15 QMC functionality that were left out of Rel-15 but requested by SA4:

R2-1912638 Discussion on incoming LS for QoE measurement collection in LTE Ericsson discussion TEI16

R2-1912763 Discussion on potential impacts due to management of QMC Huawei, HiSilicon discussion Rel-16 TEI16
(moved from 7.6)

(Discussed jointly)

- Ericsson clarifies we should do what SA5 asked. Huawei thinks RAN2 did what was asked and nothing else is needed, and new information from SA5 requires more work.
- Nokia agrees with Huawei that Rel-15 has no errors. If we do what SA5 asks, the container is no longer transparent. The SA5 requirements are not necessarily correct. RRC reconfigurations already allow control of UEs.
- Ericsson thinks it's not clear how to turn off the QMC measurements without interrupting the measurements. Thinks we should at least explain to SA5 how RRC works with what they request.
- Huawei thinks this is also a RAN3 matter and needs to be coordinated with RAN3 and SA5. It's a new feature and not TEI. Nokia agrees we don't have time for this. The proposed work has also UE impacts.

Offline discussion 102 (Ericsson): Clarify what could be discussed in email discussion: What are the potential questions to be answered. Outcome of offline discussion can be provided in R2-1913990

R2-1913990 Result of offline discussion 102 on scope of QMC email discussion Ericsson discussion TEI16

- Not available.
- Ericsson reports no comments were received during offline so far. Would like to send LS. Huawei wonders what the content of the LS would be. Ericsson thinks this can be checked in email discussion.
- Nokia would like more time to check.

⇨ **Postponed**

R2-1912639 Corrections of QoE measurement collection 15.7.0 4105 - C TEI16 Ericsson CR Rel-15 36.331

R2-1912640 Draft reply LS on QoE Measurement Collection RAN3, SA4 Ericsson LS out To:SA5 Cc:CT1,

R2-1912764 Draft reply LS on QoE Measurement Collection Cc:CT1, RAN3, SA4 Huawei LS out Rel-16 TEI16 To:SA5

(moved from 7.6)

7.6 LTE TEI16 enhancements

Small Technical Enhancements to LTE. TEI should be predominantly within a single WG and fully completed within the same quarter in all affected WGs. RAN2 impact of RAN1/4-led TEI shall be limited to RRC signalling of configuration parameters and UE capabilities (no MAC impact, no RRC procedural impact, etc). Please also see RP-191602 endorsed at RAN#84.

Time budget: 0.5 TU

Non-3GPP paging for LTE connected to 5GC:

R2-1912759 Discussion on paging issue for LTE-5GC LTE_5GCN_connect-Core, TEI16 Huawei, HiSilicon discussion Rel-15

(moved from 4.5)

- Ericsson supports the intent but wonders if Rel-16 UEs still obey the legacy indication (i.e. at paging message level instead of UE record level). Nokia agrees this should be ensured and is not sure the CR is correct. Intel also wonders hwo the backward-compatibility is solved: Are both flags broadcast? Huawei clarifies different IEs are used for different releases. CN knows the UE release and would send the corresponding paging. Nokia thinks the UE release is not always available at CN so both flags could be sent. Ericsson thinks paging assistance information includes the release of the UE
- Ericsson supports the proposal but thinks technical details need work.

- Qualcomm wonders how this change affects eMTC and NB-IoT. Huawei clarifies NB-IoT has a different paging message. Nokia wonders if eMTC devices connect to Wifi as this only concerns non-3GPP interworking. Intel is still not sure if this can work since eMTC uses the same paging message and there coule be backward compatibility problems.

⇨ **We will add a new non-3GPP access type flag to paging message for Rel-16. FFS whether this will be applicable to eMTC (will need to specify something for how to handle the non-3GPP flag for eMTC). FFS how to resolve backward compatibility, including eMTC.**

✉ **[107bis#51][LTE R16] Handling of non-3GPP paging for Rel-16 UEs (Huawei)**
Discuss how to handle the paging for non-3GPP access using the Rel-15 or Rel-16 flag, including how this works for eMTC.
Intended outcome: Report and CR for next meeting, implementing the changes to specification(s).
Deadline: Next Meeting

R2-1912760 Correction on paging for LTE-5GC - B LTE_5GCN_connect-Core, TEI16 Huawei, HiSilicon CR Rel-15 36.331 15.7.0 4106

(moved from 4.5)

⇨ **Postponed (to be discussed as part of the email discusion)**

Outcome of email discussion 107#50 (Introduction of wideband PRG size):

R2-1913716 Introduction of wideband PRG size 15.6.0 B TEI16 Huawei, HiSilicon draftCR Rel-16 36.306

R2-1913717 Introduction of wideband PRG size 15.7.0 B TEI16 Huawei, HiSilicon draftCR Rel-16 36.331

Both CRs covered together, following apply to both CRs:

⇨**Endorsed as email discussion outcome. To be submitted as (Rel-16) CRs next time with following changes:**

- **Add CR number to next version of CRs**
- **Add cross-reference of CRs to impact**
- **Ensure all change marks are correct**
- **Correct date**
- **Check cover page**
- **Remove revision history (only used in draft CRs)**

CMAS/ETWS enhancements, e.g. using WUS, for devices configured with eDRX (NOTE that this topic has some commonality with Rel-16 eMTC discussion on ETWS/CMAS in connected mode for non-BL UEs; WUS is currently only supported by eMTC/NB-IoT UEs):

R2-1913382 CMAS/ETWS Reception at UE Configured with eDRX Apple discussion Rel-16 TEI16

Proposal 1: Suggest RAN2 to improve the CMAS/ETWS reception scheme of UE configured with eDRX to meet the latency requirement.

Proposal 2: Introduce a simultaneous DRX and eDRX based paging monitoring scheme at UE side.

- *DRX based paging scheme with WUS for CMAS/ETWS indication and reception*
- *Normal eDRX based paging scheme for normal paging message*

Proposal 3: Consider possible enhancement to allow UE wake up less frequently by introducing dedicated WUS sequence for ETWS/CMAS.

- *DRX scheme with dedicated WUS for ETWS/CMAS indication and reception*
- *Normal eDRX based paging scheme for normal paging reception*

Discussion

- Nokia wonders if there is a requirement for small devices to meet regulatory requirements (e.g. CMAS) so that this is a valid use case. Apple clarifies that CMAS requirement is critical to all devices. Nokia is not so sure these are normative or just operator preferences. Apple thinks a watch is still considered a phone.

- Qualcomm thinks the form factor limits certain functionalities. CMAS reception might drain the battery. eDRX already doesn't fulfill all requirements.
- Ericsson wonders if the requirements of CMAS and ETWS have the same requirements and sees this as problematic. The problem is in battery consumption in general not just specific to this case.
- Intel thinks the problem is real but not sure if this is the right solution. This might also affect other WGs.
- Qualcomm agrees and thinks this cannot be done in TEI16.

⇨ **Noted (no support).**

UDC enhancements:

R2-1913718 Discussion on UDC reconfiguration for RRC connection reestablishment case Huawei, HiSilicon discussion Rel-16 TEI16

Proposal 1: E-UTRAN can configure uplinkDataCompression via the first RRCConnectionReconfiguration message after successful completion of the RRC connection re-establishment procedure.

Proposal 2: A new UE capability is introduced to indicate whether the UE can be reconfigured with UDC via the first reconfiguration message after RRC connection re-establishment procedure.

Discussion

- CATT supports the enhancements bit is not sure capability is needed. Thinks all Rel-16 UEs supporting UDC could support this.
- Huawei thinks capability bit was seen necessary last time.
- Samsung thinks this is just about overhead. This is already possible via handover. Huawei thinks HO increases overhead.
- Qualcomm supports and thinks no need for capability. LGE also supports. Samsung also thinks capability is not needed.
- Nokia sees this as beneficial. Thinks clarification to capability is needed even if we do not introduce new capability bits. Intel thinks capability bit depends.

⇨ **Agree to introduce this enhancement as TEI16. CRs can be submitted to next meeting.**

CB: Offline discussion 103 (Huawei): Whether this feature can be mandatory in Rel-16 UEs supporting UDC. Result of offline discussion can be provided in R2-1913988.

R2-1913988 Result of offline discussion 103 on UDC reconfiguration for RRC connection reestablishment case, Huawei discussion TEI16

- Huawer reports 5 companies participated and all think this can be mandatory
- Chair wonders if this requires capability bit. Nokia explains Rel-15 bit can be used.

⇨ **The UDC enhancement will be mandatory for Rel-16 UEs supporting UDC.**

R2-1913719 UDC reconfiguration for RRC connection re-establishment case Huawei, HiSilicon draftCR Rel-16 36.306 15.6.0 C TEI16

R2-1913720 UDC reconfiguration for RRC connection re-establishment case Huawei, HiSilicon draftCR Rel-16 36.331 15.7.0 C TEI16

⇨**Postponed (to be handled in the next meeting as per above)**

UAV enhancements:

R2-1912446 Correction on H1 and H2 events Samsung Electronics Co., Ltd CR Rel-16 36.331 15.7.0 4103 - F TEI16

- Qualcomm wonders if the second change if correct. First change already implies it. Samsung thinks the first change is about inclusion of measId and second is about removal of measId.
- Qualcomm is not sure this CR is needed and whether it modifies anything.

⇨**Agree to adopt the first change (with rewording). Discuss the second change offline.**
⇨**Change to Cat.C**

CB: Offline discussion 104 (Samsung): Updated CR on Correction on H1 and H2 events can be provided in R2-1913989.

R2-1913989 Correction on H1 and H2 events Samsung Electronics Co., Ltd CR Rel-16 36.331 15.7.0 4103 1 F TEI16
- Samsung explains that also magic sentence was added to cover page.
- Samsung explains some parts were removed from the second change because they were not needed (leaving condition already implies that).

⇨ **Add italics to eventH2 in the next submitted version**
⇨ **Agreed in principle.**

MDT enhancements:

R2-1912761 Discussion on UE behaviours on location info for logged MDT Huawei, HiSilicon discussion Rel-16 TEI16

Observation 1: The UE should collect its location info for logged MDT in idle state.
Observation 2: We observe that some Ues will trigger a state transition from idle state to connected state if the UE wants to get location info for logged MDT.
Observation 3: For observation 2, if lots of Ues are doing it, it may lead to additional signallings, additional network resources, and also more UE power consumption.
Proposal 1: It is proposed RAN2 to discuss the solutions to solve the issue, and one possible solution is that the network sends a flag to Ues, and the flag is to control whether the UE is allowed to perform state trnasition in order to request location info for logged MDT.

Discussion
- Nokia wonders what the observed issues are in real networks. Huawei clarifies that there are different kinds of UEs and some consume more power than others.
- Ericsson thinks this is a bad UE implementation issue and very late. Specification already supports this. Nokia agrees. Qualcomm also agrees that UE doesn't need to be CONNECTED to use GNSS.
- Qualcomm and Intel think UEs in the field will not implement this solution anyway. Better to solve the UE implementation in the first place. No new solutions are needed.

⇨ **Noted.**

R2-1912762 Correction on location info collection for logged MDT Huawei, HiSilicon CR Rel-16 36.331 15.7.0 4107 - F TEI16
⇨**Not pursued.**

R2-1912416 Broadcast of Barometric Pressure Assistance Data Polaris Wireless, FirstNet, Intel, AT&T, NextNav discussion TEI16, LCS_LTE_acc_enh-Core

R2-1912737 Addition of broadcast of barometric pressure assistance data Polaris Wireless, FirstNet, Intel, AT&T, NextNav CR Rel-16 36.331 15.7.0 4026 1 C LCS_LTE_acc_enh-Core, TEI16R2-1908847
To be updated for the February meeting (when there will be a new version of the spec)
⇨ Endorsed as a baseline CR

R2-1912738 Addition of broadcast of barometric pressure assistance data Polaris Wireless, FirstNet, Intel, AT&T, NextNav CR Rel-16 36.355 15.5.0 0242 1 C LCS_LTE_acc_enh-Core, TEI16R2-1908848
To be updated for the February meeting (when there will be a new version of the spec)

⇨ Endorsed as a baseline CR

R2-1912421 Sensor Provide Location Information Element Correction Polaris Wirelessdiscussion TEI16

R2-1912422 Sensor Provide Location Information Elements Correction Polaris WirelessCR Rel-16 36.355 15.5.0 0245 - F TEI16

Qualcomm think some fine-tuning of the field description is needed, and there needs to be a UE capability and a request for providing it.
Nokia wonder why we would not provide the compensated measurements rather than the adjustments. Polaris clarify there is an external requirement to include the uncompensated measurements in some areas. Nokia were thinking of providing both. Polaris consider that it makes no real difference whether you provide the adjustment or the compensated value, but this solution aligns with LPPe.
Qualcomm think the adjustment is a smaller value, and this way the server gets both pieces of information. Ericsson agree.
⇨ To be revised. Offline discussion 403 (Polaris); revision in R2-1914074.

R2-1914074 Sensor Provide Location Information Elements Correction Polaris WirelessCR Rel-16 36.355 15.5.0 0245 1 F TEI16

Nokia think “compensated measurement” would be better than “accurate measurement”.
Qualcomm suggest removing “correction” from the title.
⇨ Endorsed with these changes (to be seen at the February meeting).

R2-1913849 Broadcast of TBS assistance data NextNav, AT&T, FirstNet, Polaris Wireless CR Rel-16 36.331 15.7.0 4134 - C TEI16, LCS_LTE_acc_enh-Core

Qualcomm wonder why there is only one SIB type for UE-based and UE-assisted. NextNav think it is OK only to use one, as with sensors. Qualcomm point out this would mean the same ciphering for both. Ericsson think it would be reasonable to have separate posSIBs.
Ericsson have some concern that the number of posSIBs is growing.
Intel think if the contents of the UE-based and UE-assisted SIBs are the same, the distinction does not matter.
Qualcomm are concerned that the UE supporting only UE-assisted should not receive the AD for UE-based. NextNav agree perhaps a second SIB should be created.
⇨ To be revised. Offline discussion 404 (NextNav); revision in R2-1914075.

R2-1914075 Broadcast of TBS assistance data NextNav, AT&T, FirstNet, Polaris Wireless CR Rel-16 36.331 15.7.0 4134 1 C TEI16, LCS_LTE_acc_enh-Core
⇨ Endorsed

R2-1913850 Broadcast of TBS assistance data NextNav, AT&T, FirstNet, Polaris Wireless CR Rel-16 36.355 15.5.0 0246 - C TEI16, LCS_LTE_acc_enh-Core

⇨ To be revised. Offline discussion 404, revision in R2-1914076.

R2-1914076 Broadcast of TBS assistance data NextNav, AT&T, FirstNet, Polaris Wireless CR Rel-16 36.355 15.5.0 0246 1 C TEI16, LCS_LTE_acc_enh-Core
⇨ Endorsed

7.7 Support of Indian Navigation Satellite System (NavIC)

(LCS_NAVIC; leading WG: RAN2; REL-16; started: Sept 19; target; March-20; WID: RP-192350)
Time budget: 0.5 TU

R2-1912306 Support for Indian Navigation Satellite System (NavIC) Reliance Jio discussion Rel-16 Late

R2-1913937 CR of TS 36.305 for introducing NavIC in LTE Reliance Jio, MediaTek Inc., Huawei, CEWiT, Saankhya Labs CR Rel-16 36.305 15.4.0 0084 - B LCS_NAVIC
⇨ Endorsed as a baseline CR

R2-1913938 CR of TS 36.355 for introducing NavIC in LTE Reliance Jio, MediaTek Inc., Huawei, CEWiT, Saankhya Labs CR Rel-16 36.355 15.5.0 0247 - B LCS_NAVIC
⇨ Revised in R2-1914071

R2-1914071 CR of TS 36.355 for introducing NavIC in LTE Reliance Jio, MediaTek Inc., Huawei, CEWiT, Saankhya Labs CR Rel-16 36.355 15.5.0 0247 1 B LCS_NAVIC
Some interest in offline checking. Can be revised with any changes for November meeting.
⇨ Endorsed as a baseline CR

R2-1913939 CR of TS 36.331 for introducing NavIC in LTE Reliance Jio, MediaTek Inc., Huawei, CEWiT, Saankhya Labs CR Rel-16 36.331 15.7.0 4137 - B LCS_NAVIC

Nokia wonder if the IDC aspects should be addressed as part of this WI or separately.
CATT are concerned about the SI impacts and would like more time to check.
Nokia think the IDC changes should be checked with IDC experts.
For offline checking in the areas of concern. Can be revised with any changes for November meeting.
⇨ Endorsed as a baseline CR

7.8 Breakout session reports

CB (start after lunch)

7.8.1 Report from session on LTE legacy, LTE TEI16 and NR/LTE Rel-16 Mobility

R2-1914131 Report from session on LTE legacy, LTE TEI16 and NR/LTE Rel-16 Mobility Vice Chairman (Nokia) report

⇒ **approved**

CBF: Offline 105 (Intel): Capturing agreements in running CR. Running CR can be provided in **R2-1913995**
- Intel think this cannot be endorsed now.

⇒ **Treat by email only (below)**

✉ **[107bis#08][NR] Updated Stage-2 running CR for NR mobility (Intel)**
Update running CR based on this meeting's agreements (not including conditional PSCell aspects).
Intended outcome: Endorsed running CR
Deadline: 2 weeks

⇒ **Email discussion is agreed**
=> Endorsed in R2-1913995

7.8.2 Report from Break-Out Session on SRVCC, CLI, PRN, eMIMO, RACS

R2-1914132 Report from Break-Out Session on SRVCC, CLI, PRN, eMIMO, RACS report — Vice Chairman (ZTE)

⇒ **approved**

7.8.3 Report from eMTC breakout session

R2-1914133 Report eMTC breakout session — Session chair (Ericsson) report

⇒ **approved**

7.8.4 Report from NR-U, Power Savings, NTN and 2-step RACH sessions

R2-1914134 Session minutes for NR-U, Power Savings, NTN and 2-step RACH report — Session chair (InterDigital)

⇒ **approved**

Session chair proposes to not do the following email discussions, and propose instead to just invite the authors to contribute to next meeting

✉ **[107bis#xx][NR/Power Saving] Running for 38.304 (Vivo)**
Scope: Capture agreements up to RAN2#107bis
Discuss modelling aspects if needed
Intended outcome: Running CR
Deadline: Thursday 07/11/2019

✉ **[107bis#xx][NR/Power Saving] Running for 37.340 (Oppo)**
Intended outcome: Running CR
Deadline: Thursday 07/11/2019

⇒ **2 Email discussions above are canceled**

7.8.5 Report from session on Rel-15 and 16 LTE and NR positioning

R2-1914135 Report from session on Rel-15 and 16 LTE and NR positioning report — Session chair (MediaTek)

⇒ **approved**

7.8.6 Report from SON/MDT session

R2-1914136 Report from SON/MDT session — Session chair (CMCC) report

⇒ **R2-1914090**

R2-1914090 Report from SON/MDT session — Session chair (CMCC) report

⇒ **approved**

7.8.7 Report from NB-IoT breakout session

R2-1914137 Report NB-IoT breakout session Session chair (Huawei) report
⇒ **approved**

7.8.8 Report from session on LTE V2X and NR V2X

R2-1914138 Report from session on LTE V2X and NR V2X Session chair (Samsung) report
⇒ **approved**

Closing of the meeting (17:00)

The meeting was closed by the chairman at 17:15 on Friday, 18th of October.

Annex A: List of participants

RAN2#107bis participants list is at:
https://portal.3gpp.org/Home.aspx#/participantslist?MtgId=32834

Total number of participants: 307 (registered 382)

Annex B: List of Tdocs

The list of tdocs from RAN2#107bis is attached to this report.
Total of 2229 tdoc numbers were allocated of which 2162 tdocs were made available.

Annex C: Incoming liaison statements

TDoc	Title	Source	Status	Rel	Related WIs	To	Cc	Original LS

R2-1912002	Reply LS on NAS Aspects of Mobile-terminated Early Data Transmission (C1-195111; contact: Qualcomm)	CT1	noted	Rel-16	LTE_eMTC5-Core	SA2, SA3	RAN2, RAN3, CT4	C1-195111
R2-1912003	LS on sending CAG ID during resume procedure (C1-195157; contact: Samsung)	CT1	noted	Rel-16	Vertical_LAN	SA2	RAN2	C1-195157
R2-1912004	LS on short MAC-I and ngKSI for 5G-CIoT (C1-195199; contact: Vodafone)	CT1	noted	Rel-16	5G_CIoT	SA3	RAN2	C1-195199
R2-1912005	LS on encoding of UE radio capabilities (C3-193147; contact: Qualcomm)	CT3	noted	Rel-16	RACS-RAN-Core	RAN2	CT4, SA2	C3-193147
R2-1912006	Liaison response on Ethernet header compression (liaison-response-3GPP-RAN2-Ethernet-header-compression-0719-v01; contact: Ericsson, Nokia)	GSMA	noted		NR_IIOT	RAN2		liaison-response-3GPP-RAN2-Ethernet-header-compression-0719-v0
R2-1912007	LS on O-RAN Alliance & 3GPP Coordination on O-RAN Alliance Outputs (ORAN_3GPP_Liaison_Statement_final; contact: AT&T, CMCC)	O-RAN Alliance	noted	Rel-16		SA, CT, RAN, SA1, SA2, SA3, SA5, SA6, RAN1, RAN2, RAN3	3GPP PCG	ORAN_3GPP_Liaison_Statement_final
R2-1912008	Reply LS on PDCCH monitoring for NR-DC (R1-1909550; contact: Samsung)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2	RAN3	R1-1909550
R2-1912009	LS Reply on overall procedure for 2-step RACH (R1-1909554; contact: ZTE)	RAN1	noted	Rel-16	NR_2step_RACH	RAN1	RAN2	R1-1909554
R2-1912010	Reply LS on quality report in Msg3 for LTE-M (R1-1909793; contact: Ericsson)	RAN1	noted	Rel-16	LTE_eMTC5-Core	RAN2	RAN4	R1-1909793
R2-1912011	LS on DL/UL Reference Signals and Measurements for NR Positioning (R1-1909796; contact: Intel)	RAN1	noted	Rel-16	NR_pos	RAN2	RAN3, RAN4	R1-1909796
R2-1912012	Reply LS on SFTD measurement (R1-1909819; contact: Huawei)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2, RAN4		R1-1909819
R2-1912013	Reply LS on MAC CE design for SCell BFR (R1-1909833; contact: Apple)	RAN1	noted	Rel-16	NR_eMIMO-Core	RAN2		R1-1909833
R2-1912014	Reply LS on Tx DC location (R1-1909849; contact: Huawei)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN4	RAN2	R1-1909849
R2-1912015	Reply LS on transmission of short message with multiple beams (R1-1909852; contact: Qualcomm)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2		R1-1909852
R2-1912016	Reply LS on RAN1/4 feature lists R1-1909856; contact: NTT DOCOMO)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2	RAN4	R1-1909856
R2-1912017	LS on mapping between LTE V2X PPPP and NR V2X priority (R1-1909876; contact: Qualcomm)	RAN1	noted	Rel-16	5G_V2X_NRSL	SA2	RAN2	R1-1909876
R2-1912018	Reply LS on Sidelink HARQ Feedback for Groupcast (R1-1909879; contact: LGE)	RAN1	noted	Rel-16	5G_V2X_NRSL-Core	RAN2, SA2		R1-1909879
R2-1912019	LS on DL HARQ timing for FDD Scell for LTE TDD-FDD CA with TDD Pcell, applied to FDD Pcell, for Dual Uplink EN-DC (R1-1909880; contact: Vodafone)	RAN1	noted	Rel-16	LTE_NR_DC_CA_enh-Core	RAN2	RAN	R1-1909880
R2-1912020	LS on SFN sync (R1-1909882;	RAN1	noted	Rel-15	NR_newRAT-	RAN,		R1-1909882

	contact: Nokia)				Core	RAN2		
R2-1912021	Reply LS to RAN 2 on CSI reporting in C-DRX (R1-1909889; contact: Qualcomm)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2		R1-1909889
R2-1912022	Reply LS on NR fast SCell activation (R1-1909893; contact: Qualcomm)	RAN1	noted	Rel-16	LTE_NR_DC_CA_enh-Core	RAN2, RAN4		R1-1909893
R2-1912023	Reply LS on maximum value of MDBV (R1-1909894; contact: Qualcomm)	RAN1	noted	Rel-16	5GS_Ph1	SA2, RAN2, RAN3, CT3, CT4	SA1	R1-1909894
R2-1912024	LS on NR Rel-16 TEI (R1-1909895; contact: NTT DOCOMO)	RAN1	noted	Rel-16	TEI16	RAN	RAN2	R1-1909895
R2-1912025	Response to LS on Combination 2 of Uu QoS characteristics values for V2X services (R1-1909898; contact: Huawei)	RAN1	noted	Rel-16	NR_L1enh_URLLC	SA2	RAN2, RAN3	R1-1909898
R2-1912026	Reply LS on supported BW for initial BWP (R1-1909900; contact: Nokia)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2, RAN4		R1-1909900
R2-1912027	Reply LS on propagation delay compensation for reference time information delivery (R1-1909906; contact: Nokia)	RAN1	noted	Rel-16	NR_IIOT-Core	RAN2, RAN4, RAN5		R1-1909906
R2-1912028	Reply LS on Combinations of Uu QoS characteristics values for V2X services (R3-193258; contact: Huawei)	RAN3	noted	Rel-16	NR_L1enh_URLLC	RAN1	SA2, RAN2	R3-193258
R2-1912029	Reply on radio resource management policy (R3-194550; contact: Huawei)	RAN3	noted	Rel-16	eNRM	SA5	RAN2	R3-194550
R2-1912030	Reply LS on LS on maximum value of MDBV (R3-194553; contact: Qualcomm)	RAN3	noted	Rel-16	5GS_Ph1	SA2, RAN1, RAN2, CT3, CT4	SA1	R3-194553
R2-1912031	Reply LS on Data activity reporting (R3-194572; contact: Ericsson)	RAN3	noted	Rel-16	5G_SLICE_ePA	SA5	RAN2	R3-194572
R2-1912032	Reply LS on LTE-M identification in 5GC (R3-194748; contact: Qualcomm)	RAN3	noted	Rel-16	5G_CIoT	SA2, RAN, RAN2	SA3	R3-194748
R2-1912033	LS on full configuration during SN Modification procedure (R3-194758; contact: Huawei)	RAN3	noted	Rel-15	NR_newRAT-Core	RAN2		R3-194758
R2-1912034	LS on enhanced Make-Before-Break data forwarding (R3-194768; contact: Ericsson)	RAN3	noted	Rel-16	LTE_feMob, NR_Mob_enh	RAN2		R3-194768
R2-1912035	Reply LS on RAN sharing and Emergency services with Non-Public Networks (R3-194785; contact: Qualcomm)	RAN3	noted	Rel-16	Vertical_LAN	SA2, RAN2	SA1	R3-194785
R2-1912036	LS on clarifications on Private Networks (R3-194786; contact: Nokia)	RAN3	noted	Rel-16	NG_RAN_PRN	SA2	RAN2	R3-194786
R2-1912037	LS on the IAB-indication to core network (R3-194787; contact: Qualcomm)	RAN3	noted	Rel-16	NR_IAB	SA2, RAN2	SA3, SA5	R3-194787
R2-1912038	Reply LS on Enhancements to QoS Handling for V2X Communication Over Uu Reference Point (R3-194795; contact: Vodafone)	RAN3	noted	Rel-16	eV2XARC	SA2, RAN2		R3-194795
R2-1912039	Reply LS on measurement gap for SRS-RSRP or CLI-RSSI measurements (R4-1908777; contact: LGE)	RAN4	noted	Rel-16	NR_CLI_RIM-Core	RAN2	RAN1	R4-1908777
R2-1912040	Reply LS on RAN1/4 feature lists (R4-1909845; contact: Intel)	RAN4	noted	Rel-15	NR_newRAT-Core	RAN2	RAN1	R4-1909845
R2-1912041	Reply LS on simultaneous	RAN4	noted	Rel-16	NR_Mob_enh-	RAN1,		R4-1909992

	RX/TX for NR (R4-1909992; contact: Ericsson)				Core	RAN2		
R2-1912042	Reply LS on maximum allowed SCell activation delay for Rel16 CA (R4-1909995; contact: Nokia)	RAN4	noted	Rel-16	LTE_NR_DC_CA_enh-Core	RAN1	RAN2	R4-1909995
R2-1912043	LS Reply on measurements for SRVCC from 5G to 3G (R4-1910026; contact: Huawei)	RAN4	noted	Rel-16	SRVCC_NR_to_UMTS-Core	RAN2		R4-1910026
R2-1912044	Reply to LS on DL channel quality report for configured carrier in RRC connected mode (R4-1910110; contact: Qualcomm)	RAN4	noted	Rel-16	NB_IOTenh3-Core	RAN2	RAN1	R4-1910110
R2-1912045	LS on signalling measurement thresholds for validating the TA for PUR (R4-1910176; contact: Ericsson)	RAN4	noted	Rel-16	LTE_eMTC5-Core, NB_IOTenh3-Core	RAN2	RAN1	R4-1910176
R2-1912046	Reply LS on SFTD measurement (R4-1910179; contact: ZTE)	RAN4	noted	Rel-15	NR_newRAT-Core	RAN2		R4-1910179
R2-1912047	LS on Handling of Fallbacks for combined contiguous and non-contiguous CA or DC configurations in FR2 (R4-1910239; contact: Apple)	RAN4	noted	Rel-15	NR_newRAT-Core	RAN2		R4-1910239
R2-1912048	LS on FR2 Pmax (R4-1910262; contact: Huawei)	RAN4	noted	Rel-15	NR_newRAT-Core	RAN2		R4-1910262
R2-1912049	LS reply on supported BW for initial BWP (R4-1910522; contact: Nokia)	RAN4	noted	Rel-15	NR_newRAT-Core	RAN1, RAN2		R4-1910522
R2-1912050	LS on sidelink BWP reconfiguration on ITS band (R4-1910542; contact: MediaTek)	RAN4	noted	Rel-16	5G_V2X_NRSL-Core	RAN1	RAN2	R4-1910542
R2-1912051	Reply LS on reporting criteria limitation in MR-DC (R4-1910570; contact: Huawei)	RAN4	noted	Rel-15	NR_newRAT-Core	RAN2		R4-1910570
R2-1912052	LS on RSSI definition (R4-1910573; contact: MediaTek)	RAN4	noted	Rel-16	NR_unlic-Core	RAN1	RAN2	R4-1910573
R2-1912053	Reply LS on NR fast SCell activation (R4-1910574; contact: Huawei)	RAN4	noted	Rel-16	LTE_NR_DC_CA_enh-Core	RAN1, RAN2		R4-1910574
R2-1912054	LS on evaluation of S criteria on non-anchor carrier (R4-1910575; contact: Huawei)	RAN4	noted	Rel-16	NB_IOTenh3-Core	RAN2		R4-1910575
R2-1912055	LS to RAN2 on mandatory 90 MHz UE channel bandwidth for n41 and n78 in REL-16 (R4-1910605; contact: Vodafone)	RAN4	noted	Rel-16	NR_newRAT-Core	RAN2	RAN	R4-1910605
R2-1912056	LS on Rel-16 NB-IoT enhancements (RP-192338; contact: Futurewei)	RAN	noted	Rel-16	NB_IOTenh3	SA2, CT1	RAN2, SA, CT	RP-192338
R2-1912057	Reply on Combinations of Uu QoS characteristics values for V2X services (S2 -1906340; contact: Huawei)	SA2	noted	Rel-16	eV2XARC, NR_L1enh_URLLC	RAN1, RAN3	RAN2	S2 -1906340
R2-1912058	Reply LS on Reply LS on Mobile-terminated Early Data Transmission (S3-193059; contact: Nokia)	SA3	noted	Rel-16	LTE_eMTC5-Core	SA2, RAN2, RAN3, CT1		S3-193059
R2-1912059	LS on Sending CAG ID in NAS layer (S3-193142; contact: Qualcomm)	SA3	noted	Rel-16	FS_Vertical_LAN_SEC	SA2, RAN2, RAN3	CT1	S3-193142
R2-1912060	LS to RAN2 and RAN3 on False Base Station Detection (S3-193175; contact: Huawei)	SA3	noted	Rel-16	FS_5GFBS	RAN2, RAN3		S3-193175
R2-1912061	LS on QoE Measurement Collection (S5-195659; contact: Ericsson)	SA5	noted	Rel-16	QOED	CT1, RAN2, RAN3, SA4		S5-195659
R2-1912062	Reply LS on L1 and L2	SA5	noted	Rel-16	5G_SLICE_eP	RAN2,		S5-195941

	measurements (S5-195941; contact: Huawei)				A	RAN3		
R2-1912063	LS on aspects of Mission Critical Services over 5MBS (S6-192003; contact: AT&T)	SA6	postponed	Rel-17	FS_MC5MBS	SA, RAN, SA2, RAN2, RAN3	SA1	S6-192003
R2-1912064	Reply LS to "O-RAN Alliance & 3GPP Coordination on O-RAN Alliance Outputs" (SP-190947; contact: Intel)	SA	noted			O-RAN Alliance	CT, RAN, SA1, SA2, SA3, SA5, SA6, RAN1, RAN2, RAN3, PCG	SP-190947
R2-1913533	LS on NR V2X synchronization procedures and priority (R1-1909910; contact: CATT)	RAN1	noted	Rel-16	5G_V2X_NRSL-Core	RAN2, RAN4		R1-1909910
R2-1913972	Update LS on Release-with-Redirect in 2-step resume procedure (C1-196902; contact: OPPO)	CT1	noted	Rel-15	NR_newRAT-Core	RAN2		C1-196902
R2-1913973	LS Reply on maximum value of MDBV (C3-194330; contact: Nokia)	CT3	available	Rel-16	5GS_Ph1	SA2	RAN1, RAN2, RAN3, CT4, SA1	C3-194330
R2-1914168	LS on CLI measurement reporting range (R4-1911416; contact: LGE)	RAN4	available	Rel-16	NR_CLI_RIM-Core	RAN2		R4-1911416
R2-1914177	Reply LS to LS on maximum value of MDBV (C4-194314; contact: Nokia)	CT4	noted	Rel-16	5GS_Ph1	SA2	RAN1, RAN2, RAN3, CT3, SA1	C4-194314
R2-1914178	LS on NID structure and length (C4-194332; contact: Ericsson)	CT4	available	Rel-16	Vertical_LAN	RAN2, RAN3, CT1, CT3	SA2	C4-194332
R2-1914183	LS on PDCCH-based Power Saving Signal/Channel carrying indication of UE wakeup before DRX ON (R1-1911475; contact; CATT)	RAN1	noted	Rel-16	NR_UE_pow_sav-Core	RAN2		
R2-1914192	LS on UE adaptation to maximum number of MIMO layers (R1-1911528; contact: vivo)	RAN1	noted	Rel-16	NR_UE_pow_sav-Core	RAN2	RAN4	R1-1911528
R2-1914206	LS on NR IAB case-1 timing (R1-1911548; contact: ZTE)	RAN1	available	Rel-16	NR_IAB-core	RAN2	RAN4	R1-1911548
R2-1914207	Reply LS on single PDCCH-based multi-TRP operation (R1- 1911550; contact: Huawei)	RAN1	noted	Rel-16	NR_eMIMO-Core	RAN2		R1- 1911550
R2-1914208	Reply LS on MAC CE design for SCell BFR (R1-1911587; contact: Apple)	RAN1	noted	Rel-16	NR_eMIMO-Core	RAN2		R1-1911587

74 incoming LS, of which 69 were noted, and 1 LS was postponed. The remaining non-treated LSin will be handled in RAN2#108.

Annex D: Outgoing liaison statements

TDoc	Title	Rel	Related WIs	To	Cc
R2-1913996	LS on uplink TDM pattern for LTE DAPS based enhanced make-before-break HO	Rel-16	LTE_feMob-Core	RAN1	RAN3, RAN4
R2-1913997	LS on UE feature list format for Release-16 UE capability	Rel-16	NR_newRAT-Core	RAN1, RAN4	RAN3
R2-1913999	LS to RAN1&4 on UE capabilities on DAPS HO	Rel-16	NR_Mob_enh-Core, LTE_feMob-Core	RAN1, RAN4	
R2-1914020	LS on multi PDCCH-based and single PDCCH-based multi-TRP operation	Rel-16	NR_eMIMO-Core	RAN1	
R2-1914021	LS For Exchange of information related to SRS-RSRP measurement resource configuration for UE-CLI	Rel-16	NR_CLI_RIM	RAN3	RAN1
R2-1914022	LS on No support of delta signalling	Rel-16	RACS-RAN-Core	SA2	
R2-1914023	LS Radio Capability Signalling Identity on X2/Xn interfaces	Rel-16	RACS-RAN-Core	RAN3	
R2-1914025	LS on RAN2 agreements on LTE and NR mobility enhancements	Rel-16	NR_Mob_enh-Core, LTE_feMob-Core	RAN3	
R2-1914045	LS on RAN2 agreements for 5GC CIoT	Rel-16	LTE_eMTC5-Core, NB_IOTenh3-Core	RAN3	
R2-1914060	LS to RAN1 on WUS for short DRX cycle	Rel-16	NR_UE_pow_sav	RAN1	
R2-1914064	LS on SFN LSB indication in msg2/msgB	Rel-16	NR_unlic-Core, NR_2step_RACH-Core	RAN1	
R2-1914068	LS on PHR reporting for NR-U	Rel-16	NR_unlic-Core	RAN1	
R2-1914087	Reply LS on RACH Optimization and Mobility Robustness Optimization	Rel-16	NR_SON_MDT-Core	RAN3	
R2-1914089	Reply LS on PDCP end user throughput measurements	Rel-16	NR_SON_MDT-Core	SA5	RAN3
R2-1914147	LS on Layer 2 Identifiers for NR Sidelink communication	Rel-16	5G_V2X_NRSL-Core	RAN1, SA2	
R2-1914149	LS on SL RLF handling	Rel-16	5G_V2X_NRSL-Core	SA2	
R2-1914150	LS on Handling Multiple Unicast Links with Peer UE	Rel-16	5G_V2X_NRSL-Core	RAN1	SA2
R2-1914151	LS on PC5-S Signaling and PC5-RRC connection for NR sidelink communication	Rel-16	5G_V2X_NRSL-Core	SA2	SA3
R2-1914191	LS on differentiating between MSG2 and MSGB	Rel-16	NR_2step_RACH-Core	RAN1	
R2-1914200	LS to RAN1 on CSI/SRS reporting	Rel-16	NR_UE_pow_sav	RAN1	RAN4
R2-1914201	Reply LS on potential improvements for delay critical QoS flows	Rel-16	5GS_Ph1, TEI16	SA2	RAN3
R2-1914213	LS to SA2 on reference time delivery	Rel-16	NR_IIOT	SA2	
R2-1914214	LCP restriction for Dynamic Grant	Rel-16	NR_IIOT-Core	RAN1	
R2-1914221	Reply LS to RAN1 on SFTD measurement	Rel-15	NR_newRAT-Core	RAN1	RAN4
R2-1914222	Reply LS on FR2 Pmax	Rel-15	NR_newRAT-Core	RAN4	
R2-1914223	Granularity of periodicity and burst arrival time in TSCAI	Rel-16	NR_IIOT	RAN3	SA2
R2-1914224	Reply LS to SA3 on FBS detection	Rel-16	FS_5GFBS	SA3	RAN3
R2-1914226	LS on BCS reporting for EN-DC B	Rel-15	NR_newRAT-Core	RAN4	
R2-1914227	LS on direct Scell activation in RRC resume message	Rel-16	LTE_NR_DC_CA_enh-Core	RAN4	
R2-1914228	Reply LS on full configuration during SN Modification procedure	Rel-15	NR_newRAT-Core	RAN3	

30 outgoing LS.

Annex E: List of agreed-in-principle CRs and draftCRs

TDoc	Title	Source	Rel	Spec	Related WIs	CR	Rev	Ca
R2-1912141	Corrections on CG-Config	CATT	Rel-15	38.331	NR_newRAT-Core	1267		F
R2-1912326	Correction on PUCCH transform precoding	vivo, Nokia (rapporteur)	Rel-15	38.300	NR_newRAT-Core			F
R2-1912767	CR to introduce timer for DRX based SFTD measurement	ZTE Corporation, Sanechips, MediaTek Inc.	Rel-15	38.331	NR_newRAT-Core	1273		F
R2-1912768	Correction on absence of gapPurpose	ZTE Corporation, Sanechips	Rel-15	38.331	NR_newRAT-Core	1274		F
R2-1913059	Introduction of RRC parameters and UE capabilities for enhanced high speed scenario	NTT DOCOMO INC.	Rel-16	36.331	LTE_high_speed-Core	4095	2	B
R2-1913066	Introduction of UE capabilities for further performance enhancement for LTE in high speed scenario in Rel-16	CMCC, Huawei, HiSilicon, NTTDOCOMO, INC.	Rel-16	36.306	LTE_high_speed_enh2-Core	1712	2	B
R2-1913195	Correction for P-Max in FR2	Ericsson, NTT DOCOMO INC.	Rel-15	38.331	NR_newRAT-Core	1292		F
R2-1913270	Reconfiguration failure in NE-DC	Google Inc.	Rel-15	36.331	NR_newRAT-Core	4115		F
R2-1913273	PDCP configuration generation (email discussion of 107#25)	Huawei, HiSilicon	Rel-15	37.340	NR_newRAT-Core	0158		F
R2-1913280	Correction on EUTRAN terminology	Huawei, HiSilicon	Rel-15	38.305	NR_newRAT-Core	0014		F
R2-1913297	Handling of AS-Config in HandoverPreparationInformation	Ericsson	Rel-15	38.331	NR_newRAT-Core	1300		F
R2-1913298	Corrections on scg-RB-Config in CG-Config	Ericsson	Rel-15	38.331	NR_newRAT-Core	1301		F
R2-1913310	Correction to integrity protection in DRB addition and modification	Ericsson	Rel-15	38.331	NR_newRAT-Core	1309		F
R2-1913433	CR to 36.331 on performing L3 filtering for NR related measurements	Ericsson	Rel-15	36.331	NR_newRAT-Core	4125		F
R2-1913446	Clarification on the restriction of maximum SRS resource sets configuration for uplink beam management.	Intel	Rel-15	38.306	NR_newRAT-Core	0185		F
R2-1913482	Clarification on security key change and bearer termination point change	ZTE Corporation, Ericsson, Intel	Rel-15	37.340	NR_newRAT-Core	0160		F
R2-1913673	Correction on the Msg3 based on demand system information	Huawei, HiSilicon	Rel-15	38.331	NR_newRAT-Core	1333		F
R2-1913687	Clarification on the feature set report in EUTRAN	Huawei, HiSilicon	Rel-15	38.331	NR_newRAT-Core	1337		F
R2-1913737	CR to 38.331 on CGI information	Huawei, HiSilicon, Ericsson	Rel-15	38.331	NR_newRAT-Core	1341		F
R2-1913783	Correction on parameter description of beamManagementSSB-CSI-RS in 38.306	Huawei, HiSilicon	Rel-15	38.306	NR_newRAT-Core	0194		F
R2-1913898	Correction to PHR in dual connectivity	Qualcomm Inc, Nokia, Nokia Shanghai Bell, Ericsson	Rel-15	36.321	NR_newRAT-Core	0660	2	F
R2-1913976	Clarification of NR-DC synchronization	ZTE Corporation	Rel-15	37.340	NR_NewRAT-Core	0163		F
R2-1913978	Clarification on measurement gap for LTE inter-RAT measurement in NR SA	MediaTek Inc., Nokia (Rapporteur)	Rel-15	38.300	NR_newRAT-Core	0173	1	F
R2-1913979	SMTC setting in MR-DC PSCell change	Nokia, Nokia Shanghai Bell	Rel-15	37.340	NR_newRAT-Core	0157	1	F
R2-1913980	Correction on sending Failure Information via SRB3	Ericsson, ZTE Corporation (Rapporteur)	Rel-15	37.340	NR_newRAT-Core	0159	1	F
R2-1913981	Clarification on RA and Msg3 with PUSCH Enhancements	Nokia, Nokia Shanghai Bell	Rel-14	36.321	LTE_VoLTE_ViLTE_enh	1456	3	F
R2-1913982	Clarification on RA and Msg3 with PUSCH Enhancements	Nokia, Nokia Shanghai Bell	Rel-15	36.321	LTE_VoLTE_ViLTE_enh	1457	2	A
R2-1913983	Missing QCI to CAPC mapping	Nokia, Nokia Shanghai Bell	Rel-16	36.300	LTE_unlic-Core	1240	3	F
R2-1913984	Correction to SIB5 acquisition for idle mode measurements	Ericsson	Rel-15	36.331	LTE_5GCN_connect-Core	4120	1	F
R2-1913985	Correction on inter-frequency neighbour cell measurements	Ericsson	Rel-15	36.300	LTE_5GCN_connect-Core	1252	1	F
R2-1913989	Correction on H1 and H2 events	Samsung Electronics Co., Ltd	Rel-16	36.331	TEI16	4103	1	F

R2-1914072	Corrections for Positioning Architecture	Ericsson	Rel-15	38.305	NR_newRAT-Core	0015	1	F
R2-1914091	Correction on T322	Nokia, Nokia Shanghai Bell	Rel-14	36.331	NB_IOTenh-Core	4112	1	F
R2-1914121	Clarification regarding QoS handling in MRDC with 5G CN	Samsung, ZTE Corporation	Rel-15	37.340	NR_newRAT-Core			F
R2-1914122	PDCP version in EN-DC	Ericsson	Rel-15	37.340	NR_newRAT-Core	0155	1	F
R2-1914124	Correction to field conditions in NE-DC	Ericsson	Rel-15	36.331	NR_newRAT-Core	4128	1	F
R2-1914125	Correction for the establishment of LTE RLC bearers for (NG)EN-DC and NE-DC	Huawei, HiSilicon	Rel-15	36.331	NR_newRAT-Core	4132	1	F
R2-1914127	Presence and absence of TAC in NR cell	Ericsson	Rel-15	38.331	NR_newRAT-Core	1325	1	F
R2-1914128	Configuration limitation for RRCRelease message in R15	OPPO	Rel-15	38.331	NR_newRAT-Core	1268	1	F
R2-1914129	KgNB derivation upon mobility	Qualcomm Incorporated	Rel-15	38.300	NR_newRAT-Core	0174		F
R2-1914169	Correction to Pcompensation for FR2	Huawei	Rel-15	38.304	NR_newRAT-Core	0140		F
R2-1914172	Correction of SRB3 handling at full configuration (Alt2)	Ericsson	Rel-15	38.331	NR_newRAT-Core	1308	1	F
R2-1914173	Miscellaneous correction for late drop	Ericsson	Rel-15	36.331	NR_newRAT-Core	4117	1	F
R2-1914175	Clarification to CSI reporting in C-DRX	Qualcomm Inc.	Rel-15	38.321	NR_newRAT-Core	0672	2	F
R2-1914193	Miscellaneous corrections on UE capability fields	Intel Corporation, NTT DoCoMo	Rel-15	38.306	NR_newRAT-Core	0186	1	F
R2-1914203	Inclusion of 90MHz UE Bandwidth	Vodafone	Rel-16	38.306	NR_newRAT-Core, TEI16	0171	1	C
R2-1914209	Correction on the frequency indication in SIB2	Huawei, HiSilicon, Ericsson, MediaTek	Rel-15	38.331	NR_newRAT-Core	1296	1	F
R2-1914219	Clarifying the alignment of capability filtering across LTE and NR in MR-DC	Nokia, Nokia Shanghai Bell	Rel-15	38.331	NR_newRAT-Core	1283	1	F
R2-1914225	Security Algorithms for Radio Bearers	Qualcomm Incorporated	Rel-15	38.331	NR_newRAT-Core	1332	3	F

49 Agreed-in-principle CRs and draftCRs.

Annex F: Email Approvals

One week discussions: Deadline Thursday, 2019-10-24, 23:59 Pacific Time (unless stated)

Please request TDoc numbers for the following email discussions from MCC if not already allocated below

✉ **[107bis#01][NR R16] LS on feature list format for Rel-16 (Intel)**
Intended outcome: Approved LS on feature list format for Rel-16 to R1, R4, cc: R3
Deadline: 1 week
=> Approved in R2-1913997.

✉ **[107bis#02][IAB] 38300 (Qualcomm)**
Intended outcome: Endorsed Running CR. Agreements incl 107bis
Deadline: 1 week
=> Endorsed in R2-1913998.

✉ **[107bis#03][IAB] 38340 (Huawei)**
Intended outcome: Endorsed Running CR. Agreements incl 107bis
Deadline: 1 week
=> Endorsed in:
R2-1914006 (v0.0.0).
R2-1914008 (v0.1.0).

✉ **[107bis#04][IAB] Running CR 38331 (Ericsson)**

Intended outcome: Endorsed Running CR. Capture agreements of this meeting, include discussion from previous version.
Deadline: 1 week
=> Endorsed in R2-1914027

✉ **[107bis#06][DCCA] 36300 38300 (Ericsson)**
Intended outcome: Endorsed Running CRs, capturing agreements incl 107bis
Deadline: 1 week
=> Endorsed in:
R2-1914004 (36.#10300)
R2-1914005 (38.300)

✉ **[107bis#09][NR LTE MobE] LS to RAN1/4 on UE capabilities (Intel)**
Send LS to RAN1/4 on UE capabilities for DAPS/RUDI based on R2-1913993.
Intended outcome: Approved LS to RAN1/4
Deadline: 1 week
=> Approved in R2-1913999.

✉ **[107bis#10][LTE MobE] Updated Stage-2 running CR LTE mobility (China Telecom)**
Update running CR based on this meeting's agreements.
Intended outcome: Endorsed running CR
Deadline: 1 week
=> Endorsed in R2-1914007.

✉ **[107bis#11][NB-IoT eMTC R16] RAN2 agreements (Blackberry)**
Update RAN2 agreements for Rel-16 additional enhancements for NB-IoT and MTC
Intended outcome: Endorsed report in R2-1914092
Deadline: 1 week
=> Endorsed in R2-1914102.

✉ **[107bis#12][V2X] Running 37.324 CR (Vivo)**
Intended outcome: Endorsed running CR, 37.324 CR capturing this meeting's agreements
Deadline: 1 week
=> Endorsed in R2-1914152

✉ **[107bis#13][V2X] Running 38.300 CR (LG)**
Intended outcome: Endorsed running CR, 38.300 CR capturing this meeting's agreements
Deadline: 1 week
=> Endorsed in R2-1914000

Two week discussions: Deadline Thursday, 2019-10-31, 23:59 Pacific Time (unless stated)

Please request TDoc numbers for the following email discussions from MCC if not already allocated below

✉ **[107bis#05][IIOT] Running CR 38300 (Nokia)**
Intended outcome: Endorsed Running CR, Capture agreements incl 107bis
Deadline: 2 weeks
=> Endorsed in R2-1914009

✉ **[107bis#08][NR MobE] Updated Stage-2 running CR for NR mobility (Intel)**
Update running CR based on this meeting's agreements (not including conditional PSCell aspects). Including continuation of Offline 107bis#105.
Intended outcome: Endorsed running CR
Deadline: 2 weeks

=> Endorsed in R2-1913995

✉ **[107bis#14][LTE MobE] Updated RRC running CR for LTE mobility (Ericsson)**
Update running CR based on this meeting's agreements.
Intended outcome: Endorsed running CR
Deadline: Next meeting

✉ **[107bis#15][NR LTE MobE] LS to RAN3 on RAN2 agreements (Huawei)**
Capture RAN2 agreements affecting RAN3 and discuss whether or what to include on COUNT as per RAN3 request earlier.
Intended outcome: Approved LS to RAN3
Deadline: 2 weeks
=> Email summary endorsed in R2-1914024
=> LSout approved in R2-1914025

✉ **[107bis#16][NR-U] Running CR for 38.331 (Qualcomm)**
Intended outcome: Endorsed running CR
Deadline: 2 weeks
=> Endorsed in R2-1914001

✉ **[107bis#17][NR-U] Running CR for 38.321 (Ericsson)**
Intended outcome: Endorsed running CR
Deadline: 2 weeks
=> Endorsed in R2-1914026

✉ **[107bis#18][NR-U] Running CR for 38.300 (Qualcomm)**
Intended outcome: Endorsed running CR
Deadline: 2 weeks
=> Endorsed in R2-1914002

✉ **[107bis#19][NR-U] Running CR for 38.304 (Qualcomm)**
Intended outcome: Endorsed running CR
Deadline: 2 weeks
=> Endorsed in R2-1914003

✉ **[107bis#20][NB-IoT R16] 36.331 running CR (Huawei)**
Update 36.331 running CR with agreements from this meeting
Intended outcome: Endorsed running CR in R2-1914101
Deadline: 2 weeks
=> Endorsed in R2-1914101

✉ **[107bis#21][NB-IoT R16] 36.300 running CR (Huawei)**
Update 36.300 running CR with agreements from this meeting
Intended outcome: Endorsed running CR in R2-1914094
Deadline: 2 weeks
=> Endorsed in R2-1914094

✉ **[107bis#22][NB-IoT R16] 38.300 running CR (Qualcomm)**
Update 38.300 running CR with agreements from this meeting
Intended outcome: Endorsed running CR in R2-1914093
Deadline: 2 weeks
=> Endorsed in R2-1914093

✉ **[107bis#23][NB-IoT R16] Running CR on 36.321 (Ericsson)**
Running CR on 36.321 with agreements so far
Intended outcome: Endorsed running CR in R2-1914099
Deadline: 2 weeks
=> Endorsed in R2-1914099

- ✉ **[107bis#24][NB-IoT R16] Running CR on 36.304 (Nokia)**
  Running CR on 36.304 with agreements so far
  Intended outcome: Endorsed running CR in R2-1914100
  Deadline: Next meeting

- ✉ **[107bis#25][eMTC R16] 36.300 running CR (Intel)**
  Update 36.300 running CR with agreements from this meeting
  Intended outcome: endorsed running CR in R2-1914036
  Deadline: 2 weeks

=> Endorsed in R2-1914036

- ✉ **[107bis#26][eMTC R16] 38.300 running CR (Qualcomm)**
  Update 38.300 running CR with agreements from this meeting
  Intended outcome: endorsed running CR in R2-1914037
  Deadline: 2 weeks

=> Endorsed in R2-1914037

- ✉ **[107bis#27][eMTC R16] 36.304 running CR (Nokia)**
  Update 36.304 running CR with agreements from this meeting
  Intended outcome: endorsed running CR in R2-1914046
  Deadline: 2 weeks

=> Endorsed in R2-1914050

- ✉ **[107bis#28][eMTC R16] 36.321 running CR (Ericsson)**
  Update 36.321 running CR with agreements
  Intended outcome: endorsed running CR in R2-1914047
  Deadline: 2 weeks

=> Endorsed in R2-1914047

- ✉ **[107bis#29][eMTC R16] 36.331 running CR (Qualcomm)**
  Update 36.331 running CR with agreements from this meeting
  Intended outcome: endorsed running CR in R2-1914038
  Deadline: 2 weeks

=> Endorsed in R2-1914038

Next meeting discussions: Deadline Thursday, 2019-11-07, 23:59 Pacific Time (unless stated)

TDoc numbers for the following email discussions may be requested via 3GU tool

- ✉ **[107bis#07][NR R16] Running CR On-demand SI in RRC_CONNECTED (Ericsson)**
  Intended outcome: Endorsable running CRs for both 38.300 and 38331, capturing agreements up to now
  Deadline: Next Meeting

- ✉ **[107bis#30][NR R15] Correction on the condition of RBTermChange (Ericsson)**
  Intended outcome: Agreeable CR 38331
  Deadline: Next Meeting

- ✉ **[107bis#31][NR R15] Correction to AS security key update (Ericsson)**
  Intended outcome: CR 38331 for next meeting
  Deadline: Next Meeting

- ✉ **[107bis#32][NR R15] Miscellaneous CR 331 (Ericsson)**

Intended outcome: Agreeable CR 38331 to next meeting, including coordination with 306 changes.
Deadline: Next Meeting

✉ **[107bis#33][NR R15] Exchanging used IDs of SN terminated DRBs (Huawei)**
Intended outcome: Agreeable CRs 36331 38331, if none agreeable: Report
Deadline: Next Meeting

✉ **[107bis#34][NR R15] Ambiguity of UE FDD/TDD FR1/FR2 capabilities (ZTE)**
Intended outcome: Agreeable CR 38306, can take into account also R1 LS
Deadline: Next Meeting

✉ **[107bis#35][NR R15] Consequences if not supported (Nokia)**
Intended outcome: Agreeable CR 38306, based on R2-1913964
Deadline: Next Meeting

✉ **[107bis#36][NR R15] FR2 CA Fallbacks (Nokia)**
Intended outcome: Report to next meeting, Identify possible options, pave the way for discussions next meeting
Deadline: Next Meeting

✉ **[107bis#37][NR R15] Clarifying the interpretation behind the encapsulation of the filter extensions (Nokia)**
Intended outcome: Report to next meeting, possibly agreeable CR 38331 (dep on progress)
Deadline: Next Meeting

✉ **[107bis#38][NR R15] NE-DC dynamic power sharing capability (QC)**
Intended outcome: Agreeable CRs 306 331
Deadline: Next Meeting

✉ **[107bis#39][IAB] 38321 (Samsung)**
Intended outcome: Draft running CR to the next meeting, including agreements incl 107bis
Deadline: Next Meeting

✉ **[107bis#40][IAB] SI Broadast, barring, Initial access, Connection setup (Ericsson)**
Intended outcome: Report to next meeting, agreeable proposals, Draft reply LS
Deadline: Next Meeting

✉ **[107bis#41][IIOT] Running CR 38331 (Ericsson)**
Intended outcome: CR submitted to next meeting, Capture agreements incl 107bis, include the whole WI
Deadline: Next Meeting

✉ **[107bis#42][IIOT] Running CR 38321 (Samsung)**
Intended outcome: CR submitted to next meeting, Capture agreements incl 107bis
Deadline: Next Meeting

✉ **[107bis#43][IIOT] Running CR 38323 (LG)**
Intended outcome: CR submitted to next meeting, Capture agreements incl 107bis
Deadline: Next Meeting

✉ **[107bis#44][DCCA] Running CRs 38331 36331 (Ericsson)**
Intended outcome: Draft agreeable CRs for next meeting, capturing agreements incl 107bis
Deadline: Next Meeting

✉ **[107bis#45][DCCA] Running CR 37340 (Vivo)**
Intended outcome: Draft agreeable CR for next meeting, capturing agreements incl 107bis
Deadline: Next Meeting

- **[107bis#46][NR TEI16] Voice fallback (QC)**
  Intended outcome: Agreeable CRs 36331 38331
  Deadline: Next Meeting

- **[107bis#47][NR TEI16] Signalling design Overheating reporting in (NG)EN-DC (Huawei)**
  Intended outcome: Report w agreeable solution, even more preferred: agreeable CRs
  Deadline: Next Meeting

- **[107bis#48][NR TEI16] PRACH re-transmission for SRS carrier switching (Huawei)**
  Correction on PRACH re-transmission for SRS carrier switching
  Intended outcome: Agreeable CR for next meeting
  Deadline: Next Meeting

- **[107bis#49][NR TEI16] cDRX enhancement for CA (Ericsson)**
  Intended outcome: Arrive at an agreeable CR
  Deadline: Next Meeting

- **[107bis#50][NR TEI16] Adding CSI-RS information into inter-node msg (Huawei)**
  Intended outcome: Agreeable CR to next meeting
  Deadline: Next Meeting

- **[107bis#51][LTE R16] Handling of non-3GPP paging for Rel-16 UEs (Huawei)**
  Discuss how to handle the paging for non-3GPP access using the Rel-15 or Rel-16 flag, including how this works for eMTC.
  Intended outcome: Report and CR for next meeting, implementing the changes to specification(s).
  Deadline: Next Meeting

- **[107bis#52][NR MobE] Open issues Conditional PSCell addition/change (CATT)**
  Determine open issues that need to be resolved for the feature to be completed.
  Intended outcome: Report (may include TPs of proposals).
  Deadline: Next Meeting

- **[107bis#53][NR LTE MobE] UE capability structure DAPS/RUDI HO (Intel)**
  Determine the capability signalling structure on DAPS/RUDI.
  Intended outcome: TP on UE capability structure.
  Deadline: Next Meeting

- **[107bis#54][NR MobE] 38.331 RRC running CR NR mobility (Intel)**
  Update running CR based on this meeting's agreements (not including conditional PSCell aspects).
  Intended outcome: Running CR for next meeting.
  Deadline: Next Meeting

- **[107bis#55][NR LTE MobE] Running LTE and NR PDCP CRs NR mobility (Huawei)**
  Update running CR based on this meeting's agreements (not including conditional PSCell aspects).
  Intended outcome: Running CRs for next meeting.
  Deadline: Next Meeting

- **[107bis#56][NR LTE MobE] Updated MAC running CR NR/LTE mobility (vivo)**
  Update running CR based on this meeting's agreements (not including conditional PSCell aspects).
  Intended outcome: Running CRs for next meeting.
  Deadline: Next Meeting

- **[107bis#57][CLI] Running RRC CR (LG)**

Update running CR based on the comments and solve remaining issues
Intended outcome: Running CR, to be endorsed next meeting
Deadline: Next Meeting

✉ **[107bis#58][CLI] CLI measurements UE capabilities (Qualcomm)**
Discuss other possible UE capabilities, clarifications on the FFSs and possible questions to RAN1/RAN4 on aspects that cannot be decided by RAN2
Intended outcome: List of agreements regarding UE capabilities and updated running CR for TS 38.306
Deadline: Next Meeting

✉ **[107bis#59][NR eMIMO] MAC CE design (Vivo)**
DL MAC CE design to activate/deactivate TCI states for mTRP operation. Both single PDCCH and multiple PDCCH mTRP should be considered
Intended outcome: List of agreeable proposals
Deadline: Next Meeting

✉ **[107bis#60][NR eMIMO] RRC CR (Ericsson)**
Draft running CR for TS 38.331, including ASN.1 details for available RRC parameter list (including rapporteur excel input for the whole WI)
Intended outcome: Initial draft CR for TS 38.331
Deadline: Next Meeting

✉ **[107bis#61][NR eMIMO] Scell BFR MAC CR (Nokia, Samsung)**
Phase 1: Continue the discussion on details of BFR procedure for Scell (Nokia)
- Beam Failure Detection
- BFR-SR modelling
- MAC CE – transmission and format
Phase 2: Tentatively draft running CR for TS 38.321 (Samsung)
Intended outcome: Initial draft CR for TS 38.321, covering Scell BFR aspects
Deadline: Next Meeting

✉ **[107bis#62][PRN] Stage 2 running CR (Nokia)**
Intended outcome: Update the running CR
Deadline: Next Meeting

✉ **[107bis#63][PRN] RRC CR (Nokia)**
Continue the discussion on SIB1 design and draft running CR for TS 38.331 including agreeable ASN.1 details
Intended outcome: Initial draft CR for TS 38.331
Deadline: Next Meeting

✉ **[107bis#64][PRN] Suitable and acceptable NPN cells (Qualcomm)**
Discuss remaining issues on suitable and acceptable NPN cells
Intended outcome: List of agreeable proposals and running CR for 38.304
Deadline: Next Meeting

✉ **[107bis#65][eMTC R16] UE identifier pros and cons (LG)**
To define the problem and compose a list of pros and cons for each UE identifier
Intended outcome: report from the email discussion in R2-1914048
Deadline: Next meeting

✉ **[107bis#66][NTN] Running TP (Thales)**
Running TP capturing new agreements in this meeting and removing editor's notes
Incorporate new pedestrian requirement changes
Intended outcome: Running TP
Deadline: Next Meeting

✉ **[107bis#67][NTN] Ephemeris data handling (Ericsson)**
Intended outcome: Agreeable proposals and TP
Deadline: Next Meeting

✉ **[107bis#68][PowerSaving] RRM measurement relaxation (Mediatek)**
Intended outcome: Report, possibly Draft LS
- Stage 3 details for the triggering criterion based on papers from RAN2#107bis
- Summarize and discussion of RRM measurement relaxation based on papers from RAN2#107bis
- Agreable proposals and possible LS to RAN4
Deadline: Next Meeting

✉ **[107bis#69][PowerSaving] Running CR 38.300 (CATT)**
Scope: Capture agreements up to RAN2#107bis
Intended outcome: Running CR
Deadline: Next Meeting

✉ **[107bis#70][PowerSaving] Running CR 38.331 (Mediatek)**
Scope: Capture agreements up to RAN2#107bis at least for MIMO and SCell Identify and discuss open issues related to stage-3 modelling aspects if needed
Intended outcome: Running CR
Deadline: Next Meeting

✉ **[107bis#71][PowerSaving] Running CR 38.321 (Huawei)**
Scope: Identify and Discuss open issues related to stage-3 modelling aspects, with the aim to capture agreements up to RAN2#107bis
Intended outcome: Proposals on open issues and potential running CR
Deadline: Next Meeting

✉ **[107bis#74][2step RACH] Running 38.300 CR for 2-step RACH (Nokia)**
Intended outcome: Running MAC CR to be endorsed
Deadline: Next Meeting

✉ **[107bis#75][2step RACH] Running MAC CR for 2-step RACH (ZTE)**
Intended outcome: Running MAC CR to be endorsed
Deadline: Next Meeting

✉ **[107bis#76][2-step RACH] MSG B format design (Samsung)**
- Discuss remaining open issues (e.g. E bit)
- Design MAC PDU format based on agreements made on RAN2#107bis and possible outcome of E bit discussion
Intended outcome: TP on agreeable MAC PDU format for MsgB
Deadline: Next Meeting

✉ **[107bis#77][2-step RACH] RRC details and Running CR (Ericsson)**
Intended outcome: Agreeable proposals for configuration of 2-step RACH according to proposals submitted in RAN2#107bis and Running RRC CR capturing agreements from this meeting
Deadline: Next Meeting

✉ **[107bis#78][NR Pos] Running stage 2 CR on NR positioning (Intel)**
Intended outcome: Update of the running CR to reflect decisions of RAN2#107bis
Deadline: Next Meeting

✉ **[107bis#79][NR Pos] Running CR to 38.331 on NR positioning (Ericsson)**
Intended outcome: Endorsable running CR
Deadline: Next Meeting

- **[107bis#80][NR Pos] Capturing RAN1 parameters for positioning (Intel)**
  Generate a draft CR based on any LS from RAN1 regarding their agreed positioning parameters.
  Intended outcome: Draft CR to next meeting
  Deadline: Next Meeting

- **[107bis#81][NR Pos] Update of SSR phase 2 running CRs (Qualcomm)**
  Intended outcome: Draft CRs for 36.355 and 36.331 for next meeting
  Deadline: Next Meeting

- **[107bis#82][NR MDT] 37.320 running CR (CMCC, Nokia)**
  Intended outcome: Running CR, to be endorsed next meeting
  Deadline: Next Meeting

- **[107bis#83][NR MDT] Running 331 CR for introducing MDT (Huawei)**
  Capture agreements from this meeting
  Including stage3 details event triggered MDT
  Divided into 2 phases. Phase1 is targeted to provide a merged MDT CR in one week.
  Intended outcome: Report and Running CR to be endorsed next meeting
  Deadline: Next Meeting

- **[107bis#84][NR MDT] MR DC related issue (Ericsson)**
  How to handle MDT in DC scenario
  Intended outcome: Report
  Deadline: Next Meeting

- **[107bis#85][NR MDT] Mobility history (CATT)**
  Intended outcome: report
  Deadline: Next Meeting

- **[107bis#86][NR L2 meas] running 38.314 (CMCC)**
  Capture the related agreements from this meeting
  Intended outcome: Report and running CR for next meeting
  Deadline: Next Meeting

- **[107bis#87][NR SON] running 331 CR for introducing SON (Ericsson)**
  Capture agreements from this meeting
  The merged MDT running CR should be taken as baseline
  Intended outcome: Report and Running CR for next meeting
  Deadline: Next Meeting

- **[107bis#88][NB-IoT R15] NPDCCH monitoring start/stop timers (NTT DoCoMo)**
  Check whether there is impact to timers other than OnDuration timer for NPDCCH monitoring start/stop
  Intended outcome: Report and CR to be submitted to the next meeting.
  Deadline: Next Meeting

- **[107bis#89][NB-IoT R16] Open issues on UAC in NB-IoT (Huawei)**
  Open issues on UAC in NB-IoT
  Intended outcome: Report
  Deadline: Next Meeting

- **[107bis#90][NB-IoT eMTC R16] Further details on “m” operation for PUR (Qualcomm)**
  To progress the FFSs on “m” operation
  Intended outcome: Report
  Deadline: Next Meeting

- **[107bis#91][V2X] 38.331 running CR (Huawei)**

Intended outcome: Draft CR for next meeting, to be endorsed. 38.331 running CR (including discussion of 38.331 miscellaneous open issues considering new RAN1/4 agreements, e.g. L1 parameters, information in Sidelink UE Information, information in UE Assistance Information, need of both Sidelink UE Information and UE Assistance Information, need of Uu MR (if needed including information in the corresponding MR), SIB remaining issues, etc). See also R2-1912377.
Deadline: Next Meeting

- ✉ **[107bis#92][V2X] 36.331 running CR (Huawei)**
  Intended outcome: Draft CR for next meeting, to be endorsed. 36.331 running CR, See also R2-1913698
  Deadline: Next Meeting

- ✉ **[107bis#93][V2X] 38.321 running CR (LG)**
  Intended outcome: Draft CR for next meeting, to be endorsed. 38.321 running CR (including discussion of 38.321 miscellaneous open issues considering new RAN1/4 agreements). See also R2-1913825
  Deadline: Next Meeting

- ✉ **[107bis#94][V2X] 36.321 running CR (LG)**
  Intended outcome: Draft CR for next meeting, to be endorsed. 36.321 running CR. See also R2-1913824
  Deadline: Next Meeting

- ✉ **[107bis#95][V2X] 38.304 and 36.304 running CRs (ZTE)**
  Intended outcome: Draft CRs for next meeting, to be endorsed. Including discuss how to handle editor's note.
  Deadline: Next Meeting

- ✉ **[107bis#96][V2X] RLC AM mismatch (Huawei)**
  Intended outcome: Report for next meeting, discuss the RLC AM mismatch issues and decide solution.
  Deadline: Next Meeting

Annex G: History

Document history		
Date	**TSG RAN WG2 Tdoc**	**Subject**
22.10.2019		First draft version
12.11.2019		Second draft version (contains results of short email discussions)
17.11.2019	R2-1914301	Version submitted for approval in RAN2#108

Author: **Dr. Juha Korhonen**
ETSI Mobile Competence Centre (MCC)
Tel. +33 (0)4 92 94 42 00
email: Juha.Korhonen@etsi.org

Appendix D

TDoc	Title	Source	TDoc Status	Reservation date	Uploaded
R2-1912000	Agenda for RAN2#107bis	Chairman	approved	2019-09-29 10:30:52	2019-10-06 15:09:01
R2-1912001	RAN2#107 Meeting Report	MCC	approved	2019-09-29 10:30:52	2019-10-13 09:36:28
R2-1912002	Reply LS on NAS Aspects of Mobile-terminated Early Data Transmission (C1-195111; contact: Qualcomm)	CT1	noted	2019-09-29 10:30:52	2019-09-29 10:34:24
R2-1912003	LS on sending CAG ID during resume procedure (C1-195157; contact: Samsung)	CT1	noted	2019-09-29 10:30:52	2019-09-29 10:34:24
R2-1912004	LS on short MAC-I and ngKSI for 5G-CIoT (C1-195199; contact: Vodafone)	CT1	noted	2019-09-29 10:30:52	2019-09-29 10:34:24
R2-1912005	LS on encoding of UE radio capabilities (C3-193147; contact: Qualcomm)	CT3	noted	2019-09-29 10:30:52	2019-09-29 10:34:24
R2-1912006	Liaison response on Ethernet header compression (liaison-response-3GPP-RAN2-Ethernet-header-compression-0719-v01; contact: Ericsson, Nokia)	GSMA	noted	2019-09-29 10:30:52	2019-09-29 10:34:24
R2-1912007	LS on O-RAN Alliance & 3GPP Coordination on O-RAN Alliance Outputs (ORAN_3GPP_Liaison_Statement_final; contact: AT&T, CMCC)	O-RAN Alliance	noted	2019-09-29 10:30:52	2019-09-29 10:34:24
R2-1912008	Reply LS on PDCCH monitoring for NR-DC (R1-1909550; contact: Samsung)	RAN1	noted	2019-09-29 10:30:52	2019-09-29 10:34:24
R2-1912009	LS Reply on overall procedure for 2-step RACH (R1-1909554; contact: ZTE)	RAN1	noted	2019-09-29 10:30:52	2019-09-29 10:34:24
R2-1912010	Reply LS on quality report in Msg3 for LTE-M (R1-1909793; contact: Ericsson)	RAN1	noted	2019-09-29 10:30:52	2019-09-29 10:34:24
R2-1912011	LS on DL/UL Reference Signals and Measurements for NR Positioning (R1-1909796; contact: Intel)	RAN1	noted	2019-09-29 10:30:52	2019-09-29 10:34:24
R2-1912012	Reply LS on SFTD measurement (R1-1909819; contact: Huawei)	RAN1	noted	2019-09-29 10:30:52	2019-09-29 10:34:24
R2-1912013	Reply LS on MAC CE design for SCell BFR (R1-1909833; contact: Apple)	RAN1	noted	2019-09-29 10:30:52	2019-09-29 10:34:24
R2-1912014	Reply LS on Tx DC location (R1-1909849; contact: Huawei)	RAN1	noted	2019-09-29 10:30:53	2019-09-29 10:34:24
R2-1912015	Reply LS on transmission of short message with multiple beams (R1-1909852; contact: Qualcomm)	RAN1	noted	2019-09-29 10:30:53	2019-09-29 10:34:24
R2-1912016	Reply LS on RAN1/4 feature lists R1-1909856; contact: NTT DOCOMO)	RAN1	noted	2019-09-29 10:30:53	2019-09-29 10:34:24
R2-1912017	LS on mapping between LTE V2X PPPP and NR V2X priority (R1-1909876; contact: Qualcomm)	RAN1	noted	2019-09-29 10:30:53	2019-09-29 10:34:24
R2-1912018	Reply LS on Sidelink HARQ Feedback for Groupcast (R1-1909879; contact: LGE)	RAN1	noted	2019-09-29 10:30:53	2019-09-29 10:34:24

R2-1912019	LS on DL HARQ timing for FDD SCell for LTE TDD-FDD CA with TDD PCell, applied to FDD PCell, for Dual Uplink EN-DC (R1-1909880; contact: Vodafone)	RAN1	noted	2019-09-29 10:30:53	2019-09-29 10:34:24
R2-1912020	LS on SFN sync (R1-1909882; contact: Nokia)	RAN1	noted	2019-09-29 10:30:53	2019-09-29 10:34:24
R2-1912021	Reply LS to RAN 2 on CSI reporting in C-DRX (R1-1909889; contact: Qualcomm)	RAN1	noted	2019-09-29 10:30:53	2019-09-29 10:34:24
R2-1912022	Reply LS on NR fast SCell activation (R1-1909893; contact: Qualcomm)	RAN1	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912023	Reply LS on maximum value of MDBV (R1-1909894; contact: Qualcomm)	RAN1	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912024	LS on NR Rel-16 TEI (R1-1909895; contact: NTT DOCOMO)	RAN1	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912025	Response to LS on Combination 2 of Uu QoS characteristics values for V2X services (R1-1909898; contact: Huawei)	RAN1	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912026	Reply LS on supported BW for initial BWP (R1-1909900; contact: Nokia)	RAN1	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912027	Reply LS on propagation delay compensation for reference time information delivery (R1-1909906; contact: Nokia)	RAN1	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912028	Reply LS on Combinations of Uu QoS characteristics values for V2X services (R3-193258; contact: Huawei)	RAN3	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912029	Reply on radio resource management policy (R3-194550; contact: Huawei)	RAN3	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912030	Reply LS on LS on maximum value of MDBV (R3-194553; contact: Qualcomm)	RAN3	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912031	Reply LS on Data activity reporting (R3-194572; contact: Ericsson)	RAN3	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912032	Reply LS on LTE-M identification in 5GC (R3-194748; contact: Qualcomm)	RAN3	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912033	LS on full configuration during SN Modification procedure (R3-194758; contact: Huawei)	RAN3	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912034	LS on enhanced Make-Before-Break data forwarding (R3-194768; contact: Ericsson)	RAN3	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912035	Reply LS on RAN sharing and Emergency services with Non-Public Networks (R3-194785; contact: Qualcomm)	RAN3	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912036	LS on clarifications on Private Networks (R3-194786; contact: Nokia)	RAN3	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912037	LS on the IAB-indication to core network (R3-194787; contact: Qualcomm)	RAN3	noted	2019-09-29 10:30:53	2019-09-29 10:34:25

R2-1912038	Reply LS on Enhancements to QoS Handling for V2X Communication Over Uu Reference Point (R3-194795; contact: Vodafone)	RAN3	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912039	Reply LS on measurement gap for SRS-RSRP or CLI-RSSI measurements (R4-1908777; contact: LGE)	RAN4	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912040	Reply LS on RAN1/4 feature lists (R4-1909845; contact: Intel)	RAN4	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912041	Reply LS on simultaneous RX/TX for NR (R4-1909992; contact: Ericsson)	RAN4	noted	2019-09-29 10:30:53	2019-09-29 10:34:25
R2-1912042	Reply LS on maximum allowed SCell activation delay for Rel16 CA (R4-1909995; contact: Nokia)	RAN4	noted	2019-09-29 10:30:54	2019-09-29 10:34:25
R2-1912043	LS Reply on measurements for SRVCC from 5G to 3G (R4-1910026; contact: Huawei)	RAN4	noted	2019-09-29 10:30:54	2019-09-29 10:34:25
R2-1912044	Reply to LS on DL channel quality report for configured carrier in RRC connected mode (R4-1910110; contact: Qualcomm)	RAN4	noted	2019-09-29 10:30:54	2019-09-29 10:34:25
R2-1912045	LS on signalling measurement thresholds for validating the TA for PUR (R4-1910176; contact: Ericsson)	RAN4	noted	2019-09-29 10:30:54	2019-09-29 10:34:25
R2-1912046	Reply LS on SFTD measurement (R4-1910179; contact: ZTE)	RAN4	noted	2019-09-29 10:30:54	2019-09-29 10:34:25
R2-1912047	LS on Handling of Fallbacks for combined contiguous and non-contiguous CA or DC configurations in FR2 (R4-1910239; contact: Apple)	RAN4	noted	2019-09-29 10:30:54	2019-09-29 10:34:25
R2-1912048	LS on FR2 Pmax (R4-1910262; contact: Huawei)	RAN4	noted	2019-09-29 10:30:54	2019-09-29 10:34:25
R2-1912049	LS reply on supported BW for initial BWP (R4-1910522; contact: Nokia)	RAN4	noted	2019-09-29 10:30:54	2019-09-29 10:34:25
R2-1912050	LS on sidelink BWP reconfiguration on ITS band (R4-1910542; contact: MediaTek)	RAN4	noted	2019-09-29 10:30:54	2019-09-29 10:34:25
R2-1912051	Reply LS on reporting criteria limitation in MR-DC (R4-1910570; contact: Huawei)	RAN4	noted	2019-09-29 10:30:54	2019-09-29 10:34:25
R2-1912052	LS on RSSI definition (R4-1910573; contact: MediaTek)	RAN4	noted	2019-09-29 10:30:54	2019-09-29 10:34:25
R2-1912053	Reply LS on NR fast SCell activation (R4-1910574; contact: Huawei)	RAN4	noted	2019-09-29 10:30:54	2019-09-29 10:34:25
R2-1912054	LS on evaluation of S criteria on non-anchor carrier (R4-1910575; contact: Huawei)	RAN4	noted	2019-09-29 10:30:54	2019-09-29 10:34:25
R2-1912055	LS to RAN2 on mandatory 90 MHz UE channel bandwidth for n41 and n78 in REL-16 (R4-1910605; contact: Vodafone)	RAN4	noted	2019-09-29 10:30:54	2019-09-29 10:34:25
R2-1912056	LS on Rel-16 NB-IoT enhancements (RP-192338; contact: Futurewei)	RAN	noted	2019-09-29 10:30:54	2019-09-29 10:34:24

R2-1912057	Reply on Combinations of Uu QoS characteristics values for V2X services (S2-1906340; contact: Huawei)	SA2	noted	2019-09-29 10:30:54	2019-09-29 10:34:24
R2-1912058	Reply LS on Reply LS on Mobile-terminated Early Data Transmission (S3-193059; contact: Nokia)	SA3	noted	2019-09-29 10:30:54	2019-09-29 10:34:24
R2-1912059	LS on Sending CAG ID in NAS layer (S3-193142; contact: Qualcomm)	SA3	noted	2019-09-29 10:30:54	2019-09-29 10:34:24
R2-1912060	LS to RAN2 and RAN3 on False Base Station Detection (S3-193175; contact: Huawei)	SA3	noted	2019-09-29 10:30:54	2019-09-29 10:34:24
R2-1912061	LS on QoE Measurement Collection (S5-195659; contact: Ericsson)	SA5	noted	2019-09-29 10:30:54	2019-09-29 10:34:24
R2-1912062	Reply LS on L1 and L2 measurements (S5-195941; contact: Huawei)	SA5	noted	2019-09-29 10:30:54	2019-09-29 10:34:24
R2-1912063	LS on aspects of Mission Critical Services over 5MBS (S6-192003; contact: AT&T)	SA6	postponed	2019-09-29 10:30:54	2019-09-29 10:34:24
R2-1912064	Reply LS to "O-RAN Alliance & 3GPP Coordination on O-RAN Alliance Outputs" (SP-190947; contact: Intel)	SA	noted	2019-09-29 10:30:54	2019-09-29 10:34:24
R2-1912065	Discussion on SL capability signaling for Uu-RRC	OPPO	not treated	2019-09-30 11:26:00	2019-10-03 15:29:30
R2-1912066	Left issues on SIB and cell reselection for NR-V2X	OPPO	not treated	2019-09-30 11:26:00	2019-10-03 15:29:30
R2-1912067	Discussion on SL-related Uu-RRC messages	OPPO	not treated	2019-09-30 11:26:00	2019-10-03 15:29:30
R2-1912068	Discussion on RLC mode configuration collision	OPPO	not treated	2019-09-30 11:26:00	2019-10-03 15:29:30
R2-1912069	Left issues on RLC, PDCP and SDAP for NR-V2X	OPPO	not treated	2019-09-30 11:26:00	2019-10-03 15:29:30
R2-1912070	Left issues on MAC for NR-V2X	OPPO	revised	2019-09-30 11:26:00	2019-10-03 15:29:30
R2-1912071	Left issues on UL-SL prioritization for NR-V2X	OPPO, Apple	noted	2019-09-30 11:26:00	2019-10-03 15:29:30
R2-1912072	[DRAFT] LS on HARQ option for group-cast	OPPO	not treated	2019-09-30 11:26:00	2019-10-03 15:29:30
R2-1912073	Left issues on PC5-RRC based AS layer configuration procedure	OPPO	not treated	2019-09-30 11:26:00	2019-10-03 15:29:30
R2-1912074	Left issues on PC5-S impact on AS-layer	OPPO	not treated	2019-09-30 11:26:00	2019-10-03 15:29:30
R2-1912075	Left issues on PC5-RRC based capability transfer procedure	OPPO	noted	2019-09-30 11:26:00	2019-10-03 15:29:30
R2-1912076	Left issues on SLRB configuration for NR-V2X	OPPO	not treated	2019-09-30 11:26:00	2019-10-03 15:29:30
R2-1912077	Discussion on congestion control and admission control	OPPO	noted	2019-09-30 11:26:00	2019-10-03 15:29:30
R2-1912078	Miscellaneous issues on PC5-RRC	OPPO	not treated	2019-09-30 11:26:00	2019-10-03 15:29:30
R2-1912079	Left issue on idle mode mobility for NTN	OPPO	not treated	2019-09-30 11:26:00	2019-10-03 15:29:30
R2-1912080	Discussion on DL-TDOA positioning	ZTE Corporation	not treated	2019-09-30 11:55:16	2019-10-04 02:20:39
R2-1912081	Discussion on UL-TDOA positioning in NR	ZTE Corporation	not treated	2019-09-30 11:59:55	2019-10-04 02:20:39
R2-1912082	Discussion on multi-cell E-CID in NR	ZTE Corporation	not treated	2019-09-30 12:02:56	2019-10-04 02:20:39
R2-1912083	Discussion on multi-cell E-CID in NR	ZTE Corporation	withdrawn	2019-09-30 12:03:18	2019-10-22 03:18:35
R2-1912084	Remaining issues on supporting only 2-step RACH configuration on a UL BWP	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912085	msgB MAC PDU format in 2-step RACH	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912086	Remaining stage-2 open issues	OPPO	noted	2019-09-30 12:11:23	2019-10-03 13:52:35

R2-1912087	Stage3 issues on contention resolution for 2-step RACH	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912088	Contention free 2-step RACH	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912089	Remaining issues on UE behaviours when PDCCH-WUS is configured	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912090	Remaining issues on configuration of PDCCH-WUS	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912091	Impacts of power saivng signalling on CSI reporting	OPPO	not treated	2019-09-30 12:11:23	2019-10-10 08:22:26
R2-1912092	MIMO layer adaptation for power saving	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912093	UE assistance information for power saving	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912094	RRM relaxation for power saving	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912095	Remaining issues on detecting uplink LBT failure for NR-U	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912096	Uplink LBT failure revoery for NR-U	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912097	Issues on contention resolution timer in NR-U	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912098	Remaining issues on extending RA response window in NR-U	OPPO	noted	2019-09-30 12:11:23	2019-10-10 08:22:26
R2-1912099	[Draft] LS on supporting LBT type in RAR	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912100	2-step RACH for NR-U	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912101	Remaining DRX issues for non-numerical K1 and HARQ feedback	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912102	DRX procedure enhancements due to LBT impacts	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912103	Remaining issues on NR-U configured grant	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912104	Discussion RAN1 LS on supporting multiple frequency domain monitoring locations for a searchspace	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912105	RLM enhancements	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912106	System information enhancements for NR-U	OPPO	not treated	2019-09-30 12:11:23	2019-10-03 13:52:35
R2-1912107	RAN2 work plan for UE Power Saving WI	CATT (rapporteur)	noted	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912108	[107#65][NR/Power Saving] Running CR for 38.300 (CATT)	CATT (rapporteur)	endorsed	2019-09-30 12:13:36	2019-10-04 08:51:21
R2-1912109	Stage-3 aspects of PDCCH-WUS	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912110	Remaining issues on UE RRC state transition request	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912111	Maximum MIMO layers configuration in power saving	CATT	noted	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912112	UE assistance for SCell	CATT, Qualcomm Inc., Apple, Huawei, HiSilicon, vivo, Samsung, Intel, MediaTek	noted	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912113	Considerations on the criterions of RRM measurement relaxation	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912114	Available Cell Reselection Measurement Result Reporting	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:44:04

R2-1912115	Remaining issues of early measurement configurations	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:44:04
R2-1912116	Considerations on Direct SCell activation in DC/CA Scenarios	CATT	not treated	2019-09-30 12:13:36	2019-10-03 23:23:44
R2-1912117	Temporary RS utilization for SCell and SpCell	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:44:04
R2-1912118	Dormant SCG state	CATT	not treated	2019-09-30 12:13:36	2019-10-03 23:23:44
R2-1912119	Signalling enhancement for Inactive state	CATT	not treated	2019-09-30 12:13:36	2019-10-03 23:23:45
R2-1912120	Bearer type negotiation	CATT	not treated	2019-09-30 12:13:36	2019-10-03 23:23:45
R2-1912121	Common Cell Configuration for Signaling Reduction in NR	CATT	noted	2019-09-30 12:13:36	2019-10-03 13:44:04
R2-1912122	Bearer type negotiation	CATT	withdrawn	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912123	Discussion on BAP Buffer	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912124	Pre-emptive BSR	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912125	Remaining issues with IAB Routing	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912126	Further Discussions on IAB BH RLF	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912127	Summary of the email discussion [106#43][IAB] Backhaul RLF	CATT	noted	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912128	Discussion on multi-beam enhancements	CATT	not treated	2019-09-30 12:13:36	2019-10-03 23:23:45
R2-1912129	Further Considerations on Capability Coordination for DAPS-RUDI	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912130	Remaining PDCP issues for DAPS	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912131	Further Considerations on CP of DAPS-RUDI	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912132	Discussion on the Working Assumption Related Issues	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912133	Conditional PScell Addition/Change	CATT	noted	2019-09-30 12:13:36	2019-10-03 23:35:06
R2-1912134	Further Discussion on Cell Evaluation for CHO Cell Selection	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912135	Coexistence of Simultaneous Connectivity and CHO	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912136	Discussion on Signaling Structure of CHO Configuration Message	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912137	UE Capability Issue for CHO	CATT	not treated	2019-09-30 12:13:36	2019-10-03 13:39:20
R2-1912138	Corrections on the premises of HO to E-UTRA	CATT	not treated	2019-09-30 12:46:13	2019-10-03 04:31:21
R2-1912139	Corrections on the premises of E-UTRA HO to NR	CATT	not treated	2019-09-30 12:46:14	2019-10-03 04:31:21
R2-1912140	Correction on reestablishRLC	CATT	not treated	2019-09-30 12:46:15	2019-10-03 04:31:21
R2-1912141	Corrections on CG-Config	CATT	agreed	2019-09-30 12:46:16	2019-10-03 04:31:21
R2-1912142	Issues for Log MDT Configuration in DC Scenario	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912143	Detection and Reporting of Out-of-coverage	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912144	[Draft] LS on MDT Configuration of Event triggered Out-of-coverage	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912145	Clarification of UL Delay Measurement	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912146	Uncertainty of L2 Measurement Result Related to URLLC	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05

R2-1912147	Output of Email Discussion [107#45][NRSON] RACH and Mobility Robustness Optimisation Checking	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912148	[Draft] Reply LS on RACH Optimization and Mobility Robustness Optimization	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912149	RACH Report Optimization	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912150	Recording and Reporting of RACH Failure	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912151	Consideration on Successful HO Report	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912152	Mobility History and State in NR	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912153	Cell Selection and Reselection of NPN cell	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912154	Connection and Mobility Issue for UEs in Idle and Inactive Mode	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912155	Mobility Issue for LEO in NTN System	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912156	Cell Selection and Reselection Issue between NTN and TN System	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912157	Measurement Issues for NTN System	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912158	Paging Load in Two Sub-options of Fixed TA	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912159	Discussion on Random Access Procedure for NTN	CATT	not treated	2019-09-30 12:46:17	2019-10-03 10:34:05
R2-1912160	Consideration on the SPS/CG for NTN	CATT	not treated	2019-09-30 12:46:17	2019-10-03 03:55:05
R2-1912161	Discussion on unicast connection setup procedure	CATT	not treated	2019-09-30 13:16:21	2019-10-03 15:39:55
R2-1912162	RLM / RLF procedure in NR V2X Sidelink	CATT	not treated	2019-09-30 13:16:21	2019-10-03 15:39:55
R2-1912163	Resource (Re-) selection function in NR V2X Sidelink	CATT	not treated	2019-09-30 13:16:21	2019-10-03 15:39:55
R2-1912164	38 323 running CR	CATT	revised	2019-09-30 13:16:21	2019-10-03 15:39:55
R2-1912165	Remaining Issues on PDCP	CATT	not treated	2019-09-30 13:16:21	2019-10-03 15:39:54
R2-1912166	Resource allocation mode configuration	CATT	not treated	2019-09-30 13:16:21	2019-10-03 15:39:54
R2-1912167	Further discussion on LCP procedure	CATT	not treated	2019-09-30 13:16:21	2019-10-03 15:39:55
R2-1912168	Leftover issues for sidelink configured grant	CATT	not treated	2019-09-30 13:16:21	2019-10-03 15:39:55
R2-1912169	Prioritization between UL and SL for NR V2X	CATT	not treated	2019-09-30 13:16:21	2019-10-03 15:39:55
R2-1912170	SLRB configurations handling during UE states transition	CATT	noted	2019-09-30 13:16:21	2019-10-03 15:39:55
R2-1912171	Configuration Procedure of the Bi-directional RLC AM SLRB	CATT	not treated	2019-09-30 13:16:21	2019-10-03 15:39:55
R2-1912172	NR Uu controlling LTE sidelink SPS	CATT	not treated	2019-09-30 13:16:21	2019-10-03 15:39:55
R2-1912173	Left Issues of BSR/SR	CATT	not treated	2019-09-30 13:16:21	2019-10-03 15:39:55
R2-1912174	Admission Control for NR SL	CATT	not treated	2019-09-30 13:16:21	2019-10-03 15:39:55
R2-1912175	Type 1 Sidelink Configured Grant Validity Time	CATT	not treated	2019-09-30 13:16:21	2019-10-03 15:39:55
R2-1912176	Remaining Issues on RACH Procedure in NR-U	vivo	not treated	2019-09-30 13:31:07	2019-10-04 04:34:51
R2-1912177	Remaining Issues on Uplink LBT Failure	vivo	not treated	2019-09-30 13:31:07	2019-10-04 04:34:51
R2-1912178	Issue on the Autonomous BWP Switching in NR-U	vivo	not treated	2019-09-30 13:31:07	2019-10-04 04:34:51
R2-1912179	LBT Impacts on 2-step RACH	vivo	not treated	2019-09-30 13:31:07	2019-10-04 04:34:51
R2-1912180	Remaining Issues on Configured Grant in NR-U	vivo	not treated	2019-09-30 13:31:08	2019-10-04 04:34:51
R2-1912181	CAPC Restriction to Data Multiplexing for Configured Grant	vivo	not treated	2019-09-30 13:31:08	2019-10-04 04:34:51

R2-1912182	Introducing More Transmission Opportunities for DL SPS in NR-U	vivo	noted	2019-09-30 13:31:08	2019-10-04 04:34:51
R2-1912183	On NR-U PHR Handling	vivo	noted	2019-09-30 13:31:08	2019-10-04 04:34:51
R2-1912184	Further Discussion on the Whitelist in NR-U	vivo	not treated	2019-09-30 13:31:08	2019-10-04 04:34:51
R2-1912185	Enhancements of System Information in NR-U	vivo	noted	2019-09-30 13:31:08	2019-10-04 04:34:51
R2-1912186	Differentiation Between 2-step and 4-step RACH	vivo	not treated	2019-09-30 13:31:08	2019-10-04 04:29:47
R2-1912187	Remaining Issue on Contention Resolution in 2-step RACH	vivo	not treated	2019-09-30 13:31:08	2019-10-04 04:29:47
R2-1912188	Remaining Issue on Fallback from 2-step to 4-step RACH	vivo	not treated	2019-09-30 13:31:08	2019-10-04 04:29:47
R2-1912189	Resource Selection for MsgA	vivo	not treated	2019-09-30 13:31:08	2019-10-04 04:29:47
R2-1912190	Prioritized RA Parameters for 2-step RACH	vivo	not treated	2019-09-30 13:31:08	2019-10-04 04:29:47
R2-1912191	Discussion on the 2-step CFRA	vivo	not treated	2019-09-30 13:31:08	2019-10-04 04:29:47
R2-1912192	Remaining issues of NR early measurements	Qualcomm Incorporated	not treated	2019-09-30 13:41:57	2019-10-04 05:35:08
R2-1912193	CR to 38.331 on support of cross-carrier scheduling with different numerology	Qualcomm Incorporated, ZTE Corporation, Sanechips	not treated	2019-09-30 13:44:55	2019-10-04 05:35:08
R2-1912194	Further discussion on NR SCG resume procedure	Qualcomm Incorporated	not treated	2019-09-30 13:46:29	2019-10-04 05:35:08
R2-1912195	Discussion on fast SCell activation based on RAN1 / RAN4 reply LS	Qualcomm Incorporated, Verizon, Vodafone, Sprint, MediaTek Inc., Charter Communications	noted	2019-09-30 13:48:52	2019-10-04 05:35:08
R2-1912196	Discussion on common SCell configuration	Qualcomm Incorporated	not treated	2019-09-30 13:50:19	2019-10-04 05:35:08
R2-1912197	Introducing suspension of SCG	Qualcomm Incorporated	not treated	2019-09-30 13:51:30	2019-10-04 05:35:08
R2-1912198	Remaining issues of Fast MCG Recovery	Qualcomm Incorporated	not treated	2019-09-30 13:55:10	2019-10-04 05:35:08
R2-1912199	CR to 38.331 on configuration of rach-ConfigCommon in initial UL BWP for RRC triggered BWP switch	Qualcomm Incorporated	revised	2019-09-30 13:57:00	2019-10-04 05:35:08
R2-1912200	Discussion on procedures in RAT-Dependent positioning methods	CATT	noted	2019-09-30 13:57:46	2019-10-03 05:53:40
R2-1912201	Considerations on Broadcast Positioning Assistance Data	CATT	not treated	2019-09-30 13:57:57	2019-10-03 05:53:40
R2-1912202	Open Issues on Broadcast Positioning Procedure	CATT	not treated	2019-09-30 13:57:57	2019-10-03 05:53:39
R2-1912203	Introduction of B1C signal in BDS system in A-GNSS	CATT, CAICT, CMCC, China Telecom, China Unicom, Huawei, ZTE Corporation, MediaTek Inc	endorsed	2019-09-30 13:57:57	2019-10-03 05:39:43
R2-1912204	Introduction of B1C signal in BDS system in A-GNSS	CATT, CAICT, CMCC, China Telecom, China Unicom, Huawei, ZTE Corporation, MediaTek Inc	revised	2019-09-30 13:57:59	2019-10-03 05:39:43

R2-1912205	Introduction of B1C signal in BDS system in A-GNSS	CATT, CAICT, CMCC, China Telecom, China Unicom, Huawei, ZTE Corporation, MediaTek Inc	**endorsed**	2019-09-30 13:58:00	2019-10-03 05:39:43
R2-1912206	Re-consideration on PLMN-wide Filter	CATT	**not treated**	2019-09-30 13:58:00	2019-10-03 05:41:26
R2-1912207	Draft LS on PLMN-wide Filter	CATT	**not treated**	2019-09-30 13:58:00	2019-10-03 05:41:26
R2-1912208	Open Issues of Reference Timing Delivery	CATT	**noted**	2019-09-30 16:16:24	2019-10-03 13:43:08
R2-1912209	Remaining Issues on Multiple Active SPS/CGs	CATT	**not treated**	2019-09-30 16:16:24	2019-10-03 13:43:08
R2-1912210	Discussion on Ethernet Header Compression	CATT	**not treated**	2019-09-30 16:16:24	2019-10-03 13:43:08
R2-1912211	Data/data prioritization	CATT	**not treated**	2019-09-30 16:16:24	2019-10-03 13:43:08
R2-1912212	Equal-priority handling	CATT	**not treated**	2019-09-30 16:16:24	2019-10-03 13:43:08
R2-1912213	SR/PUSCH prioritization	CATT	**not treated**	2019-09-30 16:16:24	2019-10-03 13:43:08
R2-1912214	[107#80][NR IIOT] Summary on Deprioritized PDUs (CATT)	CATT	revised	2019-09-30 16:16:24	2019-10-22 03:18:35
R2-1912215	Handling of Dropped MAC PDU	CATT	**noted**	2019-09-30 16:16:24	2019-10-03 13:43:08
R2-1912216	The prioritization between MAC CEs and UL data	CATT	**not treated**	2019-09-30 16:16:24	2019-10-03 13:43:08
R2-1912217	LCP restriction enhancement for reliability	CATT	**not treated**	2019-09-30 16:16:24	2019-10-03 13:43:08
R2-1912218	On the number of activated legs	CATT, Fujitsu	**not treated**	2019-09-30 16:16:24	2019-10-03 13:43:08
R2-1912219	PDCP Duplication Configuration and Activation/Deactivation	CATT	**not treated**	2019-09-30 16:16:24	2019-10-03 13:43:08
R2-1912220	Discussion on UE based Duplication Activation/Deactivation	CATT	**not treated**	2019-09-30 16:16:24	2019-10-03 13:43:08
R2-1912221	MAC upgrade for SR dropping in PHY	CATT	**not treated**	2019-09-30 16:21:09	2019-10-03 13:43:08
R2-1912222	BSR trigger issue for CA duplication	CATT	**noted**	2019-09-30 16:21:10	2019-10-03 13:43:08
R2-1912223	On the remaining open issues of 2-step RACH	CATT	**not treated**	2019-09-30 16:21:10	2019-10-03 01:07:49
R2-1912224	Load balancing between RACH Types	CATT	**not treated**	2019-09-30 16:21:10	2019-10-03 01:07:49
R2-1912225	Remaining Issue of RA Type Selection	CATT	**not treated**	2019-09-30 16:21:10	2019-10-03 01:07:49
R2-1912226	Open issues of 2-step CFRA	CATT	**not treated**	2019-09-30 16:21:10	2019-10-03 01:07:49
R2-1912227	NR-U RACH enhancements	SHARP	**not treated**	2019-09-30 18:35:06	2019-10-02 19:20:27
R2-1912228	Report of email discussion [107#56][NB-IoT R15]	NTT DOCOMO INC.	**noted**	2019-09-30 23:40:06	2019-10-04 06:45:02
R2-1912229	CE Mode Threshold Adjustments for non-BL and BL UE	NTT DOCOMO INC.	**not treated**	2019-09-30 23:42:51	2019-10-04 06:45:02
R2-1912230	Discussion on capability transfer procedure for NR V2X	Spreadtrum Communications	**not treated**	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912231	Discussion on SLRB configuration alignment	Spreadtrum Communications	**not treated**	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912232	Asymmetric UL and DL frame timing at gNB side	Spreadtrum Communications	**not treated**	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912233	Discussion on communication range in V2X	Spreadtrum Communications	**not treated**	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912234	Logical channel prioritization Consideration	Spreadtrum Communications	**not treated**	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912235	Consideration on activation/deactivation of PDCP duplication	Spreadtrum Communications	**not treated**	2019-10-01 02:03:47	2019-10-01 04:42:54

R2-1912236	Consideration on early measurement reporting	Spreadtrum Communications	not treated	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912237	Early measurement in NR-U	Spreadtrum Communications	not treated	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912238	Enhancements of resuming MR-DC configuration for RRC_INACTIVE	Spreadtrum Communications	not treated	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912239	Mobility Consideration in NR-U	Spreadtrum Communications	not treated	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912240	Measurement report enhancement in conditional handover	Spreadtrum Communications	not treated	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912241	RRC signaling size restriction in CHO	Spreadtrum Communications	not treated	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912242	PSCell Conditional Change Considerations	Spreadtrum Communications	not treated	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912243	LBT Failures Handling in Non-Connected State	Spreadtrum Communications, Huawei, HiSilicon	not treated	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912244	Inconsecutive UL LBT Failures Handling	Spreadtrum Communications	not treated	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912245	Consideration on Logged MDT Report in MR-DC	Spreadtrum Communications	not treated	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912246	Handling of periodicity misalignment between CG periodicity and TSN traffic periodicity	Spreadtrum Communications	not treated	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912247	Discussion on CG and CG collision of equal priority	Spreadtrum Communications	not treated	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912248	Consideration on packet based duplication	Spreadtrum Communications	not treated	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912249	Some remaining issues on UE capability ID	Spreadtrum Communications	not treated	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912250	Filter ID for the selection of UE capability ID	Spreadtrum Communications	not treated	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912251	Discussion on the SuccessRAR for SI request	Spreadtrum Communications	not treated	2019-10-01 02:03:47	2019-10-01 04:42:54
R2-1912252	Running CR to 37324 for 5G_V2X_NRSL	vivo (Rapporteur)	revised	2019-10-01 03:04:03	2019-10-03 19:19:11
R2-1912253	Left Issues on NR SL RLC and PDCP	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:19:11
R2-1912254	Uplink and Sidelink transmission prioritization in NR V2X	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:19:11
R2-1912255	Indication and resource configuration on HARQ enable disable	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:19:11
R2-1912256	Discussion on SR and BSR	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:19:11
R2-1912257	Discussion on Truncated Sidelink BSR	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:19:11
R2-1912258	Remaining issues on sidelink configured grant	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:19:11
R2-1912259	Left issues for PC5-S messages	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:19:11

R2-1912260	Discussion on sideink radio link management on TX and RX UE	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:19:11
R2-1912261	Remaining issues on PC5-RRC message exchange	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:19:11
R2-1912262	UE ID across multiple PC5-S links	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:19:11
R2-1912263	Report of 107#73 NR V2X SDAP(vivo)	vivo	revised	2019-10-01 03:04:03	2019-10-03 19:39:53
R2-1912264	Left issues on SLRB configuration	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:19:11
R2-1912265	Admission and Congestion control in NR V2X	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:19:11
R2-1912266	Mode switch for QoS guarantee in NR V2X	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:19:11
R2-1912267	Remaining issues about NR SL QoS handling	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:19:11
R2-1912268	Running CR to 37.340 for CA_DC enhancements	vivo, Ericsson	not treated	2019-10-01 03:04:03	2019-10-03 19:16:02
R2-1912269	Power control for NR-DC	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:16:02
R2-1912270	Report of [107#35][NR/DCCA] Remaining aspects of early measurement configuration (vivo)	vivo	noted	2019-10-01 03:04:03	2019-10-03 19:16:02
R2-1912271	Early Measurement Reporting for INACTIVE State	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:16:02
R2-1912272	UE measurement behaviour regarding autonomous state transition	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:16:02
R2-1912273	IDC impact for early measurement	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:16:02
R2-1912274	Discussion on fast radio link recovery	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:16:02
R2-1912275	Behavior of dormancy SCell and Scell activation	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:16:02
R2-1912276	Minimize signaling overhead for cell setup of MR-DC	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:16:02
R2-1912277	Remaining issues on MCG fast recovery	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:16:02
R2-1912278	UE capability parameters for SON_MDT	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:13:54
R2-1912279	Running CR to 38.306 for NR_SON_MDT	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:13:54
R2-1912280	Autonomous Gap capability for CGI reporting	vivo, Ericsson	not treated	2019-10-01 03:04:03	2019-10-03 19:14:38
R2-1912281	[Draft] Reply LS on autonomous gap capability	vivo	not treated	2019-10-01 03:04:03	2019-10-03 19:14:38
R2-1912282	SMTC for sync SSB frequency and non-sync SSB frequency	OPPO	not treated	2019-10-01 03:09:09	2019-10-01 13:53:43
R2-1912283	UE measurement behavior due to lower priority frequency and OOS	OPPO	not treated	2019-10-01 03:09:09	2019-10-01 13:53:43
R2-1912284	Fast Scell activation in sTAG	OPPO	not treated	2019-10-01 03:09:09	2019-10-01 13:53:43
R2-1912285	Introduction of dormancy behavior in NR	OPPO	revised	2019-10-01 03:09:09	2019-10-01 13:53:43
R2-1912286	Supporting RRC reestablishment to SN RAT cell	OPPO	not treated	2019-10-01 03:09:09	2019-10-01 13:53:43
R2-1912287	RRC Resume for MR-DC with 5GC	OPPO	not treated	2019-10-01 03:09:09	2019-10-01 13:53:43
R2-1912288	SCell or SCG activation in RRC_INACTIVE	OPPO	not treated	2019-10-01 03:09:09	2019-10-01 13:53:43
R2-1912289	Security algorithom update in RRC reestablishment message	OPPO,Huawei	not treated	2019-10-01 03:09:09	2019-10-01 13:50:58
R2-1912290	Configuration limitation for RRCRelease message in R15	OPPO	revised	2019-10-01 03:09:09	2019-10-01 13:50:58
R2-1912291	Discussion on Cached Data Handling for INACTIVE UE	OPPO	not treated	2019-10-01 03:09:14	2019-10-01 13:50:58
R2-1912292	Discussion on DRB IP failure handling and data recovery	OPPO	not treated	2019-10-01 03:09:14	2019-10-01 13:50:58
R2-1912293	Open issues for early measurement	OPPO	not treated	2019-10-01 03:09:14	2019-10-01 13:53:43

R2-1912294	Lossless Make-Before-Break (MBB) HO support for Low latency, high reliability services	Qualcomm Incorporated	not treated	2019-10-01 03:15:51	2019-10-04 03:15:27
R2-1912295	Source connection handling during Make-Before-Break (MBB) HO	Qualcomm Incorporated	not treated	2019-10-01 03:16:55	2019-10-04 03:15:27
R2-1912296	DAPS HO support for simultaneous Tx not feasible scenarios	Qualcomm Incorporated	not treated	2019-10-01 03:18:28	2019-10-04 03:15:27
R2-1912297	Conditional NR PSCell addition/change procedures	Qualcomm Incorporated	not treated	2019-10-01 03:19:30	2019-10-04 03:15:27
R2-1912298	Conditional NR PSCell addition/change failure handling	Qualcomm Incorporated	not treated	2019-10-01 03:20:59	2019-10-04 03:15:27
R2-1912299	Supporting per DRB MBB HO configuration	Qualcomm Incorporated	not treated	2019-10-01 03:21:53	2019-10-04 03:15:27
R2-1912300	Support Tx sharing during DAPS HO	Qualcomm Incorporated	not treated	2019-10-01 03:22:45	2019-10-04 03:15:27
R2-1912301	Remaining Aspects of Configured Grant Transmission for NR-U	Qualcomm Incorporated	noted	2019-10-01 04:33:21	2019-10-04 03:14:00
R2-1912302	Remaining issues on 4-step RACH for NR-U	Qualcomm Incorporated	noted	2019-10-01 04:35:02	2019-10-04 03:14:00
R2-1912303	Running CR for NR-based Access to Unlicensed Spectrum	Qualcomm Incorporated	revised	2019-10-01 05:04:56	2019-10-04 03:14:00
R2-1912304	Details of the Uplink LBT failure mechanism	Qualcomm Incorporated	noted	2019-10-01 05:06:30	2019-10-04 03:14:00
R2-1912305	Broadcasting of System Information in NR-U	Qualcomm Incorporated	noted	2019-10-01 05:08:12	2019-10-04 03:14:00
R2-1912306	Support for Indian Navigation Satellite System (NavIC)	Reliance Jio	not treated	2019-10-01 05:57:50	2019-10-08 07:46:22
R2-1912307	Remaining Issues on Ethernet Header Compression	China Telecommunications	not treated	2019-10-01 06:49:52	2019-10-04 00:02:25
R2-1912308	Fast Recovery with CA	Nokia, Nokia Shanghai Bell	not treated	2019-10-01 07:46:25	2019-10-03 12:08:52
R2-1912309	Consideration on idle and inactive mode procedures	Huawei, HiSilicon, China Telecom	not treated	2019-10-01 07:50:32	2019-10-04 00:57:48
R2-1912310	Consideration on connected mode procedures	Huawei, HiSilicon	not treated	2019-10-01 07:50:32	2019-10-04 00:57:48
R2-1912311	Propagation delay compensation for reference time	vivo	not treated	2019-10-01 07:53:56	2019-10-04 04:41:43
R2-1912312	Email discussion summary on EHC	vivo	noted	2019-10-01 07:53:56	2019-10-04 04:41:43
R2-1912313	Remaining issues for EHC	vivo	not treated	2019-10-01 07:53:56	2019-10-04 04:41:43
R2-1912314	TP on TS 38.323 of EHC	vivo	not treated	2019-10-01 07:53:57	2019-10-04 04:41:43
R2-1912315	TP on TS 38.331 of EHC	vivo	not treated	2019-10-01 07:53:57	2019-10-04 04:41:44
R2-1912316	Discussion on the periodicity misalignment between TSC traffic and SPS/CG	vivo	not treated	2019-10-01 07:53:57	2019-10-04 04:41:44
R2-1912317	URLLC transmission within measurement gap	vivo	not treated	2019-10-01 07:53:57	2019-10-04 04:41:44
R2-1912318	SPS and CG configuration issue on the partial overlapping TSN traffic pattern	vivo	not treated	2019-10-01 07:53:57	2019-10-04 04:41:44
R2-1912319	Reliability-based LCP Restriction Enhancement for DG	vivo	not treated	2019-10-01 07:53:57	2019-10-04 04:41:44
R2-1912320	Discussion on the MAC PDU recovery procedure	vivo	not treated	2019-10-01 07:53:57	2019-10-04 04:41:44
R2-1912321	Remaining issues of the network-controlled duplication	vivo	not treated	2019-10-01 07:53:57	2019-10-04 04:41:44
R2-1912322	Remaining issue for the priority of PUSCH and SR	vivo	not treated	2019-10-01 07:53:57	2019-10-04 04:41:44
R2-1912323	Discussion on the PUSCH priority based on MAC CE	vivo	not treated	2019-10-01 07:53:57	2019-10-04 04:41:44
R2-1912324	Discussion on the LCP restriction for CA duplication	vivo	not treated	2019-10-01 07:53:57	2019-10-04 04:41:44

R2-1912325	Adding the Phase Bias Indicator to the SSR Phase Bias message	Swift Navigation	not treated	2019-10-01 08:46:29	2019-10-03 23:29:13
R2-1912326	Correction on PUCCH transform precoding	vivo, Nokia (rapporteur)	agreed	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912327	Cell re-selection during RRC connection resume	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912328	Discussion on LS about beamSwitchTiming value of 224 and 336	vivo, Huawei, Hisilicon	agreed	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912329	Introduction of NR IDC solution	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912330	WUS impact on Short DRX cycle	vivo, Qualcomm Inc., Spreadtrum, Huawei, Hisilicon	noted	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912331	WUS impact upon BWP switching	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912332	Stage-3 design for per-BWP MIMO layer adaptation	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912333	UE assistance information for power saving	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912334	RRM measurement relaxation criteria	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912335	UE Power Consumption Reduction in RRM Measurement	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912336	Summary of EmailDis-78 on MAC aspects for mobility enhancement	vivo (rapporteur)	noted	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912337	Summary of EmailDis-78 on Text Proposal for 38321 of mobility	vivo (rapporteur)	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912338	Summary of EmailDis-78 on Text Proposal for 36321 of mobility	vivo (rapporteur)	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912339	Conditional Handover without explict trigger condition	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912340	Discussion on CHO release	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912341	Discussion on the HOF for CHO	vivo	withdrawn	2019-10-01 09:13:10	2019-10-22 03:18:35
R2-1912342	Discussion on the number of prepared cells for CHO	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912343	Conditional PSCell addition and change	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912344	Text proposal for conditional PSCell addition and change	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912345	Discussion on the selective PDCP retransmission at UL PDCP PDU switching	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912346	Discussion on the ROHC failure issue	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912347	Clarificaiton on the reordering after ROHC decompression for NR PDCP	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912348	Issue on the potential duplicated PDCP packets at the network side	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912349	Summary of Email Discussion on CP for DAPS	vivo (rapporteur)	noted	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912350	Discussion on the signaling procedures of the RUDI HO	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912351	RAN2 specification impacts of SCell BFR	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912352	Text proposal for 38.321 of SCell BFR	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912353	Text proposal for 38.331 of SCell BFR	vivo	not treated	2019-10-01 09:13:10	2019-10-04 04:38:33
R2-1912354	Data forwarding in RUDI HO	Ericsson	not treated	2019-10-01 12:49:41	2019-10-03 17:28:09
R2-1912355	ROHC handling in RUDI HO	Ericsson	not treated	2019-10-01 12:49:42	2019-10-03 17:28:09

R2-1912356	Uplink handling in RUDI HO	Ericsson	not treated	2019-10-01 12:49:42	2019-10-03 17:28:09
R2-1912357	Handover interruption reduction for UM bearers	Ericsson	noted	2019-10-01 12:49:42	2019-10-03 17:28:09
R2-1912358	Control plane handling in RUDI HO	Ericsson	not treated	2019-10-01 12:49:42	2019-10-03 17:28:09
R2-1912359	TDM pattern for single uplink in RUDI HO	Ericsson	not treated	2019-10-01 12:49:42	2019-10-03 19:35:46
R2-1912360	Further aspects of SNPN	Ericsson	not treated	2019-10-01 12:49:42	2019-10-03 17:28:09
R2-1912361	Further aspects of PNI-NPN	Ericsson	not treated	2019-10-01 12:49:42	2019-10-03 17:28:09
R2-1912362	Introduction of Multiple LTE-CRS-RateMatchPatterns	Ericsson	withdrawn	2019-10-01 12:49:42	2019-10-22 03:18:35
R2-1912363	PDCP version in EN-DC	Ericsson	noted	2019-10-01 12:49:43	2019-10-03 17:28:09
R2-1912364	PDCP version in EN-DC	Ericsson	revised	2019-10-01 12:49:43	2019-10-03 17:28:09
R2-1912365	Remaining issues for routing	Huawei, HiSilicon	not treated	2019-10-01 12:58:58	2019-10-04 03:18:18
R2-1912366	Remaining issues for bearer mapping	Huawei, HiSilicon	not treated	2019-10-01 12:58:58	2019-10-04 03:18:18
R2-1912367	Flow control for IAB networks	Huawei, HiSilicon	not treated	2019-10-01 12:58:58	2019-10-04 03:18:18
R2-1912368	BAP PDU format	Huawei, HiSilicon	not treated	2019-10-01 12:58:58	2019-10-04 03:18:18
R2-1912369	Remaining issues for uplink scheduling enhancement	Huawei, HiSilicon	not treated	2019-10-01 12:58:58	2019-10-04 03:18:18
R2-1912370	LCID and LCG space extension for IAB backhaul link	Huawei, HiSilicon	noted	2019-10-01 12:58:58	2019-10-04 03:18:18
R2-1912371	General RLC impacts	Huawei, HiSilicon	not treated	2019-10-01 12:58:58	2019-10-04 03:18:18
R2-1912372	RACH related issues for IAB	Huawei, HiSilicon	not treated	2019-10-01 12:58:58	2019-10-04 03:18:18
R2-1912373	Support of UE PDCP duplication	Huawei, HiSilicon	not treated	2019-10-01 12:58:58	2019-10-04 03:18:18
R2-1912374	Backhaul RLF Recovery	Huawei, HiSilicon	not treated	2019-10-01 12:58:58	2019-10-04 03:18:18
R2-1912375	BAP and RLC configurations	Huawei, HiSilicon	not treated	2019-10-01 12:58:58	2019-10-04 03:18:18
R2-1912376	Cell (re)Selection and Access Control and Connection Establishment	Huawei, HiSilicon	not treated	2019-10-01 12:58:58	2019-10-04 03:18:18
R2-1912377	Running CR to TS 38.331 for 5G V2X with NR sidelink	Huawei, HiSilicon	not treated	2019-10-01 13:28:50	2019-10-12 10:49:38
R2-1912378	Discussion on multi-mode co-existence	ZTE Corporation, Sanechips	not treated	2019-10-01 14:03:03	2019-10-03 16:05:01
R2-1912379	Consideration on mode1 resource allocation	ZTE Corporation, Sanechips	not treated	2019-10-01 14:03:03	2019-10-03 16:05:02
R2-1912380	Discussion on UL and SL prioritisation	ZTE Corporation, Sanechips	noted	2019-10-01 14:03:03	2019-10-03 16:05:02
R2-1912381	Consideration on NR V2X CBR	ZTE Corporation, Sanechips	not treated	2019-10-01 14:03:03	2019-10-03 16:05:02
R2-1912382	Discussion on left issue in NR V2X PDCP	ZTE Corporation, Sanechips	not treated	2019-10-01 14:03:03	2019-10-03 16:05:02
R2-1912383	Left issues for MAC in NR V2X	ZTE Corporation, Sanechips	not treated	2019-10-01 14:03:03	2019-10-03 16:05:02
R2-1912384	Considerations on sidelink RLC	ZTE Corporation, Sanechips	not treated	2019-10-01 14:03:03	2019-10-03 16:05:02
R2-1912385	Discussion on PC5 RRC procedure for unicast	ZTE Corporation, Sanechips	not treated	2019-10-01 14:03:03	2019-10-03 16:05:02
R2-1912386	Discussion on remaining issues on SLRB parameters	ZTE Corporation, Sanechips	not treated	2019-10-01 14:03:03	2019-10-03 16:05:02

R2-1912387	Discussion on SDAP issues	ZTE Corporation, Sanechips	not treated	2019-10-01 14:03:03	2019-10-03 16:05:02
R2-1912388	Consideration on sidelink RLM management	ZTE Corporation, Sanechips	not treated	2019-10-01 14:03:03	2019-10-03 16:05:02
R2-1912389	Consideration on exceptional resource pool and system information acquisition	ZTE Corporation, Sanechips	not treated	2019-10-01 14:03:03	2019-10-03 16:05:02
R2-1912390	Consideration on NR V2X cross RAT support	ZTE Corporation, Sanechips	not treated	2019-10-01 14:03:03	2019-10-03 16:05:02
R2-1912391	SLRB maintenance during RRC state transition	ZTE Corporation, Sanechips	not treated	2019-10-01 14:03:03	2019-10-03 16:05:02
R2-1912392	(running)36.304CR on cell selection(reselection) for NR V2X UE	ZTE Corporation, Sanechips	revised	2019-10-01 14:10:49	2019-10-03 16:05:02
R2-1912393	(running)38.304CR on cell selection(reselection) for NR V2X UE	ZTE Corporation, Sanechips	revised	2019-10-01 14:20:36	2019-10-03 16:05:02
R2-1912394	Consideration on the issue of SI update	Beijing Xiaomi Mobile Software	not treated	2019-10-01 14:24:59	2019-10-01 14:39:27
R2-1912395	Indication of contentionDetected per SSB	Beijing Xiaomi Mobile Software	not treated	2019-10-01 14:28:04	2019-10-01 14:39:27
R2-1912396	DRX enhancement for NR-U	Xiaomi Communications	not treated	2019-10-01 14:30:19	2019-10-01 14:39:27
R2-1912397	Consideration on MDT in NR	Xiaomi Communications	not treated	2019-10-01 14:32:02	2019-10-01 14:39:27
R2-1912398	Consideration on SR transmission	Xiaomi Communications	not treated	2019-10-01 14:33:48	2019-10-01 14:39:27
R2-1912399	Consideration on the blind SCG configuration	Beijing Xiaomi Mobile Software	not treated	2019-10-01 14:36:14	2019-10-01 14:39:27
R2-1912400	PCell monitoring during conditional PSCell addition/change	OPPO	not treated	2019-10-01 14:52:43	2019-10-03 02:07:49
R2-1912401	PCell monitoring during conditional PSCell addition/change	OPPO	not treated	2019-10-01 14:52:43	2019-10-03 02:07:49
R2-1912402	Discussion on T312 for PSCell	OPPO	not treated	2019-10-01 14:52:43	2019-10-03 02:07:49
R2-1912403	UL switching time for DAPS HO	OPPO	not treated	2019-10-01 14:52:43	2019-10-03 02:07:49
R2-1912404	Correction on RRC Resume procedure	OPPO	not treated	2019-10-01 14:52:43	2019-10-03 02:07:49
R2-1912405	Revision to Non-Terrestrial Networks scenarios	HUGHES Network Systems Ltd	not treated	2019-10-01 15:59:51	2019-10-04 02:30:39
R2-1912406	Remaining issues on UE capability ID	Huawei, HiSilicon	not treated	2019-10-01 17:55:22	2019-10-04 06:52:53
R2-1912407	Remaining issues on UE capability segmentation	Huawei, HiSilicon	noted	2019-10-01 17:55:22	2019-10-04 06:52:53
R2-1912408	UE CLI Measurement Configuration, Reporting and NW Signalling	Nokia, Nokia Shanghai Bell	not treated	2019-10-01 18:30:35	2019-10-07 11:58:11
R2-1912409	[DRAFT] LS For Exchange of related to UE CLI measurement configuration and reporting	Nokia, Nokia Shanghai Bell	revised	2019-10-01 18:30:35	2019-10-07 11:58:11
R2-1912410	GWUS Configuration and Resource mapping for UE-Group Information	Nokia, Nokia Shanghai Bell	not treated	2019-10-01 18:30:35	2019-10-07 12:27:13
R2-1912411	Remaining Issues for D-PUR Signalling Procedure	Nokia, Nokia Shanghai Bell	not treated	2019-10-01 18:30:35	2019-10-07 12:27:13
R2-1912412	D-PUR for Control Plane Solution	Nokia, Nokia Shanghai Bell	not treated	2019-10-01 18:30:35	2019-10-07 12:27:13
R2-1912413	Further analysis of Msg4 based MT EDT	Nokia, Nokia Shanghai Bell	noted	2019-10-01 18:30:35	2019-10-07 12:41:25

R2-1912414	Running CR for 36.304 -Rel-16 eMTC Enhancements	Nokia, Nokia Shanghai Bell	revised	2019-10-01 18:30:35	2019-10-07 12:41:25
R2-1912415	Source PS Release of PDCP DAPS during RUDI Handover	Nokia, Nokia Shanghai Bell	not treated	2019-10-01 18:30:35	2019-10-07 12:16:47
R2-1912416	Broadcast of Barometric Pressure Assistance Data	Polaris Wireless, FirstNet, Intel, AT&T, NextNav	not treated	2019-10-01 19:51:51	2019-10-02 18:05:38
R2-1912417	Running 36.300 CR for LTE_feMob	China Telecom Corporation Ltd.	revised	2019-10-01 20:23:15	2019-10-04 05:12:34
R2-1912418	Correction to applicability of UP IP in NR	Ericsson	noted	2019-10-01 20:30:31	2019-10-03 11:13:44
R2-1912419	Correction to applicability of UP IP in NR	Ericsson	not pursued	2019-10-01 20:33:19	2019-10-03 11:13:44
R2-1912420	Operation Principles of PC5 RRC Connection	Futurewei	not treated	2019-10-01 21:44:58	2019-10-04 02:09:50
R2-1912421	Sensor Provide Location Information Element Correction	Polaris Wireless	not treated	2019-10-02 01:26:41	2019-10-02 18:11:32
R2-1912422	Sensor Provide Location Information Elements Correction	Polaris Wireless	revised	2019-10-02 01:30:41	2019-10-02 18:11:32
R2-1912423	Remaining Issues for Extending RAR Window	Samsung Electronics Co., Ltd	noted	2019-10-02 01:42:30	2019-10-04 01:24:07
R2-1912424	Contention Resolution Timer Handling in NR-U	Samsung Electronics Co., Ltd	not treated	2019-10-02 01:42:30	2019-10-04 01:24:07
R2-1912425	Signaling Multiple UL grants for Msg3 Transmission in NR-U	Samsung Electronics Co., Ltd	not treated	2019-10-02 01:42:30	2019-10-04 01:24:07
R2-1912426	Draft RRC CR_Supporting RAR Window Size larger than 10ms in NR-U	Samsung Electronics Co., Ltd	not treated	2019-10-02 01:42:30	2019-10-04 01:24:07
R2-1912427	Random Access Resource Selection in NR-U	Samsung Electronics Co., Ltd	not treated	2019-10-02 01:42:30	2019-10-04 01:24:07
R2-1912428	Draft RRC CR for supporting Additional Opportunities for paging in NR-U	Samsung Electronics Co., Ltd	not treated	2019-10-02 01:42:30	2019-10-04 01:24:07
R2-1912429	Handling MIB_SIB1 Acquisition Failure	Samsung Electronics Co., Ltd	noted	2019-10-02 01:42:30	2019-10-04 01:24:07
R2-1912430	2 Step RA_12bit Timing Advanced Information	Samsung Electronics Co., Ltd	not treated	2019-10-02 01:42:30	2019-10-04 01:21:27
R2-1912431	2 Step RA_RACH prioritisation	Samsung Electronics Co., Ltd	noted	2019-10-02 01:42:30	2019-10-04 01:21:27
R2-1912432	2 Step RACH_RNTI for Receiving Network Response	Samsung Electronics Co., Ltd	noted	2019-10-02 01:42:30	2019-10-04 01:21:27
R2-1912433	2 Step RA_RACH Configuration	Samsung Electronics Co., Ltd	not treated	2019-10-02 01:42:30	2019-10-04 01:21:27
R2-1912434	Impact of Mode 1 Resource Allocation on Uu BWP Operation	Samsung Electronics Co., Ltd	not treated	2019-10-02 01:42:30	2019-10-04 01:25:05
R2-1912435	RRC Connection Initiation Trigger for V2X Sidelink Communication	Samsung Electronics Co., Ltd	not treated	2019-10-02 01:42:30	2019-10-04 01:25:05
R2-1912436	RAN2 Aspects of SCell BFR	Samsung Electronics Co., Ltd	not treated	2019-10-02 01:42:30	2019-10-04 01:21:53

R2-1912437	Discussion on (preventing) access to NPN only cell	Samsung Electronics Co., Ltd	not treated	2019-10-02 01:42:30	2019-10-04 01:22:19
R2-1912438	UE reporting for mobility optimization	vivo	not treated	2019-10-02 02:23:54	2019-10-03 19:13:54
R2-1912439	Bi-directional UE capability transfer procedure for NR V2X unicast	Samsung Electronics Co., Ltd	noted	2019-10-02 02:28:21	2019-10-04 05:26:39
R2-1912440	Remaining Issues on Handling of SLRB configuration	Samsung Electronics Co., Ltd	not treated	2019-10-02 02:28:22	2019-10-04 05:26:39
R2-1912441	AS-layer configuration failure case in SL unicast	Samsung Electronics Co., Ltd	not treated	2019-10-02 02:28:22	2019-10-04 05:26:39
R2-1912442	Discussion on handling of PC5-S messages for NR V2X unicast	Samsung Electronics Co., Ltd	not treated	2019-10-02 02:28:22	2019-10-04 05:26:39
R2-1912443	Discussion on Sidelink UE Information Initiation Trigger for NR V2X Sidelink Communication	Samsung Electronics Co., Ltd	not treated	2019-10-02 02:28:22	2019-10-04 05:26:39
R2-1912444	Interaction between RRC Connection Resume Condition and RNAU for NR V2X SL Communication	Samsung Electronics Co., Ltd	not treated	2019-10-02 02:28:22	2019-10-04 05:26:39
R2-1912445	Remaining Issues on SL RLM/RLF Declaration for NR V2X Unicast	Samsung Electronics Co., Ltd	not treated	2019-10-02 02:28:22	2019-10-04 05:26:39
R2-1912446	Correction on H1 and H2 events	Samsung Electronics Co., Ltd	revised	2019-10-02 02:32:51	2019-10-04 05:26:39
R2-1912447	Support of inter-RAT HO from SA to EN-DC in Rel-16	China Telecom, NTT DOCOMO, Huawei, Ericsson, ZTE, OPPO, Mediatek, VIVO	not treated	2019-10-02 02:48:09	2019-10-04 08:13:17
R2-1912448	Stage2 CR-Support of Inter-RAT HO between NR to EN-DC in Rel-16	China Telecom, NTT DOCOMO, Huawei, Ericsson, ZTE, OPPO, Mediatek, VIVO	not treated	2019-10-02 03:06:20	2019-10-04 08:13:17
R2-1912449	Further discussion on MCG failure recovery via SRB3	SHARP Corporation	not treated	2019-10-02 03:14:59	2019-10-03 08:19:19
R2-1912450	Discussion on priority value in LTE V2X	SHARP Corporation	noted	2019-10-02 03:14:59	2019-10-03 08:19:19
R2-1912451	Correction on priority values in LTE V2X	SHARP Corporation	not treated	2019-10-02 03:14:59	2019-10-03 08:19:19
R2-1912452	Correction on priority values in LTE V2X	SHARP Corporation	not treated	2019-10-02 03:14:59	2019-10-03 08:19:19
R2-1912453	Correction on value of sensing priority for sidelink mode 3 sensing measurement	SHARP Corporation	not treated	2019-10-02 03:14:59	2019-10-03 08:19:19
R2-1912454	Discussion on the timer design for CHO	vivo	not treated	2019-10-02 03:22:12	2019-10-04 04:38:33
R2-1912455	CAPC for RACH and PUCCH in NR-U	Mediatek India Technology Pvt.	not treated	2019-10-02 04:40:55	2019-10-03 07:16:50
R2-1912456	SI scheduling enhancements for NR-U	Mediatek India Technology Pvt.	not treated	2019-10-02 04:45:06	2019-10-03 02:52:01
R2-1912457	On Restrictions in Multiplexing of High and Low Priority LCH in NR-U	Mediatek India Technology Pvt.	not treated	2019-10-02 04:56:10	2019-10-03 02:56:59
R2-1912458	On Reusing Overheating Assistance Information for UE Power Saving	Samsung	not treated	2019-10-02 05:09:20	2019-10-04 04:17:38
R2-1912459	On Triggering RRM Measurement Relaxation	Samsung	not treated	2019-10-02 05:11:40	2019-10-04 04:17:38

R2-1912460	Leg Selection for Non-duplicated Data Transmission	Apple	not treated	2019-10-02 05:14:31	2019-10-04 03:58:06
R2-1912461	LCH-to-cell Restriction for CA Duplication Deactivation	Apple, Nokia, Nokia Shanghai Bell	noted	2019-10-02 05:14:31	2019-10-04 03:58:06
R2-1912462	Selective PDCP Duplication Enhancement	Apple	not treated	2019-10-02 05:14:31	2019-10-04 03:58:06
R2-1912463	UE based PDCP Duplication Enhancement	Apple	not treated	2019-10-02 05:14:31	2019-10-04 03:58:06
R2-1912464	Consecutive Conditional Handover	Apple	not treated	2019-10-02 05:14:31	2019-10-04 03:58:06
R2-1912465	UE Measurement in SCell Dormant State	Apple	not treated	2019-10-02 05:14:31	2019-10-04 03:58:06
R2-1912466	PCell Fast Recovery	Apple	not treated	2019-10-02 05:14:31	2019-10-04 03:58:06
R2-1912467	UE Assistance Information for EN-DC	Apple	not treated	2019-10-02 05:14:31	2019-10-04 03:58:06
R2-1912468	MsgB Retransmission Scheme	Apple	not treated	2019-10-02 05:14:31	2019-10-04 03:58:06
R2-1912469	2-step CFRA	Apple	not treated	2019-10-02 05:14:31	2019-10-04 03:58:06
R2-1912470	SCell BFR Operation	Apple	not treated	2019-10-02 05:14:31	2019-10-04 03:58:06
R2-1912471	Considering top N cells for PLMN Selection	Samsung	not treated	2019-10-02 05:14:51	2019-10-04 04:17:38
R2-1912472	RLM for NR-U	Samsung	not treated	2019-10-02 05:18:10	2019-10-04 04:17:38
R2-1912473	On Supporting Make-Before-Break in NR	Samsung	not treated	2019-10-02 05:20:41	2019-10-04 04:17:38
R2-1912474	Recovery of consistent UL LBT failures	Samsung	not treated	2019-10-02 05:21:14	2019-10-04 02:02:15
R2-1912475	Remaining issues on CAPC	Samsung	not treated	2019-10-02 05:21:14	2019-10-04 02:02:15
R2-1912476	To reduce SCell activation delay in NR	Samsung	not treated	2019-10-02 05:21:14	2019-10-04 02:02:15
R2-1912477	Support of unaligned frame boundary for inter-band TDD CA	Samsung	not treated	2019-10-02 05:21:14	2019-10-04 02:02:15
R2-1912478	TA handling in 2-step RACH	Samsung	not treated	2019-10-02 05:21:14	2019-10-04 02:02:15
R2-1912479	Introducing Make-Before-Break in NR	Samsung	not treated	2019-10-02 05:23:02	2019-10-04 04:17:38
R2-1912480	(De)Prioritizing the Access for IAB Setup	Samsung	not treated	2019-10-02 05:25:49	2019-10-04 04:17:38
R2-1912481	Including RSSI and Channel Occupancy in Connected Mode Measurements	Mediatek India Technology Pvt.	not treated	2019-10-02 05:25:51	2019-10-03 02:52:34
R2-1912482	Accessibility Measurements for NR MDT	Samsung	not treated	2019-10-02 05:32:13	2019-10-04 04:17:38
R2-1912483	Details on Event-triggered Logged MDT	Samsung	not treated	2019-10-02 05:34:14	2019-10-04 04:17:38
R2-1912484	CAPC Assignments for SRBs in NR-U	Mediatek India Technology Pvt.	not treated	2019-10-02 05:35:29	2019-10-03 02:52:56
R2-1912485	Further Logged Information in NR MDT	Samsung	not treated	2019-10-02 05:35:58	2019-10-04 04:17:38
R2-1912486	NR RLF Report	Samsung	not treated	2019-10-02 05:37:46	2019-10-04 04:17:38
R2-1912487	On Providing Mobility State and Mobility History Information in NR	Samsung	withdrawn	2019-10-02 05:39:55	2019-10-22 03:18:35
R2-1912488	On Providing Mobility State and Mobility History Information in NR	Samsung	not treated	2019-10-02 05:41:47	2019-10-04 04:17:38
R2-1912489	SLRB Reconfiguration Handling	Samsung	not treated	2019-10-02 05:42:45	2019-10-04 06:14:18
R2-1912490	Discussion on MCG Fast Recovery	Samsung	not treated	2019-10-02 05:42:45	2019-10-04 06:14:18
R2-1912491	Discussion on FailureInformation	Samsung	withdrawn	2019-10-02 05:42:45	2019-10-22 03:18:35
R2-1912492	DL Reordering Problem at MCG Link Recovery	Samsung	not treated	2019-10-02 05:42:45	2019-10-04 06:14:18
R2-1912493	Remaining Issues on Efficient Transition	Samsung	noted	2019-10-02 05:42:45	2019-10-04 06:14:18
R2-1912494	Support of Multiple Active CG/SPS Configuration	Samsung	not treated	2019-10-02 05:42:45	2019-10-04 06:14:18
R2-1912495	Prioritization of SR Transmission for URLLC	Samsung	not treated	2019-10-02 05:42:45	2019-10-04 06:14:18
R2-1912496	Split Bearer Fallback at Deactivation of PDCP Duplication	Samsung	not treated	2019-10-02 05:42:45	2019-10-04 06:14:18

R2-1912497	Configuration and initial state of PDCP duplication	Samsung	not treated	2019-10-02 05:42:45	2019-10-04 06:14:18
R2-1912498	Leftover Issues on Accurate Timing Delivery	Samsung	noted	2019-10-02 05:42:45	2019-10-04 06:14:18
R2-1912499	Discussion on UE Autonomous PDCP Duplication	Samsung	not treated	2019-10-02 05:42:45	2019-10-04 06:14:18
R2-1912500	Priority of MAC PDU and MAC CE	Samsung	not treated	2019-10-02 05:42:45	2019-10-04 06:14:18
R2-1912501	Transmission of Deprioritized Data	Samsung	noted	2019-10-02 05:42:45	2019-10-04 06:14:18
R2-1912502	LCP Restriction on Reliability	Samsung	noted	2019-10-02 05:42:45	2019-10-04 06:14:18
R2-1912503	MAC CE Format for RLC Activiation	Samsung	not treated	2019-10-02 05:42:45	2019-10-04 06:14:18
R2-1912504	Discussion on RLM for LTE mobility enhancement	OPPO	not treated	2019-10-02 05:45:12	2019-10-03 14:16:22
R2-1912505	Further details on dual active protocol stack	OPPO	not treated	2019-10-02 05:45:12	2019-10-03 14:16:22
R2-1912506	Further considerations on capability coordination	OPPO	not treated	2019-10-02 05:45:12	2019-10-03 14:16:22
R2-1912507	Clarification on HRNN reporting	OPPO	not treated	2019-10-02 05:45:12	2019-10-03 14:16:22
R2-1912508	Discussion on SIB1 design for NPN	OPPO	not treated	2019-10-02 05:45:12	2019-10-03 14:16:22
R2-1912509	Discussion on SCell BFR	OPPO	not treated	2019-10-02 05:45:12	2019-10-03 14:16:22
R2-1912510	MAC CE format to indicate up to two TCI states	OPPO	not treated	2019-10-02 05:45:12	2019-10-03 14:16:22
R2-1912511	MAC CE format to indicate up to 2 TCI state per indication	OPPO	not treated	2019-10-02 05:45:12	2019-10-03 14:16:22
R2-1912512	Including RSSI and Channel Occupancy in NR-U UE Capabilities	Mediatek India Technology Pvt.	not treated	2019-10-02 05:58:00	2019-10-03 02:53:14
R2-1912513	Further considerations for the segmented UECapabilityInformation	Samsung	not treated	2019-10-02 06:14:36	2019-10-04 04:00:56
R2-1912514	MAC CE design for support of multiple beam indication for single PDCCH-based multiple TRPs	Samsung	not treated	2019-10-02 06:14:36	2019-10-04 04:00:56
R2-1912515	Further considerations of support for multi-PDCCH based multi-TRP operation	Samsung	not treated	2019-10-02 06:14:36	2019-10-04 04:00:56
R2-1912516	Discussion on the additional UE capability filtering to limit the total number of carriers in NR	Samsung	not treated	2019-10-02 06:14:36	2019-10-04 04:00:56
R2-1912517	Additional UE capability filtering to limit the total number of carriers in NR	Samsung	not treated	2019-10-02 06:14:36	2019-10-04 04:00:56
R2-1912518	Additional UE capability filtering to limit the total number of carriers in NR	Samsung	not treated	2019-10-02 06:14:37	2019-10-04 04:00:56
R2-1912519	SSR Atmospheric Correction Points Area Definition	u-blox AG	not treated	2019-10-02 06:47:46	2019-10-04 06:58:36
R2-1912520	Text Proposal for addition of SSR Atmospheric Correction Points Area Definition	u-blox AG	revised	2019-10-02 06:49:59	2019-10-04 06:58:36
R2-1912521	MCG RLF reporting via SCell	Samsung Research America	withdrawn	2019-10-02 06:52:14	2019-10-04 01:02:03
R2-1912522	PDCP security issue	Samsung Research America	not treated	2019-10-02 06:55:02	2019-10-04 01:02:03
R2-1912523	CR on PDCP security issue	Samsung Research America	not treated	2019-10-02 06:58:32	2019-10-04 01:02:03
R2-1912524	Fallback procedure for INACTIVE mode	Samsung Research America	not treated	2019-10-02 07:01:27	2019-10-04 01:02:03
R2-1912525	Unnecessary deciphering for duplicated PDUs	Samsung Research America	not treated	2019-10-02 07:04:59	2019-10-04 01:02:03

R2-1912526	CR on unnecessary deciphering for duplicated PDU	Samsung Research America	not treated	2019-10-02 07:07:49	2019-10-04 01:02:03
R2-1912527	Feedback for EHC algorithm	Samsung Research America	not treated	2019-10-02 07:09:46	2019-10-04 01:02:03
R2-1912528	EHC header handling for IIoT	Samsung Research America	not treated	2019-10-02 07:11:27	2019-10-04 01:02:03
R2-1912529	measurement aspects for CHO	Samsung R&D Institute UK	not treated	2019-10-02 07:36:15	2019-10-04 05:52:05
R2-1912530	T312 further enhancement	Samsung R&D Institute UK	not treated	2019-10-02 07:36:15	2019-10-04 05:52:05
R2-1912531	relaxed RRM support	Samsung R&D Institute UK	not treated	2019-10-02 07:36:15	2019-10-04 05:52:05
R2-1912532	introduction of channel occupancy and RSSI for NR-U CHO	Samsung R&D Institute UK	not treated	2019-10-02 07:36:15	2019-10-04 05:52:05
R2-1912533	considerations for NR ECID	Samsung R&D Institute UK	not treated	2019-10-02 07:36:15	2019-10-04 05:52:05
R2-1912534	Consideration of beam for NR OTDOA	Samsung R&D Institute UK	not treated	2019-10-02 07:36:15	2019-10-04 05:52:05
R2-1912535	EN-DC support in IAB (srb, drb, data flow)	Samsung R&D Institute UK	not treated	2019-10-02 07:36:15	2019-10-04 05:52:05
R2-1912536	NR DC support (which link is MCG link, SCG link, MN, SN role in DU	Samsung R&D Institute UK	not treated	2019-10-02 07:36:15	2019-10-04 05:52:05
R2-1912537	RLF reporting in dual connection of IAB	Samsung R&D Institute UK	not treated	2019-10-02 07:36:15	2019-10-04 05:52:05
R2-1912538	Running CR for 38.331 on CA/DC Enhancements	Ericsson	revised	2019-10-02 07:54:40	2019-10-18 11:48:04
R2-1912539	Running CR for 36.331 for CA/DC Enhancements	Ericsson	revised	2019-10-02 07:54:40	2019-10-18 11:48:05
R2-1912540	Running CR for 36.300 on CA/DC Enhancements	Ericsson	revised	2019-10-02 07:54:40	2019-10-03 10:46:08
R2-1912541	Running CR for 38.300 for CA/DC Enhancements	Ericsson	revised	2019-10-02 07:54:40	2019-10-03 10:46:08
R2-1912542	NR-DC power control	Ericsson	not treated	2019-10-02 07:54:40	2019-10-03 16:56:35
R2-1912543	Idle measurement configuration in UE Inactive AS context	Ericsson	not treated	2019-10-02 07:54:40	2019-10-03 16:56:35
R2-1912544	Handling of early measurement configuration and results	Ericsson	not treated	2019-10-02 07:54:40	2019-10-03 17:21:28
R2-1912545	Applicability of early measurement solutions for LTE	Ericsson	not treated	2019-10-02 07:54:40	2019-10-03 16:56:35
R2-1912546	Extended use cases for early measurement other than fast CA/DC setup	Ericsson	not treated	2019-10-02 07:54:41	2019-10-03 16:56:35
R2-1912547	On further aspects of early measurement	Ericsson	not treated	2019-10-02 07:54:41	2019-10-03 16:56:35
R2-1912548	Remaining issues for reference time delivery	Ericsson	not treated	2019-10-02 08:03:49	2019-10-03 16:44:54
R2-1912549	On downlink delay compensation	Ericsson	not treated	2019-10-02 08:03:55	2019-10-03 16:44:54
R2-1912550	SPS and UL CG remaining configuration aspects	Ericsson	not treated	2019-10-02 08:03:55	2019-10-03 16:44:54
R2-1912551	L2 aspects of SPS and UL CG	Ericsson	not treated	2019-10-02 08:03:55	2019-10-03 16:44:54
R2-1912552	Miscellaneous issues with L2 impact	Ericsson	not treated	2019-10-02 08:03:55	2019-10-03 16:44:54
R2-1912553	Ethernet header compression	Ericsson	not treated	2019-10-02 08:03:55	2019-10-03 16:44:54
R2-1912554	Handling of de-prioritized MAC PDUs	Ericsson	noted	2019-10-02 08:03:55	2019-10-03 16:44:54
R2-1912555	Main functions of intra-UE data-data prioritization	Ericsson	not treated	2019-10-02 08:03:55	2019-10-03 16:44:54
R2-1912556	Reliability aspects in LCP restriction enhancement	Ericsson	not treated	2019-10-02 08:03:55	2019-10-03 16:44:54
R2-1912557	Intra-UE Control-Data prioritization - SR over PUSCH	Ericsson	not treated	2019-10-02 08:03:55	2019-10-03 16:44:54
R2-1912558	PDCP Control PDUs and primary path	Ericsson	not treated	2019-10-02 08:03:55	2019-10-03 16:44:54
R2-1912559	Open issues related to MAC CE for PDCP duplication	Ericsson	not treated	2019-10-02 08:03:55	2019-10-03 16:44:54

R2-1912560	Discussion on Potential improvements for delay critical QoS Flows	Ericsson	noted	2019-10-02 08:03:55	2019-10-03 16:44:54
R2-1912561	draft reply LS on potential improvements for delay critical QoS flows	Ericsson	not treated	2019-10-02 08:03:55	2019-10-03 16:44:54
R2-1912562	Apparent contradiction in Zone Configuration	Lenovo, Motorola Mobility	not treated	2019-10-02 08:22:33	2019-10-02 08:48:14
R2-1912563	BSR and SR reporting in Cross RAT V2X operation	Lenovo, Motorola Mobility	not treated	2019-10-02 08:25:04	2019-10-02 08:48:14
R2-1912564	Cross RAT SL Configuration	Lenovo, Motorola Mobility	not treated	2019-10-02 08:28:17	2019-10-02 08:48:14
R2-1912565	HARQ feedback impact on RAN2	Lenovo, Motorola Mobility	not treated	2019-10-02 08:30:06	2019-10-02 08:48:14
R2-1912566	PC5-S and Identification on PC5 RRC and RRC Procedures	Lenovo, Motorola Mobility	not treated	2019-10-02 08:32:15	2019-10-02 08:48:14
R2-1912567	RLM Procedure and RLF Recovery handling	Lenovo, Motorola Mobility	not treated	2019-10-02 08:35:37	2019-10-02 08:48:14
R2-1912568	Subtopics to be addressed in Sim M1M2	Lenovo, Motorola Mobility	not treated	2019-10-02 08:37:13	2019-10-02 08:48:14
R2-1912569	Handling UL LBT Failures in NR-U	PANASONIC R&D Center Germany	not treated	2019-10-02 09:13:32	2019-10-02 11:23:54
R2-1912570	Impact of disabling HARQ on DRX	PANASONIC R&D Center Germany	not treated	2019-10-02 09:16:35	2019-10-02 11:23:54
R2-1912571	Management based MDT configuration Handling for RRC Inactive state	Qualcomm Incorporated	not treated	2019-10-02 09:29:02	2019-10-04 01:12:38
R2-1912572	Report on email discussion [106#46][IAB]: Low-latency scheduling	Samsung Electronics GmbH	noted	2019-10-02 09:33:57	2019-10-02 15:25:20
R2-1912573	Remaining issues with pre-emptive BSR	Samsung Electronics GmbH	not treated	2019-10-02 09:35:27	2019-10-02 15:48:47
R2-1912574	Signalling Based MDT Configuration Handling for RRC_INACTIVE	Qualcomm Incorporated	not treated	2019-10-02 09:35:36	2019-10-04 01:12:38
R2-1912575	LCID space extension	Samsung Electronics GmbH	noted	2019-10-02 09:36:52	2019-10-02 15:43:19
R2-1912576	Downlink hop-by-hop flow control	Samsung Electronics GmbH	not treated	2019-10-02 09:38:57	2019-10-03 14:51:05
R2-1912577	On the need for bearer ID in the BAP header	Samsung Electronics GmbH	not treated	2019-10-02 09:40:03	2019-10-02 15:30:06
R2-1912578	Logged MDT Configuration and Reporting for MR-DC	Qualcomm Incorporated	not treated	2019-10-02 09:46:10	2019-10-04 01:12:38
R2-1912579	Cross-RAT RLF Report	Qualcomm Incorporated	not treated	2019-10-02 09:49:33	2019-10-04 01:12:38
R2-1912580	Discussion on BAP configuration in IAB	ZTE Corporation, Sanechips	not treated	2019-10-02 09:50:54	2019-10-03 08:09:32
R2-1912581	Further consideration on bearer mapping	ZTE Corporation, Sanechips	not treated	2019-10-02 09:50:54	2019-10-03 08:09:32
R2-1912582	Consideration on routing in IAB	ZTE Corporation, Sanechips	not treated	2019-10-02 09:50:54	2019-10-03 08:09:32
R2-1912583	Discussion on re-routing in IAB network	ZTE Corporation, Sanechips	not treated	2019-10-02 09:50:54	2019-10-03 08:09:32
R2-1912584	Further consideration on flow control in IAB	ZTE Corporation, Sanechips	not treated	2019-10-02 09:50:54	2019-10-03 08:09:32

R2-1912585	Control plane signalling deliver in NSA deployment	ZTE Corporation, Sanechips	not treated	2019-10-02 09:50:54	2019-10-03 08:09:32
R2-1912586	Discussion on low latency scheduling in IAB	ZTE Corporation, Sanechips	not treated	2019-10-02 09:50:54	2019-10-03 08:09:32
R2-1912587	Discussion on low latency scheduling in multi-connectivity scenario	ZTE Corporation, Sanechips, NEC	not treated	2019-10-02 09:50:54	2019-10-03 08:09:32
R2-1912588	Consideration on the Extension of LCID and LCG Space in IAB	ZTE Corporation, Sanechips	not treated	2019-10-02 09:50:54	2019-10-03 08:09:32
R2-1912589	Discussion on IAB BH RLF handling	ZTE Corporation, Sanechips	not treated	2019-10-02 09:50:54	2019-10-03 08:09:32
R2-1912590	Discussion on BH RLC channel configuration in IAB network	ZTE Corporation, Sanechips	not treated	2019-10-02 09:50:54	2019-10-03 08:09:32
R2-1912591	Discussion on IAB node connection setup	ZTE Corporation, Sanechips	not treated	2019-10-02 09:50:54	2019-10-03 08:09:32
R2-1912592	UE History Information	Qualcomm Incorporated	not treated	2019-10-02 09:52:34	2019-10-04 01:12:38
R2-1912593	Discussion about Successful HO in MRO	Qualcomm Incorporated	not treated	2019-10-02 09:55:13	2019-10-04 01:12:38
R2-1912594	Periodical logged measurements and event-triggered logged measurements configuration	Qualcomm Incorporated	not treated	2019-10-02 09:58:03	2019-10-04 01:12:38
R2-1912595	Make before break for NTN	Ericsson	noted	2019-10-02 11:14:27	2019-10-03 07:57:47
R2-1912596	[Rapporteur input] RRC parameter list for NR eMIMO	Samsung	noted	2019-10-02 11:17:25	2019-10-04 04:00:56
R2-1912597	Ephemeris data	Ericsson	revised	2019-10-02 11:33:17	2019-10-04 05:00:10
R2-1912598	Introduction of additional enhancements for NB-IoT in TS 36.331	Huawei	revised	2019-10-02 11:58:08	2019-10-04 04:12:06
R2-1912599	Introduction of additional enhancements for NB-IoT	Huawei	revised	2019-10-02 11:58:09	2019-10-04 07:29:45
R2-1912600	Introduction of UE specific DRX for NB-IoT	Huawei, HiSilicon	noted	2019-10-02 11:58:09	2019-10-04 04:12:06
R2-1912601	Discussion on DL channel Quality remaining open issues	Huawei, HiSilicon	noted	2019-10-02 11:58:09	2019-10-04 04:12:06
R2-1912602	Discussion on RRM measurements on non-anchor carrier	Huawei, HiSilicon	noted	2019-10-02 11:58:09	2019-10-04 04:12:06
R2-1912603	Discussion on SON ANR remaining open issues	Huawei, HiSilicon	not treated	2019-10-02 11:58:09	2019-10-04 04:12:06
R2-1912604	Discussion on SON RACH and RLF remaining open issues	Huawei, HiSilicon	not treated	2019-10-02 11:58:09	2019-10-04 04:12:06
R2-1912605	Clarification on UP-EDT	Huawei, HiSilicon	revised	2019-10-02 11:58:09	2019-10-04 04:12:06
R2-1912606	Discussion on MT-EDT Msg4 based option	Huawei, HiSilicon	noted	2019-10-02 11:58:10	2019-10-04 04:12:06
R2-1912607	[DRAFT] LS on Mobile-terminated Early Data Transmission	Huawei	not treated	2019-10-02 11:58:10	2019-10-04 04:12:06
R2-1912608	Discussion on RAN1 agreements on D-PUR	Huawei, HiSilicon	not treated	2019-10-02 11:58:10	2019-10-04 04:12:06
R2-1912609	FFSes on D-PUR	Huawei, HiSilicon	not treated	2019-10-02 11:58:10	2019-10-04 04:12:06
R2-1912610	Handling of D-PUR configuration for CP solution	Huawei, HiSilicon	not treated	2019-10-02 11:58:10	2019-10-04 04:12:06
R2-1912611	[Draft] LS on handling of D-PUR configuration for the CP solution	Huawei	not treated	2019-10-02 11:58:10	2019-10-04 04:12:06
R2-1912612	DRX timers in multiple TBs scheduling of NB-IoT	Huawei, HiSilicon	noted	2019-10-02 11:58:10	2019-10-04 04:12:06
R2-1912613	DRX timers in multiple TBs scheduling of eMTC	Huawei, HiSilicon	withdrawn	2019-10-02 11:58:10	2019-10-22 03:18:35

R2-1912614	Remaining issues to support user plane optimisations for eMTC and NB-IoT connected to 5GC	Huawei, HiSilicon	noted	2019-10-02 11:58:10	2019-10-04 04:12:06
R2-1912615	Support of RRC connection Re-establishment for the Control plane for NB-IoT connected to 5GC	Huawei, HiSilicon	not treated	2019-10-02 11:58:10	2019-10-04 04:12:06
R2-1912616	Access Stratum Release Assistance Indicator for eMTC and NB-IoT connected to 5GC	Huawei, HiSilicon	not treated	2019-10-02 11:58:10	2019-10-04 04:12:06
R2-1912617	Discussion on support of RRC_INACTIVE for eMTC connected to 5GC	Huawei, HiSilicon	not treated	2019-10-02 11:58:10	2019-10-04 04:12:06
R2-1912618	Unified access control for NB-IoT and eMTC connected to 5GC	Huawei, HiSilicon	noted	2019-10-02 11:58:10	2019-10-04 04:12:06
R2-1912619	PDCP for NB-IoT and eMTC connected to 5GC	Huawei, HiSilicon	noted	2019-10-02 11:58:10	2019-10-04 04:12:06
R2-1912620	Remaining issues for mode1 and 2 operation	Intel Corporation	not treated	2019-10-02 12:11:40	2019-10-04 02:54:09
R2-1912621	NR UL SL prioritization aspects	Intel Corporation	not treated	2019-10-02 12:11:40	2019-10-04 02:54:09
R2-1912622	On admission/congestion control	Intel Corporation	not treated	2019-10-02 12:11:40	2019-10-04 02:54:09
R2-1912623	Remaining aspects on groupcast operation	Intel Corporation	not treated	2019-10-02 12:11:40	2019-10-04 02:54:09
R2-1912624	Cross-RAT scheduling for NR V2X SL	Intel Corporation	not treated	2019-10-02 12:11:40	2019-10-04 02:54:09
R2-1912625	Detecting and Handling of UL LBT failures	Intel Corporation	not treated	2019-10-02 12:11:40	2019-10-04 02:57:02
R2-1912626	Further consideration on configured UL grant enhancement	Intel Corporation	noted	2019-10-02 12:11:40	2019-10-04 02:57:02
R2-1912627	Channel Access Priority selection & multiplexing for Configured Grant	Intel Corporation	not treated	2019-10-02 12:11:40	2019-10-04 05:12:31
R2-1912628	Sidelink and Uplink Prioritization	Samsung	not treated	2019-10-02 12:37:17	2019-10-04 03:44:40
R2-1912629	Congestion control in NR-V2X	Samsung	not treated	2019-10-02 12:37:17	2019-10-04 03:44:40
R2-1912630	Discussion on V2X specific validity area	Samsung	not treated	2019-10-02 12:37:17	2019-10-04 03:44:40
R2-1912631	Discussion on Default SLRB and HARQ configuration	Samsung	not treated	2019-10-02 12:37:17	2019-10-04 03:44:40
R2-1912632	Open issues from email discussion [107#30][NR/LTE/Mob-enh]	Ericsson	not treated	2019-10-02 12:38:10	2019-10-03 19:56:05
R2-1912633	Handling of a HO command while UE is monitoring CHO	Ericsson	not treated	2019-10-02 12:38:10	2019-10-03 19:56:05
R2-1912634	Suspend while monitoring CHO in NR	Ericsson	not treated	2019-10-02 12:38:10	2019-10-03 19:56:05
R2-1912635	Conditional PSCell addition/change	Ericsson	not treated	2019-10-02 12:38:10	2019-10-03 19:56:05
R2-1912636	TP for 38.331 on CHO	Ericsson	not treated	2019-10-02 12:38:10	2019-10-03 19:56:05
R2-1912637	Further details on CHO failure handling	Ericsson	not treated	2019-10-02 12:38:10	2019-10-03 19:56:05
R2-1912638	Discussion on incoming LS for QoE measurement collection in LTE	Ericsson	not treated	2019-10-02 12:38:10	2019-10-03 19:56:05
R2-1912639	Corrections of QoE measurement collection	Ericsson	not treated	2019-10-02 12:38:10	2019-10-03 19:56:05
R2-1912640	Draft reply LS on QoE Measurement Collection	Ericsson	not treated	2019-10-02 12:38:11	2019-10-03 19:56:05
R2-1912641	Outstanding issues for SRVCC from 5G to 3G	Ericsson	noted	2019-10-02 12:38:11	2019-10-03 19:56:05
R2-1912642	Measurements for SRVCC from 5G to 3G	Ericsson	not treated	2019-10-02 12:38:11	2019-10-03 19:56:05
R2-1912643	Running CR for introduction of SRVCC from 5G to 3G	Ericsson	endorsed	2019-10-02 12:38:11	2019-10-03 19:56:05

R2-1912644	Extended PO and early termination for page monitoring	Ericsson	revised	2019-10-02 12:38:11	2019-10-03 19:56:05
R2-1912645	Cell (re)selection for NR-U	Ericsson	revised	2019-10-02 12:38:11	2019-10-03 19:56:05
R2-1912646	RRM in NR-U	Ericsson	noted	2019-10-02 12:38:11	2019-10-03 19:56:06
R2-1912647	SLRB configuration for NR V2X UE	Lenovo, Motorola Mobility	not treated	2019-10-02 12:48:44	2019-10-03 14:12:47
R2-1912648	Discussion on QoS management for NR V2X	Lenovo, Motorola Mobility	not treated	2019-10-02 12:48:46	2019-10-03 14:12:47
R2-1912649	RRM Measurements for Mobility in NR-U	Fraunhofer HHI, Fraunhofer IIS	not treated	2019-10-02 12:58:36	2019-10-02 16:27:40
R2-1912650	Resource Pool Sharing between Mode 1 and Mode 2 UEs	Fraunhofer HHI, Fraunhofer IIS	not treated	2019-10-02 13:02:04	2019-10-02 16:27:40
R2-1912651	Resource Allocation for Mode 2 NR V2X	Fraunhofer HHI, Fraunhofer IIS	not treated	2019-10-02 13:04:08	2019-10-02 16:27:40
R2-1912652	Resource Allocation Procedures for NR V2X	Fraunhofer HHI, Fraunhofer IIS	not treated	2019-10-02 13:06:26	2019-10-02 16:27:40
R2-1912653	Inclusion of 90MHz UE Bandwidth	Vodafone	revised	2019-10-02 13:08:19	2019-10-03 09:45:40
R2-1912654	On Analysis of RACH Capacity in NTN	Mediatek India Technology Pvt.	not treated	2019-10-02 13:29:50	2019-10-03 03:00:22
R2-1912655	Improving Cell Reselection using Next Cell Information in NTN	Mediatek India Technology Pvt.	not treated	2019-10-02 13:35:39	2019-10-03 03:00:43
R2-1912656	Network and cell (re)selection in SNPN access mode	Nokia, Nokia Shanghai Bell	not treated	2019-10-02 13:38:59	2019-10-04 05:46:45
R2-1912657	RRC considerations to support SNPNs	Nokia, Nokia Shanghai Bell	not treated	2019-10-02 13:39:10	2019-10-04 05:46:45
R2-1912658	Discussion on PLMN and Cell selection and reselection enhancements for NR-U	Nokia, Nokia Shanghai Bell	not treated	2019-10-02 13:39:10	2019-10-04 05:46:45
R2-1912659	RLM/RLF measurement on NR-U	Nokia, Nokia Shanghai Bell	not treated	2019-10-02 13:39:10	2019-10-04 05:46:45
R2-1912660	On UL transmissions during SMTC in NR-U	Nokia, Nokia Shanghai Bell	noted	2019-10-02 13:39:10	2019-10-04 05:46:45
R2-1912661	Handling of pending TB for CG transmission	Lenovo, Motorola Mobility	not treated	2019-10-02 14:32:48	2019-10-03 07:57:40
R2-1912662	LBT impact to Multi-TTI scheduling	Lenovo, Motorola Mobility	not treated	2019-10-02 14:35:04	2019-10-03 07:57:40
R2-1912663	Impact of LBT on power headroom reporting functionality	Lenovo, Motorola Mobility	noted	2019-10-02 14:37:04	2019-10-03 07:57:40
R2-1912664	Report of [107#60] [NR/NTN] RACH capacity evaluation and procedures (ZTE)	ZTE Corporation, Sanechips	noted	2019-10-02 14:37:57	2019-10-03 22:56:03
R2-1912665	TP on RACH capacity evaluation and procedures	ZTE Corporation, Sanechips,China Southern Power Grid Co., Ltd	revised	2019-10-02 14:37:57	2019-10-03 22:56:03
R2-1912666	Consideration on the limited C-RNTI size in NTN	ZTE Corporation, Sanechips	not treated	2019-10-02 14:37:57	2019-10-03 07:41:46
R2-1912667	[DRAFT] LS on handling the limited size of C-RNTI in NTN (FS_NR_NTN_solutions)	ZTE Corporation, Sanechips	not treated	2019-10-02 14:37:57	2019-10-03 07:41:46
R2-1912668	Location report in NTN	ZTE Corporation, Sanechips	not treated	2019-10-02 14:37:57	2019-10-03 07:41:46
R2-1912669	Consideration on measurements in NTN-TN service continuity	ZTE Corporation, Sanechips	not treated	2019-10-02 14:37:57	2019-10-03 07:41:46

R2-1912670	Further consideration on tracking area management in NTN	ZTE Corporation, Sanechips	noted	2019-10-02 14:37:57	2019-10-03 07:41:46
R2-1912671	Clarification on the RRCReconfiguration for unauthenticated emergency call	ZTE Corporation, Sanechips	not pursued	2019-10-02 14:37:57	2019-10-03 07:42:07
R2-1912672	Consideration on UE radio capability ID signaling in inter-node RRC messages	ZTE Corporation, Sanechips	not treated	2019-10-02 14:37:58	2019-10-03 07:42:07
R2-1912673	Introduction of UE radio capability ID in inter-node RRC messages	ZTE Corporation, Sanechips	noted	2019-10-02 14:37:58	2019-10-03 07:42:07
R2-1912674	Introduction of efficient transition out of RRC_CONNECTED by UE assistance in TS38.331	ZTE Corporation, Sanechips,China Southern Power Grid Co., Ltd	not treated	2019-10-02 14:37:58	2019-10-03 07:42:07
R2-1912675	Further consideration on the System Information of the Private Network	ZTE Corporation, Sanechips	not treated	2019-10-02 14:37:58	2019-10-04 03:56:21
R2-1912676	Considerations on the remaining Idle/Inactive state issues of the Private Network	ZTE Corporation, Sanechips	not treated	2019-10-02 14:37:58	2019-10-04 03:56:21
R2-1912677	The issue of putting all SIBs in one SI message	PANASONIC R&D Center Germany, MediaTek Inc., vivo, Charter Communications, OPPO	noted	2019-10-02 14:38:02	2019-10-02 15:41:58
R2-1912678	Open issues for msgB formats for 2-step RA	Ericsson	not treated	2019-10-02 14:39:05	2019-10-03 20:28:19
R2-1912679	RNTI design and HARQ aspects for 2-step RA	Ericsson	noted	2019-10-02 14:39:05	2019-10-03 20:28:19
R2-1912680	Configuration of 2-step RA	Ericsson	not treated	2019-10-02 14:39:05	2019-10-03 20:28:19
R2-1912681	2-step CFRA	Ericsson	not treated	2019-10-02 14:39:05	2019-10-03 20:28:19
R2-1912682	PUSCH selection and MsgA payloads in 2-step RA	Ericsson	not treated	2019-10-02 14:39:05	2019-10-03 20:28:19
R2-1912683	2-step RA 38.331 Draft CR	Ericsson	not treated	2019-10-02 14:39:05	2019-10-03 20:28:19
R2-1912684	Impact of systematic LBT failure on UL transmission procedure	Lenovo, Motorola Mobility	not treated	2019-10-02 14:39:13	2019-10-03 07:57:40
R2-1912685	Further details of the RACH procedure for NR-U	Lenovo, Motorola Mobility	noted	2019-10-02 14:41:03	2019-10-03 07:57:40
R2-1912686	SL HARQ protocol operation	Lenovo, Motorola Mobility	not treated	2019-10-02 14:42:58	2019-10-03 07:57:40
R2-1912687	SR trigger for NR SL	Lenovo, Motorola Mobility	not treated	2019-10-02 14:44:47	2019-10-03 07:57:40
R2-1912688	SL LCP procedure considering the MCR requirements	Lenovo, Motorola Mobility	noted	2019-10-02 14:46:41	2019-10-03 07:57:40
R2-1912689	CSI/SRS reporting for WUS	Lenovo, Motorola Mobilty	noted	2019-10-02 14:49:31	2019-10-03 07:57:40
R2-1912690	SCell Beam Failure Recovery Procedure	Lenovo, Motorola Mobility	not treated	2019-10-02 14:51:16	2019-10-03 07:57:40
R2-1912691	Considerations on the RRM measurement relaxation	PANASONIC R&D Center Germany	not treated	2019-10-02 14:52:02	2019-10-02 15:41:58
R2-1912692	Loading Control in the RACH Type Selection	PANASONIC R&D Center Germany	not treated	2019-10-02 15:01:07	2019-10-02 15:41:58
R2-1912693	Discussion on the leaving conditions for CHO	PANASONIC R&D Center Germany	not treated	2019-10-02 15:07:27	2019-10-02 15:41:58
R2-1912694	SI update notification and PWS notification in WUS	PANASONIC R&D Center Germany	not treated	2019-10-02 15:11:26	2019-10-02 15:41:58
R2-1912695	DRX HARQ RTT enhancements for NTN	Nomor Research GmbH	revised	2019-10-02 15:56:08	2019-10-02 16:09:07
R2-1912696	Multiple PLMN Identities in NTN	Nomor Research GmbH	not treated	2019-10-02 15:59:25	2019-10-02 16:09:07

R2-1912697	System Information in NTN	Nomor Research GmbH	not treated	2019-10-02 16:00:59	2019-10-02 16:09:07
R2-1912698	HARQ process selection and logical channel prioritization	Nomor Research GmbH	not treated	2019-10-02 16:04:14	2019-10-02 17:37:16
R2-1912699	MAC CE signaling impact of enhanced TCI indication framework	Ericsson	not treated	2019-10-02 16:15:14	2019-10-03 07:57:47
R2-1912700	Report of email discussion [107#39] [NR - eMIMO]	Ericsson	not treated	2019-10-02 16:18:52	2019-10-11 10:39:07
R2-1912701	Report of email discussion [107#63][NR/NTN]	Ericsson	revised	2019-10-02 16:20:20	2019-10-09 13:52:09
R2-1912702	Congestion Control in NR V2X	Fraunhofer IIS, Fraunhofer HHI	not treated	2019-10-02 16:40:32	2019-10-02 16:58:25
R2-1912703	Running stage 2 CR on NR positioning 107#69	Intel Corporation, ESA	not treated	2019-10-02 16:48:42	2019-10-04 05:27:33
R2-1912704	Support of NR dependent positioning methods	Intel Corporation	not treated	2019-10-02 16:48:42	2019-10-04 05:27:33
R2-1912705	Assistance data for UE based DL only positioning	Intel Corporation	not treated	2019-10-02 16:48:42	2019-10-04 05:27:33
R2-1912706	Initial Access and Network Setup for IAB	Intel	not treated	2019-10-02 16:48:42	2019-10-04 05:27:33
R2-1912707	Multi-route support in IAB	Intel	not treated	2019-10-02 16:48:42	2019-10-04 05:27:33
R2-1912708	Flow control in IAB - remaining issues	Intel	not treated	2019-10-02 16:48:42	2019-10-04 05:27:33
R2-1912709	Uplink latency reduction	Intel	not treated	2019-10-02 16:48:42	2019-10-04 05:27:33
R2-1912710	Further discussion on Backhaul RLF handling	Intel	not treated	2019-10-02 16:48:42	2019-10-04 05:27:32
R2-1912711	Handling of Fairness in IAB	Intel	not treated	2019-10-02 16:48:42	2019-10-04 05:27:32
R2-1912712	Conditional Handover for Non-Terrestrial Networks	Intel	not treated	2019-10-02 16:48:42	2019-10-04 05:27:32
R2-1912713	Access Control for SNPN and CAG	Intel Corporation	not treated	2019-10-02 16:48:42	2019-10-04 05:27:32
R2-1912714	Suitability criteria for NPN	Intel Corporation	not treated	2019-10-02 16:48:42	2019-10-04 05:27:33
R2-1912715	Support of multiple SPS and CG configurations	Intel	not treated	2019-10-02 16:48:42	2019-10-04 05:27:33
R2-1912716	TSC assistance information	Intel	not treated	2019-10-02 16:48:42	2019-10-04 05:27:33
R2-1912717	Details for Ethernet header compression solution	Intel	not treated	2019-10-02 16:48:42	2019-10-04 05:27:33
R2-1912718	Intra UE prioritization of UL Data and Data	Intel	not treated	2019-10-02 16:48:42	2019-10-04 05:27:33
R2-1912719	PDCP duplication with multiple RLC entities	Intel	not treated	2019-10-02 16:48:42	2019-10-04 05:27:33
R2-1912720	UE based PDCP duplication activation/deactivation	Intel	not treated	2019-10-02 16:48:42	2019-10-04 05:27:33
R2-1912721	Full configuration indication to SN - Feedback on RAN3 LS	Intel	not treated	2019-10-02 16:48:42	2019-10-04 05:27:33
R2-1912722	False base station detection – feedback on SA3 LS	Intel	noted	2019-10-02 16:48:42	2019-10-04 05:27:33
R2-1912723	Updates to reestablishment procedure	ZTE Corporation, Sanechips, Intel Corporation	not treated	2019-10-02 17:18:47	2019-10-03 19:58:52
R2-1912724	Scheduling enhancements for TSC network	OPPO	not treated	2019-10-02 17:33:42	2019-10-03 01:04:39
R2-1912725	Discussion on confirmation MAC CE for TSC network	OPPO	not treated	2019-10-02 17:33:42	2019-10-03 01:04:39
R2-1912726	Email discussion summary of [107#55][IIOT] CG/SPS for TSC	OPPO	revised	2019-10-02 17:33:42	2019-10-09 06:06:23
R2-1912727	Discussion on Ethernet Header Compression	OPPO	not treated	2019-10-02 17:33:42	2019-10-03 01:04:39
R2-1912728	Other issue on intra-UE prioritization in IIoT	OPPO	noted	2019-10-02 17:33:42	2019-10-03 01:04:39
R2-1912729	Intra-UE prioritization involving configured grant	OPPO	not treated	2019-10-02 17:33:42	2019-10-03 01:04:39
R2-1912730	Discussion on SR cancelling on intra-UE prioritization involving SR	OPPO	not treated	2019-10-02 17:33:42	2019-10-03 01:04:39
R2-1912731	Intra-UE prioritization between multiple SRs	OPPO, Huawei, HiSilicon	not treated	2019-10-02 17:33:42	2019-10-03 01:04:39
R2-1912732	Draft LS on intra-UE prioritization for multiple SRs	OPPO	not treated	2019-10-02 17:33:42	2019-10-03 01:04:39

R2-1912733	Discussion on data duplication enhancement in IIoT	OPPO	not treated	2019-10-02 17:33:42	2019-10-03 01:04:39
R2-1912734	Discussion on UE-based data duplication enhancement	OPPO	not treated	2019-10-02 17:33:42	2019-10-03 01:04:39
R2-1912735	Discussion on potential improvements for delay critical QoS Flows	OPPO	noted	2019-10-02 17:33:42	2019-10-03 01:04:39
R2-1912736	On Maximum Number of CHO Candidate Cells and Nodes	Charter Communications, Inc	not treated	2019-10-02 17:36:58	2019-10-03 05:37:39
R2-1912737	Addition of broadcast of barometric pressure assistance data	Polaris Wireless, FirstNet, Intel, AT&T, NextNav	not treated	2019-10-02 17:53:20	2019-10-02 18:06:21
R2-1912738	Addition of broadcast of barometric pressure assistance data	Polaris Wireless, FirstNet, Intel, AT&T, NextNav	not treated	2019-10-02 18:00:49	2019-10-02 18:06:21
R2-1912739	Discussion on configuration aspect for CHO	Huawei, HiSilicon, China Telecom	not treated	2019-10-02 18:08:27	2019-10-02 18:47:05
R2-1912740	Discussion on execution aspect for CHO	Huawei, HiSilicon	not treated	2019-10-02 18:08:27	2019-10-02 18:47:05
R2-1912741	Discussion on failure handling for CHO	Huawei, HiSilicon	not treated	2019-10-02 18:08:27	2019-10-02 18:47:05
R2-1912742	Discussion on UE capabilities for mobility enhancements	Huawei, HiSilicon	not treated	2019-10-02 18:08:27	2019-10-02 18:47:05
R2-1912743	Discussion on combination of simultaneous connectivity and CHO	Huawei, HiSilicon	not treated	2019-10-02 18:08:27	2019-10-02 18:46:43
R2-1912744	Discussion on fast handover failure recovery	Huawei, HiSilicon	not treated	2019-10-02 18:08:27	2019-10-02 18:46:43
R2-1912745	Discussion on CHO for Pscell change	Huawei, HiSilicon	not treated	2019-10-02 18:08:27	2019-10-02 18:46:43
R2-1912746	Reprot of email discussion 107-47	Huawei	noted	2019-10-02 18:08:27	2019-10-08 09:51:30
R2-1912747	Running 38.331 CR for introducing logged MDT	Huawei	merged	2019-10-02 18:08:27	2019-10-08 09:51:30
R2-1912748	Discussion on user consent for MDT	Huawei, HiSilicon, LG Uplus	not treated	2019-10-02 18:08:27	2019-10-02 18:46:43
R2-1912749	Discussion on remaining aspects on logged MDT and Accessibility measurements	Huawei, HiSilicon	noted	2019-10-02 18:08:27	2019-10-02 18:46:43
R2-1912750	Discussion on remaining aspects on immediate MDT	Huawei, HiSilicon	noted	2019-10-02 18:08:27	2019-10-02 18:46:43
R2-1912751	Discussion on UE impacts and UE capabilities due to MDT	Huawei, HiSilicon, LG Uplus	not treated	2019-10-02 18:08:27	2019-10-02 18:46:17
R2-1912752	Discussion on L2 measurements based on SA5 TS 28.552	Huawei, HiSilicon	not treated	2019-10-02 18:08:27	2019-10-02 18:46:17
R2-1912753	Draft LS on L2 measurements in TS 28.552	Huawei	not treated	2019-10-02 18:08:27	2019-10-02 18:46:17
R2-1912754	Discussion on new L2 measurements	Huawei, HiSilicon, LG Uplus	noted	2019-10-02 18:08:27	2019-10-02 18:46:17
R2-1912755	Discussion on delay measurement and collection	Huawei, HiSilicon	not treated	2019-10-02 18:08:27	2019-10-02 18:46:17
R2-1912756	Discussion on RLF report and RACH report for SON	Huawei, HiSilicon	not treated	2019-10-02 18:08:27	2019-10-02 18:46:17
R2-1912757	Discussion on mobility history information	Huawei, HiSilicon	not treated	2019-10-02 18:08:27	2019-10-02 18:45:54
R2-1912758	Correction to the handling of stored AS context upon CN type change	Huawei, HiSilicon	revised	2019-10-02 18:08:27	2019-10-02 18:45:54
R2-1912759	Discussion on paging issue for LTE-5GC	Huawei, HiSilicon	not treated	2019-10-02 18:08:28	2019-10-02 18:45:54
R2-1912760	Correction on paging for LTE-5GC	Huawei, HiSilicon	postponed	2019-10-02 18:08:28	2019-10-02 18:45:54

R2-1912761	Discussion on UE behaviours on location info for logged MDT	Huawei, HiSilicon	noted	2019-10-02 18:08:29	2019-10-02 18:45:54
R2-1912762	Correction on location info collection for logged MDT	Huawei, HiSilicon	not pursued	2019-10-02 18:08:29	2019-10-02 18:45:54
R2-1912763	Discussion on potential impacts due to management of QMC	Huawei, HiSilicon	not treated	2019-10-02 18:08:31	2019-10-03 18:32:36
R2-1912764	Draft reply LS on QoE Measurement Collection	Huawei	not treated	2019-10-02 18:08:31	2019-10-03 18:32:36
R2-1912765	Measurement coordination on maxMeasIdentitiesSCG in MR-DC	ZTE Corporation, Sanechips, Ericsson	not treated	2019-10-02 18:24:42	2019-10-03 16:03:47
R2-1912766	Corrections on maxMeasIdentitiesSCG-NR in MR-DC	ZTE Corporation, Sanechips, Ericsson	not treated	2019-10-02 18:24:42	2019-10-03 16:03:47
R2-1912767	CR to introduce timer for DRX based SFTD measurement	ZTE Corporation, Sanechips, MediaTek Inc.	agreed	2019-10-02 18:24:43	2019-10-03 16:03:47
R2-1912768	Correction on absence of gapPurpose	ZTE Corporation, Sanechips	agreed	2019-10-02 18:24:45	2019-10-03 16:03:47
R2-1912769	Consideration on DRX coordination in ANR	ZTE Corporation, Sanechips, NEC	not treated	2019-10-02 18:24:46	2019-10-03 16:03:47
R2-1912770	Corrections on DRX coordination in ANR	ZTE Corporation, Sanechips, NEC	not treated	2019-10-02 18:24:46	2019-10-03 16:03:47
R2-1912771	Report of [107#28][NR R15] Ambiguity of UE FDD&TDD FR1&FR2 RAN2 capability	ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd	noted	2019-10-02 18:24:54	2019-10-04 04:08:26
R2-1912772	Correction on ambiguity of UE FDD/TDD FR1/FR2 capabilities	ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd	revised	2019-10-02 18:24:54	2019-10-04 04:08:26
R2-1912773	Remaining issues on UTRAN measurement	ZTE Corporation, Sanechips	not treated	2019-10-02 18:24:57	2019-10-03 16:03:47
R2-1912774	Corrections on UTRAN measurement	ZTE Corporation, Sanechips	noted	2019-10-02 18:24:57	2019-10-03 16:03:47
R2-1912775	Remaining issues on CLI measurement	ZTE Corporation, Sanechips	not treated	2019-10-02 18:24:57	2019-10-03 16:03:47
R2-1912776	Control plane consideration for dual active protocol stack (DAPS) based RUDI HO	Intel Corporation, Qualcomm Inc, Charter Communications,Mediatek Inc, Apple	not treated	2019-10-02 18:39:50	2019-10-04 02:54:09
R2-1912777	Control plane signaling flow for DAPS based RUDI HO	Intel Corporation	not treated	2019-10-02 18:39:50	2019-10-04 04:07:41
R2-1912778	Stage 2 TP for DAPS based RUDI	Intel Corporation	not treated	2019-10-02 18:39:50	2019-10-04 04:07:41
R2-1912779	Report of [107#30][NR/LTE/Mob-enh] Configuration of CHO and execution condition	Intel Corporation	noted	2019-10-02 18:39:50	2019-10-06 11:06:50
R2-1912780	TS38.331 TP of 107#30	Intel Corporation	not treated	2019-10-02 18:39:50	2019-10-06 11:06:50
R2-1912781	Running CR for the introduction of NR mobility enhancement	Intel Corporation	revised	2019-10-02 18:39:50	2019-10-04 02:54:09
R2-1912782	Capability design for DAPS based RUDI HO	Intel Corporation	not treated	2019-10-02 18:39:51	2019-10-04 02:54:37
R2-1912783	DL data forwarding in DAPS based RUDI HO	Intel Corporation	not treated	2019-10-02 18:39:51	2019-10-04 04:07:41

R2-1912784	Confirmation of WA for failure handling	Intel Corporation, InterDigital Inc., China Telecom, OPPO, MediaTek, Lenovo, Motorola Mobility, vivo, Spreadtrum, ITRI, Sharp, Panasonic, Xiaomi, ZTE Corporation, Sanechips, LG Electronics, CATT, NEC, Ericsson, Google Inc., Apple	noted	2019-10-02 18:39:51	2019-10-04 02:54:09
R2-1912785	RAN2 details of the wake-up signal	Intel Corporation	noted	2019-10-02 18:39:51	2019-10-04 02:54:50
R2-1912786	Efficient RRC state transition out of RRC_CONNECTED	Intel Corporation	not treated	2019-10-02 18:39:51	2019-10-04 02:54:50
R2-1912787	Configuration of MIMO layers per DL BWP	Intel Corporation	not treated	2019-10-02 18:39:51	2019-10-04 02:54:50
R2-1912788	UE assistance for C-DRX configuration	Intel Corporation	noted	2019-10-02 18:39:51	2019-10-04 02:54:50
R2-1912789	Relaxation of RRM measurements	Intel Corporation	not treated	2019-10-02 18:39:51	2019-10-04 02:54:50
R2-1912790	Remaining aspects on SL PDCP	Intel Corporation	not treated	2019-10-02 18:39:51	2019-10-04 05:11:12
R2-1912791	On the support of simultaneous configuration of mode1 and mode2	Intel Corporation	not treated	2019-10-02 18:39:51	2019-10-04 05:11:12
R2-1912792	Need for SL RLC re-establishment	Intel Corporation	not treated	2019-10-02 18:39:51	2019-10-04 05:11:12
R2-1912793	PC5 RRC procedure details for NR V2X	Intel Corporation	not treated	2019-10-02 18:39:51	2019-10-04 05:11:12
R2-1912794	Further consideration on the SucessRAR design and Fallback RAR	Intel Corporation	not treated	2019-10-02 18:39:51	2019-10-04 02:54:09
R2-1912795	Preamble grouping selection or PUSCH TBS size selection for 2-step RACH	Intel Corporation	noted	2019-10-02 18:39:51	2019-10-04 02:54:09
R2-1912796	Support of CFRA in 2-step RACH	Intel Corporation	not treated	2019-10-02 18:39:51	2019-10-04 02:54:09
R2-1912797	IAB workplan update	Qualcomm Incorporated (Rapporteur)	noted	2019-10-02 20:21:29	2019-10-03 21:05:40
R2-1912798	IAB (TP to CR on 38300) L2 structures	Qualcomm Incorporated	not treated	2019-10-02 20:23:09	2019-10-03 21:05:40
R2-1912799	SA IAB operation with EN-DC UEs	Qualcomm Incorporated	not treated	2019-10-02 20:24:23	2019-10-03 21:05:40
R2-1912800	IAB extension of LCID space	Qualcomm Incorporated	not treated	2019-10-02 20:25:31	2019-10-03 21:05:41
R2-1912801	IAB extension of LCG space	Qualcomm Incorporated	not treated	2019-10-02 20:26:26	2019-10-03 21:05:41
R2-1912802	IAB load reporting to IAB-donor CU-CP	Qualcomm Incorporated	not treated	2019-10-02 20:27:38	2019-10-03 21:05:41
R2-1912803	Issue on ping pong state transition for sidelink UE	Beijing Xiaomi Software Tech	withdrawn	2019-10-02 20:58:17	2019-10-02 21:06:58
R2-1912804	Discussion on resource allocation	Beijing Xiaomi Software Tech	not treated	2019-10-02 20:58:17	2019-10-02 21:06:58
R2-1912805	Discussion on sidelink admission control	Beijing Xiaomi Software Tech	not treated	2019-10-02 20:58:17	2019-10-02 21:06:58
R2-1912806	Discussion on BSR prioritization	Beijing Xiaomi Software Tech	not treated	2019-10-02 20:58:17	2019-10-02 21:06:58
R2-1912807	Introduction of RACS [36.300]	MediaTek Inc.	endorsed	2019-10-02 21:18:16	2019-10-04 04:39:06
R2-1912808	Introduction of RACS [38.300]	MediaTek Inc.	endorsed	2019-10-02 21:20:50	2019-10-04 04:39:06
R2-1912809	Decision on support of delta signalling	MediaTek Inc.	noted	2019-10-02 21:23:08	2019-10-04 04:39:06

R2-1912810	Introduction of UECapabilityInformation segmentation in 36.331	MediaTek Inc., CATT, Ericsson, Spreadtrum Communications, ZTE Corporation, Sanechips, OPPO, Qualcomm Incorporated	revised	2019-10-02 21:26:12	2019-10-04 04:39:06
R2-1912811	Work plan for RACS-RAN work item	MediaTek Inc., CATT	noted	2019-10-02 21:28:43	2019-10-04 04:39:06
R2-1912812	Access handling for multiple candidate cells in CHO	Futurewei Technologies	not treated	2019-10-02 21:30:17	2019-10-04 05:12:19
R2-1912813	Support (or not) of PC5-RRC for groupcast	MediaTek Inc.	not treated	2019-10-02 21:30:39	2019-10-04 04:39:06
R2-1912814	Contents and handling of PC5-RRC configuration	MediaTek Inc.	not treated	2019-10-02 21:32:35	2019-10-04 04:39:06
R2-1912815	Single vs. multiple PC5-RRC connection	MediaTek Inc.	not treated	2019-10-02 21:34:15	2019-10-04 04:39:06
R2-1912816	Procedure and configurations for conditional SN change	Futurewei Technologies	not treated	2019-10-02 21:34:29	2019-10-04 05:12:19
R2-1912817	RLM with aperiodic reference signals	MediaTek Inc.	not treated	2019-10-02 21:35:55	2019-10-04 04:39:06
R2-1912818	Discussion on RLM & RLF reduction for conditional PSCell addition/change	Futurewei Technologies	not treated	2019-10-02 21:37:20	2019-10-04 05:12:19
R2-1912819	RLM and state modelling based on PC5-S connection	MediaTek Inc.	not treated	2019-10-02 21:37:42	2019-10-04 04:39:06
R2-1912820	Validity areas based on cell lists	MediaTek Inc.	not treated	2019-10-02 21:40:04	2019-10-04 04:39:06
R2-1912821	Email discussion report for [107#79] [LTE/feMOB] Capability coordination for RUDI HO	Qualcomm India Pvt Ltd	noted	2019-10-02 22:07:46	2019-10-04 02:48:59
R2-1912822	UE capability sharing aspects for DAPS based enhanced MBB HO	Qualcomm Inc, Charter communications, Intel Corp, Appl Inc, Google Inc	not treated	2019-10-02 22:12:33	2019-10-04 02:48:59
R2-1912823	Report on [107#48][NR/MDT] Running 38.331 CR for introducing Immediate MDT and other MDT functions	Ericsson	noted	2019-10-02 22:13:22	2019-10-03 21:46:36
R2-1912824	Running 38.331 CR for introducing Immediate MDT and other MDT functions	Ericsson	merged	2019-10-02 22:13:22	2019-10-03 21:46:36
R2-1912825	Mobility history information reporting from the UE	Ericsson	not treated	2019-10-02 22:13:25	2019-10-03 23:00:26
R2-1912826	Logged MDT Configuration & Reporting handling in DC scenarios	Ericsson	not treated	2019-10-02 22:13:25	2019-10-03 21:46:36
R2-1912827	Leftover issues for Logged MDT	Ericsson	noted	2019-10-02 22:13:25	2019-10-03 21:46:36
R2-1912828	CR on introducing UE capability for MDT in NR	Ericsson	not treated	2019-10-02 22:13:25	2019-10-03 21:46:36
R2-1912829	UE Location Report capability indication for MDT	Ericsson	not treated	2019-10-02 22:13:26	2019-10-03 21:46:36
R2-1912830	Area Scope in MDT configuration	Ericsson	not treated	2019-10-02 22:13:26	2019-10-03 21:46:36
R2-1912831	Remaining issues for RRC Segmentation	Ericsson	noted	2019-10-02 22:13:26	2019-10-03 21:46:36
R2-1912832	Remaining aspects on Capability ID	Ericsson	noted	2019-10-02 22:13:26	2019-10-03 21:46:36
R2-1912833	Introduction of RRC Segmentation - Downlink	Ericsson	not treated	2019-10-02 22:13:26	2019-10-03 21:46:36
R2-1912834	Introduction of RRC Segmentation - Downlink	Ericsson	not treated	2019-10-02 22:13:27	2019-10-03 21:46:36
R2-1912835	Segmentation in DL	Ericsson, DT, AT&T, Vodafone	not treated	2019-10-02 22:13:28	2019-10-03 21:46:36
R2-1912836	Introduction of RRC Segmentation - Downlink	Ericsson, DT, AT&T, Vodafone	not treated	2019-10-02 22:13:28	2019-10-03 21:46:36
R2-1912837	Introduction of RRC Segmentation - Downlink	Ericsson	not treated	2019-10-02 22:13:29	2019-10-03 21:46:36

R2-1912838	UL TDM aspects of enhanced MBB HO using Dual Active Protocol Stack	Qualcomm Inc, Charter communications, Intel Corp, MediaTek Inc, Apple Inc, Google Inc	noted	2019-10-02 22:16:34	2019-10-04 02:48:59
R2-1912839	[Draft] LS for DAPS Handover UE capabilities	Qualcomm India Pvt Ltd	not treated	2019-10-02 22:25:49	2019-10-04 02:48:59
R2-1912840	Split Threshold for DC and NR-U	Nokia, Nokia Shanghai Bell	not treated	2019-10-02 22:26:11	2019-10-04 03:54:04
R2-1912841	NPN Work Plan	Nokia, China Telecom (Rapporteurs)	noted	2019-10-02 22:26:11	2019-10-04 03:54:04
R2-1912842	NPN Stage 2 Draft CR	Nokia, China Telecom (Rapporteurs)	not treated	2019-10-02 22:26:11	2019-10-04 03:54:04
R2-1912843	Report of Email Discussion [107#41] on CSG Aspects	Nokia (Rapporteur)	noted	2019-10-02 22:26:11	2019-10-04 03:54:04
R2-1912844	PDCP Reordering Problems	Nokia, Nokia Shanghai Bell, NTT DOCOMO INC.	noted	2019-10-02 22:26:11	2019-10-04 03:54:04
R2-1912845	Fixed LCP Restrictions	Nokia, Ericsson, Fujitsu, Nokia Shanghai Bell	noted	2019-10-02 22:26:11	2019-10-04 03:54:04
R2-1912846	QoS Flow Handling	Nokia, Nokia Shanghai Bell	not treated	2019-10-02 22:26:11	2019-10-04 03:54:04
R2-1912847	MDBV Enforcement	Nokia, Nokia Shanghai Bell	not treated	2019-10-02 22:26:11	2019-10-04 03:54:04
R2-1912848	[Draft] LS on uplink TDM pattern for LTE DAPS based enhanced make-before-break HO	Qualcomm India Pvt Ltd	not treated	2019-10-02 22:29:06	2019-10-04 02:48:59
R2-1912849	Access Stratum Release Assistance Indicator for eMTC and NB-IoT connected to 5GC	Qualcomm India Pvt Ltd	noted	2019-10-02 22:34:20	2019-10-04 02:48:59
R2-1912850	Access stratum changes to support short eDRX for eMTC connected 5GC in RRC_INACTIVE state	Qualcomm Incorporated	not treated	2019-10-02 22:36:37	2019-10-04 02:48:59
R2-1912851	Idle Mode cell reselection based on CN type supported	Qualcomm Incorporated	not treated	2019-10-02 22:39:35	2019-10-04 02:48:59
R2-1912852	PDCP type to be used for NB-IoT and eMTC connected to 5GC	Qualcomm Incorporated	not treated	2019-10-02 22:41:55	2019-10-04 02:48:59
R2-1912853	UAC information change indication in 5GC	Qualcomm Incorporated	not treated	2019-10-02 22:44:33	2019-10-04 02:48:59
R2-1912854	UE identity for CIoT/5GC UP Optimization and RRC indication to upper layers	Qualcomm India Pvt Ltd	not treated	2019-10-02 22:47:52	2019-10-04 02:48:59
R2-1912855	Unified access control for NB-IoT connected to 5GC	Qualcomm India Pvt Ltd	not treated	2019-10-02 22:51:48	2019-10-04 02:48:59
R2-1912856	Remaining issues in MT EDT for UP solution	Intel Corporation	not treated	2019-10-02 23:01:47	2019-10-04 04:07:41
R2-1912857	Remaining issues in Msg4-based Control Plane solution for MT EDT	Intel Corporation	not treated	2019-10-02 23:01:47	2019-10-04 04:07:41
R2-1912858	After the acquisition of ETWS/CMAS by non-BL UEs in connected mode	Intel Corporation	not treated	2019-10-02 23:01:47	2019-10-04 04:07:41
R2-1912859	Remaning issues in DL Quality report	Intel Corporation	not treated	2019-10-02 23:01:47	2019-10-04 04:07:41
R2-1912860	Remaning issues on the support of 5GCN connectivity	Intel Corporation	not treated	2019-10-02 23:01:47	2019-10-04 04:07:41
R2-1912861	Remaining issues in RRC inactive state	Intel Corporation	not treated	2019-10-02 23:01:47	2019-10-04 04:07:41
R2-1912862	Additional issues in D-PUR in RRC_IDLE	Intel Corporation	not treated	2019-10-02 23:01:47	2019-10-04 04:07:41
R2-1912863	Non-BL UE operation in standalone deployment	Intel Corporation	not treated	2019-10-02 23:01:47	2019-10-04 04:07:41
R2-1912864	Introduction of Rel-16 eMTC enhancements	Intel Corporation	revised	2019-10-02 23:01:47	2019-10-04 04:07:41

R2-1912865	Remaining FFSs on enabling the UE to camp on non-best cell	Intel Corporation	not treated	2019-10-02 23:01:49	2019-10-04 02:54:09
R2-1912866	Remaining issues related to random access procedure	Intel Corporation	noted	2019-10-02 23:01:49	2019-10-04 02:54:09
R2-1912867	Non-BL UE in normal and enhanced coverage	Intel Corporation	not treated	2019-10-02 23:01:49	2019-10-04 04:07:41
R2-1912868	Considerations for Geographical Zone Design for NR V2X	InterDigital	not treated	2019-10-02 23:30:02	2019-10-04 01:04:05
R2-1912869	RAN2 Aspects of HARQ for NR V2X	InterDigital	not treated	2019-10-02 23:30:02	2019-10-04 01:04:05
R2-1912870	LCP for NR V2X	InterDigital	not treated	2019-10-02 23:30:02	2019-10-04 01:04:05
R2-1912871	Remaining Aspects of UL/SL Prioritization	InterDigital	not treated	2019-10-02 23:30:02	2019-10-04 01:04:05
R2-1912872	Multiple SL Configured Grants and UE Assistance	InterDigital	not treated	2019-10-02 23:30:02	2019-10-04 01:04:05
R2-1912873	Handling Multiple Unicast Links in NR V2X	InterDigital	noted	2019-10-02 23:30:02	2019-10-04 01:04:05
R2-1912874	RLM/RLF for NR V2X	InterDigital	not treated	2019-10-02 23:30:02	2019-10-04 01:04:05
R2-1912875	RAN2 Aspects of Simultaneous Configuration of Mode 1 and Mode 2	InterDigital	not treated	2019-10-02 23:30:02	2019-10-04 01:04:05
R2-1912876	Draft LS on Handling of Multiple Unicast Links	InterDigital	not treated	2019-10-02 23:30:02	2019-10-04 01:04:05
R2-1912877	Admission Control for NR SL	InterDigital, Ericsson, MediaTek, CATT, ITL, Xiaomi, Fraunhofer, LG	noted	2019-10-02 23:30:02	2019-10-04 01:04:05
R2-1912878	QoS-Based SLRB Establishment Decision	InterDigital	not treated	2019-10-02 23:30:02	2019-10-04 01:04:05
R2-1912879	Remaining Aspects of Fast MCG Link Recovery using SRB3	InterDigital	not treated	2019-10-02 23:30:02	2019-10-04 01:04:05
R2-1912880	Summary of Email Discussion [107#32]NR/DCCA] MCG Scell/SCG Resume	InterDigital	noted	2019-10-02 23:30:02	2019-10-04 14:52:54
R2-1912881	On Combining RUDI and CHO	InterDigital	not treated	2019-10-02 23:30:02	2019-10-04 01:04:05
R2-1912882	Conditional PSCell addition/change	InterDigital	not treated	2019-10-02 23:30:02	2019-10-04 01:04:05
R2-1912883	Intra-UE Prioritization for overlapping PUSCHs	InterDigital	not treated	2019-10-02 23:31:57	2019-10-03 23:02:10
R2-1912884	Handling of deprioritized PDUs in MAC	InterDigital	noted	2019-10-02 23:31:57	2019-10-03 23:02:10
R2-1912885	Intra UE prioritization between SR and PUSCH	InterDigital	not treated	2019-10-02 23:31:57	2019-10-03 23:02:10
R2-1912886	Scheduling enhancements for TSC traffic	InterDigital	not treated	2019-10-02 23:31:57	2019-10-03 23:02:09
R2-1912887	Paging procedure in NR-U	InterDigital	not treated	2019-10-02 23:31:57	2019-10-03 23:02:09
R2-1912888	Random access in NR-U	InterDigital	not treated	2019-10-02 23:31:57	2019-10-03 23:02:09
R2-1912889	Handling UL LBT Failures in MAC	InterDigital	noted	2019-10-02 23:31:57	2019-10-03 23:02:10
R2-1912890	CAPC selection for Configured grant transmission in NR-U	InterDigital	noted	2019-10-02 23:31:57	2019-10-03 23:02:10
R2-1912891	Impact of non-numeric K1 value on DRX Timers	InterDigital	not treated	2019-10-02 23:31:57	2019-10-03 23:02:10
R2-1912892	RLM and RLF for NR-U	InterDigital	not treated	2019-10-02 23:31:57	2019-10-03 23:02:10
R2-1912893	Correction on field description of cellReselectionInfoCommon	Qualcomm Incorporated, Ericsson	not treated	2019-10-03 00:05:24	2019-10-04 03:06:58
R2-1912894	DRX considerations for preconfigured resources	Sequans Communications	not treated	2019-10-03 00:07:38	2019-10-03 12:48:19
R2-1912895	Remaining FFSs for ANR report in NB-IoT	ZTE Corporation, Sanechips	noted	2019-10-03 00:38:17	2019-10-04 04:11:01
R2-1912896	Remaining issues for D-PUR in IDLE	ZTE Corporation, Sanechips	not treated	2019-10-03 00:43:09	2019-10-04 04:32:25

R2-1912897	Signalling aspects for accurate reference timing delivery in TSC	ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd	noted	2019-10-03 00:46:31	2019-10-04 04:58:10
R2-1912898	Other issues related to accurate reference timing delivery in TSC	ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd	not treated	2019-10-03 00:49:05	2019-10-04 04:58:22
R2-1912899	Correction of cell reselection parameters for multi-beam operation	Qualcomm Incorporated, Ericsson	not treated	2019-10-03 00:51:16	2019-10-04 03:06:58
R2-1912900	TP for accurate reference timing delivery in TSC	ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd	not treated	2019-10-03 00:55:15	2019-10-04 04:58:38
R2-1912901	Remaining issues for EHC in TSC	ZTE Corporation, Sanechips	not treated	2019-10-03 00:59:53	2019-10-04 05:04:37
R2-1912902	Support of eDRX in CM-CONNECTED with RRC_INACTIVE for 5GC	ZTE Corporation, Sanechips	noted	2019-10-03 01:03:58	2019-10-04 05:17:42
R2-1912903	User plane solutions for connecting to 5GC	ZTE Corporation, Sanechips	not treated	2019-10-03 01:07:32	2019-10-04 05:50:29
R2-1912904	Some remaining issues for Msg4-based MT-EDT	ZTE Corporation, Sanechips	not treated	2019-10-03 01:16:56	2019-10-04 05:50:54
R2-1912905	Remaining issues of quality report for non-anchor access	ZTE Corporation, Sanechips	noted	2019-10-03 01:20:56	2019-10-04 06:12:53
R2-1912906	Remaining issues for DL quality report for eMTC	ZTE Corporation, Sanechips	noted	2019-10-03 01:26:33	2019-10-04 06:13:13
R2-1912907	Other remaining issues of UE grouping for WUS	ZTE Corporation, Sanechips	not treated	2019-10-03 01:29:43	2019-10-04 06:13:28
R2-1912908	Remaining issue of non-BL UE enhancement	ZTE Corporation, Sanechips	not treated	2019-10-03 01:34:43	2019-10-04 06:13:43
R2-1912909	Discussion on configuration of CHO	China Telecommunications	not treated	2019-10-03 02:03:27	2019-10-04 02:57:26
R2-1912910	Simulations on PDCCH-WUS not applying to the DRX short cycles	Xiaomi Communications	noted	2019-10-03 02:05:07	2019-10-03 03:09:20
R2-1912911	Avoid ping pong state transition for sidelink UE	Beijing Xiaomi Software Tech	noted	2019-10-03 02:20:25	2019-10-03 02:23:23
R2-1912912	Discussion on details of PDCP for DAPS	China Telecommunications	not treated	2019-10-03 02:24:04	2019-10-04 02:57:26
R2-1912913	Remaining issue for prioritization for NR V2X	Lenovo, Motorola Mobility	not treated	2019-10-03 02:26:22	2019-10-03 14:11:28
R2-1912914	Considerations on QoS based resource pool for NR V2X	Lenovo, Motorola Mobility	not treated	2019-10-03 02:26:22	2019-10-03 14:11:28
R2-1912915	Further discussion on scheduling enhancement for TSN traffic	Lenovo, Motorola Mobility	not treated	2019-10-03 02:26:22	2019-10-03 14:11:28
R2-1912916	Paging probability information based UE grouping	Lenovo, Motorola Mobility	not treated	2019-10-03 02:26:22	2019-10-03 14:37:09
R2-1912917	Consideration on WUS configuration	Lenovo, Motorola Mobility	not treated	2019-10-03 02:26:22	2019-10-03 14:38:41
R2-1912918	Discussion on PDCCH-WUS missing problems during BWP switching and handover	Xiaomi Communications	not treated	2019-10-03 02:27:48	2019-10-03 03:09:35
R2-1912919	Some issues on the PDCCH-WUS working with C-DRX	Xiaomi Communications	not treated	2019-10-03 02:30:11	2019-10-03 03:09:48

R2-1912920	Considerations on UE power saving for BWP scenarios	Xiaomi Communications	not treated	2019-10-03 02:33:11	2019-10-03 03:10:05
R2-1912921	PRACH prioritization parameters for MPS for Rel-16	Perspecta Labs, ECD, AT&T, FirstNet, T-Mobile, Sprint, Verizon, Qualcomm, Ericsson	merged	2019-10-03 02:36:54	2019-10-03 21:28:28
R2-1912922	PRACH prioritization procedure for MPS	Perspecta Labs, ECD, AT&T, FirstNet, T-Mobile, Sprint, Verizon, Qualcomm, Ericsson	merged	2019-10-03 02:51:36	2019-10-03 21:28:28
R2-1912923	Grouping and Automatic Reconfiguration for Handover Enhancement in LEO NTN	Mediatek India Technology Pvt.	not treated	2019-10-03 03:23:09	2019-10-03 03:26:30
R2-1912924	Left issues in idle and inactive mode for NPN	CMCC	not treated	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912925	Left issues in active mode for NPN	CMCC	not treated	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912926	Further consideration on HARQ configuration in NTN	CMCC,Huawei,Sony, KT Corp.	revised	2019-10-03 03:36:54	2019-10-04 02:35:15
R2-1912927	Analysis on RAN1 LS on propagation delay compensation	CMCC	not treated	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912928	Support on TSN periodicities of non-integer multiple CG-SPS periodicities	CMCC	noted	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912929	Draft LS on support of the activation DCI of Type 2 CGs/SPS to adjust the start offset	CMCC	not treated	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912930	Repetitions Transmission for SPS configurations	CMCC	not treated	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912931	Down selection on the PDCP Duplication MAC CE Structure	CMCC	not treated	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912932	Further discussion on fast HO failure recovery in NR	CMCC	not treated	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912933	Handling of deprioritized transmissions	CMCC	noted	2019-10-03 03:36:54	2019-10-04 02:46:51
R2-1912934	Handling for CG resource collision of equal priority	CMCC	not treated	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912935	BAP mapping support for routing	CMCC	not treated	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912936	BWP and sub-band switching for NR-U in RACH	CMCC	not treated	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912937	Further consideration on consistent LBT failures	CMCC	not treated	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912938	Consideration on further CP enhancements for NR-U	CMCC	revised	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912939	Differentiating steerable and moving cells of LEO	CMCC	not treated	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912940	Using beam footprint information for GEO mobility	CMCC	not treated	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912941	Impact analysis of NR CA frame timing relaxation	CMCC	not treated	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912942	Further consideration on PRACH prioritization	CMCC	not treated	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912943	Discussion on the flexible configuration of Maximum Data Rate Enumeration for UP Integrity Protection	CMCC	revised	2019-10-03 03:36:54	2019-10-22 03:18:35
R2-1912944	Mobility-state-based cell reselection in NR for HSDN	CMCC, MediaTek Inc	not treated	2019-10-03 03:36:54	2019-10-04 02:28:36
R2-1912945	Discussion on LCP restriction enhancements for DG	CMCC	not treated	2019-10-03 03:36:55	2019-10-04 02:43:34
R2-1912946	Discussion on fast handover failure recovery	CMCC	not treated	2019-10-03 03:36:55	2019-10-04 02:43:34
R2-1912947	HARQ feedback for MsgB	CMCC	not treated	2019-10-03 03:36:55	2019-10-04 02:39:00
R2-1912948	PUSCH segmentation and repetition	CMCC	not treated	2019-10-03 03:36:55	2019-10-04 02:39:00

R2-1912949	Discussion of the PUSCH transmission of MsgA	CMCC	not treated	2019-10-03 03:36:55	2019-10-04 02:39:00
R2-1912950	Handling of de-prioritized MAC PDU	CMCC	withdrawn	2019-10-03 03:36:55	2019-10-22 03:18:35
R2-1912951	Discussion on IE design of TimeReferenceInfo used for IIOT	CMCC	noted	2019-10-03 03:36:55	2019-10-04 02:28:36
R2-1912952	[DRAFT] LS to SA3 on privacy concern of transmission of CAG ID	CMCC	not treated	2019-10-03 03:36:55	2019-10-04 02:28:36
R2-1912953	Discussion of primary path configuration for PDCP duplication	CMCC	not treated	2019-10-03 03:36:55	2019-10-04 02:28:36
R2-1912954	Further discussion on RA type selection	CMCC	not treated	2019-10-03 03:36:55	2019-10-04 02:28:36
R2-1912955	System information for 2-step RACH resources configuration	CMCC	not treated	2019-10-03 03:36:55	2019-10-04 02:28:36
R2-1912956	[107#49][NR L2 measurement] Running TS38.314	CMCC	noted	2019-10-03 03:36:55	2019-10-04 02:28:36
R2-1912957	Draft TS 38.314 v002	CMCC	endorsed	2019-10-03 03:36:55	2019-10-04 02:28:36
R2-1912958	TP for TS 38.314 on number of Ues	CMCC	not treated	2019-10-03 03:36:57	2019-10-04 02:28:36
R2-1912959	Discussion on power saving in inter-frequency measurements	CMCC	not treated	2019-10-03 03:36:57	2019-10-04 02:28:36
R2-1912960	Further consideration on EN-DC cell reselection	CMCC	revised	2019-10-03 03:36:57	2019-10-22 03:18:35
R2-1912961	Discussion on support of NR RAN sharing	CMCC	revised	2019-10-03 03:36:57	2019-10-22 03:18:35
R2-1912962	Running TS 37.320 CR	CMCC	revised	2019-10-03 03:36:57	2019-10-04 04:27:44
R2-1912963	LS on Logged Measurements	CMCC	not treated	2019-10-03 03:36:57	2019-10-04 04:27:45
R2-1912964	Broadcast Handover in LEO-Satellite based NTN	Mediatek India Technology Pvt.	not treated	2019-10-03 03:40:03	2019-10-03 03:42:05
R2-1912965	Consideration on further CP enhancements for NR-U	CMCC	not treated	2019-10-03 03:48:42	2019-10-04 02:51:43
R2-1912966	Report of email discussion: [107#44][LTE and NR /feMOB] Discussion on PDCP details for RUDI HO	Mediatek Inc., Huawei,	noted	2019-10-03 03:57:45	2019-10-04 02:55:04
R2-1912967	PRACH prioritization parameters for MCS for Rel-16	FirstNet, Perspecta Labs, Ericsson, Qualcomm	merged	2019-10-03 03:59:11	2019-10-03 15:55:13
R2-1912968	Bearer handling for RUDI during HO with DAPS	Mediatek Inc., Intel Corporation, Qualcomm Incorporated,Charter Communications, Apple	noted	2019-10-03 04:04:38	2019-10-04 02:55:04
R2-1912969	PRACH prioritization procedure for MCS for Rel-16	FirstNet, Perspecta Labs, Ericsson, Qualcomm	merged	2019-10-03 04:07:28	2019-10-03 15:55:13
R2-1912970	RLC Impacts analysis with DAPS during HO	Mediatek Inc.	not treated	2019-10-03 04:13:50	2019-10-04 02:55:04
R2-1912971	PDCP Duplication Configuration	Mediatek Inc.	not treated	2019-10-03 04:18:57	2019-10-04 02:55:04
R2-1912972	Discussion on the use case of CHO failure recovery	Beijing Xiaomi Software Tech	not treated	2019-10-03 04:20:26	2019-10-03 04:21:38
R2-1912973	Service continuity between TN and NTN	NEC Telecom MODUS Ltd.	not treated	2019-10-03 04:32:19	2019-10-03 04:46:45
R2-1912974	Clarification on RSSI and Channel Occupancy measurement in LAA	Qualcomm Incorporated	not treated	2019-10-03 04:33:01	2019-10-04 06:47:20
R2-1912975	Clarification on RSSI and Channel Occupancy measurement in LAA	Qualcomm Incorporated	not treated	2019-10-03 04:33:02	2019-10-04 06:47:20
R2-1912976	Clarification on RSSI and Channel Occupancy measurement in LAA	Qualcomm Incorporated	not treated	2019-10-03 04:33:02	2019-10-04 06:47:20

R2-1912977	Location based mobility enhancement	NEC Telecom MODUS Ltd.	not treated	2019-10-03 04:35:24	2019-10-03 04:46:45
R2-1912978	Downstream Next hop ID design	NEC Telecom MODUS Ltd.	not treated	2019-10-03 04:37:14	2019-10-03 04:46:45
R2-1912979	End to end reliability in IAB	NEC Telecom MODUS Ltd.	not treated	2019-10-03 04:39:55	2019-10-03 04:46:45
R2-1912980	Flow control in IAB	NEC Telecom MODUS Ltd.	not treated	2019-10-03 04:40:54	2019-10-03 04:46:45
R2-1912981	IAB backhaul RLF handling	NEC Telecom MODUS Ltd.	not treated	2019-10-03 04:41:40	2019-10-03 04:46:45
R2-1912982	Missing QCI to CAPC mapping	Nokia, Nokia Shanghai Bell	revised	2019-10-03 04:42:24	2019-10-04 05:37:24
R2-1912983	Applicability of CHO agreements to conditional PSCell change	NEC	not treated	2019-10-03 04:48:40	2019-10-04 05:58:48
R2-1912984	Configuration of fast MCG recovery	NEC	not treated	2019-10-03 04:48:42	2019-10-04 05:58:48
R2-1912985	Pcompensation and FR2	Nokia, Nokia Shanghai Bell	noted	2019-10-03 04:55:30	2019-10-04 05:37:24
R2-1912986	Clarification on PO calculation	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 04:55:30	2019-10-04 05:37:24
R2-1912987	Paging in NR-U	Nokia, Nokia Shanghai Bell	noted	2019-10-03 04:55:31	2019-10-04 05:37:24
R2-1912988	Consecutive failed connection attempts in NR-U	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 04:55:31	2019-10-04 05:37:24
R2-1912989	Details of early measurement configuration	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 04:55:31	2019-10-04 05:37:24
R2-1912990	Early measurements and Inter-RAT	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 04:55:31	2019-10-04 05:37:24
R2-1912991	UE capabilities for early measurements	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 04:55:31	2019-10-04 05:37:24
R2-1912992	Dormant behaviour	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 04:55:31	2019-10-04 05:37:24
R2-1912993	Aspects of MCGFailureInformation over SRB3	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 04:55:31	2019-10-04 05:37:24
R2-1912994	CR on how to introduce x-scheduling with different numerologies	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 04:55:31	2019-10-04 05:37:24
R2-1912995	Multiple SMTC for Idle	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 04:55:31	2019-10-04 05:37:24
R2-1912996	CR on multiple SMTC for idle	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 04:55:31	2019-10-04 05:37:24
R2-1912997	PDCP uplink transmit operation for split-bearer	Qualcomm Incorporated	not pursued	2019-10-03 05:02:40	2019-10-04 03:06:58
R2-1912998	Reselection to a Cell with Valid Dedicated Frequency Offset	MediaTek Inc, LG Electronics	postponed	2019-10-03 05:30:53	2019-10-04 06:58:36
R2-1912999	Reselection to a Cell with Valid Dedicated Frequency Offset	MediaTek Inc., LG Electronics	not treated	2019-10-03 05:34:20	2019-10-04 06:58:36
R2-1913000	Mobility Failure Handling with Conditional Handover Candidates	MediaTek Inc.	not treated	2019-10-03 05:35:39	2019-10-04 06:58:36
R2-1913001	Measurement Report for Conditional Handover Procedures	MediaTek Inc.	not treated	2019-10-03 05:37:03	2019-10-04 06:58:36
R2-1913002	Power Saving for RRM Measurements in NR	MediaTek Inc.	noted	2019-10-03 05:42:38	2019-10-04 06:58:36
R2-1913003	CN Type Indication for Cell Reselection from NR to LTE	MediaTek Inc.	not treated	2019-10-03 05:43:51	2019-10-04 06:58:36
R2-1913004	Considerations on IAB multi connectivity	KDDI Corporation	not treated	2019-10-03 06:36:57	2019-10-04 00:31:29
R2-1913005	Discussion on reselection between NPNs and public networks	KDDI Corporation	not treated	2019-10-03 06:38:42	2019-10-04 00:31:29
R2-1913006	PDU format for msgB	Huawei, HiSilicon	not treated	2019-10-03 06:49:31	2019-10-03 15:59:37
R2-1913007	msgA resource configuration and selection	Huawei, HiSilicon	not treated	2019-10-03 06:49:33	2019-10-03 15:59:37
R2-1913008	Discussion on the MsgA transmission	Huawei, HiSilicon	not treated	2019-10-03 06:49:33	2019-10-03 15:59:37
R2-1913009	Discussion on MsgB reception	Huawei, HiSilicon	not treated	2019-10-03 06:49:33	2019-10-03 15:59:36
R2-1913010	fallback procedure for 2-step RACH	Huawei, HiSilicon	not treated	2019-10-03 06:49:33	2019-10-03 15:59:36
R2-1913011	Differentiation for two-step random access	Huawei, HiSilicon	not treated	2019-10-03 06:49:33	2019-10-03 15:59:37
R2-1913012	MAC aspects of BFR on SCell	Ericsson	not treated	2019-10-03 06:49:41	2019-10-03 20:19:03

R2-1913013	Analysis of RRC impacts from multi-beam enhancements	Ericsson	not treated	2019-10-03 06:49:41	2019-10-03 20:19:03
R2-1913014	Addition of indication for successful Random access procedure	Ericsson	not treated	2019-10-03 06:49:41	2019-10-03 20:15:43
R2-1913015	UE capabilities for CHO	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 06:55:37	2019-10-03 15:50:28
R2-1913016	UE capabilities for RUDI handover	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 06:55:37	2019-10-03 15:50:28
R2-1913017	Report for email discussion [107#26] [NR/R15] SMTC setting in MR-DC PSCell change (Nokia)	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 06:55:37	2019-10-03 15:50:28
R2-1913018	SMTC setting in MR-DC PSCell change	Nokia, Nokia Shanghai Bell	revised	2019-10-03 06:55:37	2019-10-03 15:50:28
R2-1913019	Clarification regarding the supportedSRS-TxPortSwitch capability	Nokia, Nokia Shanghai Bell	not pursued	2019-10-03 06:55:38	2019-10-03 15:50:28
R2-1913020	Importing consequences if not approved from RAN1 and RAN4 excel files	Nokia, Nokia Shanghai Bell	revised	2019-10-03 06:55:39	2019-10-03 15:50:28
R2-1913021	Importing feature index numbers from TR 38.822	Nokia, Nokia Shanghai Bell	not pursued	2019-10-03 06:55:40	2019-10-03 15:50:28
R2-1913022	On FR2 CA fall-backs	Nokia, Nokia Shanghai Bell	revised	2019-10-03 06:55:41	2019-10-03 15:50:28
R2-1913023	Clarifying the alignment of capability filtering across LTE and NR in MR-DC	Nokia, Nokia Shanghai Bell	revised	2019-10-03 06:55:41	2019-10-03 15:50:28
R2-1913024	Clarifying the alignment of capability filtering across LTE and NR in MR-DC	Nokia, Nokia Shanghai Bell	merged	2019-10-03 06:55:42	2019-10-03 15:50:28
R2-1913025	Clarifying the interpretation behind the encapsulation of the filter extensions - Option 1	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 06:55:43	2019-10-03 15:50:28
R2-1913026	Clarifying the interpretation behind the encapsulation of the filter extensions - Option 2	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 06:55:44	2019-10-03 15:50:28
R2-1913027	Clarifying the interpretation behind the encapsulation of the filter extensions - Option 3	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 06:55:45	2019-10-03 15:50:28
R2-1913028	Clarifying the interpretation behind the encapsulation of the filter extensions - Option 4	Nokia, Nokia Shanghai Bell	postponed	2019-10-03 06:55:45	2019-10-03 15:50:28
R2-1913029	UL LBT failure handling	Huawei, HiSilicon	not treated	2019-10-03 06:55:47	2019-10-03 16:56:58
R2-1913030	Configured grant for NR-U	Huawei, HiSilicon	not treated	2019-10-03 06:55:47	2019-10-03 16:56:58
R2-1913031	Discussion on DRX for NR-U	Huawei, HiSilicon	noted	2019-10-03 06:55:47	2019-10-03 16:56:58
R2-1913032	Impacts of Cross-COT HARQ feedback to BWP and SCell	Huawei, HiSilicon	not treated	2019-10-03 06:55:47	2019-10-03 16:56:58
R2-1913033	RAR format and contention resolution for NR-U	Huawei, HiSilicon	not treated	2019-10-03 06:55:47	2019-10-03 16:56:58
R2-1913034	PRACH and msg3 for NR-U	Huawei, HiSilicon	not treated	2019-10-03 06:55:47	2019-10-03 16:56:58
R2-1913035	Enhancement on 2-step RACH for NR-U	Huawei, HiSilicon	not treated	2019-10-03 06:55:47	2019-10-03 16:56:58
R2-1913036	Conditional PSCell addition and change	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 06:56:57	2019-10-07 12:16:47
R2-1913037	Consideration on DL positioning method in NR	Huawei, HiSilicon	not treated	2019-10-03 06:57:15	2019-10-03 17:44:13
R2-1913038	Discussion on broadcasting of positioning assistance data	Huawei, HiSilicon	not treated	2019-10-03 06:57:15	2019-10-03 17:44:13
R2-1913039	Consideration on UL positioning method in NR	Huawei, HiSilicon	not treated	2019-10-03 06:57:15	2019-10-03 17:44:13
R2-1913040	Consideration on Multi-RTT positioning in NR	Huawei, HiSilicon	not treated	2019-10-03 06:57:15	2019-10-03 17:44:13
R2-1913041	Consideration on E-CID in NR	Huawei, HiSilicon	not treated	2019-10-03 06:57:15	2019-10-03 17:44:13
R2-1913042	Further discussion on on-demand SI in RRC_CONNECTED	Huawei, HiSilicon	not treated	2019-10-03 06:57:15	2019-10-03 17:44:13

R2-1913043	Remaining issue on scheduling ehancement for TSN	ZTE Corporation, Sanechips	not treated	2019-10-03 07:11:19	2019-10-04 05:26:08
R2-1913044	Considerations on support of split bearer in the case of PDCP duplication with multiple copies	ZTE Corporation, Sanechips	not treated	2019-10-03 07:11:19	2019-10-04 05:49:00
R2-1913045	Discussion on UE based PDCP Duplication activationdeactivation	ZTE Corporation, Sanechips	not treated	2019-10-03 07:11:19	2019-10-04 05:26:08
R2-1913046	Consideration on the multiplexing BSR MAC CE and URLLC data	ZTE Corporation, Sanechips	not treated	2019-10-03 07:11:19	2019-10-04 05:26:08
R2-1913047	Consideration on HARQ conflict between configured grant and dynamic grant	ZTE Corporation, Sanechips	not treated	2019-10-03 07:11:19	2019-10-04 05:26:08
R2-1913048	Considerations on Beam failure Recovery for SCell	ZTE Corporation, Sanechips	not treated	2019-10-03 07:11:19	2019-10-04 05:49:00
R2-1913049	Consideration on Enhancement of TCI state for Multi-TRP transmission	ZTE Corporation, Sanechips	not treated	2019-10-03 07:11:19	2019-10-04 05:26:08
R2-1913050	Remaining issues on the impact from WUS signal	ZTE Corporation, Sanechips	noted	2019-10-03 07:11:19	2019-10-04 05:26:08
R2-1913051	Discussion on the ambiguity in calculation of RA-RNTI	ZTE Corporation, Sanechips	not treated	2019-10-03 07:11:19	2019-10-04 05:26:09
R2-1913052	Discussion on human-readable network name	China Telecom, Huawei, HiSilicon	withdrawn	2019-10-03 07:11:24	
R2-1913053	DL PDCP handling for RLC AM	NEC	not treated	2019-10-03 07:13:13	2019-10-04 00:24:20
R2-1913054	DL PDCP handling for RLC UM	NEC	not treated	2019-10-03 07:13:13	2019-10-04 00:24:20
R2-1913055	Capability coordination for DAPS based handover	NEC	not treated	2019-10-03 07:13:13	2019-10-04 00:24:20
R2-1913056	Behaviours when handover configuration exceeds UE capabilities	NEC	not treated	2019-10-03 07:13:13	2019-10-04 00:24:20
R2-1913057	Failure handling and RLF report for CHO	NEC	not treated	2019-10-03 07:13:13	2019-10-04 00:24:20
R2-1913058	Discussion on human-readable network name	China Telecom, Huawei, HiSilicon	withdrawn	2019-10-03 07:13:21	
R2-1913059	Introduction of RRC parameters and UE capabilities for enhanced high speed scenario	NTT DOCOMO INC.	agreed	2019-10-03 07:33:21	2019-10-04 06:49:06
R2-1913060	Discussion on human-readable network name	China Telecom, Huawei, HiSilicon	not treated	2019-10-03 07:41:23	2019-10-04 02:57:26
R2-1913061	Paging opportunities overlapping for the NR-U	ITRI	not treated	2019-10-03 07:44:29	2019-10-04 06:59:31
R2-1913062	Msg1 transmission opportunities	ITRI	not treated	2019-10-03 07:44:29	2019-10-04 06:59:32
R2-1913063	Backhaul RLF handling	ITRI	not treated	2019-10-03 07:44:29	2019-10-04 06:59:32
R2-1913064	Handling of consistent UL LBT failures during HO	ITRI	not treated	2019-10-03 07:44:29	2019-10-04 06:59:32
R2-1913065	Trigger Conditions for low-latency IAB Uplink Scheduling	ITRI	not treated	2019-10-03 07:44:29	2019-10-04 06:59:32
R2-1913066	Introduction of UE capabilities for further performance enhancement for LTE in high speed scenario in Rel-16	CMCC, Huawei, HiSilicon, NTTDOCOMO, INC.	agreed	2019-10-03 07:45:21	2019-10-04 06:48:27
R2-1913067	Clarification of PDCCH monitoring period with non-zero DRX-startoffset for NB-IoT	NTT DOCOMO INC.	revised	2019-10-03 07:46:54	2019-10-04 06:45:02
R2-1913068	Discussion on phase of the LTE CHO procedure	China Telecommunications	revised	2019-10-03 07:51:06	2019-10-04 04:12:42

R2-1913069	Discussion on the deployment for CAG	China Telecommunications	withdrawn	2019-10-03 07:54:49	
R2-1913070	Discussion on the deployment for CAG	China Telecom, Huawei, HiSilicon	not treated	2019-10-03 07:56:33	2019-10-04 04:12:42
R2-1913071	Further consideration on D-PUR aspect	III	not treated	2019-10-03 08:06:03	2019-10-04 04:39:40
R2-1913072	Discussion on MDT in DC scenario	ZTE Corporation, Sanechips	not treated	2019-10-03 08:07:13	2019-10-04 04:38:58
R2-1913073	MDT activation for INACTIVE&IDLE mode UE	ZTE Corporation, Sanechips	not treated	2019-10-03 08:07:13	2019-10-04 04:38:58
R2-1913074	Immediate MDT continuity upon handover procedure	ZTE Corporation, Sanechips	not treated	2019-10-03 08:07:13	2019-10-04 04:38:58
R2-1913075	Discussion on out-of-coverage measurement and report	ZTE Corporation, Sanechips	not treated	2019-10-03 08:07:13	2019-10-04 04:38:58
R2-1913076	Restriction on MDT measurement and report	ZTE Corporation, Sanechips	not treated	2019-10-03 08:07:13	2019-10-04 04:38:58
R2-1913077	Discussion on RLF & CEF report	ZTE Corporation, Sanechips	not treated	2019-10-03 08:07:13	2019-10-04 04:38:58
R2-1913078	Further consideration on RACH optimization	ZTE Corporation, Sanechips	not treated	2019-10-03 08:07:13	2019-10-04 04:38:58
R2-1913079	Further consideration on INACTIVE UE counting	ZTE Corporation, Sanechips	not treated	2019-10-03 08:07:13	2019-10-04 04:38:58
R2-1913080	Correction on the definition of over-the-air delay in UL	ZTE Corporation, Sanechips	not treated	2019-10-03 08:07:13	2019-10-04 04:38:58
R2-1913081	Discussion on PRB usage of a cell	ZTE Corporation, Sanechips	not treated	2019-10-03 08:07:13	2019-10-04 04:38:58
R2-1913082	Enhancement on RACH procedure for SI request	ZTE Corporation, Sanechips	not treated	2019-10-03 08:07:13	2019-10-04 04:38:58
R2-1913083	Further consideration on MAC enhancements	ZTE Corporation, Sanechips	not treated	2019-10-03 08:07:14	2019-10-04 04:38:58
R2-1913084	Handling of de-prioritized MAC PDUs	III	noted	2019-10-03 08:08:05	2019-10-04 04:08:19
R2-1913085	Consideration on UL low-latency scheduling	Lenovo, Motorola Mobility	not treated	2019-10-03 08:09:51	2019-10-04 03:48:58
R2-1913086	Pre-emptive BSR in multiple connection scenario	Lenovo, Motorola Mobility	not treated	2019-10-03 08:09:51	2019-10-04 03:48:58
R2-1913087	Cell selection for IAB RLF recovery	Lenovo, Motorola Mobility	not treated	2019-10-03 08:09:51	2019-10-04 03:48:58
R2-1913088	RLF notification to downstream IAB node	Lenovo, Motorola Mobility	not treated	2019-10-03 08:09:51	2019-10-04 03:48:58
R2-1913089	Failure handling with CHO candidate	Lenovo, Motorola Mobility	not treated	2019-10-03 08:09:51	2019-10-04 09:01:32
R2-1913090	Further consideration on On demand SI in RRC_CONNECTED	ZTE Corporation, Sanechips	not treated	2019-10-03 08:10:16	2019-10-03 08:28:48
R2-1913091	Handling of De-prioritized MAC PDUs	Nokia, Nokia Shanghai Bell	noted	2019-10-03 08:19:33	2019-10-03 13:29:28
R2-1913092	Remaining Issues for Resource Conflicts Involving SR	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 08:19:34	2019-10-03 13:29:28
R2-1913093	On Primary Path of PDCP Duplication	Nokia, Nokia Shanghai Bell, NTT Docomo, Samsung, CATT, NEC, III, Qualcomm, Lenovo	noted	2019-10-03 08:19:34	2019-10-03 13:29:28

R2-1913094	MAC CE Format and Network Coordination for Uplink PDCP Duplication	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 08:19:34	2019-10-03 13:29:28
R2-1913095	Introduction of additional enhancements for NB-IoT	Qualcomm Incorporated	not treated	2019-10-03 08:23:27	2019-10-03 19:30:19
R2-1913096	WUS grouping design overview and UE distribution	Qualcomm Incorporated	not treated	2019-10-03 08:23:27	2019-10-03 19:30:19
R2-1913097	Non-anchor carrier measurements for RRM	Qualcomm Incorporated	noted	2019-10-03 08:23:27	2019-10-03 19:30:19
R2-1913098	Support for UE specific DRX in NB-IoT	Qualcomm Incorporated	noted	2019-10-03 08:23:27	2019-10-03 19:30:19
R2-1913099	Draft LS on UE specific DRX in NB-IoT	Qualcomm Incorporated	not treated	2019-10-03 08:23:27	2019-10-03 19:30:19
R2-1913100	Introduction of additional enhancements for eMTC	Qualcomm Incorporated	not treated	2019-10-03 08:23:27	2019-10-03 19:30:19
R2-1913101	Outstanding issues and TP for ETWS/CMAS support by non-BL UE	Qualcomm Incorporated	withdrawn	2019-10-03 08:23:27	
R2-1913102	TP for downlink channel quality reporting in MSG3 for eMTC	Qualcomm Incorporated	not treated	2019-10-03 08:23:27	2019-10-03 19:30:19
R2-1913103	Open issues and TP for ETWS/CMAS support by non-BL UE	Qualcomm Incorporated	noted	2019-10-03 08:23:27	2019-10-03 19:30:19
R2-1913104	On efficient transition from RRC_CONNECTED to RRC_IDLE/RRC_INACTIVE	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 08:29:04	2019-10-03 13:53:27
R2-1913105	On UE assistance for C-DRX configuration	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 08:29:04	2019-10-03 13:53:27
R2-1913106	Dedicated RRM Measurement Relaxation	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 08:29:04	2019-10-03 13:53:27
R2-1913107	Further details on WUS	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 08:29:04	2019-10-03 13:53:27
R2-1913108	Further details on RRM measurement relaxation	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 08:29:04	2019-10-03 13:53:27
R2-1913109	On adaptation of maximum number of MIMO layers	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 08:29:04	2019-10-03 13:53:27
R2-1913110	On combined RRC procedures	Nokia, Nokia Shanghai Bell, Ericsson	not treated	2019-10-03 08:29:04	2019-10-03 13:53:27
R2-1913111	RRC processing delays for combined procedures	Nokia, Nokia Shanghai Bell, Ericsson	not treated	2019-10-03 08:29:04	2019-10-03 13:53:27
R2-1913112	Remaining issues in Msg4-based MT EDT	Ericsson	noted	2019-10-03 08:41:27	2019-10-04 00:21:14
R2-1913113	Scheduling enhancements for LTE-MTC and NB-IoT	Ericsson	noted	2019-10-03 08:41:27	2019-10-04 00:21:14
R2-1913114	MPDCCH performance improvement for LTE-M	Ericsson	noted	2019-10-03 08:41:27	2019-10-04 00:21:14
R2-1913115	ETWS/CMAS notification delivery in connected mode for non-BL UEs in CE	Ericsson	noted	2019-10-03 08:41:27	2019-10-04 00:21:14
R2-1913116	S-Criterion interpretation for non-BL UEs	Ericsson	not treated	2019-10-03 08:41:27	2019-10-04 00:21:14
R2-1913117	Cell Reselection improvement for LTE-M Standalone cells	Ericsson	not treated	2019-10-03 08:41:27	2019-10-04 00:21:14
R2-1913118	Remaining issues for UP solution and 5GC	Ericsson	noted	2019-10-03 08:41:27	2019-10-04 00:21:14
R2-1913119	PUR periodicity and UE multiplexing	Ericsson	not treated	2019-10-03 08:41:27	2019-10-04 00:21:14
R2-1913120	PUR with DCI scheduling	Ericsson	not treated	2019-10-03 08:41:27	2019-10-04 00:21:14
R2-1913121	PUR data transmission - remaining open issues	Ericsson	not treated	2019-10-03 08:41:27	2019-10-04 00:21:14
R2-1913122	PUR configuration - remaining open issues	Ericsson	not treated	2019-10-03 08:41:27	2019-10-04 00:21:14
R2-1913123	PDCP type when connecting LTE-M and NB-IoT to 5GC	Ericsson	noted	2019-10-03 08:41:28	2019-10-04 00:21:14
R2-1913124	Discussion on leftover issues of Inter-RAT measurement	Huawei, HiSilicon, China Unicom	not treated	2019-10-03 08:41:42	2019-10-04 05:06:15
R2-1913125	Discusion on the SRVCC capability	Huawei, HiSilicon	not treated	2019-10-03 08:41:42	2019-10-04 05:06:15

R2-1913126	Running CR for the introduction of SRVCC from 5G to 3G	Huawei, HiSilicon, China Unicom	revised	2019-10-03 08:41:42	2019-10-04 05:06:15
R2-1913127	Discussion on SL radio link management	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 08:43:21	2019-10-03 19:49:30
R2-1913128	Report buffer status with one padding byte	Google Inc.	not treated	2019-10-03 08:56:38	2019-10-03 09:33:57
R2-1913129	Additional opportunity for Msg1 in 4-step RACH	LG Electronics Inc.	not treated	2019-10-03 09:00:04	2019-10-04 04:56:38
R2-1913130	Problems in BFD-inspired detection mechanism for consistent UL LBT failures	LG Electronics Inc.	not treated	2019-10-03 09:00:04	2019-10-04 04:56:38
R2-1913131	Dynamic DL opportunity enhancement based on channel busy level in NR-U	LG Electronics Inc.	not treated	2019-10-03 09:00:04	2019-10-04 04:56:38
R2-1913132	Measurement enhancement for channel occupancy	LG Electronics Inc.	not treated	2019-10-03 09:00:04	2019-10-04 04:56:38
R2-1913133	Periodicity misalignment between TSN traffic and SPS/CG	LG Electronics Inc.	not treated	2019-10-03 09:00:04	2019-10-04 04:56:38
R2-1913134	LCP enhancements for mapping between LCH and CG	LG Electronics Inc.	noted	2019-10-03 09:00:04	2019-10-04 04:56:38
R2-1913135	Measurement gap skipping for TSN traffic	LG Electronics Inc.	not treated	2019-10-03 09:00:04	2019-10-04 04:56:38
R2-1913136	Impact of intra-UE prioritization on SR cancellation	LG Electronics Inc.	not treated	2019-10-03 09:00:04	2019-10-04 04:56:38
R2-1913137	Discussion on beam failure recovery for SCell	LG Electronics Inc.	not treated	2019-10-03 09:00:04	2019-10-04 04:56:38
R2-1913138	Need for fast transition to RRC_IDLE	LG Electronics Inc.	not treated	2019-10-03 09:04:45	2019-10-04 04:31:21
R2-1913139	Consideration on UE assistance information	LG Electronics Inc.	not treated	2019-10-03 09:04:45	2019-10-04 04:31:21
R2-1913140	Discussion on the impact of WUS on drx-onDurationTimer	LG Electronics Inc.	not treated	2019-10-03 09:04:45	2019-10-04 04:31:21
R2-1913141	Consideration on PDCCH-based power saving signals	LG Electronics Inc.	not treated	2019-10-03 09:04:45	2019-10-04 04:31:21
R2-1913142	Consideration on dormancy behavior	LG Electronics Inc.	not treated	2019-10-03 09:04:45	2019-10-04 04:31:21
R2-1913143	Confirmation MAC CE for multiple CG configurations	LG Electronics Inc.	not treated	2019-10-03 09:05:13	2019-10-04 04:56:38
R2-1913144	Discussion on HARQ and RNTI design for msgB	Google	not treated	2019-10-03 09:12:42	2019-10-04 06:48:28
R2-1913145	Discussion on simultaneous connectivity in CHO	vivo	not treated	2019-10-03 09:13:39	2019-10-04 04:38:33
R2-1913146	Even further views on NR V2X System Information	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 09:26:03	2019-10-03 15:38:06
R2-1913147	Unresolved issues on SL and UL prioritization	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 09:26:03	2019-10-03 15:38:06
R2-1913148	On NR V2X Sidelink transmissions during Handover or Uu PHY layer problems	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 09:26:03	2019-10-04 05:39:25
R2-1913149	On PC5 capability transfer and link management	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 09:26:03	2019-10-03 15:38:06
R2-1913150	Network Based Monitoring and Reporting of QoS parameters for NR V2X Sidelink	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 09:26:03	2019-10-03 15:38:06
R2-1913151	On RRC Reconfigurations in CHO-prepared state	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 09:26:03	2019-10-03 15:38:06
R2-1913152	On RRC processing and CHO command compliance check	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 09:26:03	2019-10-03 15:38:06
R2-1913153	Failure handling in the presence of prepared CHO candidates	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 09:26:03	2019-10-03 15:38:06
R2-1913154	Mobility Robustness for DAPS eMBB handover	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 09:26:03	2019-10-03 15:38:06
R2-1913155	Further thoughts on RLF detection in NR	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 09:26:03	2019-10-03 15:38:06
R2-1913156	Remaining Details on UL User Data Transmission Switching in eMBB	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 09:26:03	2019-10-03 15:38:06

R2-1913157	On early data forwarding and per-DRB eMBB Handover	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 09:26:03	2019-10-03 15:38:06
R2-1913158	Correction to nrofSS-BlocksToAverage and nrofCSInrofCSI-RS-ResourcesToAverage description	Nokia, Nokia Shanghai Bell	not pursued	2019-10-03 09:26:03	2019-10-03 15:38:06
R2-1913159	Missing reportAddNeighMeas in periodic measurement reporting	Nokia, Nokia Shanghai Bell	not pursued	2019-10-03 09:26:05	2019-10-03 15:38:06
R2-1913160	Mobility challenges for NR V2X platooning/groupcast	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 09:26:06	2019-10-03 15:38:06
R2-1913161	Latency reduction enhancements for SCG RACH procedure	Qualcomm Incorporated	not treated	2019-10-03 09:27:12	2019-10-04 05:35:08
R2-1913162	UE behavior upon consistenB2:AE10t UL LBT failures	Fujitsu	withdrawn	2019-10-03 09:27:48	
R2-1913163	On PDU overwritten in NR-U configured grant	Fujitsu	not treated	2019-10-03 09:27:48	2019-10-04 06:23:26
R2-1913164	Discussion on sidelink SR trigger	Fujitsu	not treated	2019-10-03 09:27:48	2019-10-04 06:23:54
R2-1913165	RLM/RLF for unicast in NR V2X	Fujitsu	not treated	2019-10-03 09:27:48	2019-10-04 06:23:54
R2-1913166	MAC CE structure for PDCP duplication activation deactivation	Fujitsu	not treated	2019-10-03 09:27:48	2019-10-04 06:23:54
R2-1913167	NW-based per-packet PDCP duplication	Fujitsu	not treated	2019-10-03 09:27:48	2019-10-04 06:29:33
R2-1913168	Considerations on MsgB reception	Fujitsu	not treated	2019-10-03 09:27:48	2019-10-04 06:23:54
R2-1913169	On open questions to 2-step CF-RACH	Fujitsu	not treated	2019-10-03 09:27:48	2019-10-04 06:29:33
R2-1913170	SR_COUNTER initialization due to RRC reconfiguration	Fujitsu, LG Electronics Inc.	not treated	2019-10-03 09:27:48	2019-10-04 06:29:33
R2-1913171	Consideration on MAC CE design for single PDCCH based multi-TRP transmission	CMCC	not treated	2019-10-03 09:35:03	2019-10-04 02:28:36
R2-1913172	Discussion on the flexible configuration of Maximum Data Rate Enumeration for UP Integrity Protection	CMCC, Huawei, Hisilicon	not treated	2019-10-03 09:37:22	2019-10-04 02:28:37
R2-1913173	Further consideration on HARQ configuration in NTN	CMCC,Huawei,HiSilicon,Sony,KT Corp.	revised	2019-10-03 09:39:49	2019-10-04 02:28:37
R2-1913174	Service continuity and feeder link switch in NTN	Huawei, HiSilicon	not treated	2019-10-03 09:40:41	2019-10-04 05:15:11
R2-1913175	Discussion on TA management and cell reselection in NTN	Huawei, HiSilicon	not treated	2019-10-03 09:40:41	2019-10-04 05:15:11
R2-1913176	Discussion on inactive state in NTN	Huawei, HiSilicon	not treated	2019-10-03 09:40:41	2019-10-04 05:15:11
R2-1913177	Running CR to TS 38.331 on IAB for NR	Ericsson	revised	2019-10-03 09:46:18	2019-10-18 11:48:05
R2-1913178	Draft CR to 38.331 on IAB for enhancements to existing signaling for TDD pattern configuration	Ericsson	not treated	2019-10-03 09:46:18	2019-10-03 17:12:49
R2-1913179	Summary for Email Discussion [107#53] [NR_IAB-Core] Routing	Ericsson	noted	2019-10-03 09:46:18	2019-10-11 15:04:41
R2-1913180	Remaining Issues for BAP Layer	Ericsson	not treated	2019-10-03 09:46:18	2019-10-03 17:12:49
R2-1913181	Uplink BH RLC Channel Mapping in IAB Nodes	Ericsson, KDDI	not treated	2019-10-03 09:46:18	2019-10-03 17:12:49
R2-1913182	LCID and LCG Extension in IAB Networks	Ericsson	noted	2019-10-03 09:46:18	2019-10-03 17:12:49
R2-1913183	Remaining Issues Related to Flow Control	Ericsson	not treated	2019-10-03 09:46:18	2019-10-03 17:12:49
R2-1913184	Further details for BSR in IAB Networks	Ericsson	not treated	2019-10-03 09:46:18	2019-10-03 17:12:49
R2-1913185	On Multi-connectivity for IAB	Ericsson	not treated	2019-10-03 09:46:18	2019-10-03 19:58:39

R2-1913186	Access Identities and Access Categories for IAB Nodes	Ericsson	not treated	2019-10-03 09:46:18	2019-10-03 17:12:49
R2-1913187	Allowing only IAB Nodes in a Standalone NR Deployment	Ericsson	not treated	2019-10-03 09:46:18	2019-10-03 17:12:49
R2-1913188	Backhaul link RLF Notification Types to Downstream Node(s)	Ericsson	not treated	2019-10-03 09:46:18	2019-10-03 17:12:49
R2-1913189	Support for LTE Deployment at IAB Node Sites	Ericsson	not treated	2019-10-03 09:46:18	2019-10-03 17:12:50
R2-1913190	Draft CR to 38.300 on IAB to add definitions for IAB-MT and IAB-DU	Ericsson	not treated	2019-10-03 09:46:18	2019-10-03 17:12:50
R2-1913191	Correction on T322	Nokia, Nokia Shanghai Bell	revised	2019-10-03 10:07:08	2019-10-03 13:53:27
R2-1913192	Correction on T322	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:07:09	2019-10-03 13:53:28
R2-1913193	Correction on the actions for frequencyBandList in SIB1 and SIB2	Ericsson, MediaTek	not treated	2019-10-03 10:16:36	2019-10-04 06:50:01
R2-1913194	RAN2 impact of undefined Pmax for FR2 in REL-15	Ericsson, NTT Docomo Inc.	not treated	2019-10-03 10:16:38	2019-10-04 06:50:01
R2-1913195	Correction for P-Max in FR2	Ericsson, NTT DOCOMO INC.	agreed	2019-10-03 10:16:38	2019-10-04 06:50:01
R2-1913196	cDRX enhancement for CA	Ericsson, Qualcomm Inc., Samsung, Verizon, Deutsche Telekom	not treated	2019-10-03 10:16:39	2019-10-04 06:50:01
R2-1913197	RAN2 impact of WUS in connected mode	Ericsson	not treated	2019-10-03 10:16:39	2019-10-04 06:50:01
R2-1913198	UE assistance for RRC connection release	Ericsson	noted	2019-10-03 10:16:39	2019-10-04 06:50:01
R2-1913199	UE adaptation to maximum number of MIMO layers	Ericsson	not treated	2019-10-03 10:16:39	2019-10-04 06:50:01
R2-1913200	UE Assistance Information for cDRX configuration	Ericsson	noted	2019-10-03 10:16:39	2019-10-04 06:50:01
R2-1913201	UE Assistance Information for SCell configuration	Ericsson	not treated	2019-10-03 10:16:39	2019-10-04 06:50:01
R2-1913202	RRM measurement relaxation	Ericsson	not treated	2019-10-03 10:16:39	2019-10-04 06:50:01
R2-1913203	Considerations on user plane for DAPS	Huawei, HiSilicon	not treated	2019-10-03 10:20:32	2019-10-04 05:24:36
R2-1913204	Considerations on UE capability coordination	Huawei, HiSilicon	not treated	2019-10-03 10:20:32	2019-10-04 05:24:36
R2-1913205	Considerations on control plane for DAPS	Huawei, HiSilicon,China Telecom	not treated	2019-10-03 10:20:32	2019-10-04 05:24:36
R2-1913206	Problems of ROHC handling for DAPS	Huawei, HiSilicon	not treated	2019-10-03 10:20:32	2019-10-04 05:24:36
R2-1913207	Further consideration on reply LSs from RAN1 and RAN4	Huawei, HiSilicon,China Telecom	not treated	2019-10-03 10:20:32	2019-10-04 05:24:36
R2-1913208	Discussion on Groupcast and Broadcast QoS Report	ITRI	not treated	2019-10-03 10:22:42	2019-10-03 19:03:58
R2-1913209	Details of hop-by-hop flow control	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:25:22	2019-10-04 05:47:50
R2-1913210	Signalling for radio aware scheduling	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:25:22	2019-10-04 05:47:50
R2-1913211	Discussion on number of LCIDs and LCGs for IAB	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:25:22	2019-10-04 05:47:50
R2-1913212	Discussion on MAC subheader structures for IAB	Nokia, Nokia Shanghai Bell	noted	2019-10-03 10:25:22	2019-10-04 05:47:50
R2-1913213	Buffer status reporting for IAB	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:25:22	2019-10-04 05:47:51
R2-1913214	T_delta signalling for IAB timing	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:25:22	2019-10-04 05:47:51
R2-1913215	Increasing Tx opportunities for Msg1	Nokia, Nokia Shanghai Bell	noted	2019-10-03 10:25:22	2019-10-04 05:47:51
R2-1913216	Msg2 format and contention resolution based on LBT outcome of Msg3	Nokia, Nokia Shanghai Bell	noted	2019-10-03 10:25:22	2019-10-04 05:47:51
R2-1913217	RNTI design for MsgB reception	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:25:22	2019-10-04 05:47:51
R2-1913218	Draft LS on MsgB RNTI design	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:25:22	2019-10-04 05:47:51

R2-1913219	Further design aspects of MsgB MAC subheader formats	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:25:22	2019-10-04 05:47:51
R2-1913220	New TAC MAC CE for 2-step RACH	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:25:22	2019-10-04 05:47:51
R2-1913221	Preamble groups for 2-step RACH	Nokia, Nokia Shanghai Bell	noted	2019-10-03 10:25:22	2019-10-04 05:47:51
R2-1913222	CFRA for 2-step RACH	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:25:22	2019-10-04 05:47:51
R2-1913223	BFR procedure for SCell	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:25:22	2019-10-04 05:47:51
R2-1913224	Candidate detection and MAC CE format for SCell BFR	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:25:22	2019-10-04 05:47:51
R2-1913225	Draft CR on Introduction of SCell BFR	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:25:22	2019-10-04 05:47:51
R2-1913226	CFRA resource handling for BFR upon TAT expiry	Nokia, Nokia Shanghai Bell, Apple	not treated	2019-10-03 10:25:22	2019-10-04 05:47:51
R2-1913227	PDCP handling and RLC UM support for RUDI HO	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:25:22	2019-10-04 05:47:50
R2-1913228	NR UE-based Positioning Modes and Geographical Information	ITRI	not treated	2019-10-03 10:32:14	2019-10-03 19:03:58
R2-1913229	Clarification to CA fallback band combinations	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:38:37	2019-10-03 13:49:18
R2-1913230	Efficient RRC configuration with low latency	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 10:38:38	2019-10-03 13:49:18
R2-1913231	Support of multiple LTE CRS rate matching patterns	Nokia, Nokia Shanghai Bell, Ericsson	postponed	2019-10-03 10:38:38	2019-10-03 13:49:18
R2-1913232	Support of multiple LTE CRS rate matching patterns	Nokia, Nokia Shanghai Bell, Ericsson	postponed	2019-10-03 10:38:40	2019-10-03 13:49:18
R2-1913233	Further consideration on EN-DC cell reselection	CMCC, Huawei, vivo, ZTE, OPPO, xiaomi	not treated	2019-10-03 10:58:42	2019-10-04 02:28:37
R2-1913234	Conditional presence on ue-CapabilityInfo and servCellIndexRangeSCG for inter-MN handover without SN change	NTT DOCOMO, INC.	not treated	2019-10-03 11:04:15	2019-10-04 06:30:53
R2-1913235	Prioritization between NR-UL and NR-SL	MediaTek Inc.	not treated	2019-10-03 11:10:37	2019-10-04 06:53:31
R2-1913236	Remaining issues of SL LCP	MediaTek Inc.	not treated	2019-10-03 11:10:37	2019-10-04 06:53:31
R2-1913237	On SL configured grant	MediaTek Inc.	not treated	2019-10-03 11:10:37	2019-10-04 06:53:31
R2-1913238	Support of simultaneous mode 1 and mode 2	MediaTek Inc.	not treated	2019-10-03 11:10:37	2019-10-04 06:53:31
R2-1913239	MAC CE format for single PDCCH multi-TRP	MediaTek Inc.	not treated	2019-10-03 11:10:37	2019-10-04 06:53:31
R2-1913240	Support BFR for SCell	MediaTek Inc.	not treated	2019-10-03 11:10:37	2019-10-04 06:53:31
R2-1913241	Solution for intra-UE prioritization	Huawei, HiSilicon	not treated	2019-10-03 11:23:16	2019-10-04 01:17:36
R2-1913242	Handling of de-prioritized MAC PDU due to intra-UE prioritization	Huawei, HiSilicon, SIA	noted	2019-10-03 11:23:16	2019-10-04 01:17:36
R2-1913243	Prioritization issues for MAC Ces	Huawei, HiSilicon, SIA	not treated	2019-10-03 11:23:16	2019-10-04 01:17:36
R2-1913244	Activation/deactivation of PDCP duplication of up to 4 legs	Huawei, HiSilicon	not treated	2019-10-03 11:23:16	2019-10-04 01:17:36
R2-1913245	Cell restriction for PDCP duplication with up to 4 legs	Huawei, HiSilicon	noted	2019-10-03 11:23:16	2019-10-04 01:17:36
R2-1913246	Configuration of early measurments by SN	Samsung Telecommunications	not treated	2019-10-03 11:24:25	2019-10-03 21:05:10
R2-1913247	Remaining aspects on early measurement configuration	Samsung, MediaTek Incorporated, ZTE Corporation, Sanechips, Qualcomm Incorporated	not treated	2019-10-03 11:24:26	2019-10-03 21:05:10

R2-1913248	CA/ DC enhancements, signalling reduction	Samsung Telecommunications	not treated	2019-10-03 11:24:26	2019-10-03 21:05:10
R2-1913249	Immediate MDT, inter-node aspects	Samsung Telecommunications	not treated	2019-10-03 11:24:26	2019-10-03 21:05:10
R2-1913250	Logged MDT, inter-node aspects (SN configuration)	Samsung Telecommunications	not treated	2019-10-03 11:24:26	2019-10-03 21:05:10
R2-1913251	MDT for early measurments (Logged, immediate)	Samsung Telecommunications	not treated	2019-10-03 11:24:26	2019-10-03 21:05:10
R2-1913252	General framework to harmonise transfer of UE information	Samsung Telecommunications	not treated	2019-10-03 11:24:26	2019-10-03 21:05:10
R2-1913253	Report of email discussion [107#08][NR IAB] Running BAP CR	Huawei, HiSilicon	noted	2019-10-03 11:37:23	2019-10-11 11:08:57
R2-1913254	Running CR for TS 38.340 (BAP)	Huawei, HiSilicon	revised	2019-10-03 11:37:23	2019-10-11 11:08:57
R2-1913255	Correction on initial DL BWP and CORESET#0	Huawei, MediaTek, HiSilicon	merged	2019-10-03 11:39:01	2019-10-04 01:17:36
R2-1913256	Correction on capabilities of BWP bandwidth	Huawei, HiSilicon	postponed	2019-10-03 11:39:07	2019-10-04 01:17:36
R2-1913257	Correction on camping conditions	Huawei, HiSilicon	postponed	2019-10-03 11:39:08	2019-10-04 01:17:36
R2-1913258	Introduction of a second SMTC per frequency carrier in idle/inactive	Orange, AT&T, Vodafone, Telecom Italia S.p.A., CMCC, Samsung, Ericsson	not treated	2019-10-03 11:44:40	2019-10-03 13:43:41
R2-1913259	Periodic CSI and SRS with wake-up indication	MediaTek Inc.	noted	2019-10-03 11:49:45	2019-10-03 16:54:22
R2-1913260	On consistent LBT failures	MediaTek Inc.	not treated	2019-10-03 11:49:45	2019-10-03 16:54:22
R2-1913261	RAR design for NR-U	MediaTek Inc.	not treated	2019-10-03 11:49:45	2019-10-03 16:54:22
R2-1913262	On PHR and autonomous retransmissions	MediaTek Inc.	not treated	2019-10-03 11:49:45	2019-10-03 16:54:22
R2-1913263	MAC behaviour for LBT failures in Msg3 transmissions	MediaTek Inc.	not treated	2019-10-03 11:49:45	2019-10-03 16:54:22
R2-1913264	MsgB format proposal for 2-step RACH	MediaTek Inc.	not treated	2019-10-03 11:49:45	2019-10-03 16:54:22
R2-1913265	Ethernet Header Compression Message Format	MediaTek Inc.	not treated	2019-10-03 11:49:45	2019-10-03 16:54:22
R2-1913266	Misalignment Between TSC and SPS/CG Periodicities	MediaTek Inc.	not treated	2019-10-03 11:49:45	2019-10-03 16:54:22
R2-1913267	Propagation Delay Compensation by the gNB	MediaTek Inc.	not treated	2019-10-03 11:49:45	2019-10-03 16:54:22
R2-1913268	Reconfiguration with sync for NE-DC	Google Inc.	revised	2019-10-03 11:50:01	2019-10-04 06:06:36
R2-1913269	Introduction of a second SMTC for inter-RAT cell reselection	Orange, AT&T, Vodafone, Telecom Italia S.p.A., CMCC, Samsung, Ericsson	not treated	2019-10-03 11:50:45	2019-10-03 13:43:41
R2-1913270	Reconfiguration failure in NE-DC	Google Inc.	agreed	2019-10-03 11:53:55	2019-10-04 06:06:36
R2-1913271	Reconfiguration failure in NE-DC	Google Inc.	reserved	2019-10-03 11:54:11	
R2-1913272	Support of releasing UL configuration	Huawei, HiSilicon, CMCC, China Telecom, MediaTek Inc., Vodafone, Orange, vivo, OPPO, Spreadtrum Communications	not treated	2019-10-03 11:55:00	2019-10-04 00:56:34
R2-1913273	PDCP configuration generation (email discussion of 107#25)	Huawei, HiSilicon	agreed	2019-10-03 11:55:02	2019-10-04 00:56:34

R2-1913274	Resource Pool Configuration	LG Electronics Inc.	not treated	2019-10-03 12:07:54	2019-10-03 16:48:53
R2-1913275	NR V2X System Information Aspects	LG Electronics Inc.	not treated	2019-10-03 12:08:57	2019-10-03 16:49:43
R2-1913276	SLRB Management in NR V2X	LG Electronics Inc.	not treated	2019-10-03 12:10:19	2019-10-03 16:50:33
R2-1913277	Simultaneous Mode 1 and Mode 2 Configuration	LG Electronics Inc.	not treated	2019-10-03 12:11:22	2019-10-03 16:51:18
R2-1913278	On PRS Information for NR Positioning	LG Electronics Inc.	not treated	2019-10-03 12:12:24	2019-10-03 17:23:51
R2-1913279	Correction on the frequency indication in SIB2	Huawei, HiSilicon	revised	2019-10-03 12:42:42	2019-10-04 02:02:36
R2-1913280	Correction on EUTRAN terminology	Huawei, HiSilicon	agreed	2019-10-03 12:42:45	2019-10-04 02:02:36
R2-1913281	Remaining issues for the MAC specification	Huawei, HiSilicon	not pursued	2019-10-03 12:42:46	2019-10-04 02:02:36
R2-1913282	Correction on PRACH re-transmission for SRS carrier switching	Huawei, HiSilicon, MediaTek	revised	2019-10-03 12:42:47	2019-10-04 02:02:36
R2-1913283	Correction on PUSCH frequency hopping	Huawei, HiSilicon	merged	2019-10-03 12:42:48	2019-10-04 02:54:16
R2-1913284	Correction on synchoronous reconfiguration	Huawei, HiSilicon	merged	2019-10-03 12:42:49	2019-10-04 02:02:36
R2-1913285	Correction on delta signalling for handover	Huawei, HiSilicon	not pursued	2019-10-03 12:42:49	2019-10-04 02:02:36
R2-1913286	Discussion on support of NR RAN sharing	CMCC	not treated	2019-10-03 12:44:45	2019-10-04 02:28:37
R2-1913287	Remaining issues on UL LBT	Nokia, Nokia Shanghai Bell	noted	2019-10-03 12:51:33	2019-10-03 13:29:14
R2-1913288	Non-numeric K1 impacts	Nokia, Nokia Shanghai Bell	noted	2019-10-03 12:51:33	2019-10-03 13:29:14
R2-1913289	Multiple configured grants for NR-U	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 12:51:33	2019-10-03 13:29:14
R2-1913290	CAPC for configured grant and dynamic grant	Nokia, Nokia Shanghai Bell, Lenovo	noted	2019-10-03 12:51:33	2019-10-03 13:29:14
R2-1913291	Stage-2 running CR for 2-step RACH	Nokia (rapporteur), Nokia Shanghai Bell	endorsed	2019-10-03 12:51:33	2019-10-03 13:29:14
R2-1913292	Further consideration on logged MDT	CMCC	not treated	2019-10-03 13:02:20	2019-10-04 02:28:37
R2-1913293	UE behavior upon consisten UL LBT failures	Fujitsu	withdrawn	2019-10-03 13:19:24	
R2-1913294	UE behavior upon consistent UL LBT failures	Fujitsu	not treated	2019-10-03 13:29:23	2019-10-04 06:23:54
R2-1913295	Routing details in IAB	Sony Europe B.V.	not treated	2019-10-03 13:38:50	2019-10-03 20:52:57
R2-1913296	Summary of email discussion [107#31][NR/DCCA] MCG fast recovery	Ericsson	noted	2019-10-03 13:39:33	2019-10-03 21:15:10
R2-1913297	Handling of AS-Config in HandoverPreparationInformation	Ericsson	agreed	2019-10-03 13:39:33	2019-10-03 21:15:10
R2-1913298	Corrections on scg-RB-Config in CG-Config	Ericsson	agreed	2019-10-03 13:39:34	2019-10-03 21:15:10
R2-1913299	Correction on candidateCellInfoListSN-EUTRA in HandoverPreparationInformation	Ericsson	merged	2019-10-03 13:39:35	2019-10-03 21:15:10
R2-1913300	Corrections to power limitations in NE-DC	Ericsson	revised	2019-10-03 13:39:36	2019-10-03 21:15:10
R2-1913301	Correction of SRB3 handling at full configuration (Alt1)	Ericsson	not treated	2019-10-03 13:39:36	2019-10-03 21:15:11
R2-1913302	Correction on MCG measurements in SCGFailureInformation	Ericsson	not treated	2019-10-03 13:39:37	2019-10-03 21:15:11
R2-1913303	Correction on SCGFailureInformation	Ericsson	not treated	2019-10-03 13:39:38	2019-10-03 21:15:11
R2-1913304	Remaining issues for correction on the condition of RBTermChange	Ericsson	revised	2019-10-03 13:39:39	2019-10-03 21:15:11
R2-1913305	Remaining issues for correction on the condition of RBTermChange	Ericsson	not treated	2019-10-03 13:39:41	2019-10-03 21:15:11
R2-1913306	Correction of SRB3 handling at full configuration (Alt2)	Ericsson	revised	2019-10-03 13:39:41	2019-10-03 21:15:11

R2-1913307	Miscellaneous correction for late drop	Ericsson	revised	2019-10-03 13:39:42	2019-10-03 21:15:11
R2-1913308	Correction to connection resume in EN-DC	Ericsson	not pursued	2019-10-03 13:39:43	2019-10-03 21:15:11
R2-1913309	Correction to power limitations in (NG)EN-DC	Ericsson	revised	2019-10-03 13:39:44	2019-10-03 21:15:11
R2-1913310	Correction to integrity protection in DRB addition and modification	Ericsson	agreed	2019-10-03 13:39:45	2019-10-03 21:15:11
R2-1913311	Correction on handover terminology	Ericsson	not pursued	2019-10-03 13:39:46	2019-10-03 21:15:11
R2-1913312	Correction on sending Failure Information via SRB3	Ericsson, ZTE Corporation (Rapporteur)	revised	2019-10-03 13:39:47	2019-10-03 21:15:11
R2-1913313	Correction on inter-node messages from CU to DU	Ericsson	not pursued	2019-10-03 13:39:48	2019-10-03 21:15:11
R2-1913314	Correction to SIB5 acquisition for idle mode measurements	Ericsson	revised	2019-10-03 13:39:49	2019-10-03 21:15:11
R2-1913315	Correction on inter-frequency neighbour cell measurements	Ericsson	revised	2019-10-03 13:39:49	2019-10-03 21:15:11
R2-1913316	Summary of email discussion [107#42][NR-Rel-16] On demand SI in connected	Ericsson	noted	2019-10-03 13:39:50	2019-10-03 21:15:11
R2-1913317	Running CR on on-demand SI procedure in RRC_CONNECTED	Ericsson	revised	2019-10-03 13:39:50	2019-10-03 21:15:11
R2-1913318	Remaining issues regarding on-demand SI for Positioning	Ericsson	not treated	2019-10-03 13:39:50	2019-10-03 21:15:11
R2-1913319	Inter-node resource coordination in NR SL	Ericsson	not treated	2019-10-03 13:39:50	2019-10-03 21:15:11
R2-1913320	Discussion on NR SL QoS management	Ericsson	not treated	2019-10-03 13:39:50	2019-10-03 21:15:11
R2-1913321	Discussion on SL link management	Ericsson	not treated	2019-10-03 13:39:50	2019-10-03 21:15:11
R2-1913322	Discussion on SL cross-RAT scheduling and configurations	Ericsson	not treated	2019-10-03 13:39:50	2019-10-03 21:15:11
R2-1913323	Discussion on SL Mode 2 left issues	Ericsson	not treated	2019-10-03 13:39:51	2019-10-03 21:15:11
R2-1913324	Discussion on SL information reporting over Uu	Ericsson	not treated	2019-10-03 13:39:51	2019-10-03 21:15:11
R2-1913325	Discussion on SL mode 1 left issues	Ericsson	not treated	2019-10-03 13:39:51	2019-10-03 21:15:11
R2-1913326	Remaining issues on UL-SL prioritisation	Ericsson	noted	2019-10-03 13:39:51	2019-10-03 21:15:11
R2-1913327	Support on HARQ procedure over sidelink	Ericsson	not treated	2019-10-03 13:39:51	2019-10-03 21:15:11
R2-1913328	Summary of email discussion [107#75][NR/V2X] RLF	Ericsson	noted	2019-10-03 13:39:51	2019-10-03 21:15:11
R2-1913329	Remaining issues on RLC AM and UM support in SL	Ericsson	noted	2019-10-03 13:39:51	2019-10-03 21:15:11
R2-1913330	Discussion on NR SL lower layer procedures	Ericsson	not treated	2019-10-03 13:39:51	2019-10-03 21:15:11
R2-1913331	Running CR for 38.322 for NR V2X	Ericsson	revised	2019-10-03 13:39:51	2019-10-03 21:15:11
R2-1913332	Discussion on SL AS configuration request over NR Uu	Ericsson	not treated	2019-10-03 13:39:51	2019-10-03 21:15:11
R2-1913333	Handling of capability transfer in sidelink	Ericsson	not treated	2019-10-03 13:39:51	2019-10-03 21:15:11
R2-1913334	Handling of SL in Uu RRC state transitions	Ericsson	not treated	2019-10-03 13:39:51	2019-10-03 21:15:11
R2-1913335	Left issues on random access procedure in NTN	OPPO	not treated	2019-10-03 13:40:07	2019-10-03 14:13:00
R2-1913336	Discussion on DRX operation in NTN	OPPO	not treated	2019-10-03 13:40:07	2019-10-03 14:13:00
R2-1913337	Discussion on UL scheduling enhancement in NTN	OPPO	not treated	2019-10-03 13:40:07	2019-10-03 14:13:00
R2-1913338	Impacts of disabling HARQ on LCP	OPPO	not treated	2019-10-03 13:40:07	2019-10-03 14:13:00
R2-1913339	Discussion on handover procedure for NTN	OPPO	not treated	2019-10-03 13:40:07	2019-10-03 14:13:00

R2-1913340	Considerations on performing and criteria of measurement relaxation	LG Electronics	not treated	2019-10-03 13:40:21	2019-10-04 05:28:09
R2-1913341	Considerations on reporting measurement relaxation upon access	LG Electronics	revised	2019-10-03 13:40:21	2019-10-04 05:28:09
R2-1913342	Handling early meaurment results upon cell reselection	LG Electronics	not treated	2019-10-03 13:40:21	2019-10-04 05:28:09
R2-1913343	Validity area enhancements in NR	LG Electronics	not treated	2019-10-03 13:40:21	2019-10-04 05:28:09
R2-1913344	Considerations on ways to provide SSB configuration in early measurements	LG Electronics	not treated	2019-10-03 13:40:21	2019-10-04 05:28:09
R2-1913345	Report of email discussion [107#64][NTN] Cell selection&reselection	LG Electronics	revised	2019-10-03 13:40:21	
R2-1913346	Considerations on CHO in NTN	LG Electronics	not treated	2019-10-03 13:40:21	2019-10-04 05:28:09
R2-1913347	Dual connectivity use cases in NTN	LG Electronics	not treated	2019-10-03 13:40:21	2019-10-04 05:28:09
R2-1913348	Remaining issues of tracking area management in NTN	LG Electronics	not treated	2019-10-03 13:40:21	2019-10-04 05:28:09
R2-1913349	TA update after PUR transmission via MAC CE	Sequans Communications	not treated	2019-10-03 13:47:00	2019-10-04 07:51:43
R2-1913350	IAB System information handling	Sony	not treated	2019-10-03 13:47:15	2019-10-03 20:52:57
R2-1913351	BSR enhancement for IAB	Sony	not treated	2019-10-03 13:47:15	2019-10-03 20:52:57
R2-1913352	Handling a deprioritized PDU for uplink Intra-UE prioritization in IIoT	Sony	noted	2019-10-03 13:47:15	2019-10-03 20:52:57
R2-1913353	Consideration on activation/deactivation for CG Type 1	Sony	not treated	2019-10-03 13:47:15	2019-10-03 20:52:57
R2-1913354	Location report in NTN	Sony	not treated	2019-10-03 13:47:15	2019-10-03 20:52:57
R2-1913355	Bulk handover signalling for mobility enhancement in NTN	Sony	not treated	2019-10-03 13:47:15	2019-10-03 20:52:57
R2-1913356	Fallback to 4-step RACH with BI	Sony	not treated	2019-10-03 13:47:15	2019-10-03 20:52:57
R2-1913357	HARQ support for MsgB of 2-Step RACH	Sony	not treated	2019-10-03 13:47:15	2019-10-03 20:52:57
R2-1913358	Power Saving techniques, UE assistance information	Sony	not treated	2019-10-03 13:47:15	2019-10-03 20:52:57
R2-1913359	UE power saving for inter frequency measurements	Sony	not treated	2019-10-03 13:47:15	2019-10-03 20:52:57
R2-1913360	Relaxed monitoring for beam measurement	Sony	not treated	2019-10-03 13:47:15	2019-10-03 20:52:57
R2-1913361	Details of Relaxed monitoring for NR UE power saving	Sony	not treated	2019-10-03 13:47:15	2019-10-03 20:52:57
R2-1913362	On supporting UE-group wake-up signal for MTC/NB-IoT	Sony	not treated	2019-10-03 13:47:15	2019-10-03 20:52:57
R2-1913363	Cell selection/reselection with NPN cells	Sony	not treated	2019-10-03 13:47:15	2019-10-03 20:52:57
R2-1913364	Mobility enhancements for Connectivity to 5GC for MTC and NB-IoT	Sony	not treated	2019-10-03 13:47:15	2019-10-03 20:52:57
R2-1913365	Discussion on RAT dependent NR Positioning techniques	Sony	not treated	2019-10-03 13:47:15	2019-10-03 20:52:57
R2-1913366	Differentiating between MSG2 and MSGB	ZTE Corporation, Sanechips	not treated	2019-10-03 13:59:37	2019-10-03 19:58:52
R2-1913367	Remaining Stage 2 issues for 2-step RACH	ZTE Corporation, Sanechips	noted	2019-10-03 13:59:38	2019-10-03 19:58:52

R2-1913368	Support of CFRA with 2-step RACH	ZTE Corporation, Sanechips, Qualcomm, Fujitsu	noted	2019-10-03 13:59:38	2019-10-03 19:58:52
R2-1913369	Configuration aspects of 2-step RACH	ZTE Corporation, Sanechips	not treated	2019-10-03 13:59:38	2019-10-03 19:58:52
R2-1913370	Running MAC CR for 2-step RACH	ZTE Corporation (email rapporteur)	not treated	2019-10-03 13:59:38	2019-10-03 19:58:52
R2-1913371	RAR MAC PDU design for NR-U	ZTE Corporation, Sanechips	not treated	2019-10-03 13:59:38	2019-10-03 19:58:52
R2-1913372	Multiple Msg1 transmission opportunities for NR-U	ZTE Corporation, Sanechips	not treated	2019-10-03 13:59:38	2019-10-03 19:58:52
R2-1913373	Discussion on configured grant for NR-U	ZTE Corporation, Sanechips	not treated	2019-10-03 13:59:38	2019-10-03 19:58:52
R2-1913374	Considerations on camping on non-best cell	ZTE Corporation, Sanechips	not treated	2019-10-03 13:59:38	2019-10-03 19:58:52
R2-1913375	Recovery from consistent LBT failures	ZTE Corporation, Sanechips	not treated	2019-10-03 13:59:38	2019-10-03 19:58:52
R2-1913376	Report on [107#74] QoS flow in SLRB	Apple	noted	2019-10-03 14:02:59	2019-10-06 11:06:50
R2-1913377	Discussion on QoS flow in SLRB	Apple	revised	2019-10-03 14:02:59	2019-10-04 06:41:22
R2-1913378	PC5 RRC procedure	Apple	not treated	2019-10-03 14:02:59	2019-10-04 06:41:22
R2-1913379	Maximum Data Rate Enumeration for UP Integrity Protection	Apple, ZTE Corporation, Sanechips	not treated	2019-10-03 14:02:59	2019-10-04 06:41:22
R2-1913380	Draft LS on Maximum Data Rate Enumeration for UP Integrity Protection	Apple	not treated	2019-10-03 14:02:59	2019-10-04 06:41:22
R2-1913381	SI Acquisition in Connected Mode	Apple	not treated	2019-10-03 14:02:59	2019-10-04 06:41:22
R2-1913382	CMAS/ETWS Reception at UE Configured with eDRX	Apple	noted	2019-10-03 14:02:59	2019-10-04 06:41:22
R2-1913383	Handling of fallbacks for combined contiguous and non-contiguous CA in FR2	Apple	revised	2019-10-03 14:02:59	2019-10-04 06:41:22
R2-1913384	CR to TS38.306 on FR2 intra band contiguous and non-contiguous CA fallback	Apple	not treated	2019-10-03 14:02:59	2019-10-04 06:41:22
R2-1913385	Full configuration in inter-RAT handover	Google Inc.	not treated	2019-10-03 14:07:11	2019-10-04 06:06:36
R2-1913386	Full configuration in inter-RAT handover	Google Inc.	not treated	2019-10-03 14:12:05	2019-10-04 06:06:36
R2-1913387	Baseline NTN-TN service continuity and mobility mechanism	HUGHES Network Systems Ltd	reserved	2019-10-03 14:24:18	
R2-1913388	Discussion on LCP procedure for NTN	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 14:28:48	2019-10-04 05:08:31
R2-1913389	Introduction of voice fallback indication	Qualcomm Incorporated, T-Mobile USA, Verizon, China Telecom, Softbank, Ericsson	not treated	2019-10-03 14:48:49	2019-10-04 06:24:17
R2-1913390	Introduction of voice fallback indication	Qualcomm Incorporated, T-Mobile USA, Verizon, China Telecom, Softbank, Ericsson	not treated	2019-10-03 14:48:49	2019-10-04 06:24:17

R2-1913391	Draft LS on RRC establishment cause value in EPS fallback	Qualcomm Incorporated	not treated	2019-10-03 14:48:49	2019-10-04 15:23:31
R2-1913392	CLI measurements UE capabilities	Qualcomm Incorporated	not treated	2019-10-03 14:48:49	2019-10-04 06:46:54
R2-1913393	Too strong interference during CLI-RSSI/SRS-RSRP measurement	Qualcomm Incorporated	not treated	2019-10-03 14:48:49	2019-10-04 06:24:17
R2-1913394	ARFCN used for security key derivation	Qualcomm Incorporated	noted	2019-10-03 14:48:49	2019-10-04 06:24:17
R2-1913395	DL and UL NR Positioning Procedures	Qualcomm Incorporated	not treated	2019-10-03 15:02:34	2019-10-04 05:49:23
R2-1913396	TP for 38.305 Baseline CR: Transmission Measurement Function in NG-RAN	Qualcomm Incorporated	noted	2019-10-03 15:04:28	2019-10-04 05:49:23
R2-1913397	GNSS SSR Assistance Data	Qualcomm Incorporated	not treated	2019-10-03 15:06:19	2019-10-04 05:49:23
R2-1913398	Broadcast of Location Assistance Data by NG-RAN	Qualcomm Incorporated	noted	2019-10-03 15:07:59	2019-10-04 05:49:23
R2-1913399	Assistance Data for DL-only UE-based mode	Qualcomm Incorporated	not treated	2019-10-03 15:09:48	2019-10-04 05:49:23
R2-1913400	Running CR for Introduction of Even futher Mobility enhancement in E-UTRAN	Ericsson India Private Limited	not treated	2019-10-03 15:15:01	2019-10-03 19:56:06
R2-1913401	Discussion on HARQ feedback for msgB and RNTI design for msgB	Qualcomm Incorporated	not treated	2019-10-03 15:21:13	2019-10-04 05:50:23
R2-1913402	Prioritized 2-step RACH	Qualcomm Incorporated	noted	2019-10-03 15:23:10	2019-10-04 05:50:23
R2-1913403	Report of email discussion [107#68] [NR/2-step RACH]: MAC PDU format for msgB	Qualcomm Incorporated	noted	2019-10-03 15:25:35	2019-10-04 05:50:23
R2-1913404	msgB MAC PDU format	Qualcomm Incorporated	not treated	2019-10-03 15:27:30	2019-10-04 05:50:23
R2-1913405	Remaining issue on contention resolution and fall back procedure	Qualcomm Incorporated	not treated	2019-10-03 15:30:00	2019-10-04 05:50:23
R2-1913406	[107#61][NR/NTN] Rapporteur Running TP	THALES	revised	2019-10-03 15:36:57	2019-10-10 12:29:39
R2-1913407	Enhanced TCI States Activation/Deactivation PDSCH MAC CE for Multi-TRP	Qualcomm Incorporated	not treated	2019-10-03 15:37:50	2019-10-04 05:50:23
R2-1913408	Use case and Signaling for RSS	Ericsson	not treated	2019-10-03 15:50:44	2019-10-04 05:00:47
R2-1913409	NRS Signalling Configuration	Ericsson	not treated	2019-10-03 15:50:44	2019-10-04 05:00:47
R2-1913410	New SIB for hosting posSI Scheduling Information	Ericsson	not treated	2019-10-03 15:50:44	2019-10-04 05:11:20
R2-1913411	Specify UDC Header is part of Data Field	Ericsson	postponed	2019-10-03 15:50:44	2019-10-04 05:00:47
R2-1913412	Running CR for the introduction of NR positioning	Ericsson	not treated	2019-10-03 15:50:45	2019-10-04 05:11:20
R2-1913413	Quality Report in eMTC Remaining Issues	Ericsson	not treated	2019-10-03 15:50:45	2019-10-04 05:00:47
R2-1913414	Text Proposal for MAC specification on Quality Report	Ericsson	not treated	2019-10-03 15:50:45	2019-10-04 05:00:47
R2-1913415	Introduction of additional posSIBs for QZSS PPP-RTK Phase 2	Ericsson	not treated	2019-10-03 15:50:45	2019-10-04 05:11:20
R2-1913416	UE-based configuration options	Ericsson	not treated	2019-10-03 15:50:45	2019-10-04 05:11:20
R2-1913417	S-Criterion for Non anchor Carrier based NRS measurements	Ericsson	not treated	2019-10-03 15:50:45	2019-10-04 05:00:47
R2-1913418	RSS Signalling Configuration	Ericsson	not treated	2019-10-03 15:50:45	2019-10-04 05:00:47
R2-1913419	Remaining Issues for ANR measurements	Ericsson	noted	2019-10-03 15:50:45	2019-10-04 05:00:47
R2-1913420	posSIBs on a selective carrier	Ericsson	noted	2019-10-03 15:50:45	2019-10-04 05:11:20
R2-1913421	PosSIB Broadcast carrier	Ericsson	not treated	2019-10-03 15:50:45	2019-10-04 05:11:20
R2-1913422	Stage-3 structure details for RAT-dependent NR positioning	Ericsson	not treated	2019-10-03 15:50:46	2019-10-04 05:11:20

R2-1913423	RAT dependent positioning methods - architecture and protocol aspects	Ericsson	not treated	2019-10-03 15:50:46	2019-10-04 05:11:20
R2-1913424	GNSS Integer Ambiguity Level Indications	Ericsson	not treated	2019-10-03 15:50:46	2019-10-04 05:11:20
R2-1913425	Corrections for Positioning Architecture	Ericsson	revised	2019-10-03 15:50:46	2019-10-04 05:11:20
R2-1913426	RAN2 agreements for Rel-16 additional enhancements for NB-IoT and MTC	Document Rapporteur (BlackBerry)	revised	2019-10-03 15:51:36	2019-10-03 15:59:18
R2-1913427	CR to 38.331 on SSB-ToMeasure clarifications	Ericsson	not treated	2019-10-03 15:52:27	2019-10-03 16:44:27
R2-1913428	CR to 36.331 on SSB-ToMeasure clarifications	Ericsson	not treated	2019-10-03 15:52:28	2019-10-03 16:44:27
R2-1913429	CR to 36.306 on FR2 related ANR capability	Ericsson	not pursued	2019-10-03 15:52:29	2019-10-03 16:44:27
R2-1913430	CR to 36.331 on FR2 related ANR capability	Ericsson	not pursued	2019-10-03 15:52:30	2019-10-03 16:44:27
R2-1913431	CR to 38.306 on FR2 related ANR capability	Ericsson	not pursued	2019-10-03 15:52:31	2019-10-03 16:44:27
R2-1913432	CR to 38.331 on FR2 related ANR capability	Ericsson	not pursued	2019-10-03 15:52:32	2019-10-03 16:44:27
R2-1913433	CR to 36.331 on performing L3 filtering for NR related measurements	Ericsson	agreed	2019-10-03 15:52:33	2019-10-03 16:44:27
R2-1913434	CR to 36.331on NR CGI reporting related to cellReservedForOtherUse	Ericsson	not pursued	2019-10-03 15:52:34	2019-10-03 16:44:27
R2-1913435	CR to 38.331 on NR CGI reporting related to cellReservedForOtherUse and LTE CGI reporting related to CSG cells	Ericsson	not pursued	2019-10-03 15:52:35	2019-10-03 16:44:27
R2-1913436	CR to 38.331 on A2 event definition clarification	Ericsson	not treated	2019-10-03 15:52:35	2019-10-03 16:44:28
R2-1913437	CR to 36.331 on A2 event definition clarification	Ericsson	not treated	2019-10-03 15:52:36	2019-10-03 16:44:28
R2-1913438	Triggering conditions for A1-A6 events in NR	Ericsson	not treated	2019-10-03 15:52:38	2019-10-03 16:44:28
R2-1913439	CR to 38.331 on Triggering conditions for A1 to A6 events in NR	Ericsson	not treated	2019-10-03 15:52:38	2019-10-03 16:44:28
R2-1913440	CR to 38.306 on Triggering conditions for A1 to A6 events in NR	Ericsson	not treated	2019-10-03 15:52:39	2019-10-03 16:44:28
R2-1913441	Open issues of L2 measurements in NR	Ericsson	noted	2019-10-03 15:52:41	2019-10-03 16:44:28
R2-1913442	Open issues related to RACH report	Ericsson	not treated	2019-10-03 15:52:41	2019-10-03 16:44:28
R2-1913443	Open issues related to RLF report	Ericsson	not treated	2019-10-03 15:52:41	2019-10-03 16:44:28
R2-1913444	Successful handover report	Ericsson	not treated	2019-10-03 15:52:41	2019-10-03 16:44:28
R2-1913445	Correction on the usage of the TCI capability	Intel	reserved	2019-10-03 16:00:23	
R2-1913446	Clarification on the restriction of maximum SRS resource sets configuration for uplink beam management.	Intel	agreed	2019-10-03 16:00:26	2019-10-04 05:27:33
R2-1913447	Miscellaneous corrections on UE capability fields	Intel Corporation, NTT DoCoMo	revised	2019-10-03 16:00:27	2019-10-04 05:27:33
R2-1913448	Discussion on some open issues in running MAC CR	Email discussion rapporteur (ZTE Corporation)	noted	2019-10-03 16:10:32	2019-10-03 19:58:52
R2-1913449	Summary of running MAC CR review issue list	ZTE Corporation (email disc Rapporteur)	not treated	2019-10-03 16:14:37	2019-10-03 19:58:52
R2-1913450	Updated Work Plan for NR Industrial IoT WI	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 16:17:44	2019-10-03 17:56:54
R2-1913451	Remaining issues for accurate reference time delivery	Nokia, Nokia Shanghai Bell, NTT DOCOMO	noted	2019-10-03 16:17:44	2019-10-03 17:56:54
R2-1913452	Periodicity and burst arrival encoding in TSCAI	Nokia, Nokia Shanghai Bell	revised	2019-10-03 16:17:44	2019-10-03 18:13:23

R2-1913453	Support for arbitrary TSC message periodicities	Nokia, Nokia Shanghai Bell	noted	2019-10-03 16:17:44	2019-10-03 18:59:22
R2-1913454	CG and SPS occasions determination for new periodicities	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 16:17:44	2019-10-03 17:56:54
R2-1913455	SPS collisions with multiple SPS configurations	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 16:17:44	2019-10-03 17:56:54
R2-1913456	Padding removal	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 16:17:44	2019-10-03 18:00:14
R2-1913457	Joint IP and Ethernet Header compression	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 16:17:44	2019-10-03 17:56:54
R2-1913458	LCP restrictions enhancements	Nokia, Nokia Shanghai Bell	noted	2019-10-03 16:17:44	2019-10-03 17:56:54
R2-1913459	Route priority and local routing	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 16:17:45	2019-10-03 17:33:43
R2-1913460	BH link failure handling	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 16:17:45	2019-10-03 17:33:43
R2-1913461	IAB initial access and IAB support indication	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 16:17:45	2019-10-03 17:33:43
R2-1913462	Routing and mapping configuration in IAB nodes	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 16:17:45	2019-10-04 06:15:37
R2-1913463	IAB-MT terminology	Nokia, Nokia Shanghai Bell, Vodafone	noted	2019-10-03 16:17:45	2019-10-03 17:33:43
R2-1913464	Admission control for IAB	Nokia, Nokia Shanghai Bell	reserved	2019-10-03 16:17:45	
R2-1913465	Revisions of usage scenarios for NTN	THALES	reserved	2019-10-03 16:22:00	
R2-1913466	SSB-ToMeasure related clarification	Ericsson LM	not treated	2019-10-03 16:38:15	2019-10-03 16:44:28
R2-1913467	On Layer 2 parameter values to support delay critical GBR QoS flows	Huawei, HiSilicon	not treated	2019-10-03 17:03:58	2019-10-03 18:27:07
R2-1913468	Solutions to mitigate the periodicity misalignment between TSC traffic and CG/SPS	Huawei, HiSilicon	not treated	2019-10-03 17:03:58	2019-10-03 18:27:08
R2-1913469	Remaining issues of LCP enhancement for TSC traffic	Huawei, HiSilicon	not treated	2019-10-03 17:03:58	2019-10-03 18:27:08
R2-1913470	Propagation delay compensation for accurate reference timing	Huawei, HiSilicon	revised	2019-10-03 17:03:58	2019-10-03 18:27:08
R2-1913471	Remaining issues of reference time delivery	Huawei, HiSilicon	revised	2019-10-03 17:03:58	2019-10-03 18:27:08
R2-1913472	Further discussion on Configured Grant Confirmation MAC CE	Huawei, HiSilicon	not treated	2019-10-03 17:03:58	2019-10-03 18:27:08
R2-1913473	Discussion on EHC header format	Huawei, HiSilicon	not treated	2019-10-03 17:03:58	2019-10-03 18:27:08
R2-1913474	Paging for NR-U	Huawei, HiSilicon	not treated	2019-10-03 17:03:58	2019-10-03 18:27:08
R2-1913475	SI enhancement for NR-U	Huawei, HiSilicon	not treated	2019-10-03 17:03:58	2019-10-03 18:27:08
R2-1913476	Discussion on multiplexing of data	Huawei, HiSilicon	not treated	2019-10-03 17:03:59	2019-10-03 18:27:08
R2-1913477	Discussion on DL LBT failure impact on RLF triggering	Huawei, HiSilicon	not treated	2019-10-03 17:03:59	2019-10-03 18:27:08
R2-1913478	Further discussion on PLMN selection for NR-U	Huawei, HiSilicon	noted	2019-10-03 17:03:59	2019-10-03 18:27:08
R2-1913479	Consistent LBT failure detection	Google Inc.	not treated	2019-10-03 17:04:41	2019-10-03 17:52:36
R2-1913480	CAPC for configured grants in NR-U	Google Inc.	not treated	2019-10-03 17:07:36	2019-10-03 17:52:36
R2-1913481	Correction to RRCReconfigurationComplete in NR-DC	Ericsson	withdrawn	2019-10-03 17:09:37	2019-10-03 17:15:45
R2-1913482	Clarification on security key change and bearer termination point change	ZTE Corporation, Ericsson, Intel	agreed	2019-10-03 17:28:04	2019-10-04 00:10:05
R2-1913483	Further issues for CHO configuration and execution	ZTE Corporation, Sanechips	not treated	2019-10-03 17:28:06	2019-10-04 00:10:05
R2-1913484	Discussion on fast RLF recovery when applying CHO and fast MCG recovery	ZTE Corporation, Sanechips	not treated	2019-10-03 17:28:06	2019-10-04 00:10:05

R2-1913485	Discussion on conditional PSCell addition/change	ZTE Corporation, Sanechips	not treated	2019-10-03 17:28:06	2019-10-04 00:10:05
R2-1913486	Discussion on capability coordination for RUDI HO	ZTE Corporation, Sanechips	not treated	2019-10-03 17:28:06	2019-10-04 00:10:05
R2-1913487	Remaining Issues on Early Measurements	ZTE Corporation, Sanechips	not treated	2019-10-03 17:28:06	2019-10-04 00:10:05
R2-1913488	On Inter-RAT Operation	ZTE Corporation, Sanechips	not treated	2019-10-03 17:28:06	2019-10-04 00:10:05
R2-1913489	On directly donfiguring SCell as activated	ZTE Corporation, Sanechips	not treated	2019-10-03 17:28:06	2019-10-04 00:10:05
R2-1913490	Further Consideration on fast SCell activation	ZTE Corporation, Sanechips	not treated	2019-10-03 17:28:06	2019-10-04 00:10:05
R2-1913491	On SCG suspension	ZTE Corporation, Sanechips	not treated	2019-10-03 17:28:06	2019-10-04 00:10:05
R2-1913492	Signalling overhead reduction for cell configuration and BWP configuration	ZTE Corporation, Sanechips	not treated	2019-10-03 17:28:06	2019-10-04 00:10:05
R2-1913493	UE positioning in legacy satellite communication systems for 5G NTN	THALES	noted	2019-10-03 17:48:04	2019-10-03 18:57:43
R2-1913494	Discussion on SDAP protocol for NR V2X	Apple	not treated	2019-10-03 17:49:01	2019-10-04 05:44:59
R2-1913495	Discussion on prioritization between SL BSR and UL BSR	Apple, OPPO	not treated	2019-10-03 17:49:01	2019-10-04 05:44:59
R2-1913496	Discussion on remaining issues on HARQ feedback	Apple	not treated	2019-10-03 17:49:01	2019-10-04 05:44:59
R2-1913497	Draft LS on Support HARQ feedback design for SL groupcast	Apple	not treated	2019-10-03 17:49:01	2019-10-04 05:44:59
R2-1913498	UE Mobility for Simultaneous Mode 1 & Mode 2 configuration	Apple	not treated	2019-10-03 17:49:01	2019-10-04 05:44:59
R2-1913499	Resource allocations for UEs with simultaneous mode 1 & mode 2 configurations	Apple	not treated	2019-10-03 17:49:01	2019-10-04 05:44:59
R2-1913500	Improved transmission mechanism for PUCCH-UCI	Ericsson	not treated	2019-10-03 17:50:15	2019-10-03 20:51:01
R2-1913501	Discussions on configured grant in NR-U	Ericsson	noted	2019-10-03 17:50:16	2019-10-03 20:51:01
R2-1913502	Further discussions on channel access priority	Ericsson	not treated	2019-10-03 17:50:16	2019-10-03 20:51:01
R2-1913503	DRX enhancement for NR-U	Ericsson	not treated	2019-10-03 17:50:17	2019-10-03 20:51:01
R2-1913504	Handling LBT failures	Ericsson	not treated	2019-10-03 17:50:17	2019-10-03 20:51:01
R2-1913505	RACH enhancements for NR-U	Ericsson	not treated	2019-10-03 17:50:17	2019-10-03 20:51:01
R2-1913506	RAN2 impact of supporting wideband operation	Ericsson	not treated	2019-10-03 17:50:17	2019-10-03 20:51:01
R2-1913507	Channel access for Msg3	Ericsson	not treated	2019-10-03 17:50:17	2019-10-03 20:51:01
R2-1913508	2-step Random Access for NR-U	Ericsson	not treated	2019-10-03 17:50:17	2019-10-03 20:51:01
R2-1913509	Running MAC CR for NR-U	Ericsson	endorsed	2019-10-03 17:50:17	2019-10-03 20:51:01
R2-1913510	PC5-RRC and PC5-S interactions and their security in NR V2X	Qualcomm Incorporated	not treated	2019-10-03 17:50:43	2019-10-03 23:37:39
R2-1913511	Discussion on mode 1 resource allocation	Qualcomm Incorporated	not treated	2019-10-03 17:53:48	2019-10-03 23:43:22
R2-1913512	Inter-RAT resource allocation in NR V2X	Qualcomm Incorporated	not treated	2019-10-03 17:55:39	2019-10-03 23:49:40
R2-1913513	Timing of Key Derivation in Conditional Handover	Futurewei	not treated	2019-10-03 18:00:00	2019-10-04 02:09:50

R2-1913514	Draft LS on the Timing of AS Key Derivation in Conditional Handover	Futurewei	not treated	2019-10-03 18:00:00	2019-10-04 02:09:50
R2-1913515	Handling of Key Derivation in Conditional PSCell Addition/Change	Futurewei	not treated	2019-10-03 18:00:00	2019-10-04 02:09:50
R2-1913516	Correction to secondary key derivation	Ericsson	not pursued	2019-10-03 18:16:58	2019-10-03 18:53:14
R2-1913517	Miscellaneous corrections to 38.306	Ericsson	merged	2019-10-03 18:17:01	2019-10-03 18:53:14
R2-1913518	Correction to field conditions in NE-DC	Ericsson	revised	2019-10-03 18:17:02	2019-10-03 18:53:14
R2-1913519	Addition of dynamic power sharing for NE-DC (38.306)	Ericsson	not pursued	2019-10-03 18:17:03	2019-10-03 18:53:14
R2-1913520	Addition of dynamic power sharing for NE-DC	Ericsson	noted	2019-10-03 18:17:03	2019-10-03 18:53:14
R2-1913521	Clarification to radio bearer handling for intra-5GC HO from LTE to NR (38.331)	Ericsson	postponed	2019-10-03 18:17:03	2019-10-03 18:53:14
R2-1913522	Clarification to radio bearer handling for intra-5GC HO from NR to LTE (36.331)	Ericsson	postponed	2019-10-03 18:17:05	2019-10-03 18:53:14
R2-1913523	Correction on capability coordination terminology (37.340)	Ericsson	not pursued	2019-10-03 18:17:06	2019-10-03 18:53:14
R2-1913524	Correction to Feature Set Combinations for NR-DC (38.331)	Ericsson	not treated	2019-10-03 18:17:07	2019-10-03 18:53:14
R2-1913525	Handling of fallback band combinations	Ericsson, NTT DOCOMO	not treated	2019-10-03 18:17:07	2019-10-03 18:53:14
R2-1913526	[DRAFT] Reply LS on Handling of Fallbacks for combined contiguous and non-contiguous CA or DC configurations in FR2	Ericsson	not treated	2019-10-03 18:17:07	2019-10-03 18:53:14
R2-1913527	Introducing multiple BC-FS	Ericsson	not treated	2019-10-03 18:17:07	2019-10-03 18:53:14
R2-1913528	Returning multiple BC+FS in CG-Config	Ericsson	not treated	2019-10-03 18:17:08	2019-10-03 18:53:14
R2-1913529	Overheating enhancements for EN-DC	Ericsson	not treated	2019-10-03 18:17:08	2019-10-03 18:53:14
R2-1913530	Use of group signaling for NR-CA	Ericsson	not treated	2019-10-03 18:17:08	2019-10-03 18:53:14
R2-1913531	Further RRC impact due to dormancy behaviour	Ericsson	not treated	2019-10-03 18:17:08	2019-10-03 18:53:14
R2-1913532	Email Discussion [107#27][NR/R15] Determining L2 buffer size (Ericsson)	Ericsson	noted	2019-10-03 18:17:08	2019-10-03 18:53:15
R2-1913533	LS on NR V2X synchronization procedures and priority (R1-1909910; contact: CATT)	RAN1	noted	2019-10-03 18:37:19	2019-10-03 19:58:50
R2-1913534	Clarification on satellite beam and PCI mapping	THALES	withdrawn	2019-10-03 18:49:54	2019-10-03 18:58:32
R2-1913535	Draft CR on CLI for TS 38.306	Ericsson(rapporteur)	endorsed	2019-10-03 18:53:36	2019-10-03 22:12:56
R2-1913536	Remaining issues on CLI	Ericsson	not treated	2019-10-03 18:53:36	2019-10-03 22:12:56
R2-1913537	On s measure for CLI	Ericsson	not treated	2019-10-03 18:53:36	2019-10-03 22:12:56
R2-1913538	Open Issues for IAB Routing	Futurewei Technologies	not treated	2019-10-03 18:59:06	2019-10-04 07:13:55
R2-1913539	Enhancements for low-latency IAB Uplink scheduling	Futurewei Technologies	not treated	2019-10-03 19:00:55	2019-10-04 06:09:12
R2-1913540	Miscellaneous non-controversial corrections Set IV	Ericsson	postponed	2019-10-03 19:03:14	2019-10-03 23:49:14
R2-1913541	Definition of NR standalone	Ericsson	revised	2019-10-03 19:03:15	2019-10-03 23:49:14
R2-1913542	Presence and absence of TAC in NR cell	Ericsson	revised	2019-10-03 19:03:16	2019-10-03 23:49:14
R2-1913543	On Scell AddMod and Release lists	Ericsson	noted	2019-10-03 19:03:17	2019-10-03 23:49:14
R2-1913544	Backhaul RLF Notification and Recovery Procedure	Futurewei Technologies	not treated	2019-10-03 19:06:02	2019-10-04 06:09:12
R2-1913545	Logged MDT for RRC_INACTIVE state	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 19:07:18	2019-10-04 07:59:28
R2-1913546	Logged MDT configuration events	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 19:07:18	2019-10-04 07:59:28

R2-1913547	Impact of SNPN on PLMN check for MDT	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 19:07:18	2019-10-04 07:59:28
R2-1913548	RACH Scenarios and their presence in the RACH Report	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 19:07:18	2019-10-04 07:59:28
R2-1913549	RACH Fallback from NUL to SUL	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 19:07:18	2019-10-04 07:59:28
R2-1913550	TP to 38.300 on SON support	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 19:07:18	2019-10-04 08:48:42
R2-1913551	Counting number of inactive Ues	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 19:07:18	2019-10-04 08:22:20
R2-1913552	Measurement event for interference-forced inter-RAT/inter-freq HO	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 19:07:18	2019-10-04 07:59:28
R2-1913553	Clarification on RA and Msg3 with PUSCH Enhancements	Nokia, Nokia Shanghai Bell	revised	2019-10-03 19:07:18	2019-10-04 07:59:28
R2-1913554	Clarification on RA and Msg3 with PUSCH Enhancements	Nokia, Nokia Shanghai Bell	revised	2019-10-03 19:07:19	2019-10-04 07:59:28
R2-1913555	MAC Scheduling Aspects of Multi-TTI Grant	Qualcomm Incorporated	not treated	2019-10-03 19:10:57	2019-10-04 03:14:00
R2-1913556	Impact of ACK/NACK transmission to NR-U DRX	Qualcomm Incorporated	noted	2019-10-03 19:17:51	2019-10-04 03:14:00
R2-1913557	Report for [107#51][NR IAB] F1 over LTE (AT&T)	AT&T	noted	2019-10-03 19:26:20	2019-10-03 21:30:02
R2-1913558	Impact of non-Numeric K1 Value to NR-U DRX	Qualcomm Incorporated	revised	2019-10-03 19:44:47	2019-10-04 03:14:00
R2-1913559	Paging monitoring in NR-U	Qualcomm Incorporated	noted	2019-10-03 19:49:00	2019-10-04 04:02:28
R2-1913560	Remaining FFS on cell reselection for NR-U	Qualcomm Incorporated	not treated	2019-10-03 19:50:45	2019-10-04 03:14:00
R2-1913561	DRX Active Time for NR-U	Qualcomm Incorporated	not treated	2019-10-03 19:57:38	2019-10-04 03:14:00
R2-1913562	CAPC and uplink transmission	Qualcomm Incorporated	noted	2019-10-03 20:02:16	2019-10-04 03:14:00
R2-1913563	Clarification on satellite beam and PCI mapping	THALES, ERICSSON	revised	2019-10-03 20:02:36	2019-10-03 20:06:31
R2-1913564	On SL HARQ configuration for NR V2X	Intel Corporation	not treated	2019-10-03 20:02:38	2019-10-04 02:54:09
R2-1913565	Correction to Pcompensation for FR2	Huawei, HiSilicon	withdrawn	2019-10-03 20:12:11	2019-10-03 20:36:36
R2-1913566	Correction to the parameter descriptions for cell measurement quallity derivation in multi-beam operation	Huawei, HiSilicon	not treated	2019-10-03 20:12:12	2019-10-03 20:36:36
R2-1913567	Correction to the field description of cellReselectionInfoCommon for cell measurement quallity derivation in multi-beam operation	Huawei, HiSilicon	not treated	2019-10-03 20:12:13	2019-10-03 20:36:36
R2-1913568	Remaining issues on time domain measurement relaxation	Huawei, HiSilicon	not treated	2019-10-03 20:12:15	2019-10-03 20:36:36
R2-1913569	Reducing the number of neighbour cells/carriers to measure	Huawei, HiSilicon	not treated	2019-10-03 20:12:15	2019-10-03 20:36:36
R2-1913570	Remaining issues of DL quality report	Huawei, HiSilicon	noted	2019-10-03 20:12:15	2019-10-03 20:36:36
R2-1913571	MPDCCH performance improvement using CRS	Huawei, HiSilicon	noted	2019-10-03 20:12:15	2019-10-03 20:36:36
R2-1913572	Enhancements to idle mode mobility for non-BL UEs	Huawei, HiSilicon	noted	2019-10-03 20:12:15	2019-10-03 20:36:36
R2-1913573	Use of RSS for measurement improvements	Huawei, HiSilicon	not treated	2019-10-03 20:12:15	2019-10-03 20:36:36
R2-1913574	NR-U specific aspects for 2-step RACH	Qualcomm Incorporated	not treated	2019-10-03 20:12:42	2019-10-04 05:55:52
R2-1913575	Running RRC CR for NR-based Access to Unlicensed Spectrum	Qualcomm Incorporated	revised	2019-10-03 20:16:38	2019-10-18 11:48:05
R2-1913576	Running Idle/Inactive mode CR for NR-based Access to Unlicensed Spectrum	Qualcomm Incorporated	revised	2019-10-03 20:18:18	2019-10-18 11:48:05
R2-1913577	Clarification on SRB3 usage	ZTE Corporation	not treated	2019-10-03 20:21:37	2019-10-04 00:10:05

R2-1913578	Correction of RRC procedure upon expiry of DataInactivityTimer	Qualcomm Incorporated	not pursued	2019-10-03 20:21:53	2019-10-04 03:06:58
R2-1913579	Draft LS on RRC indication to NAS upon expiry of DataInactivityTimer	Qualcomm Incorporated	not treated	2019-10-03 20:24:22	2019-10-04 04:02:28
R2-1913580	Methods of Paging in GEO Satellite-Based 5G Networks	HUGHES Network Systems Ltd	not treated	2019-10-03 20:28:13	2019-10-04 03:27:46
R2-1913581	On uplink enhancements for NTN	Ericsson	not treated	2019-10-03 20:36:30	2019-10-03 22:58:41
R2-1913582	DRX adaptions for NTN	Ericsson	not treated	2019-10-03 20:36:30	2019-10-03 22:58:41
R2-1913583	Remaining aspects on Random access for NTN	Ericsson	not treated	2019-10-03 20:36:30	2019-10-03 22:58:41
R2-1913584	Remaining aspects on RLC and PDCP	Ericsson	not treated	2019-10-03 20:36:30	2019-10-03 22:58:41
R2-1913585	Satellite identifier in 3GPP NTN Control Plane	THALES	noted	2019-10-03 20:38:47	2019-10-03 20:46:07
R2-1913586	Remaining issues regarding UE assistance information	Samsung, Ericsson	noted	2019-10-03 20:47:45	2019-10-03 23:27:11
R2-1913587	Correction of UE assistance information	Samsung, Ericsson	not treated	2019-10-03 20:47:45	2019-10-03 23:27:11
R2-1913588	Correction of UE assistance information	Samsung, Ericsson	revised	2019-10-03 20:47:45	2019-10-04 12:37:17
R2-1913589	Clarification regarding QoS handling in MRDC with 5G CN	Samsung, ZTE Corporation	revised	2019-10-03 20:47:45	2019-10-03 23:27:11
R2-1913590	CHO configuration/ execution, remaining aspects	Samsung Telecommunications	not treated	2019-10-03 20:47:45	2019-10-03 23:27:11
R2-1913591	Introducing condition for SN (re-)configurations	Samsung Telecommunications	not treated	2019-10-03 20:47:45	2019-10-04 06:07:30
R2-1913592	Capability coordination for DAPS, required UE capability details and signalling	Samsung Telecommunications	not treated	2019-10-03 20:47:45	2019-10-04 12:37:17
R2-1913593	Angle of Departure UE positioning technique	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 21:26:55	2019-10-04 03:27:48
R2-1913594	On-demand and dynamic PRS configuration for DL-TDOA	Nokia, Nokia Shanghai Bell	not treated	2019-10-03 21:28:21	2019-10-04 03:28:08
R2-1913595	PC5 groupcast handling	Qualcomm Incorporated	not treated	2019-10-03 21:38:32	2019-10-04 01:45:44
R2-1913596	RRC Framework for handling MN failure indication and recovery over SRB3	Intel Corporation	not treated	2019-10-03 21:40:08	2019-10-04 02:54:09
R2-1913597	Pre-configured UL Resources Design Considerations	Sierra Wireless, S.A., Sony Mobile Communications, Gemalto N.V.	not treated	2019-10-03 21:41:04	2019-10-03 22:03:09
R2-1913598	Recommended Bit Rate/Query for FLUS and MTSI	Qualcomm Incorporated	not treated	2019-10-03 21:43:46	2019-10-04 06:50:57
R2-1913599	[Draft] Reply LS on Recommended Bit Rate/Query for FLUS and MTSI	Qualcomm Incorporated	not treated	2019-10-03 21:43:46	2019-10-04 06:50:57
R2-1913600	Remaining aspects from [106#61] D-PUR Request, (re)configuration and release mechanism	Qualcomm Incorporated	not treated	2019-10-03 21:46:08	2019-10-04 06:55:47
R2-1913601	Introduction of Rel-16 eMTC enhancements	Qualcomm Incorporated	revised	2019-10-03 21:54:08	2019-10-08 18:07:58
R2-1913602	Addressing Editor's Notes and FFSes in RRC running CR	Qualcomm Incorporated	noted	2019-10-03 21:56:38	2019-10-08 18:07:57
R2-1913603	Conditional measurement configuration for LEO NTN	InterDigital	not treated	2019-10-03 22:08:02	2019-10-03 22:20:54
R2-1913604	Summary of Email Discussion [107_62] TP Mobility (InterDigital)	InterDigital	noted	2019-10-03 22:08:02	2019-10-08 22:33:01
R2-1913605	TP on NTN Mobility Issues and Solutions	InterDigital	revised	2019-10-03 22:08:02	2019-10-08 22:33:01

R2-1913606	Further considerations for the WUS	InterDigital	not treated	2019-10-03 22:08:02	2019-10-03 22:20:15
R2-1913607	Discussion on the SN modification trigger	Huawei, HiSilicon	noted	2019-10-03 22:43:59	2019-10-03 23:06:04
R2-1913608	Draft reply LS on full configuration during SN Modification procedure	Huawei, HiSilicon	revised	2019-10-03 22:44:00	2019-10-03 23:06:04
R2-1913609	Further issues of not up-to-date SN configuration at handover	Huawei, HiSilicon	not treated	2019-10-03 22:44:00	2019-10-03 23:06:04
R2-1913610	Exchanging used IDs of SN terminated DRBs	Huawei, HiSilicon	not treated	2019-10-03 22:44:00	2019-10-03 23:06:04
R2-1913611	Exchanging used IDs of SN terminated DRBs	Huawei, HiSilicon	not treated	2019-10-03 22:44:07	2019-10-03 23:06:04
R2-1913612	Sending FailureInformation message on SRB3	Huawei, HiSilicon	not treated	2019-10-03 22:44:08	2019-10-03 23:06:04
R2-1913613	Clarification on SRB3 release	Huawei, HiSilicon	merged	2019-10-03 22:44:09	2019-10-03 23:06:04
R2-1913614	sk-counter presence in RRC(Connection)Reconfiguration	Huawei, HiSilicon	not treated	2019-10-03 22:44:10	2019-10-03 23:06:04
R2-1913615	Idle/inactive NR measurements in LTE and in NR	Huawei, HiSilicon	not treated	2019-10-03 22:44:10	2019-10-03 23:06:04
R2-1913616	UE capabilities for DC and CA enhancements	Huawei, HiSilicon	not treated	2019-10-03 22:44:10	2019-10-03 23:06:04
R2-1913617	Handling of primaryPath when fast MCG link recovery via split SRB1 fails	Huawei, HiSilicon	not treated	2019-10-03 22:44:10	2019-10-03 23:06:04
R2-1913618	Discussion on dormancy-like behaviour	Huawei, HiSilicon	not treated	2019-10-03 22:44:10	2019-10-03 23:06:04
R2-1913619	RAN2 specification impacts of multi-TRP transmission	Huawei, HiSilicon	not treated	2019-10-03 22:44:10	2019-10-03 23:06:04
R2-1913620	MAC CE signalling enhancement for TCI indication of single-PDCCH based multi-TRP transmission	Huawei, HiSilicon	not treated	2019-10-03 22:44:10	2019-10-03 23:06:04
R2-1913621	Beam failure recovery for SCell	Huawei, HiSilicon	not treated	2019-10-03 22:44:10	2019-10-03 23:06:04
R2-1913622	Configured Grant enhancements for TSC traffic	Sequans Communications	noted	2019-10-03 22:53:48	2019-10-03 23:10:57
R2-1913623	BSR operation with CA packet duplication	Sequans Communications	noted	2019-10-03 22:53:49	2019-10-03 23:10:57
R2-1913624	Handling of collisions with a CG	Sequans Communications	noted	2019-10-03 22:53:49	2019-10-03 23:10:57
R2-1913625	Enhanced rescheduling for dropped CG	Sequans Communications	noted	2019-10-03 22:53:49	2019-10-03 23:10:57
R2-1913626	On Inter-RAT assistance information for NB-IoT and LTE(-eMTC)	Sequans Communications	not treated	2019-10-03 22:53:49	2019-10-10 17:23:28
R2-1913627	NB-IoT UE Specific DRX Support	Sequans Communications	not treated	2019-10-03 22:53:49	2019-10-10 17:23:28
R2-1913628	IAB with NSA operation	Sequans Communications	noted	2019-10-03 22:53:49	2019-10-10 17:23:28
R2-1913629	Support for LTE deployment at IAB node sites	Sequans Communications	not treated	2019-10-03 22:53:49	2019-10-03 23:10:57
R2-1913630	F1-U Flow Control and Reordering Issues	Sequans Communications	not treated	2019-10-03 22:53:49	2019-10-03 23:10:57
R2-1913631	Queue Management vs Flow Control for Congestion Handling	Sequans Communications	not treated	2019-10-03 22:53:49	2019-10-03 23:10:57
R2-1913632	Correction for the establishment of LTE RLC bearers for (NG)EN-DC and NE-DC	Huawei, HiSilicon	revised	2019-10-03 22:54:31	2019-10-03 23:06:04
R2-1913633	Report of email discussion [107#40][NR/NPN] SIB1 design (Qualcomm)	Qualcomm Incorporated	not treated	2019-10-03 23:06:22	2019-10-04 03:15:32
R2-1913634	Suitable and acceptable NPN cells	Qualcomm Incorporated	not treated	2019-10-03 23:07:42	2019-10-04 03:19:03
R2-1913635	Support for NPN HRNN broadcast	Qualcomm Incorporated	not treated	2019-10-03 23:08:30	2019-10-04 03:21:01
R2-1913636	[DRAFT] LS on granularity of periodicity and burst arrival time in TSCAI	Qualcomm Incorporated	revised	2019-10-03 23:11:11	2019-10-04 03:34:58
R2-1913637	TSCAI Encoding: Granularity of burst arrival time and periodicity	Qualcomm Incorporated	not treated	2019-10-03 23:12:07	2019-10-04 03:27:09

R2-1913638	MAC CE structure for PDCP duplication enhancement	Qualcomm Incorporated	not treated	2019-10-03 23:12:57	2019-10-04 03:36:22
R2-1913639	Value of UE-based PDCP duplication	Qualcomm Incorporated	not treated	2019-10-03 23:14:00	2019-10-04 03:37:20
R2-1913640	PDCP duplication enhancements and RLC AM	Qualcomm Incorporated	not treated	2019-10-03 23:14:48	2019-10-04 03:33:01
R2-1913641	Views on handling of PDUs and data of deprioritized grants	Qualcomm Incorporated	noted	2019-10-03 23:15:30	2019-10-04 03:39:26
R2-1913642	LCP restriction enhancements for Industrial IoT	Qualcomm Incorporated	noted	2019-10-03 23:16:12	2019-10-04 03:40:26
R2-1913643	Reference timing delivery determination by RAN	Qualcomm Incorporated	noted	2019-10-03 23:16:52	2019-10-04 03:41:58
R2-1913644	Principles for EHC header design	Qualcomm Incorporated	not treated	2019-10-03 23:17:32	2019-10-04 03:44:13
R2-1913645	Discussion of RAN1 LS on propagation delay compensation and way forward	Qualcomm Incorporated	not treated	2019-10-03 23:18:14	2019-10-04 03:45:20
R2-1913646	More granularity for PDCP discardTimer	Qualcomm Incorporated	not treated	2019-10-03 23:19:24	2019-10-04 03:46:19
R2-1913647	Extended MAC CE ID	Qualcomm Incorporated	not treated	2019-10-03 23:20:27	2019-10-04 03:48:26
R2-1913648	Draft LS on signalling of reference timing delivery determination information	Qualcomm Incorporated	not treated	2019-10-03 23:21:43	2019-10-04 03:49:38
R2-1913649	Remaining Issues on Persistent LBT Failures in NRU	Charter Communications, Inc	not treated	2019-10-03 23:27:56	2019-10-04 05:05:10
R2-1913650	Considerations on T312 enhancements for fast RLF recovery in NR	Potevio	not treated	2019-10-03 23:28:11	2019-10-03 23:39:30
R2-1913651	Paging Monitoring in NR-U	Charter Communications, Inc	not treated	2019-10-03 23:29:51	2019-10-04 03:23:07
R2-1913652	On NR-U Operation in DFS Channels	Charter Communications, Inc	revised	2019-10-03 23:31:28	2019-10-04 03:23:08
R2-1913653	System Information Transmission Enhancements in NR-U	Charter Communications, Inc	not treated	2019-10-03 23:32:37	2019-10-04 03:23:08
R2-1913654	Consideration of preemptive BSR in IAB	Kyocera	not treated	2019-10-03 23:36:09	2019-10-04 03:09:15
R2-1913655	Further discussion on Backhaul RLF handling	Kyocera	not treated	2019-10-03 23:37:58	2019-10-04 03:09:15
R2-1913656	Inter-node interaction for Conditional PScell addition/change	CATT	not treated	2019-10-03 23:41:40	2019-10-03 23:44:51
R2-1913657	Draft LS on Conditional PSCell addition_change	CATT	not treated	2019-10-03 23:41:40	2019-10-03 23:44:51
R2-1913658	Logged MDT for NR-DC and EN-DC	Kyocera	not treated	2019-10-03 23:45:00	2019-10-04 03:09:15
R2-1913659	Recovery due to LBT failures	Kyocera	noted	2019-10-03 23:48:57	2019-10-04 03:09:48
R2-1913660	PC5-RRC state considerations	Kyocera	not treated	2019-10-03 23:54:35	2019-10-04 03:09:48
R2-1913661	PC5 L2/L3 protocols for unicast and groupcast	Kyocera	not treated	2019-10-03 23:56:04	2019-10-04 03:09:48
R2-1913662	Some Considerations on intra-UE data-data prioritization	China Telecommunications	not treated	2019-10-04 00:01:12	2019-10-04 00:02:25
R2-1913663	channelBWs parameter and legacy channel bandwidths	Sprint Corporation	noted	2019-10-04 00:02:10	2019-10-04 00:55:45
R2-1913664	LCP restrictions for configured grant	Intel Corporation	not treated	2019-10-04 00:03:50	2019-10-04 05:27:33
R2-1913665	SL RLF handling	Qualcomm Incorporated	not treated	2019-10-04 00:11:22	2019-10-04 04:50:44
R2-1913666	Access restrictions (barring) in IAB	Sharp	not treated	2019-10-04 00:13:43	2019-10-04 00:20:18
R2-1913667	Skipping supportedBandCombinationList of n90	KDDI Corporation	revised	2019-10-04 00:14:34	2019-10-04 04:44:25
R2-1913668	Validity of CHO configurations based on security configuration	Sharp	not treated	2019-10-04 00:15:22	2019-10-04 02:51:05

R2-1913669	NE-DC dynamic power sharing capability	Qualcomm Incorporated	not treated	2019-10-04 00:22:37	2019-10-04 01:43:56
R2-1913670	NE-DC dynamic power sharing capability	Qualcomm Incorporated	not treated	2019-10-04 00:22:40	2019-10-04 01:43:56
R2-1913671	Clarification on essential system information acquisition	Qualcomm Incorporated	not treated	2019-10-04 00:22:41	2019-10-04 01:43:56
R2-1913672	Security Algorithms for all Radio Bearer in NR-DC	Qualcomm Incorporated	revised	2019-10-04 00:22:42	2019-10-04 01:43:56
R2-1913673	Correction on the Msg3 based on demand system information	Huawei, HiSilicon	agreed	2019-10-04 00:23:23	2019-10-04 03:35:33
R2-1913674	Enhancement on BSR format for the one LCG case	Huawei, HiSilicon	not treated	2019-10-04 00:23:25	2019-10-04 03:35:33
R2-1913675	Discussion on a configuration mismatch between a UE and a target gNB	KDDI Corporation	not treated	2019-10-04 00:42:12	2019-10-04 00:43:27
R2-1913676	Discussion of Guarantee PDCP Duplication Transmission	III	not treated	2019-10-04 00:46:48	2019-10-04 04:34:11
R2-1913677	LTE Mobility Robustness Enhancements for DAPS eMBB HO	Qualcomm Incorporated	not treated	2019-10-04 00:49:34	2019-10-04 02:48:59
R2-1913678	Clarification on informative timer table	Huawei, HiSilicon	not treated	2019-10-04 00:58:02	2019-10-04 05:26:30
R2-1913679	DL data delivery for Msg4 fallback case	LG Electronics UK	not treated	2019-10-04 00:59:25	2019-10-04 05:52:14
R2-1913680	Draft LS on MT data delivery in MT EDT	LG Electronics UK	not treated	2019-10-04 00:59:25	2019-10-04 05:52:14
R2-1913681	FFS issues on D-PUR	LG Electronics UK	not treated	2019-10-04 00:59:25	2019-10-04 05:52:14
R2-1913682	Discussion on D-PUR request and TA validity check	LG Electronics UK	not treated	2019-10-04 00:59:25	2019-10-04 05:52:14
R2-1913683	Paging response usign D-PUR	LG Electronics UK	not treated	2019-10-04 00:59:25	2019-10-04 05:52:14
R2-1913684	Support for S-PUR	LG Electronics UK	not treated	2019-10-04 00:59:25	2019-10-04 05:52:14
R2-1913685	Clarification for aggregated bandwidth for overheating	Huawei, HiSilicon, Ericsson	revised	2019-10-04 00:59:36	2019-10-04 06:52:53
R2-1913686	Correction on procedural text for appliedFreqBandListFilter	Huawei, HiSilicon	not pursued	2019-10-04 00:59:37	2019-10-04 06:52:53
R2-1913687	Clarification on the feature set report in EUTRAN	Huawei, HiSilicon	agreed	2019-10-04 00:59:38	2019-10-04 06:52:53
R2-1913688	Corrections on PDCCH blind decoding in NR-DC	Huawei, HiSilicon	not treated	2019-10-04 00:59:39	2019-10-04 06:52:53
R2-1913689	Signalling design for overheating reporting in (NG)EN-DC scenario	Huawei, Huawei Device, China Unicom, MediaTek Inc., Samsung, LG Uplus, vivo	noted	2019-10-04 00:59:40	2019-10-04 06:52:53
R2-1913690	36.331 Draft CR for addressing overheating issue in EN-DC scenario - Option 1	Huawei, Huawei Device	not treated	2019-10-04 00:59:40	2019-10-04 06:52:53
R2-1913691	38.331 Draft CR for addressing overheating issue in EN-DC sceanrio - Option 1	Huawei, Huawei Device	not treated	2019-10-04 00:59:40	2019-10-04 06:52:53
R2-1913692	36.331 Draft CR for addressing overheating issue in EN-DC scenario - Option 2	Huawei, Huawei Device	not treated	2019-10-04 00:59:40	2019-10-04 06:52:53
R2-1913693	37.340 Draft CR for addressing overheating issue in EN-DC scenario - Option 2	Huawei, Huawei Device	not treated	2019-10-04 00:59:40	2019-10-04 06:52:53
R2-1913694	38.331 Draft CR for addressing overheating issue in EN-DC scenario - Option 2	Huawei, Huawei Device	not treated	2019-10-04 00:59:40	2019-10-04 06:52:53
R2-1913695	CR on UE capability for SRS-Tx switch	Huawei, HiSilicon	not treated	2019-10-04 00:59:40	2019-10-04 06:52:53
R2-1913696	Summary on email discussion 107#05 BWCS for inter-ENDC BC with intra-ENDC BC	Huawei, HiSilicon	noted	2019-10-04 00:59:41	2019-10-10 08:22:26

R2-1913697	Clarification on description for mandatory capability without capability signalling	Huawei, HiSilicon	**not pursued**	2019-10-04 00:59:41	2019-10-04 06:52:53
R2-1913698	Running CR to 36 331 for NR V2X	Huawei, HiSilicon	**not treated**	2019-10-04 01:01:23	2019-10-12 10:49:38
R2-1913699	TP on NR V2X for TR 37.985 RAN2 parts	Huawei, HiSilicon	revised	2019-10-04 01:01:23	2019-10-12 10:49:38
R2-1913700	Discussion about mode coexistence for NR sidelink	Huawei, HiSilicon	**not treated**	2019-10-04 01:01:23	2019-10-04 01:51:33
R2-1913701	Discussion on HARQ support for NR sidelink	Huawei, HiSilicon	**noted**	2019-10-04 01:01:23	2019-10-04 01:51:33
R2-1913702	Discussion on Sidelink Configured Grant support	Huawei, HiSilicon	**not treated**	2019-10-04 01:01:23	2019-10-04 01:51:33
R2-1913703	Further details of UE assistance information procedure for NR SL	Huawei, HiSilicon	**not treated**	2019-10-04 01:01:23	2019-10-04 01:51:33
R2-1913704	Further discussion on inter-RAT resource allocation	Huawei, HiSilicon	**noted**	2019-10-04 01:01:24	2019-10-04 01:51:33
R2-1913705	Identifier assignment to enable Option2 groupcast HARQ	Huawei, HiSilicon	**not treated**	2019-10-04 01:01:24	2019-10-04 01:51:33
R2-1913706	Discussion on related aspects of system information	Huawei, HiSilicon	**not treated**	2019-10-04 01:01:24	2019-10-04 01:51:33
R2-1913707	Discussion on remaining issues of SR and BSR for SL Mode 1	Huawei, HiSilicon	**not treated**	2019-10-04 01:01:24	2019-10-04 01:51:33
R2-1913708	Further details of Uu RRC procedures for sidelink	Huawei, HiSilicon	**not treated**	2019-10-04 01:01:24	2019-10-04 01:51:33
R2-1913709	Further discussion on NR SL and NR UL prioritization	Huawei, HiSilicon	**not treated**	2019-10-04 01:01:24	2019-10-04 01:51:33
R2-1913710	Relationship between PC5-RRC connection and PC5-S connection	Huawei, HiSilicon	**noted**	2019-10-04 01:01:24	2019-10-04 01:51:33
R2-1913711	Remaining issue on sidelink LCP procedure	Huawei, HiSilicon	**noted**	2019-10-04 01:01:24	2019-10-04 01:51:33
R2-1913712	Remaining issues on SLRB configuration	Huawei, HiSilicon	**not treated**	2019-10-04 01:01:24	2019-10-04 01:51:33
R2-1913713	Support of RLC AM for Sidelink unicast	Huawei, HiSilicon	**not treated**	2019-10-04 01:01:24	2019-10-04 01:51:33
R2-1913714	Introduction of cross link interfernce management	Huawei, HiSilicon	**endorsed**	2019-10-04 01:01:24	2019-10-04 01:52:34
R2-1913715	Leftover issues on CLI	Huawei, HiSilicon	**not treated**	2019-10-04 01:01:24	2019-10-04 01:52:34
R2-1913716	Introduction of wideband PRG size	Huawei, HiSilicon	**endorsed**	2019-10-04 01:03:29	2019-10-04 01:52:34
R2-1913717	Introduction of wideband PRG size	Huawei, HiSilicon	**endorsed**	2019-10-04 01:03:29	2019-10-04 01:52:34
R2-1913718	Discussion on UDC reconfiguration for RRC connection reestablishment case	Huawei, HiSilicon	revised	2019-10-04 01:03:29	2019-10-04 01:52:34
R2-1913719	UDC reconfiguration for RRC connection re-establishment case	Huawei, HiSilicon	**postponed**	2019-10-04 01:03:29	2019-10-04 01:52:34
R2-1913720	UDC reconfiguration for RRC connection re-establishment case	Huawei, HiSilicon	**postponed**	2019-10-04 01:03:29	2019-10-04 01:52:34
R2-1913721	Discussion on providing CAG ID to AS during resume procedure	Huawei, HiSilicon	**not treated**	2019-10-04 01:06:29	2019-10-04 01:12:58
R2-1913722	draft Reply LS to CTI on providing CAG ID to AS during resume procedure	Huawei, HiSilicon	**not treated**	2019-10-04 01:06:29	2019-10-04 01:12:58
R2-1913723	Open issue of uplink MDBV enforcement	Huawei, HiSilicon	**not treated**	2019-10-04 01:09:14	2019-10-04 01:14:34
R2-1913724	Postponed discussions on potential improvements for delay critical QoS flows	Huawei, HiSilicon	**noted**	2019-10-04 01:09:14	2019-10-04 01:14:34
R2-1913725	Draft Reply LS on potential improvements for delay critical QoS flows	Huawei, HiSilicon	revised	2019-10-04 01:09:14	2019-10-04 01:14:34
R2-1913726	Draft CR for 36.323 on supporting DAPS handover	Huawei, HiSilicon, Mediatek Inc.	**not treated**	2019-10-04 01:15:16	2019-10-04 05:24:36

R2-1913727	Draft CR for 38.323 on supporting DAPS handover	Huawei, HiSilicon, Mediatek Inc.	not treated	2019-10-04 01:15:16	2019-10-04 05:24:36
R2-1913728	Draft LS on UL data forwarding and COUNT initialization	Huawei, HiSilicon, Mediatek Inc.	not treated	2019-10-04 01:15:16	2019-10-04 05:24:36
R2-1913729	Corrections on the reconfiguration with sync	Huawei, HiSilicon	withdrawn	2019-10-04 01:21:24	2019-10-04 03:35:33
R2-1913730	Corrections on the PDCP duplication (de)activation	Huawei, HiSilicon	not treated	2019-10-04 01:21:27	2019-10-04 03:35:33
R2-1913731	Corrections on the condition of PDCP for split SRB	Huawei, HiSilicon	not treated	2019-10-04 01:21:29	2019-10-04 03:35:33
R2-1913732	Discussion on SFTD measurement based on RAN1 LS	Huawei, HiSilicon	noted	2019-10-04 01:24:22	2019-10-04 02:00:33
R2-1913733	[draft] Reply LS to RAN1 on SFTD measurement	Huawei, HiSilicon	revised	2019-10-04 01:24:22	2019-10-04 02:00:33
R2-1913734	Discussion on adding CSI-RS inter-node message	Huawei, HiSilicon, China Telecom	not treated	2019-10-04 01:24:22	2019-10-04 02:00:33
R2-1913735	DRX configuration coordination in (NG)EN-DC	Huawei, HiSilicon	not treated	2019-10-04 01:24:22	2019-10-04 02:00:33
R2-1913736	CR to 36.331 on CGI information	Huawei, HiSilicon, Ericsson	not pursued	2019-10-04 01:24:22	2019-10-04 02:00:33
R2-1913737	CR to 38.331 on CGI information	Huawei, HiSilicon, Ericsson	agreed	2019-10-04 01:24:23	2019-10-04 02:00:33
R2-1913738	L2 impacts on supporting IIoT traffic	NTT DOCOMO, INC.	not treated	2019-10-04 01:25:34	2019-10-04 05:33:57
R2-1913739	[DRAFT] Reply LS to SA3 on FBS detection	Huawei, HiSilicon	revised	2019-10-04 01:28:14	2019-10-04 05:53:11
R2-1913740	Discussion on potential RAN2 impact to support false base station detection	Huawei, HiSilicon	noted	2019-10-04 01:28:14	2019-10-04 05:53:11
R2-1913741	HO and redirection from NR to LTE due to EPS fallback	Huawei, HiSilicon, China Unicom	not treated	2019-10-04 01:28:14	2019-10-04 05:53:11
R2-1913742	NR group specific cell configuration	Huawei, HiSilicon	not treated	2019-10-04 01:28:14	2019-10-04 05:53:11
R2-1913743	RAN2 impact to support cross-carrier scheduling with different numerologies	Huawei, HiSilicon	not treated	2019-10-04 01:28:14	2019-10-04 05:53:11
R2-1913744	Clarification on RAN2 impact to support DL HARQ timing for dual UL EN-DC	Huawei, HiSilicon	not treated	2019-10-04 01:28:14	2019-10-04 05:53:11
R2-1913745	Other recovery mechanisms for MCG fast recovery	Huawei, HiSilicon	not treated	2019-10-04 01:28:14	2019-10-04 05:53:11
R2-1913746	Recovery for deprioritized data transmission	NTT DOCOMO, INC.	noted	2019-10-04 01:31:34	2019-10-04 05:33:57
R2-1913747	Remaining issues on CLI	LG Electronics Inc	noted	2019-10-04 01:34:20	2019-10-04 05:54:33
R2-1913748	draft CR on CLI for TS38 331_v3_Alt1	LG Electronics Inc	not treated	2019-10-04 01:34:20	2019-10-04 05:54:33
R2-1913749	draft CR on CLI for TS38 331_v3_Alt2	LG Electronics Inc	revised	2019-10-04 01:34:21	2019-10-04 05:54:33
R2-1913750	Cell (re)selection after consecutive UL LBT failures	LG Electronics Inc	not treated	2019-10-04 01:34:22	2019-10-04 05:54:33
R2-1913751	Remaining issues on camping on non-best cell	LG Electronics Inc	not treated	2019-10-04 01:34:22	2019-10-04 05:54:33
R2-1913752	RLMRLF in NR-U	LG Electronics Inc	not treated	2019-10-04 01:34:22	2019-10-04 05:54:33
R2-1913753	RSSI and channel occupancy measurements for serving frequency	LG Electronics Inc	not treated	2019-10-04 01:34:22	2019-10-04 05:54:33
R2-1913754	SI change indicaiton in RRC_CONNECTED	LG Electronics Inc	not treated	2019-10-04 01:34:22	2019-10-04 05:54:33
R2-1913755	Discussion on per beam number of active UEs measurement	NTT DOCOMO INC.	not treated	2019-10-04 01:39:58	2019-10-04 06:48:31
R2-1913756	MAC PDU format of Success RAR	ETRI	not treated	2019-10-04 01:46:04	2019-10-04 03:22:48
R2-1913757	RRC release after EDT for User Plane CIoT EPS optimization	Ericsson	not treated	2019-10-04 01:57:28	2019-10-04 02:21:27
R2-1913758	RRC release after EDT for User Plane CIoT EPS optimization	Ericsson	reserved	2019-10-04 02:04:04	

R2-1913759	Redundant retransmission in PDCP duplication	LG Electronics Inc., LG Uplus	not treated	2019-10-04 02:09:48	2019-10-04 02:14:00
R2-1913760	Handling of RLC stuck problem with PDCP duplication	LG Electronics Inc.	withdrawn	2019-10-04 02:09:48	2019-10-04 02:14:00
R2-1913761	MAC CE format for PDCP duplication activation/deactivation	LG Electronics Inc.	not treated	2019-10-04 02:09:48	2019-10-04 02:14:00
R2-1913762	ON Duration adaptation	LG Electronics Inc.	withdrawn	2019-10-04 02:09:48	2019-10-04 02:14:00
R2-1913763	Reduced PDCCH monitoring in CA	LG Electronics Inc.	not treated	2019-10-04 02:09:48	2019-10-04 02:14:00
R2-1913764	On the consideration of routing for reporting pre-emptive BSR	ASUSTeK	not treated	2019-10-04 02:10:19	2019-10-04 02:18:23
R2-1913765	Discussion on traditional uplink and IAB uplink traffic for BSR triggering	ASUSTeK	not treated	2019-10-04 02:10:19	2019-10-04 02:18:23
R2-1913766	SR configuration for pre-emptive BSR	ASUSTeK	not treated	2019-10-04 02:10:19	2019-10-04 02:18:23
R2-1913767	Discussion on SCCH configuration	ASUSTeK	not treated	2019-10-04 02:10:19	2019-10-04 02:18:23
R2-1913768	Discussion on handling multiple SL communication	ASUSTeK	not treated	2019-10-04 02:10:19	2019-10-04 02:18:23
R2-1913769	Discussion on resource allocation for sidelink HARQ ACK/NACK report	ASUSTeK	not treated	2019-10-04 02:10:19	2019-10-04 02:18:23
R2-1913770	Discussion on sidelink RLM indication	ASUSTeK	not treated	2019-10-04 02:10:19	2019-10-04 02:18:23
R2-1913771	Discussion on requesting and releasing SLRB configuration	ASUSTeK	not treated	2019-10-04 02:10:19	2019-10-04 02:18:23
R2-1913772	Discussion on association between sidelink data and resource allocation modes	ASUSTeK	not treated	2019-10-04 02:10:19	2019-10-04 02:18:23
R2-1913773	DRX timer operation in multi-TB scheduling	ASUSTeK	not treated	2019-10-04 02:10:19	2019-10-04 02:18:23
R2-1913774	Buffer status indicated by BSR in multi-TB scheduling	ASUSTeK	not treated	2019-10-04 02:10:19	2019-10-04 02:18:23
R2-1913775	Remaining issues of D-PUR TA timer	ASUSTeK	not treated	2019-10-04 02:10:19	2019-10-04 02:18:23
R2-1913776	Group WUS	Ericsson	not treated	2019-10-04 02:10:56	2019-10-04 02:21:27
R2-1913777	Discussion on UE location information in SCG failure report	NTT DOCOMO INC. , Ericsson	not treated	2019-10-04 02:13:05	2019-10-04 06:48:38
R2-1913778	Discussion on groupcast HARQ in NR SL	LG Electronics Inc.	not treated	2019-10-04 02:20:11	2019-10-04 04:56:49
R2-1913779	Discussion on HARQ enable and disable	LG Electronics Inc.	not treated	2019-10-04 02:20:11	2019-10-04 04:56:49
R2-1913780	Discussion on measurement and report in NR SL	LG Electronics Inc.	not treated	2019-10-04 02:20:11	2019-10-04 04:56:49
R2-1913781	Discussion on remaining issues of mode 1 operation	LG Electronics Inc.	not treated	2019-10-04 02:20:11	2019-10-04 04:56:49
R2-1913782	Discussion on SFTD measurement between NR PSCell and NR neighbour cells in EN-DC	Nokia, Nokia Shanghai Bell	not treated	2019-10-04 02:23:56	2019-10-04 05:08:31
R2-1913783	Correction on parameter description of beamManagementSSB-CSI-RS in 38.306	Huawei, HiSilicon	agreed	2019-10-04 02:27:31	2019-10-04 02:36:36
R2-1913784	Random access without UE location information	Huawei, HiSilicon	not treated	2019-10-04 02:49:15	2019-10-04 07:01:21
R2-1913785	Random access with UE location information	Huawei, HiSilicon	not treated	2019-10-04 02:49:19	2019-10-04 07:01:21
R2-1913786	RACH resource configuration and utilization in NTN	Huawei, HiSilicon	not treated	2019-10-04 02:49:19	2019-10-04 07:01:21
R2-1913787	Further discussion on the impact of PDCCH-WUS	Huawei, HiSilicon	not treated	2019-10-04 02:49:19	2019-10-04 07:01:21
R2-1913788	Discussion on efficient RRC state transition	Huawei, HiSilicon	not treated	2019-10-04 02:49:19	2019-10-04 07:01:21
R2-1913789	Further discussion on the MIMO layer adaptation	Huawei, HiSilicon	not treated	2019-10-04 02:49:19	2019-10-04 07:01:21

R2-1913790	UE assistance information in MR-DC	Huawei, Huawei Device, CMCC, MediaTek Inc., China Telecom, vivo	noted	2019-10-04 02:49:19	2019-10-04 07:01:21
R2-1913791	Service continuity between terrestrial network (TN) and non-terrestrial network (NTN)	HUGHES Network Systems Ltd	not treated	2019-10-04 03:04:08	2019-10-04 03:31:16
R2-1913792	Problems in Evaluation of CHO Execution Condition	ETRI	not treated	2019-10-04 03:30:37	2019-10-04 06:35:28
R2-1913793	Combination of CHO and RUDI Handover	ETRI	not treated	2019-10-04 03:30:47	2019-10-04 06:35:28
R2-1913794	Faster Handover Failure Recovery	ETRI	not treated	2019-10-04 03:30:47	2019-10-04 06:35:28
R2-1913795	PDCP/RLC Re-establishment in DAPS Handover	ETRI	not treated	2019-10-04 03:30:47	2019-10-04 06:35:28
R2-1913796	Data Forwarding Options and Interruption Time	ETRI	not treated	2019-10-04 03:30:47	2019-10-04 06:35:28
R2-1913797	Bye Message for RUDI Handover	ETRI	not treated	2019-10-04 03:30:47	2019-10-04 06:35:28
R2-1913798	Source Cell Release in DAPS Handover	ETRI	not treated	2019-10-04 03:30:47	2019-10-04 06:35:28
R2-1913799	Control plane management during/after DAPS HO	LG Electronics France	not treated	2019-10-04 03:33:34	2019-10-04 04:02:02
R2-1913800	On the need of earlier packet forwarding	LG Electronics France	not treated	2019-10-04 03:33:34	2019-10-04 04:02:02
R2-1913801	Access copntrol in IAB networks	LG Electronics France	not treated	2019-10-04 03:33:34	2019-10-04 04:02:02
R2-1913802	F1AP over LTE	LG Electronics France	noted	2019-10-04 03:33:34	2019-10-04 04:02:02
R2-1913803	Resolving open issues on BH RLF	LG Electronics France	not treated	2019-10-04 03:33:34	2019-10-04 04:02:02
R2-1913804	Resue of CSG features for NPN cells	LG Electronics France	not treated	2019-10-04 03:33:34	2019-10-04 04:02:02
R2-1913805	Handling of RLC stuck problem with PDCP duplication	LG Electronics Inc., LG Uplus	not treated	2019-10-04 03:34:00	2019-10-04 03:35:35
R2-1913806	ON Duration adaptation	LG Electronics Inc., LG Uplus	not treated	2019-10-04 03:34:00	2019-10-04 03:35:35
R2-1913807	Use of range parameter	MediaTek Inc.	not treated	2019-10-04 03:37:29	2019-10-04 03:43:21
R2-1913808	Remaining issues in SDAP layer	MediaTek Inc.	not treated	2019-10-04 03:37:29	2019-10-04 03:43:21
R2-1913809	Inter-RAT BSR	MediaTek Inc.	not treated	2019-10-04 03:37:29	2019-10-04 03:43:21
R2-1913810	Discussion on local decision make for routing	Samsung	not treated	2019-10-04 03:38:40	2019-10-04 04:07:06
R2-1913811	UL mapping configuration	Samsung	not treated	2019-10-04 03:38:40	2019-10-04 04:07:06
R2-1913812	Further discussions on bearer mapping configuration for CP and UP	Samsung	not treated	2019-10-04 03:38:40	2019-10-04 04:07:06
R2-1913813	Upstream BH link RLF notification	Samsung	not treated	2019-10-04 03:38:40	2019-10-04 04:07:06
R2-1913814	Clarification on the using of RRCSetup	Huawei, HiSilicon	not treated	2019-10-04 03:43:31	2019-10-04 03:50:28
R2-1913815	LCID space extension and MAC format	LG Electronics Inc.	not treated	2019-10-04 03:44:01	2019-10-04 04:57:08
R2-1913816	Consideration on LCG space extension	LG Electronics Inc.	not treated	2019-10-04 03:44:01	2019-10-04 04:57:08
R2-1913817	LCG based UL grant	LG Electronics Inc.	not treated	2019-10-04 03:44:01	2019-10-04 04:57:08
R2-1913818	BSR MAC CE format for pre-BSR	LG Electronics Inc., LG Uplus	not treated	2019-10-04 03:44:01	2019-10-04 04:57:08
R2-1913819	Further details for DL flow control	LG Electronics Inc., LG Uplus	postponed	2019-10-04 03:44:02	2019-10-04 04:57:08
R2-1913820	Consideration on local route selection in IAB node	LG Electronics Inc.	not treated	2019-10-04 03:44:02	2019-10-04 04:57:08
R2-1913821	BAP layer configuration for data forwarding	LG Electronics Inc.	not treated	2019-10-04 03:44:02	2019-10-04 04:57:08
R2-1913822	Way forward for CP bearer mapping	LG Electronics Inc.	not treated	2019-10-04 03:44:02	2019-10-04 04:57:08
R2-1913823	Retransmission of an RLC SDU with a poll after discard procedure	LG Electronics Inc.	not treated	2019-10-04 03:44:02	2019-10-04 04:57:08
R2-1913824	Running CR to 36.321 on 5G V2X with NR sidelink	LG Electronics Inc.	not treated	2019-10-04 03:54:34	2019-10-11 10:28:00

R2-1913825	Running CR to 38.321 on 5G V2X with NR sidelink	LG Electronics Inc.	not treated	2019-10-04 03:54:34	2019-10-11 10:28:00
R2-1913826	Layer-1 and Layer 2 Identifiers for NR Sidelink	LG Electronics Inc.	noted	2019-10-04 03:54:34	2019-10-04 04:15:17
R2-1913827	Proposed LS on Layer-1 and Layer 2 Identifiers for NR Sidelink	LG Electronics Inc.	revised	2019-10-04 03:54:34	2019-10-04 04:15:17
R2-1913828	Delivery of PC5-S Signaling and PC5-RRC messages	LG Electronics Inc.	noted	2019-10-04 03:54:34	2019-10-04 04:15:17
R2-1913829	Proposed LS on PC5-S Signaling for NR Sidelink	LG Electronics Inc.	not treated	2019-10-04 03:54:34	2019-10-04 04:15:17
R2-1913830	PC5-RRC connection and procedures with PC5-S and Uu RRC	LG Electronics Inc.	not treated	2019-10-04 03:54:34	2019-10-04 04:15:17
R2-1913831	Report of email discussion [107#57][NB-IoT eMTC R16] WUS configuration	ZTE Corporation, Sanechips	not treated	2019-10-04 03:57:05	2019-10-06 09:00:33
R2-1913832	RRC release for User Plane EDT	III	not treated	2019-10-04 04:03:31	2019-10-04 04:08:23
R2-1913833	Procedures and MAC CE design for BFR for SCells	Qualcomm Incorporated	not treated	2019-10-04 04:06:54	2019-10-04 05:50:23
R2-1913834	Clarification on measurement gap for LTE inter-RAT measurement in NR SA	MediaTek Inc., Nokia (Rapporteur)	revised	2019-10-04 04:12:40	2019-10-04 06:34:05
R2-1913835	Discussion on early measurement configuration upon state transition	MediaTek Inc.	not treated	2019-10-04 04:17:41	2019-10-04 06:34:05
R2-1913836	Discussion on performing ROHC	LG Electronics Inc.	not treated	2019-10-04 04:21:36	2019-10-04 04:34:17
R2-1913837	Need for Primary path	LG Electronics Inc., LG Uplus	not treated	2019-10-04 04:21:36	2019-10-04 04:34:17
R2-1913838	Discussion on LCH-to-Cell restriction for PDCP duplication	LG Electronics Inc.	noted	2019-10-04 04:21:36	2019-10-04 04:34:17
R2-1913839	PDCP SN gap issue in fast MCG link recovery	LG Electronics Inc.	not treated	2019-10-04 04:21:36	2019-10-04 04:34:17
R2-1913840	Handling of RLF for eMOB	LG Electronics Inc.	not treated	2019-10-04 04:21:36	2019-10-04 04:34:17
R2-1913841	Discussion on PDCP impacts for eMOB/feMOB	LG Electronics Inc.	not treated	2019-10-04 04:21:36	2019-10-04 04:34:17
R2-1913842	When to apply the target network configurations	LG Electronics Inc.	not treated	2019-10-04 04:21:36	2019-10-04 04:34:17
R2-1913843	Dicussion on RUDI HO for UM DRB	LG Electronics Inc.	not treated	2019-10-04 04:21:36	2019-10-04 04:34:17
R2-1913844	Scheduling enhancement in NTN	LG Electronics Inc.	not treated	2019-10-04 04:21:37	2019-10-04 04:34:17
R2-1913845	Integrity verification and PDCP duplication	LG Electronics Inc.	not treated	2019-10-04 04:21:37	2019-10-04 04:34:17
R2-1913846	Extension of the LCID	LG Electronics Inc.	not treated	2019-10-04 04:21:37	2019-10-04 04:34:17
R2-1913847	Report of [107#81][NR TEI16] Need-for-Gaps signalling	MediaTek Inc.	not treated	2019-10-04 04:26:33	2019-10-04 06:34:05
R2-1913848	Discussion on de-prioritized MAC PDU on CG resource	LG Electronics Polska, LG Uplus	noted	2019-10-04 04:26:46	2019-10-04 05:49:39
R2-1913849	Broadcast of TBS assistance data	NextNav, AT&T, FirstNet, Polaris Wireless	revised	2019-10-04 04:27:26	2019-10-04 05:06:18
R2-1913850	Broadcast of TBS assistance data	NextNav, AT&T, FirstNet, Polaris Wireless	revised	2019-10-04 04:30:56	2019-10-04 05:06:18
R2-1913851	Correction to mobility from NR	Google Inc.	not pursued	2019-10-04 04:33:48	2019-10-04 06:06:36
R2-1913852	Discussion on multiple active CGs for NR-U	LG Electronics Polska	noted	2019-10-04 04:34:15	2019-10-04 05:49:39
R2-1913853	CR on NeedForGap capability for each supported NR band before EN-DC configuration	Nokia, Nokia Shanghai Bell	not treated	2019-10-04 04:34:29	2019-10-04 05:08:31
R2-1913854	Discussion on contention resolution timer in NR-U	LG Electronics Polska	not treated	2019-10-04 04:38:37	2019-10-04 05:49:39
R2-1913855	Discussion on L2 measurement in EN-DC	NTT DOCOMO INC.	not treated	2019-10-04 04:41:12	2019-10-04 06:48:50

R2-1913856	Considerations on simultaneous configuration of mode 1 and 2	ITL	not treated	2019-10-04 04:42:52	2019-10-04 05:07:50
R2-1913857	Correction to mobility from E-UTRA	Google Inc.	not treated	2019-10-04 04:48:11	2019-10-04 06:06:36
R2-1913858	Discussion on MAC PDU overwritten issue	LG Electronics Polska	not treated	2019-10-04 04:49:21	2019-10-04 05:49:39
R2-1913859	Discussion and Decision	LG Electronics	not treated	2019-10-04 04:53:45	2019-10-04 05:09:07
R2-1913860	Consideration of CHO Configuration Update	LG Electronics Inc.	not treated	2019-10-04 04:55:09	2019-10-04 06:07:44
R2-1913861	Draft LS on CHO Configuration Update	LG Electronics Inc.	not treated	2019-10-04 04:55:09	2019-10-04 06:07:44
R2-1913862	Consideration on Invalid Cell Handling in CHO	LG Electronics Inc.	not treated	2019-10-04 04:55:09	2019-10-04 06:07:44
R2-1913863	ReportConifg ID for CHO Condition	LG Electronics Inc.	not treated	2019-10-04 04:55:09	2019-10-04 06:07:44
R2-1913864	Handling Excess of UE Capability in DAPS HO	LG Electronics Inc.	not treated	2019-10-04 04:55:09	2019-10-04 06:07:44
R2-1913865	RLM Handling of Enhanced MBB HO	LG Electronics Inc.	not treated	2019-10-04 04:55:09	2019-10-04 06:07:44
R2-1913866	Signalling Delay in NTN	LG Electronics Inc.	not treated	2019-10-04 04:55:09	2019-10-04 06:07:44
R2-1913867	Consideration on Default SLRB	ITL	not treated	2019-10-04 04:55:29	2019-10-04 05:13:43
R2-1913868	Sidelink HARQ retransmission in mode 1	ITL	not treated	2019-10-04 04:57:17	2019-10-04 05:13:43
R2-1913869	Discussion on DRX operation associated with disabling HARQ feedback	LG Electronics Polska	not treated	2019-10-04 04:57:28	2019-10-04 05:49:39
R2-1913870	RNTI design for msgB	LG Electronics Inc.	not treated	2019-10-04 04:57:40	2019-10-04 05:09:07
R2-1913871	Discussion on the flow control	ITL	not treated	2019-10-04 04:58:30	2019-10-04 05:13:43
R2-1913872	Remaining issues on 2-step random access resource	LG Electronics	not treated	2019-10-04 05:00:08	2019-10-04 05:09:07
R2-1913873	Remaining issue on NR SL QoS and SLRB configurations	ITL	not treated	2019-10-04 05:01:07	2019-10-04 05:13:43
R2-1913874	MAC PDU formats for msgB	LG Electronics Polska	not treated	2019-10-04 05:01:35	2019-10-04 05:49:39
R2-1913875	Need for RAPID MAC CE in payload of msgA	LG Electronics Inc.	not treated	2019-10-04 05:02:19	2019-10-04 05:09:07
R2-1913876	Common delay for initial access	ETRI	not treated	2019-10-04 05:03:26	2019-10-04 06:51:55
R2-1913877	Logical channel based RA type selection	LG Electronics Inc.	not treated	2019-10-04 05:04:16	2019-10-04 05:09:07
R2-1913878	MAC impacts of multiple CCAs in wide band operation	LG Electronics Polska	not treated	2019-10-04 05:04:56	2019-10-04 05:49:39
R2-1913879	Consideration on 2-step CFRA	LG Electronics	not treated	2019-10-04 05:06:24	2019-10-04 05:09:07
R2-1913880	Draft LS on SCell BFR Operation	Apple	not treated	2019-10-04 05:06:38	2019-10-04 05:08:56
R2-1913881	Handling of new flow when the number of stored contexts are already equal to the MAX_CID	SHARP Corporation	not treated	2019-10-04 05:06:39	2019-10-04 06:52:04
R2-1913882	On RLC UM for RUDI HO	SHARP Corporation	not treated	2019-10-04 05:06:39	2019-10-04 06:52:04
R2-1913883	On voice fallback enhancement	SHARP Corporation	noted	2019-10-04 05:06:39	2019-10-04 06:52:56
R2-1913884	Remaining issue on PC5 RLM/RLF	LG Electronics Inc.	not treated	2019-10-04 05:12:39	2019-10-04 06:04:56
R2-1913885	Discussion on PC5 RRC Connection	LG Electronics Inc.	not treated	2019-10-04 05:12:39	2019-10-04 06:04:56
R2-1913886	Discussion on assistance information for resource allocation in NR SL	LG Electronics Inc.	not treated	2019-10-04 05:12:39	2019-10-04 06:04:56
R2-1913887	Running CR to 38.300 on 5G V2X with NR sidelink	LG Electronics Inc.	revised	2019-10-04 05:12:39	2019-10-04 06:04:56
R2-1913888	L4S support in 5G	Ericsson, Vodafone, Nokia, Nokia Shanghai Bell, Sprint	noted	2019-10-04 05:12:42	2019-10-04 05:33:59
R2-1913889	New BSR trigger for EN-DC	Ericsson	not treated	2019-10-04 05:16:16	2019-10-04 05:33:59
R2-1913890	Clarification to CSI reporting in C-DRX	Qualcomm Inc	withdrawn	2019-10-04 05:18:17	

R2-1913891	Correction to PHR in dual connectivity	Qualcomm Inc, Nokia, Nokia Shanghai Bell, Ericsson	withdrawn	2019-10-04 05:18:19	
R2-1913892	Configuration aspects of wakeup signaling	Qualcomm Inc	withdrawn	2019-10-04 05:18:21	
R2-1913893	Cross cell group wakeup message in MR-DC	Qualcomm Inc, Futurewei	withdrawn	2019-10-04 05:18:21	
R2-1913894	UE indication on expected data	Qualcomm Inc, Apple	withdrawn	2019-10-04 05:18:21	
R2-1913895	Backoff indication in multi-beam operation	Qualcomm Inc	withdrawn	2019-10-04 05:18:21	
R2-1913896	Enhancements to PHR in multi-beam operation	Qualcomm Inc	withdrawn	2019-10-04 05:18:21	
R2-1913897	Clarification to CSI reporting in C-DRX	Qualcomm Inc	revised	2019-10-04 05:23:33	2019-10-04 06:40:03
R2-1913898	Correction to PHR in dual connectivity	Qualcomm Inc, Nokia, Nokia Shanghai Bell, Ericsson	agreed	2019-10-04 05:23:35	2019-10-04 05:40:46
R2-1913899	Configuration aspects of wakeup signaling	Qualcomm Inc	revised	2019-10-04 05:23:36	2019-10-04 05:40:46
R2-1913900	Cross cell group wakeup message in MR-DC	Qualcomm Inc, Futurewei	not treated	2019-10-04 05:23:36	2019-10-04 05:40:46
R2-1913901	UE indication on expected data	Qualcomm Inc, Apple	not treated	2019-10-04 05:23:36	2019-10-04 05:40:46
R2-1913902	Backoff indication in multi-beam operation	Qualcomm Inc	not treated	2019-10-04 05:23:36	2019-10-04 05:40:46
R2-1913903	Enhancements to PHR in multi-beam operation	Qualcomm Inc	not treated	2019-10-04 05:23:36	2019-10-04 05:40:46
R2-1913904	Discussion on Fast failure recovery alternatives to WA	Samsung Electronics Polska	not treated	2019-10-04 05:26:33	2019-10-04 06:36:53
R2-1913905	Discussion on Remaining issues related to T312	Samsung Electronics Polska	noted	2019-10-04 05:27:27	2019-10-04 06:36:53
R2-1913906	DISC_Resume_procedure_CAG_ID	Samsung Electronics Polska	revised	2019-10-04 05:28:24	2019-10-04 06:36:53
R2-1913907	L2 Throughput measurement	Samsung Electronics Polska	not treated	2019-10-04 05:29:09	2019-10-04 06:36:53
R2-1913908	Discussion on Performing CHO instaed of RRE in CHO	Samsung, Nokia, Nokia Shanghai Bell, Qualcomm Incorporated	not treated	2019-10-04 05:30:07	2019-10-04 06:36:53
R2-1913909	CHO UE behaviour upon transitioning to RRC_INACTIVE/RRC_IDLE	Samsung Electronics Polska	not treated	2019-10-04 05:30:52	2019-10-04 06:05:37
R2-1913910	Specification Impacts to specify Single Stack solution for NR	Samsung Electronics Polska	not treated	2019-10-04 05:31:32	2019-10-04 06:05:37
R2-1913911	Single stack eMOB solution for 1Rx NR Ues	Samsung Electronics Polska	noted	2019-10-04 05:32:13	2019-10-04 06:05:37
R2-1913912	Correction on common search space	Google Inc.	not pursued	2019-10-04 05:33:05	2019-10-04 07:00:10
R2-1913913	Further considerations on handling UL LBT failures	ETRI	not treated	2019-10-04 05:37:09	2019-10-04 05:42:26
R2-1913914	Clarification on criteria selection for 2-step RACH and 4-step RACH	Qualcomm Incorporated	noted	2019-10-04 05:39:52	2019-10-04 05:50:23
R2-1913915	Further consideration on SCG resumption	LG Electronics Inc.	not treated	2019-10-04 05:51:57	2019-10-04 06:39:05
R2-1913916	Study on application of CHO mechanism to Conditional PSCell addition change	NTT DOCOMO INC.	not treated	2019-10-04 05:56:19	2019-10-04 06:28:43
R2-1913917	Considerations on satellite location sharing	ETRI	not treated	2019-10-04 05:57:15	2019-10-04 06:52:16
R2-1913918	Conditional resumption with validity check	LG Electronics Inc.	not treated	2019-10-04 06:02:07	2019-10-04 06:39:05
R2-1913919	Further consideration on capability reporting	LG Electronics Inc.	not treated	2019-10-04 06:04:45	2019-10-04 06:39:05

R2-1913920	Hop-by-Hop Flow control for IAB	Futurewei Technologies	not treated	2019-10-04 06:06:18	2019-10-04 06:09:12
R2-1913921	Discussion on UE behavior for stored SCG/SCell configuration	MediaTek Inc.	not treated	2019-10-04 06:10:37	2019-10-04 06:34:05
R2-1913922	Discussion on supporting SN terminated Split SRB for IAB CP in NSA deployments	Futurewei	not treated	2019-10-04 06:14:38	2019-10-18 11:48:05
R2-1913923	Discussion on fixed vs. steerable beams in NTN LEO	Nokia, Nokia Shanghai Bell	noted	2019-10-04 06:22:30	2019-10-04 07:13:00
R2-1913924	Pre-trigger based mobility for NTN LEO with fixed beams	Nokia, Nokia Shanghai Bell	not treated	2019-10-04 06:27:28	2019-10-04 06:55:06
R2-1913925	To agree on the remaining NTN-TN service continuity aspects	Nokia, Nokia Shanghai Bell	not treated	2019-10-04 06:30:22	2019-10-04 06:55:06
R2-1913926	UE positioning requirements in NTN	Nokia, Nokia Shanghai Bell	not treated	2019-10-04 06:33:33	2019-10-04 06:55:06
R2-1913927	Consideration on LEO mobility in NTN	CENC	not treated	2019-10-04 06:34:36	2019-10-04 07:19:23
R2-1913928	NR Paging Frame Calculation when SearchSpaceId is Zero	MediaTek Inc.	not treated	2019-10-04 06:34:50	2019-10-04 06:58:36
R2-1913929	Source RLM handling for RUDI HO with DAPS	SHARP Corporation	not treated	2019-10-04 06:35:36	2019-10-04 06:50:32
R2-1913930	Considerations on the use of satellite Id in NTN	Nokia, Nokia Shanghai Bell	noted	2019-10-04 06:36:25	2019-10-04 06:55:06
R2-1913931	Report of email discussion [107#58][R16 NB-IoT/eMTC] RRC messages for D-PUR transmission and response	Huawei	noted	2019-10-04 07:31:28	2019-10-18 11:48:05
R2-1913932	Clarification on PUR release upon missing 'm' consecutive occasions	Gemalto N.V., Qualcomm Incorporated	not treated	2019-10-04 07:36:40	2019-10-04 08:43:31
R2-1913933	Transmission in preconfigured resources	Gemalto N.V.	not treated	2019-10-04 07:39:15	2019-10-04 08:43:31
R2-1913934	Periodicity and burst arrival encoding in TSCAI	Nokia, Nokia Shanghai Bell	noted	2019-10-04 15:15:05	2019-10-07 08:42:43
R2-1913935	Security Algorithms for all Radio Bearer in SA	Qualcomm Incorporated	revised	2019-10-04 19:29:28	2019-10-13 13:14:27
R2-1913936	Clarification to CSI reporting in C-DRX	Qualcomm Inc.	revised	2019-10-04 19:33:46	2019-10-04 19:46:37
R2-1913937	CR of TS 36.305 for introducing NavIC in LTE	Reliance Jio, MediaTek Inc., Huawei, CEWiT, Saankhya Labs	endorsed	2019-10-05 09:15:44	2019-10-08 07:46:22
R2-1913938	CR of TS 36.355 for introducing NavIC in LTE	Reliance Jio, MediaTek Inc., Huawei, CEWiT, Saankhya Labs	revised	2019-10-05 09:18:06	2019-10-08 07:46:22
R2-1913939	CR of TS 36.331 for introducing NavIC in LTE	Reliance Jio, MediaTek Inc., Huawei, CEWiT, Saankhya Labs	endorsed	2019-10-05 09:20:23	2019-10-08 07:46:22
R2-1913940	Further considerations on RRM relaxation about reporting and coexistence with early measurements	LG Electronics	not treated	2019-10-05 13:52:22	2019-10-07 02:24:33
R2-1913941	Left issues on MAC for NR-V2X	OPPO	not treated	2019-10-06 08:47:27	2019-10-07 11:30:09
R2-1913942	Introduction of dormancy behavior in NR	OPPO	not treated	2019-10-06 13:04:55	2019-10-06 13:22:13
R2-1913943	Simultaneous use of mode 1 and mode 2	KT Corp.	not treated	2019-10-07 08:00:26	2019-10-07 08:15:36
R2-1913944	CR to 38.331 on configuration of rach-ConfigCommon in initial UL BWP for RRC triggered BWP switch	Qualcomm Incorporated	revised	2019-10-07 08:03:35	2019-10-08 00:45:04

R2-1913945	Running CR on on-demand SI procedure in RRC_CONNECTED	Ericsson	not treated	2019-10-07 15:02:22	2019-10-10 10:07:24
R2-1913946	Draft Reply LS on Sending CAG ID in NAS layer	Qualcomm Incorporated	not treated	2019-10-07 17:08:31	2019-10-07 18:04:59
R2-1913947	Configuration aspects of wakeup signaling	Qualcomm Inc	not treated	2019-10-07 18:30:57	2019-10-07 21:22:43
R2-1913948	Report of 107#73 NR V2X SDAP(vivo)	vivo	not treated	2019-10-08 07:43:44	2019-10-11 10:28:00
R2-1913949	Some open issues for TS 37.320 to support NR MDT	CMCC	not treated	2019-10-08 08:46:55	2019-10-08 09:51:30
R2-1913950	Running TS 37.320 CR	CMCC, Nokia	endorsed	2019-10-08 08:49:29	2019-10-08 10:09:11
R2-1913951	Impact of non-Numeric K1 Value to NR-U DRX	Qualcomm Incorporated, Ericsson	not treated	2019-10-08 22:05:58	2019-10-18 11:48:05
R2-1913952	Email discussion summary of [107#55][IIOT] CG/SPS for TSC	OPPO	noted	2019-10-09 05:57:33	2019-10-10 09:15:48
R2-1913953	Report of email discussion [107#64][NTN] Cell selection&reselection	LG Electronics	revised	2019-10-09 06:17:56	2019-10-10 07:44:08
R2-1913954	Draft LS on F1 over LTE	KDDI Corporation	revised	2019-10-09 07:20:05	2019-10-18 11:48:05
R2-1913955	[107#80][NR IIOT] Summary on Deprioritized PDUs (CATT)	CATT	noted	2019-10-09 07:35:58	2019-10-09 10:33:32
R2-1913956	Correction on PRACH re-transmission for SRS carrier switching	Huawei, HiSilicon, MediaTek	not treated	2019-10-09 07:42:42	2019-10-12 10:49:38
R2-1913957	CR to 38.331 on configuration of rach-ConfigCommon in initial UL BWP for RRC triggered BWP switch	Qualcomm Incorporated	postponed	2019-10-09 08:42:54	2019-10-09 10:00:43
R2-1913958	Correction to AS security key update	Ericsson	revised	2019-10-09 14:10:04	2019-10-10 10:07:24
R2-1913959	Transmission of CAG ID during Resume Procedure	Samsung	not treated	2019-10-10 07:54:54	2019-10-11 12:23:23
R2-1913960	CR to 36.331 on support of F1AP over LTE for IAB	AT&T, KDDI	not treated	2019-10-10 08:14:34	2019-10-10 21:22:37
R2-1913961	CR to 38.331 on support of F1AP over LTE for IAB	AT&T, KDDI	not treated	2019-10-10 08:17:26	2019-10-10 21:22:37
R2-1913962	Propagation delay compensation for accurate reference timing	Huawei, HiSilicon, China Southern Power Grid Co., Ltd	not treated	2019-10-10 08:29:26	2019-10-12 10:49:38
R2-1913963	Remaining issues of reference time delivery	Huawei, HiSilicon, China Southern Power Grid Co., Ltd	noted	2019-10-10 08:31:13	2019-10-12 10:49:38
R2-1913964	Importing consequences if not approved from RAN1 and RAN4 excel files	Nokia, Nokia Shanghai Bell	not treated	2019-10-10 08:41:46	2019-10-10 09:50:26
R2-1913965	On FR2 CA fall-backs	Nokia, Nokia Shanghai Bell	not treated	2019-10-10 08:43:06	2019-10-10 09:50:26
R2-1913966	Discussion on priority misalignment issue	OPPO, Apple	noted	2019-10-10 11:30:07	2019-10-11 00:48:50
R2-1913967	Extended PO and early termination for page monitoring	Ericsson	not treated	2019-10-10 15:57:09	2019-10-11 13:21:28
R2-1913968	Cell (re)selection for NR-U	Ericsson	noted	2019-10-10 15:58:45	2019-10-11 13:21:28
R2-1913969	[107#61][NR/NTN] Rapporteur Running TP	THALES	agreed	2019-10-11 09:36:46	2019-10-11 10:28:02
R2-1913970	Reconfiguration with sync for NE-DC	Google Inc., Ericsson	not pursued	2019-10-11 09:54:06	2019-10-11 15:04:40
R2-1913971	Handover in (NG)EN-DC	Google Inc., Ericsson	not treated	2019-10-11 09:58:05	2019-10-11 15:04:40
R2-1913972	Update LS on Release-with-Redirect in 2-step resume procedure (C1-196902; contact: OPPO)	CT1	noted	2019-10-13 15:27:34	2019-10-13 15:39:45

R2-1913973	LS Reply on maximum value of MDBV (C3-194330; contact: Nokia)	CT3	not treated	2019-10-13 15:38:36	2019-10-13 15:39:45
R2-1913974	Handling of fallbacks for combined contiguous and non-contiguous CA in FR2	Apple	not treated	2019-10-22 20:15:03	2019-10-22 20:18:06
R2-1913975	Further consideration on HARQ configuration in NTN	CMCC,Huawei,HiSilicon,Sony,KT Corp.	revised	2019-10-22 20:15:03	2019-10-22 20:18:06
R2-1913976	Clarification of NR-DC synchronization	ZTE Corporation	agreed	2019-10-22 20:15:03	2019-10-22 20:18:06
R2-1913977	[DRAFT] [Reply LS to RAN3]	Huawei	withdrawn	2019-10-22 20:15:06	
R2-1913978	Clarification on measurement gap for LTE inter-RAT measurement in NR SA	MediaTek Inc., Nokia (Rapporteur)	agreed	2019-10-22 20:15:06	2019-10-22 20:18:06
R2-1913979	SMTC setting in MR-DC PSCell change	Nokia, Nokia Shanghai Bell	agreed	2019-10-22 20:15:07	2019-10-22 20:18:06
R2-1913980	Correction on sending Failure Information via SRB3	Ericsson, ZTE Corporation (Rapporteur)	agreed	2019-10-22 20:15:08	2019-10-22 20:18:06
R2-1913981	Clarification on RA and Msg3 with PUSCH Enhancements	Nokia, Nokia Shanghai Bell	agreed	2019-10-22 20:15:09	2019-10-22 20:18:06
R2-1913982	Clarification on RA and Msg3 with PUSCH Enhancements	Nokia, Nokia Shanghai Bell	agreed	2019-10-22 20:15:10	2019-10-22 20:18:06
R2-1913983	Missing QCI to CAPC mapping	Nokia, Nokia Shanghai Bell	agreed	2019-10-22 20:15:11	2019-10-22 20:18:06
R2-1913984	Correction to SIB5 acquisition for idle mode measurements	Ericsson	agreed	2019-10-22 20:15:13	2019-10-22 20:18:06
R2-1913985	Correction on inter-frequency neighbour cell measurements	Ericsson	agreed	2019-10-22 20:15:14	2019-10-22 20:18:06
R2-1913986	Correction to the handling of stored AS context upon CN type change	Huawei, HiSilicon	postponed	2019-10-22 20:15:15	2019-10-22 20:18:06
R2-1913987	Result of offline discussion 101 on RSSI and channel occupancy measurement in LAA	Qualcomm Incorporated	withdrawn	2019-10-22 20:15:16	
R2-1913988	Discussion on UDC reconfiguration for RRC connection reestablishment case	Huawei, HiSilicon	noted	2019-10-22 20:15:16	2019-10-22 20:18:06
R2-1913989	Correction on H1 and H2 events	Samsung Electronics Co., Ltd	agreed	2019-10-22 20:15:17	2019-10-22 20:18:06
R2-1913990	Clarification of e-mail discussion for QoE measurements	Ericsson	postponed	2019-10-22 20:15:18	
R2-1913991	[Draft] LS on uplink TDM pattern for LTE DAPS based enhanced make-before-break HO	Qualcomm Incorporated	revised	2019-10-22 20:15:18	2019-10-22 20:18:06
R2-1913992	[DRAFT] LS on PDCP agreements	Huawei, HiSilicon, Mediatek Inc.	revised	2019-10-22 20:15:18	2019-10-22 20:18:06
R2-1913993	[Draft] LS for DAPS Handover UE capabilities	Intel Corporation	revised	2019-10-22 20:15:18	2019-10-22 20:18:06
R2-1913994	Result of offline discussion 109 on RAN2 agreements for interruption reduction feature name	Huawei	noted	2019-10-22 20:15:18	2019-10-22 20:18:06
R2-1913995	Running CR for the introduction of NR mobility enhancement	Intel Corporation	available	2019-10-22 20:15:18	2019-11-01 16:06:21
R2-1913996	LS on uplink TDM pattern for LTE DAPS based enhanced make-before-break HO	RAN2	approved	2019-10-22 20:15:20	2019-10-22 20:18:06

R2-1913997	LS on UE feature list format for Release-16 UE capability	RAN2	approved	2019-10-22 20:15:20	2019-10-25 14:24:44
R2-1913998	NR_IAB running CR for 38300	Qualcomm Inc (Rapporteur)	available	2019-10-22 20:15:20	2019-11-01 16:52:29
R2-1913999	LS to RAN1&4 on UE capabilities on DAPS HO	Intel Corporation	available	2019-10-22 20:15:20	2019-10-30 00:18:11
R2-1914000	Running CR to 38.300 on 5G V2X with NR sidelink	LG Electronics Inc.	endorsed	2019-10-22 20:37:53	2019-10-31 06:49:02
R2-1914001	Running RRC CR for NR-based Access to Unlicensed Spectrum	Qualcomm Incorporated	endorsed	2019-10-22 20:37:53	2019-11-04 19:01:57
R2-1914002	Running CR for NR-based Access to Unlicensed Spectrum	Qualcomm Incorporated	endorsed	2019-10-22 20:37:53	2019-11-04 19:01:57
R2-1914003	Running Idle/Inactive mode CR for NR-based Access to Unlicensed Spectrum	Qualcomm Incorporated	endorsed	2019-10-22 20:37:53	2019-11-06 09:06:51
R2-1914004	Running CR for 36.300 for CA/DC Enhancements	Ericsson	endorsed	2019-10-22 20:37:53	2019-10-28 22:11:26
R2-1914005	Running CR for 38.300 for CA/DC Enhancements	Ericsson LM	endorsed	2019-10-22 20:37:53	2019-10-28 22:11:26
R2-1914006	TS 38.340 (BAP), v0.0.0	Huawei	endorsed	2019-10-22 20:37:53	2019-10-30 13:24:01
R2-1914007	Running CR for introduction of even further mobility enhancement in E-UTRAN	China Telecom	available	2019-10-22 20:37:53	2019-11-04 08:14:32
R2-1914008	TS 38.340 (BAP), v0.1.0	Huawei	endorsed	2019-10-22 20:37:53	2019-10-30 13:23:59
R2-1914009	Stage-2 running CR for support of NR Industrial IoT WI	Nokia (Rapporteur)	available	2019-10-22 20:37:54	2019-11-01 15:12:03
R2-1914010	Running CR to 38.331 on Integrated Access and Backhaul for NR	Ericsson	revised	2019-10-22 20:37:54	2019-11-06 17:06:16
R2-1914011	[DRAFT] LS on multi PDCCH-based multi-TRP operation	Ericsson	revised	2019-10-22 20:37:54	2019-10-22 20:48:09
R2-1914012	draft CR on CLI for TS38 331_v3_Alt2	LG Electronics Inc	not treated	2019-10-22 20:37:54	2019-10-22 20:48:09
R2-1914013	LS For Exchange of information related to SRS-RSRP measurement resource configuration for UE-CLI	Nokia, Nokia Shanghai Bell	revised	2019-10-22 20:37:55	2019-10-22 20:48:09
R2-1914014	Running CR for the introduction of SRVCC from 5G to 3G	Huawei, HiSilicon, China Unicom	approved	2019-10-22 20:37:55	2019-10-22 20:48:09
R2-1914015	[DRAFT] LS on multi PDCCH-based multi-TRP operation	Ericsson	revised	2019-10-22 20:37:55	2019-10-22 20:48:09
R2-1914016	[DRAFT] LS on No support of delta signalling	MediaTek	revised	2019-10-22 20:37:55	2019-10-22 20:48:09
R2-1914017	[DRAFT] LS Radio Capability Signalling Identity on X2/Xn interfaces	Nokia	revised	2019-10-22 20:37:55	2019-10-22 20:48:09
R2-1914018	Introduction of UECapabilityInformation segmentation in 36.331	MediaTek Inc., CATT, Ericsson, Spreadtrum Communications, ZTE Corporation, Sanechips, OPPO, Qualcomm Incorporated	endorsed	2019-10-22 20:37:55	2019-10-22 20:48:09
R2-1914019	Introduction of UECapabilityInformation segmentation in 36.331	ZTE	endorsed	2019-10-22 20:37:56	2019-10-22 20:48:09

R2-1914020	LS on multi PDCCH-based and single PDCCH-based multi-TRP operation	RAN2	approved	2019-10-22 20:37:56	2019-10-22 20:48:09
R2-1914021	LS For Exchange of information related to SRS-RSRP measurement resource configuration for UE-CLI	RAN2	approved	2019-10-22 20:37:57	2019-10-22 20:48:09
R2-1914022	LS on No support of delta signalling	RAN2	approved	2019-10-22 20:37:57	2019-10-22 20:48:09
R2-1914023	LS Radio Capability Signalling Identity on X2/Xn interfaces	RAN2	approved	2019-10-22 20:37:57	2019-10-22 20:48:09
R2-1914024	Summary of email discussion on LS to RAN3 on RAN2 agreements	Huawei, HiSilicon, Mediatek Inc.	noted	2019-10-22 20:37:58	2019-11-04 08:14:32
R2-1914025	LS on RAN2 agreements on LTE and NR mobility enhancements	RAN2	approved	2019-10-22 20:37:58	2019-11-04 08:14:32
R2-1914026	Running MAC CR for NR-U	Ericsson	endorsed	2019-10-22 20:37:58	2019-11-05 13:24:22
R2-1914027	Running CR to 38.331 on Integrated Access and Backhaul for NR	Ericsson	available	2019-10-22 20:37:58	2019-11-06 19:11:22
R2-1914028	(reserved)	Sergio's tdocs	reserved	2019-10-22 20:37:58	
R2-1914029	(reserved)	Sergio's tdocs	reserved	2019-10-22 20:37:58	
R2-1914030	(reserved)	Sergio's tdocs	reserved	2019-10-22 20:37:58	
R2-1914031	(reserved)	Sergio's tdocs	reserved	2019-10-22 20:37:58	
R2-1914032	(reserved)	Sergio's tdocs	reserved	2019-10-22 20:37:58	
R2-1914033	(reserved)	Sergio's tdocs	reserved	2019-10-22 20:37:58	
R2-1914034	(reserved)	Sergio's tdocs	reserved	2019-10-22 20:37:59	
R2-1914035	(reserved)	Sergio's tdocs	reserved	2019-10-22 20:37:59	
R2-1914036	Introduction of Rel-16 eMTC enhancements	Intel Corporation	endorsed	2019-10-22 20:37:59	2019-11-05 13:20:38
R2-1914037	Introduction of additional enhancements for eMTC	Qualcomm Incorporated	endorsed	2019-10-22 20:37:59	2019-11-04 13:06:17
R2-1914038	Introduction of Rel-16 eMTC enhancements	Qualcomm Incorporated	endorsed	2019-10-22 20:37:59	2019-11-04 19:01:57
R2-1914039	Report of offline #301: Discussion on whether I-RNTI is adopted for UP CIoT 5GS Optimisation	LGE	not treated	2019-10-22 20:37:59	2019-10-22 20:48:10
R2-1914040	[DRAFT] LS on RAN2 agreements for 5GC CIoT	Qualcomm	revised	2019-10-22 20:37:59	2019-10-22 20:48:10
R2-1914041	Summary of Offline discussion #303: RRC_INACTIVE for eMTC UEs connected to 5GC	Huawei, HiSilicon	noted	2019-10-22 20:37:59	2019-10-22 20:48:10
R2-1914042	Running CR for 36.304 -Rel-16 eMTC Enhancements	Nokia, Nokia Shanghai Bell	revised	2019-10-22 20:37:59	2019-10-22 20:48:10
R2-1914043	Clarification on UP-EDT	Huawei, HiSilicon	postponed	2019-10-22 20:37:59	2019-10-22 20:48:10
R2-1914044	[DRAFT] LS on RAN2 agreements for 5GC CIoT	Qualcomm	revised	2019-10-22 20:38:01	2019-10-22 20:48:10
R2-1914045	LS on RAN2 agreements for 5GC CIoT	RAN2	approved	2019-10-22 20:38:01	2019-10-22 20:48:10
R2-1914046	Running CR for 36.304 -Rel-16 eMTC Enhancements	Nokia, Nokia Shanghai Bell	revised	2019-10-22 20:38:01	2019-10-23 15:35:39
R2-1914047	[36.321 running CR]	Ericsson	endorsed	2019-10-22 20:38:01	2019-11-05 13:20:38
R2-1914048	[Report from Email [107bis#65][eMTC R16] UE identifier pros and cons (LG)]	LGE	reserved	2019-10-22 20:38:02	
R2-1914049	Running CR for 36.304 -Rel-16 eMTC Enhancements	Nokia, Nokia Shanghai Bell	revised	2019-10-22 20:38:02	2019-11-04 08:14:32

R2-1914050	Running CR for 36.304 -Rel-16 eMTC Enhancements	Nokia, Nokia Shanghai Bell	endorsed	2019-10-22 20:38:02	2019-11-04 19:01:57
R2-1914051	[DRAFT] LS to RAN1 on 2-step RACH	ZTE	revised	2019-10-22 20:38:02	2019-10-22 20:48:10
R2-1914052	Summary of discussion on rebudiling and fallback	Nokia	noted	2019-10-22 20:38:02	2019-10-22 20:48:10
R2-1914053	[DRAFT] LS on SFN LSB indication in msg2/msgB	Qualcomm	revised	2019-10-22 20:38:02	2019-10-22 20:48:10
R2-1914054	Summary of discussion on UL LBT	InterDigital	noted	2019-10-22 20:38:02	2019-10-22 20:48:10
R2-1914055	Clarification on satellite beam and PCI mapping	THALES, ERICSSON, Nokia	agreed	2019-10-22 20:38:02	2019-10-22 20:48:10
R2-1914056	DRX HARQ RTT enhancements for NTN	Nomor Research GmbH	agreed	2019-10-22 20:38:03	2019-10-22 20:48:10
R2-1914057	LS to RAN1 on WUS for short DRX cycle	vivo	revised	2019-10-22 20:38:04	2019-10-22 20:48:10
R2-1914058	Offline #506 Release assistance	Ericsson	noted	2019-10-22 20:38:04	2019-10-22 20:48:10
R2-1914059	Summary of offline discussion on UE assistance for Scell	CATT	noted	2019-10-22 20:38:04	2019-10-22 20:48:10
R2-1914060	LS to RAN1 on WUS for short DRX cycle	RAN2	approved	2019-10-22 20:38:04	2019-10-22 20:48:10
R2-1914061	LS to RAN1 on question related to CSI/SRS reporting	vivo	revised	2019-10-22 20:38:04	2019-10-22 20:48:10
R2-1914062	TP editorial corrections	Nomor	noted	2019-10-22 20:38:04	2019-10-22 20:48:10
R2-1914063	On NR-U Operation in DFS Channels	Charter Communications, Inc	noted	2019-10-22 20:38:04	2019-10-22 20:48:10
R2-1914064	LS on SFN LSB indication in msg2/msgB	RAN2	approved	2019-10-22 20:38:04	2019-10-22 20:48:10
R2-1914065	(reserved)	Diana's tdocs	reserved	2019-10-22 20:38:04	
R2-1914066	[DRAFT] LS on PHR reporting for NR-U	Lenovo	revised	2019-10-22 20:38:04	2019-10-22 20:48:10
R2-1914067	[DRAFT] LS on differentiating between MSG2 and MSGB	ZTE	revised	2019-10-22 20:38:04	2019-10-22 20:48:10
R2-1914068	LS on PHR reporting for NR-U	RAN2	approved	2019-10-22 20:38:05	2019-10-22 20:48:10
R2-1914069	TP on RACH capacity evaluation and procedures	ZTE Corporation, Sanechips,China Southern Power Grid Co., Ltd	agreed	2019-10-22 20:38:05	2019-10-22 20:48:10
R2-1914070	Report of email discussion [107#64][NTN] Cell selection&reselection	LG Electronics	agreed	2019-10-22 20:38:05	2019-10-22 20:48:10
R2-1914071	CR of TS 36.355 for introducing NavIC in LTE	Reliance Jio, MediaTek Inc., Huawei, CEWiT, Saankhya Labs	endorsed	2019-10-22 20:38:06	2019-10-22 20:48:10
R2-1914072	Corrections for Positioning Architecture	Ericsson	agreed	2019-10-22 20:38:07	2019-10-22 20:48:10
R2-1914073	[RAN2#107bis Offline-402] Converge on details of SSR Correction Points definition	u-blox AG	noted	2019-10-22 20:38:09	2019-10-22 20:48:10
R2-1914074	Sensor Provide Location Information Elements Correction	Polaris Wireless	endorsed	2019-10-22 20:38:09	2019-10-22 20:48:10
R2-1914075	Broadcast of TBS assistance data	NextNav, AT&T, FirstNet, Polaris Wireless	endorsed	2019-10-22 20:38:10	2019-10-22 20:48:10
R2-1914076	Broadcast of TBS assistance data	NextNav, AT&T, FirstNet, Polaris Wireless	endorsed	2019-10-22 20:38:13	2019-10-22 20:48:10
R2-1914077	(reserved)	Nathan's tdocs	reserved	2019-10-22 20:38:15	
R2-1914078	(reserved)	Nathan's tdocs	reserved	2019-10-22 20:38:15	
R2-1914079	(reserved)	Nathan's tdocs	reserved	2019-10-22 20:38:15	

R2-1914080	(reserved)	Nathan's tdocs	reserved	2019-10-22 20:38:15	
R2-1914081	(reserved)	Nathan's tdocs	reserved	2019-10-22 20:38:15	
R2-1914082	(reserved)	Nathan's tdocs	reserved	2019-10-22 20:38:15	
R2-1914083	(reserved)	Nathan's tdocs	reserved	2019-10-22 20:38:15	
R2-1914084	(reserved)	Nathan's tdocs	reserved	2019-10-22 20:38:15	
R2-1914085	(reserved)	Nathan's tdocs	reserved	2019-10-22 20:38:15	
R2-1914086	[DRAFT] Reply LS on PDCP end user throughput measurements	CMCC	revised	2019-10-22 20:38:16	2019-10-22 20:48:10
R2-1914087	Reply LS on RACH Optimization and Mobility Robustness Optimization	RAN2	approved	2019-10-22 20:38:16	2019-10-22 20:48:10
R2-1914088	(reserved)	HuNan's tdocs	reserved	2019-10-22 20:38:16	
R2-1914089	Reply LS on PDCP end user throughput measurements	RAN2	approved	2019-10-22 20:38:16	2019-10-22 20:48:10
R2-1914090	Report from session on SON/MDT	Session chair (CMCC)	approved	2019-10-22 20:39:40	2019-10-22 20:48:12
R2-1914091	Correction on T322	Nokia, Nokia Shanghai Bell	agreed	2019-10-22 20:38:16	2019-10-22 20:48:10
R2-1914092	RAN2 agreements for Rel-16 additional enhancements for NB-IoT and MTC	Document Rapporteur (BlackBerry)	revised	2019-10-22 20:38:17	2019-10-25 14:24:44
R2-1914093	Introduction of additional enhancements for NB-IoT	Qualcomm Incorporated	endorsed	2019-10-22 20:38:17	2019-11-04 13:06:17
R2-1914094	Introduction of additional enhancements for NB-IoT	Huawei	endorsed	2019-10-22 20:38:17	2019-11-04 19:01:57
R2-1914095	Report of Offline discussion #703 (Qualcomm) For alignment of eMTC and NB-IoT 36.331 CR	Qualcomm	noted	2019-10-22 20:38:17	2019-10-22 20:48:10
R2-1914096	Report from offline #704	Qualcomm Incorporated	noted	2019-10-22 20:38:17	2019-10-22 20:48:10
R2-1914097	Clarification of PDCCH monitoring period with non-zero DRX-startoffset for NB-IoT	NTT DOCOMO INC.	not treated	2019-10-22 20:38:17	2019-10-22 20:48:10
R2-1914098	Summary of offline #706	Qualcomm Incorporated	noted	2019-10-22 20:38:19	2019-10-22 20:48:10
R2-1914099	Running CR on 36.321 for NB-IoT	Ericsson	endorsed	2019-10-22 20:38:19	2019-11-06 09:07:49
R2-1914100	[Running CR on 36.304]	Nokia	reserved	2019-10-22 20:38:19	
R2-1914101	Introduction of additional enhancements for NB-IoT in TS 36.331	Huawei	endorsed	2019-10-22 20:38:19	2019-11-05 13:20:38
R2-1914102	RAN2 agreements for Rel-16 additional enhancements for NB-IoT and MTC	Document Rapporteur (BlackBerry)	available	2019-10-22 20:38:19	2019-10-28 22:11:26
R2-1914103	(reserved)	Brian's tdocs	reserved	2019-10-22 20:38:19	
R2-1914104	(reserved)	Brian's tdocs	reserved	2019-10-22 20:38:19	
R2-1914105	(reserved)	Brian's tdocs	reserved	2019-10-22 20:38:19	
R2-1914106	(reserved)	Brian's tdocs	reserved	2019-10-22 20:38:19	
R2-1914107	(reserved)	Brian's tdocs	reserved	2019-10-22 20:38:19	
R2-1914108	(reserved)	Brian's tdocs	reserved	2019-10-22 20:38:19	
R2-1914109	(reserved)	Brian's tdocs	reserved	2019-10-22 20:38:19	
R2-1914110	(reserved)	Brian's tdocs	reserved	2019-10-22 20:38:20	
R2-1914111	38 323 running CR	CATT	endorsed	2019-10-22 20:38:20	2019-10-22 20:48:10
R2-1914112	Running CR to 37324 for 5G_V2X_NRSL	vivo (Rapporteur)	revised	2019-10-22 20:38:20	2019-10-22 20:48:11
R2-1914113	Running CR for 38.322 for NR V2X	Ericsson	revised	2019-10-22 20:38:20	2019-10-22 20:48:11
R2-1914114	Running CR to 38.300 on 5G V2X with NR sidelink	LG Electronics Inc.	not treated	2019-10-22 20:38:20	2019-10-22 20:48:11

R2-1914115	(running)36.304CR on cell selection(reselection) for NR V2X UE	ZTE Corporation, Sanechips	not treated	2019-10-22 20:38:20	2019-10-22 20:48:11
R2-1914116	(running)38.304CR on cell selection(reselection) for NR V2X UE	ZTE Corporation, Sanechips	not treated	2019-10-22 20:38:20	2019-10-22 20:48:11
R2-1914117	TP on NR V2X for TR 37.985 RAN2 parts	Huawei, HiSilicon	endorsed	2019-10-22 20:38:20	2019-10-22 20:48:11
R2-1914118	[DRAFT] LS on SL RLF handling	Ericsson	revised	2019-10-22 20:38:20	2019-10-22 20:48:11
R2-1914119	Summary of RAN2#107bis Offline-807	vivo	not treated	2019-10-22 20:38:20	2019-10-22 20:48:11
R2-1914120	Proposed LS on Layer-1 and Layer 2 Identifiers for NR Sidelink	LG Electronics Inc.	revised	2019-10-22 20:38:20	2019-10-22 20:48:11
R2-1914121	Clarification regarding QoS handling in MRDC with 5G CN	Samsung, ZTE Corporation	agreed	2019-10-22 20:38:20	2019-10-22 20:48:11
R2-1914122	PDCP version in EN-DC	Ericsson	agreed	2019-10-22 20:38:20	2019-10-22 20:48:11
R2-1914123	Remaining issues for correction on the condition of RBTermChange	Ericsson	not treated	2019-10-22 20:38:22	2019-10-22 20:48:11
R2-1914124	Correction to field conditions in NE-DC	Ericsson	agreed	2019-10-22 20:38:23	2019-10-22 20:48:11
R2-1914125	Correction for the establishment of LTE RLC bearers for (NG)EN-DC and NE-DC	Huawei, HiSilicon	agreed	2019-10-22 20:38:25	2019-10-22 20:48:11
R2-1914126	Correction to AS security key update	Ericsson	reserved	2019-10-22 20:38:26	
R2-1914127	Presence and absence of TAC in NR cell	Ericsson	agreed	2019-10-22 20:38:28	2019-10-22 20:48:11
R2-1914128	Configuration limitation for RRCRelease message in R15	OPPO	agreed	2019-10-22 20:38:29	2019-10-22 20:48:11
R2-1914129	KgNB derivation upon mobility	Qualcomm Incorporated	agreed	2019-10-22 20:38:30	2019-10-22 20:48:11
R2-1914130	Security Algorithms for Radio Bearers	Qualcomm Incorporated	revised	2019-10-22 20:38:33	2019-10-22 20:48:11
R2-1914131	Report from session on LTE legacy, LTE TEI16 and NR/LTE Rel-16 Mobility	Vice Chairman (Nokia)	approved	2019-10-22 20:38:34	2019-10-22 20:48:11
R2-1914132	Report from Break-Out Session on SRVCC, CLI, PRN, eMIMO, RACS	Vice Chairman (ZTE)	approved	2019-10-22 20:38:34	2019-10-22 20:48:11
R2-1914133	Report eMTC breakout session	Session chair (Ericsson)	approved	2019-10-22 20:38:34	2019-10-22 20:48:11
R2-1914134	Session minutes for NR-U, Power Savings, NTN and 2-step RACH	Session chair (InterDigital)	approved	2019-10-22 20:38:34	2019-10-22 20:48:11
R2-1914135	Report from session on Rel-15 and 16 LTE and NR positioning	Session chair (MediaTek)	approved	2019-10-22 20:38:34	2019-10-22 20:48:11
R2-1914136	Report from session on SON/MDT	Session chair (CMCC)	revised	2019-10-22 20:38:34	
R2-1914137	Report NB-IoT breakout session	Session chair (Huawei)	approved	2019-10-22 20:38:35	2019-10-22 20:48:11
R2-1914138	Report from session on LTE V2X and NR V2X	Session chair (Samsung)	approved	2019-10-22 20:38:35	2019-10-22 20:48:11
R2-1914139	Definition of NR standalone	Ericsson	postponed	2019-10-22 20:38:35	2019-10-22 20:48:11
R2-1914140	Clarification for aggregated bandwidth for overheating	Huawei, HiSilicon, Ericsson	postponed	2019-10-22 20:38:36	2019-10-22 20:48:11
R2-1914141	WF on flexible BSR	OPPO	noted	2019-10-22 20:38:37	2019-10-22 20:48:11
R2-1914142	[Offline-811] Support of SL RLC AM	Huawei, HiSilicon	not treated	2019-10-22 20:38:37	2019-10-22 20:48:11
R2-1914143	[DRAFT] LS on Handling Multiple Unicast Links with Peer UE	InterDigital	revised	2019-10-22 20:38:37	2019-10-22 20:48:11
R2-1914144	[DRAFT] LS on PC5-S Signaling and PC5-RRC connection for NR sidelink communication	LGE	revised	2019-10-22 20:38:37	2019-10-22 20:48:11
R2-1914145	(reserved)	Kyeongin's tdocs	reserved	2019-10-22 20:38:37	

R2-1914146	Running CR for 38.322 for NR V2X	Ericsson	endorsed	2019-10-22 20:38:37	2019-10-22 20:48:11
R2-1914147	LS on Layer 2 Identifiers for NR Sidelink communication	RAN2	approved	2019-10-22 20:38:38	2019-10-22 20:48:11
R2-1914148	(reserved)	Kyeongin's tdocs	reserved	2019-10-22 20:38:38	
R2-1914149	LS on SL RLF handling	RAN2	approved	2019-10-22 20:38:38	2019-10-22 20:48:11
R2-1914150	LS on Handling Multiple Unicast Links with Peer UE	RAN2	approved	2019-10-22 20:38:38	2019-10-22 20:48:11
R2-1914151	LS on PC5-S Signaling and PC5-RRC connection for NR sidelink communication	RAN2	approved	2019-10-22 20:38:38	2019-10-22 20:48:11
R2-1914152	Running CR to 37324 for 5G_V2X_NRSL	vivo (Rapporteur)	available	2019-10-22 20:38:38	2019-11-01 15:12:03
R2-1914153	(reserved)	Kyeongin's tdocs	reserved	2019-10-22 20:38:38	
R2-1914154	(reserved)	Kyeongin's tdocs	reserved	2019-10-22 20:38:38	
R2-1914155	(reserved)	Kyeongin's tdocs	reserved	2019-10-22 20:38:38	
R2-1914156	(reserved)	Kyeongin's tdocs	reserved	2019-10-22 20:38:38	
R2-1914157	(reserved)	Kyeongin's tdocs	reserved	2019-10-22 20:38:38	
R2-1914158	(reserved)	Kyeongin's tdocs	reserved	2019-10-22 20:38:38	
R2-1914159	(reserved)	Kyeongin's tdocs	reserved	2019-10-22 20:38:38	
R2-1914160	(reserved)	Kyeongin's tdocs	reserved	2019-10-22 20:38:38	
R2-1914161	Correction of UE assistance information	Samsung, Ericsson	postponed	2019-10-22 20:38:38	2019-10-22 20:48:11
R2-1914162	[draft] Reply LS to RAN1 on SFTD measurement	Huawei, HiSilicon	revised	2019-10-22 20:38:39	2019-10-22 20:48:11
R2-1914163	Work plan for Rel-16 UE Capability feature list	Intel Corporation	not treated	2019-10-22 20:38:39	2019-10-22 20:48:11
R2-1914164	Draft reply LS on full configuration during SN Modification procedure	Huawei, HiSilicon	revised	2019-10-22 20:38:39	2019-10-22 20:48:11
R2-1914165	NTN_RAN2_107bis_offline1_outcomes	Thales	noted	2019-10-22 20:38:39	2019-10-22 20:48:11
R2-1914166	NTN_RAN2_107bis_offline2_outcomes	Thales	noted	2019-10-22 20:38:39	2019-10-22 20:48:11
R2-1914167	Correction to power limitations in (NG)EN-DC	Ericsson	postponed	2019-10-22 20:38:39	2019-10-22 20:48:11
R2-1914168	LS on CLI measurement reporting range (R4-1911416; contact: LGE)	RAN4	not treated	2019-10-22 20:38:40	2019-10-22 20:48:11
R2-1914169	Correction to Pcompensation for FR2	Huawei	agreed	2019-10-22 20:38:40	2019-10-22 20:48:11
R2-1914170	[DRAFT] Reply LS on FR2 Pmax	Huawei	revised	2019-10-22 20:38:43	2019-10-22 20:48:12
R2-1914171	IAB routing and bearer mapping config	Qualcomm Incorporated (Rapporteur)	not treated	2019-10-22 20:38:43	2019-10-22 20:48:12
R2-1914172	Correction of SRB3 handling at full configuration (Alt2)	Ericsson	agreed	2019-10-22 20:38:43	2019-10-22 20:48:12
R2-1914173	Miscellaneous correction for late drop	Ericsson	agreed	2019-10-22 20:38:45	2019-10-22 20:48:12
R2-1914174	Discussion on phase of the LTE CHO procedure	China Telecommunications	not treated	2019-10-22 20:38:46	2019-10-22 20:48:12
R2-1914175	Clarification to CSI reporting in C-DRX	Qualcomm Inc.	agreed	2019-10-22 20:38:46	2019-10-22 20:48:12
R2-1914176	Discussion on QoS flow in SLRB	Apple	not treated	2019-10-22 20:38:48	2019-10-22 20:48:12
R2-1914177	Reply LS to LS on maximum value of MDBV (C4-194314; contact: Nokia)	CT4	noted	2019-10-22 20:38:48	2019-10-22 20:48:12
R2-1914178	LS on NID structure and length (C4-194332; contact: Ericsson)	CT4	not treated	2019-10-22 20:38:48	2019-10-22 20:48:12
R2-1914179	[R2#107bis-offline-30] IAB LS on F1 over LTE	KDDI Corporation	noted	2019-10-22 20:38:48	2019-10-22 20:48:12

R2-1914180	Correction on ambiguity of UE FDD/TDD FR1/FR2 capabilities	ZTE Corporation, Sanechips, China Southern Power Grid Co., Ltd	not treated	2019-10-22 20:38:48	2019-10-22 20:48:12
R2-1914181	CR on BWCS for inter-ENDC BC with intra-ENDC BC (38.331)	Huawei, HiSilicon	postponed	2019-10-22 20:38:51	
R2-1914182	BWCS for inter-ENDC BC with intra-ENDC BC	Huawei, HiSilicon	postponed	2019-10-22 20:38:53	
R2-1914183	LS on PDCCH-based Power Saving Signal/Channel carrying indication of UE wakeup before DRX ON (R1-1911475; contact; CATT)	RAN1	noted	2019-10-22 20:38:56	2019-10-22 20:48:12
R2-1914184	Introduction of B1C signal in BDS system in A-GNSS	CATT, CAICT, CMCC, China Telecom, China Unicom, Huawei, ZTE Corporation, MediaTek Inc	endorsed	2019-10-22 20:38:56	2019-10-22 20:48:12
R2-1914185	[DRAFT] LS to SA2 on reference time delivery	Ericsson	revised	2019-10-22 20:38:57	2019-10-22 20:48:12
R2-1914186	[RAN2#107bis Offline-031]: IAB routing and bearer mapping config	Qualcomm Inc	noted	2019-10-22 20:38:57	2019-10-22 20:48:12
R2-1914187	[DRAFT] LS to RAN1 on LCP restriction for dynamic grant	Qualcomm	revised	2019-10-22 20:38:57	2019-10-22 20:48:12
R2-1914188	Running CR for 38.331 on CA/DC Enhancements	Ericsson	endorsed	2019-10-22 20:38:57	2019-10-22 20:48:12
R2-1914189	Running CR for 36.331 for CA/DC Enhancements	Ericsson	endorsed	2019-10-22 20:38:57	2019-10-22 20:48:12
R2-1914190	Corrections to power limitations in NE-DC	Ericsson	merged	2019-10-22 20:38:57	2019-10-22 20:48:12
R2-1914191	LS on differentiating between MSG2 and MSGB	RAN2	approved	2019-10-22 20:38:58	2019-10-22 20:48:12
R2-1914192	LS on UE adaptation to maximum number of MIMO layers (R1-1911528; contact: vivo)	RAN1	noted	2019-10-22 20:38:58	2019-10-22 20:48:12
R2-1914193	Miscellaneous corrections on UE capability fields	Intel Corporation, NTT DoCoMo	agreed	2019-10-22 20:38:59	2019-10-22 20:48:12
R2-1914194	TP on NTN Mobility Issues and Solutions	InterDigital	agreed	2019-10-22 20:39:00	2019-10-22 20:48:12
R2-1914195	Ephemeris data	Ericsson	not treated	2019-10-22 20:39:00	2019-10-22 20:48:12
R2-1914196	Report of email discussion [107#63][NR/NTN]	Ericsson	agreed	2019-10-22 20:39:00	2019-10-22 20:48:12
R2-1914197	Further consideration on HARQ configuration in NTN	CMCC,Huawei,HiSilicon,Sony,KT Corp.	noted	2019-10-22 20:39:00	2019-10-22 20:48:12
R2-1914198	TP on HARQ configuration in NTN	CMCC, Nomor Research GmbH, Huawei, HiSilicon, Sony, KT Corp., NEC, Oppo, Nokia, ZTE, Ericsson, ETRI	agreed	2019-10-22 20:39:00	2019-10-22 20:48:12
R2-1914199	TP on tracking area management in NTN	ZTE Corporation, Sanechips, Huawei, Ericsson, LG, CATT, OPPO, Hughes	merged	2019-10-22 20:39:00	2019-10-22 20:48:12
R2-1914200	LS to RAN1 on CSI/SRS reporting	RAN2	approved	2019-10-22 20:39:00	2019-10-22 20:48:12
R2-1914201	Reply LS on potential improvements for delay critical QoS flows	RAN2	approved	2019-10-22 20:39:00	2019-10-22 20:48:12
R2-1914202	[DRAFT] Reply LS to SA3 on FBS detection	Huawei, HiSilicon	revised	2019-10-22 20:39:00	2019-10-22 20:48:12

R2-1914203	Inclusion of 90MHz UE Bandwidth	Vodafone	agreed	2019-10-22 20:39:01	2019-10-22 20:48:12
R2-1914204	[CR on adding CSI-RS inter-node message]	Huawei	reserved	2019-10-22 20:39:02	
R2-1914205	Skipping supportedBandCombinationList of n90	KDDI Corporation	postponed	2019-10-22 20:39:03	2019-10-22 20:48:12
R2-1914206	LS on NR IAB case-1 timing (R1-1911548; contact: ZTE)	RAN1	not treated	2019-10-22 20:39:05	2019-10-22 20:48:12
R2-1914207	Reply LS on single PDCCH-based multi-TRP operation (R1-1911550; contact: Huawei)	RAN1	noted	2019-10-22 20:39:05	2019-10-22 20:48:12
R2-1914208	Reply LS on MAC CE design for SCell BFR (R1-1911587; contact: Apple)	RAN1	noted	2019-10-22 20:39:05	2019-10-22 20:48:12
R2-1914209	Correction on the frequency indication in SIB2	Huawei, HiSilicon, Ericsson, MediaTek	agreed	2019-10-22 20:39:05	2019-10-22 20:48:12
R2-1914210	[DRAFT] LS on direct SCell activation in RRC resume message	Qualcomm Incorporated	revised	2019-10-22 20:39:07	2019-10-22 20:48:12
R2-1914211	Report of offline discussion 020 on Correction of UE assistance information	Samsung	noted	2019-10-22 20:39:07	2019-10-22 20:48:12
R2-1914212	Report of offline discussion 040 on Signaling options for early measurement configuration	Samsung	noted	2019-10-22 20:39:07	2019-10-22 20:48:12
R2-1914213	LS to SA2 on reference time delivery	RAN2	approved	2019-10-22 20:39:07	2019-10-22 20:48:12
R2-1914214	LCP restriction for Dynamic Grant	RAN2	approved	2019-10-22 20:39:07	2019-10-22 20:48:12
R2-1914215	[DRAFT] LS on granularity of periodicity and burst arrival time in TSCAI	Qualcomm Incorporated	revised	2019-10-22 20:39:07	2019-10-22 20:48:12
R2-1914216	[DRAFT] LS on direct SCell activation in RRC resume message	Qualcomm Incorporated	revised	2019-10-22 20:39:07	2019-10-22 20:48:12
R2-1914217	LS on direct Scell activation in RRC resume message	RAN2	revised	2019-10-22 20:39:07	2019-10-22 20:48:12
R2-1914218	Reply LS on full configuration during SN Modification procedure	RAN2	revised	2019-10-22 20:39:08	2019-10-22 20:48:12
R2-1914219	Clarifying the alignment of capability filtering across LTE and NR in MR-DC	Nokia, Nokia Shanghai Bell	agreed	2019-10-22 20:39:08	2019-10-22 20:48:12
R2-1914220	[DRAFT] LS on BCS reporting for EN-DC BC	Huawei	revised	2019-10-22 20:39:09	2019-10-22 20:48:12
R2-1914221	Reply LS to RAN1 on SFTD measurement	RAN2	approved	2019-10-22 20:39:09	2019-10-22 20:48:12
R2-1914222	Reply LS on FR2 Pmax	RAN2	approved	2019-10-22 20:39:09	2019-10-22 20:48:12
R2-1914223	Granularity of periodicity and burst arrival time in TSCAI	RAN2	approved	2019-10-22 20:39:09	2019-10-25 14:24:44
R2-1914224	Reply LS to SA3 on FBS detection	RAN2	approved	2019-10-22 20:39:09	2019-10-22 20:48:12
R2-1914225	Security Algorithms for Radio Bearers	Qualcomm Incorporated	agreed	2019-10-22 20:39:09	2019-10-22 20:48:12
R2-1914226	LS on BCS reporting for EN-DC B	RAN2	approved	2019-10-22 20:39:11	2019-10-22 20:48:12
R2-1914227	LS on direct Scell activation in RRC resume message	RAN2	approved	2019-10-22 20:39:11	2019-10-22 23:56:28
R2-1914228	Reply LS on full configuration during SN Modification procedure	RAN2	approved	2019-10-22 20:39:11	2019-10-22 23:56:28

Appendix E

TITLE	Family Name	Given Name	Role	Email	Employer Organization	Employer Ca	Employer St	Organization Represented	Organization	Organization Attended
Mr.	Abdelghaffar	Muhammad	Delegate	mabdelgh@qti.qualcomm.com	Qualcomm Incorporated	ATIS	3GPPMEMBE	QUALCOMM Europe Inc. - Italy	ETSI	3GPPMEMBE Y
Mr.	Adhikari	Shubhodeep	Delegate	shubhodeep.adhikari@broadcom.com	BROADCOM CORPORATION	ETSI	3GPPMEMBE	BROADCOM CORPORATION	ETSI	3GPPMEMBE Y
Dr.	Ahmadi	Sassan	Delegate	sassana@xilinx.com	Xilinx Ireland	ETSI	3GPPMEMBE	Xilinx Ireland	ETSI	3GPPMEMBE Y
Mr.	Ahmadzadeh	Arman	Delegate	arman.ahmadzadeh@iis.fraunhofer.de	Fraunhofer IIS	ETSI	3GPPMEMBE	Fraunhofer IIS	ETSI	3GPPMEMBE Y
Dr.	Ahn	Joon Kui	Delegate	joon.ahn@lge.com	LG Electronics France	ETSI	3GPPMEMBE	LG Electronics Polska	ETSI	3GPPMEMBE Y
Mr.	Alexei	Davydov	Delegate	alexei.davydov@intel.com	Intel Corporation (UK) Ltd	ETSI	3GPPMEMBE	Intel Corporation (UK) Ltd	ETSI	3GPPMEMBE Y
Dr.	Al-Imari	Mohammed	Delegate	Mohammed.Al-Imari@mediatek.com	MediaTek Inc.	ETSI	3GPPMEMBE	MediaTek Inc.	ETSI	3GPPMEMBE Y
Dr.	An	Chanho	Delegate	chanho.an@samsung.com	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE Y
Mr.	Ashraf	Shehzad Ali	Delegate	shehzad.ali.ashraf@ericsson.com	Ericsson GmbH, Eurolab	ETSI	3GPPMEMBE	Ericsson Telecomunicazioni SpA	ETSI	3GPPMEMBE Y
Mr.	Åström	Magnus	Delegate	magnus.astrom@ericsson.com	Ericsson Limited	ETSI	3GPPMEMBE	Ericsson Limited	ETSI	3GPPMEMBE Y
Mr.	Bae	Duck Hyun	Delegate	duckhyun.bae@lge.com	LG Electronics Inc.	TTA	3GPPMEMBE	LG Electronics Inc.	TTA	3GPPMEMBE Y
Mr.	Baghel	Sudhir Kumar	Delegate	sudhirb@qti.qualcomm.com	Qualcomm Korea	TTA	3GPPMEMBE	Qualcomm India Pvt Ltd	TSDSI	3GPPMEMBE Y
Dr.	Bagheri	Hossein	Delegate	hbagheri@motorola.com	Motorola Mobility España SA	ETSI	3GPPMEMBE	Motorola Mobility España SA	ETSI	3GPPMEMBE Y
Mr.	Bala	Erdem	Delegate	erdem.bala@interdigital.com	InterDigital Communications	ATIS	3GPPMEMBE	InterDigital France R&D, SAS	ETSI	3GPPMEMBE Y
Mr.	Bang	Jonghyun	Delegate	jhyun1.bang@samsung.com	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE	Harman GmbH	ETSI	3GPPMEMBE Y
Dr.	Beale	Martin	Delegate	martin.beale@sony.com	Sony Europe B.V.	ETSI	3GPPMEMBE	Sony Europe B.V.	ETSI	3GPPMEMBE Y
Dr.	Behravan	Ali	Delegate	ali.behravan@ericsson.com	Ericsson Inc.	ATIS	3GPPMEMBE	Ericsson France S.A.S	ETSI	3GPPMEMBE Y
Dr.	Berggren	Fredrik	Delegate	fredrik.b@huawei.com	HUAWEI TECHNOLOGIES Co. Ltd.	ETSI	3GPPMEMBE	Huawei Technologies Sweden AB	ETSI	3GPPMEMBE Y
Mr.	Bergman	Johan	Delegate	johan.bergman@ericsson.com	Ericsson LM	ETSI	3GPPMEMBE	Ericsson Limited	ETSI	3GPPMEMBE Y
Dr.	Bhamri	Ankit	Delegate	ankit.bhamri@eu.panasonic.com	PANASONIC R&D Center Germany	ETSI	3GPPMEMBE	PANASONIC R&D Center Germany	ETSI	3GPPMEMBE Y
Mr.	Bhatoolaul	David	Delegate	david.bhatoolaul@nokia.com	Nokia Uk	ETSI	3GPPMEMBE	Nokia Uk	ETSI	3GPPMEMBE Y
Mr.	Bi	Cheng	Delegate	bi.cheng@zte.com.cn	ZTE Corporation	ETSI	3GPPMEMBE	ZTE Corporation	CCSA	3GPPMEMBE Y
Dr.	Blankenship	Yufei	Delegate	yufei.blankenship@ericsson.com	Ericsson Inc.	ATIS	3GPPMEMBE	Ericsson Inc.	ATIS	3GPPMEMBE Y
Mr.	Blasco Serrano	Ricardo	Delegate	ricardo.blasco@ericsson.com	Ericsson LM	ETSI	3GPPMEMBE	Ericsson España S.A.	ETSI	3GPPMEMBE Y
Mrs.	Blessent	Luca	Delegate	lblessen@qti.qualcomm.com	Qualcomm Incorporated	ATIS	3GPPMEMBE	Qualcomm Incorporated	ATIS	3GPPMEMBE Y
Mr.	Brown	Tyler	Delegate	tylerbrown@motorola.com	Motorola Mobility France S.A.S	ETSI	3GPPMEMBE	Motorola Mobility France S.A.S	ETSI	3GPPMEMBE Y
Mr.	Budama	Sree Charan	Delegate	charan@cewit.org.in	CEWiT	TSDSI	3GPPMEMBE	CEWiT	TSDSI	3GPPMEMBE Y
Mr.	Campos	Javier	Delegate	javier.campos@keysight.com	Keysight Technologies UK Ltd	ETSI	3GPPMEMBE	Keysight Technologies UK Ltd	ETSI	3GPPMEMBE Y
Dr.	Cao	Jianfei	Delegate	Jeffrey.Cao@sony.com	Sony Corporation	ARIB	3GPPMEMBE	Sony Corporation	ARIB	3GPPMEMBE Y
Dr.	Cao	Yiqing	Delegate	yiqingc@qti.qualcomm.com	Qualcomm India Pvt Ltd	TSDSI	3GPPMEMBE	Qualcomm CDMA Technologies	ETSI	3GPPMEMBE Y
Mr.	Castelain	Damien	Delegate	d.castelain@fr.merce.mee.com	Mitsubishi Electric RCE	ETSI	3GPPMEMBE	Mitsubishi Electric RCE	ETSI	3GPPMEMBE Y
Mr.	Chakraborty	Rishikesh	Delegate	rishikesh.chakraborty@vodafone.com	VODAFONE Group Plc	ETSI	3GPPMEMBE	VODAFONE Group Plc	ETSI	3GPPMEMBE Y
Dr.	Chatterjee	Debdeep	Delegate	debdeep.chatterjee@intel.com	Intel Corporation (UK) Ltd	ETSI	3GPPMEMBE	Intel	ATIS	3GPPMEMBE Y
Ms.	Chen	Mengzhu	Delegate	chen.mengzhu@zte.com.cn	ZTE Corporation	ETSI	3GPPMEMBE	ZONSON	CCSA	3GPPMEMBE Y
Dr.	Chen	Tao	Delegate	tao.chen@mediatek.com	MediaTek Inc.	ETSI	3GPPMEMBE	MediaTek Inc.	ETSI	3GPPMEMBE Y
Dr.	Chen	Wanshi	Chairman	wanshic@qti.qualcomm.com	Qualcomm Incorporated	ATIS	3GPPMEMBE	Qualcomm Incorporated	ATIS	3GPPMEMBE Y
Mr.	Chen	Wenhong	Delegate	chenwenhong@oppo.com	Guangdong OPPO Mobile Telecom.	CCSA	3GPPMEMBE	Beijing OPPO Com. corp., ltd	CCSA	3GPPMEMBE Y
Mr.	Chen	Xiaohang	Delegate	chenxiaohang@vivo.com	vivo Mobile Communication Co.,	CCSA	3GPPMEMBE	vivo Mobile Com. (Chongqing)	CCSA	3GPPMEMBE Y
Mr.	Chen	Ying	Delegate	chenying@cbn.cn	CBN	CCSA	3GPPMEMBE	CBN	CCSA	3GPPMEMBE Y
Dr.	Chen	Zhe	Delegate	chenzhe@cn.fujitsu.com	Fujitsu Limited	TTC	3GPPMEMBE	Fujitsu Limited	ETSI	3GPPMEMBE Y
Dr.	Chen	Zheng	Delegate	zhengchen@potevio.com	Potevio Company Limited	CCSA	3GPPMEMBE	Potevio Company Limited	CCSA	3GPPMEMBE Y
Dr.	CHENG	Chien-Chun	Delegate	chienchun.cheng@aptg.com.tw	Asia Pacific Telecom co. Ltd	ETSI	3GPPMEMBE	Asia Pacific Telecom co. Ltd	ETSI	3GPPMEMBE Y
Dr.	Cheng	Fang-chen	Delegate	fcc@catt.cn	CATT	CCSA	3GPPMEMBE	CATT	CCSA	3GPPMEMBE Y
Miss	Cheng	Yan	Delegate	chengyan.cheng@huawei.com	HUAWEI TECHNOLOGIES Co. Ltd.	ETSI	3GPPMEMBE	HUAWEI TECHNOLOGIES Co. Ltd.	ETSI	3GPPMEMBE Y
Mr.	cheng	yuhsin	Delegate	yuhsin.cheng@aptg.com.tw	Asia Pacific Telecom co. Ltd	ETSI	3GPPMEMBE	Asia Pacific Telecom co. Ltd	ETSI	3GPPMEMBE Y
Mr.	Cheng	Zi Qi	Delegate	471660314@qq.com	Southwest Jiaotong university	CCSA	3GPPMEMBE	Southwest Jiaotong university	CCSA	3GPPMEMBE Y
Mr.	Chien	Chun-che	Delegate	tez@iii.org.tw	III	ETSI	3GPPMEMBE	III	ETSI	3GPPMEMBE Y
Dr.	Choi	Kyungjun	Delegate	kyungjun.choi@wilusgroup.com	WILUS Inc.	TTA	3GPPMEMBE	WILUS Inc.	TTA	3GPPMEMBE Y
Mr.	Choi	Seunghoon	Delegate	seunghoon.choi@samsung.com	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE	Samsung Electronics Czech	ETSI	3GPPMEMBE Y
Dr.	Chou	Kao-Peng	Delegate	nevillechou@google.com	Google Inc.	ATIS	3GPPMEMBE	Google Inc.	ATIS	3GPPMEMBE Y
Mr.	Chuberre	Nicolas	Delegate	nicolas.chuberre@thalesaleniaspace.com	THALES	ETSI	3GPPMEMBE	THALES	ETSI	3GPPMEMBE Y
Dr.	Ciochina-Duchesne	Cristina	Delegate	c.ciochina@FR.MERCE.MEE.COM	Mitsubishi Electric RCE	ETSI	3GPPMEMBE	Mitsubishi Electric RCE	ETSI	3GPPMEMBE Y
Mr.	Cioni	Stefano	Delegate	stefano.cioni@esa.int	ESA	ETSI	3GPPMEMBE	ESA	ETSI	3GPPMEMBE Y
Mr.	Classon	Brian	Delegate	brian.classon@futurewei.com	Futurewei Technologies	ATIS	3GPPMEMBE	Futurewei Technologies	ATIS	3GPPMEMBE Y
Mr.	Cohen	Ronen	Delegate	rcohen@sequans.com	Sequans Communications	ETSI	3GPPMEMBE	Sequans Communications	ETSI	3GPPMEMBE Y
Dr.	Cozzo	Carmela	Delegate	carmela.cozzo@futurewei.com	Futurewei Technologies	ATIS	3GPPMEMBE	Futurewei	ETSI	3GPPMEMBE Y
Mr.	Cudak	Mark	Delegate	mark.cudak@nokia-bell-labs.com	Nokia Germany	ETSI	3GPPMEMBE	Nokia	ATIS	3GPPMEMBE Y
Mr.	Cui	Tao	Delegate	Tao.Cui@sony.com	Sony Corporation	ARIB	3GPPMEMBE	Sony Corporation	ARIB	3GPPMEMBE Y
Mr.	Cummings	George	Delegate	George.Cummings@sprint.com	SPRINT Corporation	ETSI	3GPPMEMBE	Sprint Corporation	ATIS	3GPPMEMBE Y
Dr.	Dahlman	Erik	Delegate	erik.dahlman@ericsson.com	Nanjing Ericsson Panda Com Ltd	CCSA	3GPPMEMBE	Nanjing Ericsson Panda Com Ltd	CCSA	3GPPMEMBE Y
Mr.	Daiki	Takeda	Delegate	daiki.takeda.er@nttdocomo.com	NTT DOCOMO INC.	TTC	3GPPMEMBE	NTT DOCOMO INC.	TTC	3GPPMEMBE Y
Ms.	Dietrich	Christiane	Delegate	dietrich@nomor.de	Nomor Research GmbH	ETSI	3GPPMEMBE	Nomor Research GmbH	ETSI	3GPPMEMBE Y
Mr.	Dominguez Tijero	Enrique	Delegate	edominguez@gmv.com	ESA	ETSI	3GPPMEMBE	ESA	ETSI	3GPPMEMBE Y
Mr.	Dost	Serkan	Delegate	sdost@sierrawireless.com	Sierra Wireless, S.A.	ETSI	3GPPMEMBE	Sierra Wireless, S.A.	ETSI	3GPPMEMBE Y
Mr.	Dou	Shengyue	Delegate	doushengyue@huawei.com	CHENGDU TD TECH LTD.	CCSA	3GPPMEMBE	CHENGDU TD TECH LTD.	CCSA	3GPPMEMBE Y
Dr.	Dwivedi	Satyam	Delegate	satyam.dwivedi@ericsson.com	Ericsson LM	ETSI	3GPPMEMBE	Ericsson LM	ETSI	3GPPMEMBE Y
Mr.	El Hamss	Aata	Delegate	aata.elhamss@interdigital.com	InterDigital Communications	ATIS	3GPPMEMBE	InterDigital Belgium. LLC	ETSI	3GPPMEMBE Y
Mr.	El Masri	Rabih	Delegate	rabih.el-masri@rohde-schwarz.com	ROHDE & SCHWARZ	ETSI	3GPPMEMBE	ROHDE & SCHWARZ	ETSI	3GPPMEMBE Y
Mr.	Ermolaev	Gregory	Delegate	gregory.ermolaev@intel.com	Intel Corporation (UK) Ltd	ETSI	3GPPMEMBE	Intel Technology Poland SP Zoo	ETSI	3GPPMEMBE Y
Mr.	Fakoorian	Ali	Delegate	alif@qti.qualcomm.com	Qualcomm communications-France	ETSI	3GPPMEMBE	Qualcomm CDMA Technologies	ETSI	3GPPMEMBE Y
Dr.	Falahati	Sorour	Delegate	sorour.falahati@ericsson.com	Ericsson LM	ETSI	3GPPMEMBE	Ericsson GmbH, Eurolab	ETSI	3GPPMEMBE Y
Ms.	Fang	Huiying	Delegate	fang.huiying@zte.com.cn	ZTE Trunking Technology Corp.	CCSA	3GPPMEMBE	ZTE Wistron Telecom AB	ETSI	3GPPMEMBE Y
Dr.	Farag	Emad	Delegate	emad.farag@nokia.com	Nokia Corporation	ETSI	3GPPMEMBE	Nokia Japan	ARIB	3GPPMEMBE Y
Mr.	Faxér	Sebastian	Delegate	sebastian.faxer@ericsson.com	L.M. Ericsson Limited	ETSI	3GPPMEMBE	L.M. Ericsson Limited	ETSI	3GPPMEMBE Y
Ms.	FENG	Shulan	Delegate	shulan.feng@hisilicon.com	HiSilicon Technologies Co. Ltd	CCSA	3GPPMEMBE	HiSilicon Technologies Co. Ltd	CCSA	3GPPMEMBE Y
Mr.	Frederiksen	Frank	Delegate	frank.frederiksen@nokia.com	Nokia Corporation	ETSI	3GPPMEMBE	Nokia Denmark	ETSI	3GPPMEMBE Y

Dr.	Frenne	Mattias	Delegate	mattias.frenne@ericsson.com	Ericsson LM	ETSI	3GPPMEMBE	Ericsson-LG Co., LTD	TTA	3GPPMEMBE Y
Mr.	Fu	Guangtao	Delegate	fuguangtao@abs.ac.cn	ABS	CCSA	3GPPMEMBE	ABS	CCSA	3GPPMEMBE Y
Ms.	Fu	Ting	Delegate	futing@xiaomi.com	Beijing Xiaomi Mobile Software	CCSA	3GPPMEMBE	Beijing Xiaomi Mobile Software	CCSA	3GPPMEMBE Y
Miss	Fu	Yang	Delegate	florafu@astri.org	ASTRI	ETSI	3GPPMEMBE	ASTRI	ETSI	3GPPMEMBE Y
Dr.	Gaal	Peter	Delegate	pgaal@qti.qualcomm.com	Qualcomm Incorporated	ATIS	3GPPMEMBE	Qualcomm Austria RFFE GmbH	ETSI	3GPPMEMBE Y
Mr.	Ganesan	Karthikeyan	Delegate	kganesan@lenovo.com	Motorola Mobility Germany GmbH	ETSI	3GPPMEMBE	Motorola Mobility Germany GmbH	ETSI	3GPPMEMBE Y
Mr.	Gang	Wang	Delegate	wang_gang@nec.cn	NEC Corporation	ETSI	3GPPMEMBE	NEC Corporation	ARIB	3GPPMEMBE Y
Mr.	Gao	Bo	Delegate	gao.bo1@zte.com.cn	ZTE Corporation	CCSA	3GPPMEMBE	ZTE Corporation	ETSI	3GPPMEMBE Y
Mr.	Gao	Yukai	Delegate	gao_yukai@nec.cn	NEC Corporation	ARIB	3GPPMEMBE	NEC Europe Ltd	ETSI	3GPPMEMBE Y
Dr.	Garcia	Virgile	Delegate	virgile.garcia@tcl.com	TCL Communication Ltd.	CCSA	3GPPMEMBE	TCL Communication Ltd.	CCSA	3GPPMEMBE Y
Dr.	Ghimire	Birendra	Delegate	birendra.ghimire@iis.fraunhofer.de	Fraunhofer IIS	ETSI	3GPPMEMBE	Fraunhofer IIS	ETSI	3GPPMEMBE Y
Mr.	Goktepe	Baris	Delegate	baris.goektepe@hhi.fraunhofer.de	Fraunhofer HHI	ETSI	3GPPMEMBE	Fraunhofer HHI	ETSI	3GPPMEMBE Y
Mr.	Golitschek Edler Von Elbwart	Alexander	Delegate	aelbwart@lenovo.com	Motorola Mobility Germany GmbH	ETSI	3GPPMEMBE	Motorola Mobility Germany GmbH	ETSI	3GPPMEMBE Y
Dr.	Gonzalez G.	David	Delegate	david.gonzalez.gonzalez@continental-corporation.com	Continental Automotive GmbH	ETSI	3GPPMEMBE	Continental Automotive GmbH	ETSI	3GPPMEMBE Y
Dr.	Grant	Stephen	Delegate	stephen.grant@ericsson.com	Ericsson Inc.	ATIS	3GPPMEMBE	Ericsson Inc.	ATIS	3GPPMEMBE Y
Dr.	Grossmann	Marcus	Delegate	marcus.grossmann@iis.fraunhofer.de	Fraunhofer IIS	ETSI	3GPPMEMBE	Fraunhofer IIS	ETSI	3GPPMEMBE Y
Mr.	Grovlen	Asbjorn	Delegate	asbjorn.grovlen@ericsson.com	Ericsson LM	ETSI	3GPPMEMBE	Ericsson LM	ETSI	3GPPMEMBE Y
Mr.	Guo	Bolun	Delegate	guobolun@huawei.com	HuaWei Technologies Co., Ltd	CCSA	3GPPMEMBE	HUAWEI Technologies Japan K.K.	ARIB	3GPPMEMBE Y
Miss	Guo	Jing	Delegate	guojing.bri@chinatelecom.cn	China Telecomunication Corp.	CCSA	3GPPMEMBE	China Telecomunication Corp.	CCSA	3GPPMEMBE Y
Dr.	Guo	Li	Delegate	guoli@oppo.com	Guangdong OPPO Mobile Telecom.	CCSA	3GPPMEMBE	Guangdong OPPO Mobile Telecom.	CCSA	3GPPMEMBE Y
Miss	Guo	Shaozhen	Delegate	guosz@docomolabs-beijing.com.cn	NTT DOCOMO INC.	ARIB	3GPPMEMBE	NTT DOCOMO INC.	ARIB	3GPPMEMBE Y
Mr.	Haghighat	Afshin	Delegate	afshin.haghighat@interdigital.com	InterDigital, Inc.	ETSI	3GPPMEMBE	InterDigital, Inc.	ETSI	3GPPMEMBE Y
Mr.	Han	Seunghee	Delegate	seunghee.han@intel.com	Intel Corporation (UK) Ltd	ETSI	3GPPMEMBE	Intel K.K.	ARIB	3GPPMEMBE Y
Mr.	Han	Xianghui	Delegate	han.xianghui@zte.com.cn	ZTE Corporation	CCSA	3GPPMEMBE	ZTE Corporation	CCSA	3GPPMEMBE Y
Mr.	Hao	Peng	Delegate	hao.peng@zte.com.cn	ZTE Corporation	ETSI	3GPPMEMBE	ZTE Photonics	CCSA	3GPPMEMBE Y
Dr.	Harada	Hiroki	Delegate	hiroki.harada.sv@nttdocomo.com	NTT DOCOMO INC.	TTC	3GPPMEMBE	NTT DOCOMO INC.	TTC	3GPPMEMBE Y
Mr.	Harrison	Mark	Delegate	mark.h.harrison@ericsson.com	Ericsson LM	ETSI	3GPPMEMBE	Ericsson Limited	ETSI	3GPPMEMBE Y
Dr.	Hasegawa	Fumihiro	Delegate	hasegawa.fumihiro@bk.mitsubishielectric.co.jp	Mitsubishi Electric Co.	ARIB	3GPPMEMBE	Mitsubishi Electric Co.	ARIB	3GPPMEMBE Y
Mr.	He	Chuanfeng	Delegate	hechuanfeng@oppo.com	Chengdu OPPO Mobile Com. corp.	CCSA	3GPPMEMBE	Chengdu OPPO Mobile Com. corp.	CCSA	3GPPMEMBE Y
Dr.	HE	Danping	Delegate	hedanping@bjtu.edu.cn	BJTU	CCSA	3GPPMEMBE	BJTU	CCSA	3GPPMEMBE Y
Dr.	he	hong	Delegate	hhe5@apple.com	Apple Poland Sp. z.o.o.	ETSI	3GPPMEMBE	Apple Poland Sp. z.o.o.	ETSI	3GPPMEMBE Y
Mr.	Hoang	Duc Tuong	Delegate	tuongduc.hoang@interdigital.com	InterDigital Belgium. LLC	ETSI	3GPPMEMBE	InterDigital Germany GmbH	ETSI	3GPPMEMBE Y
Miss	Hong	Hanjiang	Delegate	honghj@sjtu.edu.cn	Shanghai Jiao Tong University	CCSA	3GPPMEMBE	Shanghai Jiao Tong University	CCSA	3GPPMEMBE Y
Mr.	Hong	Wei	Delegate	hongwei@xiaomi.com	Beijing Xiaomi Mobile Software	CCSA	3GPPMEMBE	Xiaomi Communications	CCSA	3GPPMEMBE Y
Dr.	Hoshino	Masayuki	Delegate	hoshino.masayuki@sharp.co.jp	SHARP Corporation	ARIB	3GPPMEMBE	SHARP Corporation	ARIB	3GPPMEMBE Y
Dr.	Hou	Xiaolin	Delegate	hou@docomolabs-beijing.com.cn	NTT DOCOMO INC.	ARIB	3GPPMEMBE	NTT DOCOMO INC.	ARIB	3GPPMEMBE Y
Miss	Hsieh	Chia-wen	Delegate	Crystal_Hsieh@itri.org.tw	ITRI	ETSI	3GPPMEMBE	ITRI	ETSI	3GPPMEMBE Y
Mr.	Hsieh	Chi-hsuan	Delegate	CH.Hsieh@mediatek.com	MediaTek Inc.	ETSI	3GPPMEMBE	MediaTek (Hefei) Inc.	CCSA	3GPPMEMBE Y
Dr.	Hsieh	Frank	Delegate	frank.hsieh@nokia-bell-labs.com	Nokia Belgium	ETSI	3GPPMEMBE	Nokia Belgium	ETSI	3GPPMEMBE Y
Miss	Hu	Dan	Delegate	hudan11@huawei.com	HuaWei Technologies Co., Ltd	CCSA	3GPPMEMBE	HuaWei Technologies Co., Ltd	CCSA	3GPPMEMBE Y
Dr.	Hu	Hai	Delegate	non-itar_hhu@asiasat.com	CITICSAT	CCSA	3GPPMEMBE	CITICSAT	CCSA	3GPPMEMBE Y
Mr.	Hu	Teck	Delegate	teck.hu@futurewei.com	Futurewei Technologies	ATIS	3GPPMEMBE	Futurewei Technologies	ATIS	3GPPMEMBE Y
Mr.	Huang	Denny	Delegate	denny_huang@asus.com	ASUSTEK COMPUTER (SHANGHAI)	CCSA	3GPPMEMBE	ASUSTEK COMPUTER (SHANGHAI)	CCSA	3GPPMEMBE Y
Dr.	Huang	Min	Delegate	minhua@qti.qualcomm.com	Qualcomm Incorporated	ATIS	3GPPMEMBE	Qualcomm Incorporated	ATIS	3GPPMEMBE Y
Dr.	Huang	Su	Delegate	huangsu2@huawei.com	Huawei Technologies Co. Ltd.	ETSI	3GPPMEMBE	HuaWei Technologies Co., Ltd	CCSA	3GPPMEMBE Y
Miss	Huang	Xiuxuan	Delegate	ihxx1120@sjtu.edu.cn	Shanghai Jiao Tong University	CCSA	3GPPMEMBE	Shanghai Jiao Tong University	CCSA	3GPPMEMBE Y
Mr.	Huang	Xu	Delegate	neos.huang@mediatek.com	MediaTek Inc.	ETSI	3GPPMEMBE	MediaTek Beijing Inc.	CCSA	3GPPMEMBE Y
Dr.	Hugl	Klaus	Delegate	klaus.hugl@nokia.com	Nokia Germany	ETSI	3GPPMEMBE	Nokia Germany	ETSI	3GPPMEMBE Y
Dr.	Hwang	Chienhwa	Delegate	chienhwa.hwang@mediatek.com	MediaTek Inc.	ETSI	3GPPMEMBE	MediaTek (Shenzhen) Inc.	CCSA	3GPPMEMBE Y
Dr.	Hwang	Seunggye	Delegate	seunggye.hwang@lge.com	LG Electronics Inc.	TTA	3GPPMEMBE	LG Electronics Inc.	TTA	3GPPMEMBE Y
Dr.	Ijaz	Ayesha	Delegate	ayesha.ijaz@emea.nec.com	NEC Telecom MODUS Ltd.	ETSI	3GPPMEMBE	NEC Telecom MODUS Ltd.	ETSI	3GPPMEMBE Y
Mr.	Jang	Youngrok	Delegate	yr.jang@samsung.com	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE Y
Mr.	Jassal	Aman	Delegate	aman.jassal@huawei.com	HUAWEI TECHNOLOGIES Co. Ltd.	ETSI	3GPPMEMBE	HUAWEI TECHNOLOGIES Co. Ltd.	ETSI	3GPPMEMBE Y
Dr.	Jayasinghe	Keeth	Delegate	keeth.jayasinghe@nokia.com	Nokia Solutions & Networks (I)	TSDSI	3GPPMEMBE	Nokia Solutions & Networks (I)	TSDSI	3GPPMEMBE Y
Dr.	Ji	Hyoungju	Delegate	hyoungju.ji@samsung.com	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE Y
Mr.	Ji	Zichao	Delegate	jizichao@vivo.com	vivo Communication Technology	CCSA	3GPPMEMBE	vivo Communication Technology	CCSA	3GPPMEMBE Y
Mr.	Jia	Songlin	Delegate	18811720527@163.com	DFH Satellite Co., LTD	CCSA	3GPPMEMBE	DFH Satellite Co., LTD	CCSA	3GPPMEMBE Y
Mr.	Jiang	Dajie	Delegate	jiangdajie@vivo.com	vivo Mobile Communication Co.,	CCSA	3GPPMEMBE	vivo Mobile Communication Co.,	CCSA	3GPPMEMBE Y
Dr.	Jiang	Jiamo	Delegate	jiangjiamo@caict.ac.cn	CAICT			CAICT	CCSA	3GPPMEMBE Y
Miss	Jiang	Qinyan	Delegate	jiangqinyan@cn.fujitsu.com	Fujitsu Limited	ARIB	3GPPMEMBE	Fujitsu Limited	TTC	3GPPMEMBE Y
Mr.	JIANG	XIAOWEI	Delegate	jiangxiaowei@xiaomi.com	Beijing Xiaomi Mobile Software	CCSA	3GPPMEMBE	Beijing Xiaomi Mobile Software	CCSA	3GPPMEMBE Y
Mr.	JIANQIANG	DAI	Delegate	10168368@zte.com.cn	ZTE Corporation	ETSI	3GPPMEMBE	ShenZhen Zhongxing Shitong	CCSA	3GPPMEMBE Y
Mr.	Jin	Zhe	Delegate	jinzhe.jinzhe@huawei.com	HUAWEI TECHNOLOGIES Co. Ltd.	ETSI	3GPPMEMBE	HuaWei Technologies Co., Ltd	CCSA	3GPPMEMBE Y
Mr.	JUNG	EUICHANG	Delegate	euichang.jung@samsung.com	Samsung R&D Institute UK	ETSI	3GPPMEMBE	Samsung R&D Institute UK	ETSI	3GPPMEMBE Y
Mr.	Jung	Hoiyoon	Delegate	junghy@etri.re.kr	ETRI			ETRI	TTA	3GPPMEMBE Y
Dr.	Jung	Hyejung	Delegate	hyejung@motorola.com	Motorola Mobility UK Ltd.	ETSI	3GPPMEMBE	Motorola Mobility UK Ltd.	ETSI	3GPPMEMBE Y
Mr.	JUNG	INYONG	Delegate	jatx3302@hyundai.com	Hyundai Motors	TTA	3GPPMEMBE	Hyundai Motors	TTA	3GPPMEMBE Y
Mr.	Kahtava	Jussi	Delegate	jussi.kahtava@huawei.com	Huawei Technologies R&D UK	ETSI	3GPPMEMBE	Huawei Technologies R&D UK	ETSI	3GPPMEMBE Y
Mr.	Kaikkonen	Jorma	Delegate	jorma.kaikkonen@nokia.com	Nokia Germany	ETSI	3GPPMEMBE	Nokia Germany	ETSI	3GPPMEMBE Y
Mr.	Kalhan	Amit	Delegate	amit.kalhan@kyocera.com	Kyocera Corporation	ARIB	3GPPMEMBE	Kyocera Corporation	ARIB	3GPPMEMBE Y
Dr.	Kang	Jinkyu	Delegate	jin_kyu.kang@samsung.com	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE Y
Mr.	Kang	Jiwon	Delegate	jw.kang@lge.com	LG Electronics Inc.	TTA	3GPPMEMBE	LG Electronics Inc.	TTA	3GPPMEMBE Y
Mr.	Kang	Yang	Delegate	yang.kang@sg.panasonic.com	Panasonic Corporation	ARIB	3GPPMEMBE	Panasonic Corporation	ARIB	3GPPMEMBE Y
Mr.	Kapil	Bhattad	Delegate	kbhattad@qti.qualcomm.com	Qualcomm India Pvt Ltd	TSDSI	3GPPMEMBE	Qualcomm India Pvt Ltd	TSDSI	3GPPMEMBE Y
Miss	Karaki	Reem	Delegate	reem.karaki@ericsson.com	Ericsson GmbH, Eurolab	ETSI	3GPPMEMBE	Ericsson GmbH, Eurolab	ETSI	3GPPMEMBE Y
Dr.	Karunakaran	Prasanth	Delegate	prasanth.karunakaran@iis.fraunhofer.de	Fraunhofer IIS	ETSI	3GPPMEMBE	Fraunhofer IIS	ETSI	3GPPMEMBE Y
Dr.	Keating	Ryan	Delegate	ryan.keating@nokia-bell-labs.com	Nokia	ATIS	3GPPMEMBE	Nokia Poland	ETSI	3GPPMEMBE Y

Mr.	Khalona	Ramon	Delegate	rkhalona@hotmail.com	Idaho National Laboratory	ETSI	3GPPMEMBE	Idaho National Laboratory	ETSI	3GPPMEMBE Y
Mr.	Khoryaev	Alexey	Delegate	alexey.khoryaev@intel.com	Intel Corporation (UK) Ltd	ETSI	3GPPMEMBE	Intel Finland Oy	ETSI	3GPPMEMBE Y
Dr.	Khsiba	Achraf	Delegate	achraf.khsiba@tcl.com	TCL Communication Ltd.	CCSA	3GPPMEMBE	TCL Communication Ltd.	CCSA	3GPPMEMBE Y
Dr.	Kim	Byoung-hoon	Delegate	bh.kim@lge.com	LG Electronics Inc.	TTA	3GPPMEMBE	LG Electronics Inc.	TTA	3GPPMEMBE Y
Dr.	Kim	Cheulsoon	Delegate	cs.kim@etri.re.kr	ETRI	TTA	3GPPMEMBE	ETRI	TTA	3GPPMEMBE Y
Dr.	Kim	Jihyung	Delegate	savant21@etri.re.kr	ETRI	TTA	3GPPMEMBE	ETRI	TTA	3GPPMEMBE Y
Mr.	Kim	Kitae	Delegate	kitae1.kim@kt.com	KT Corp.	TTA	3GPPMEMBE	KT Corp.	TTA	3GPPMEMBE Y
Dr.	Kim	Seonwook	Delegate	seonwook.kim@lge.com	LG Electronics Inc.	TTA	3GPPMEMBE	LG Electronics Inc.	TTA	3GPPMEMBE Y
Dr.	Kim	Taehyoung	Delegate	th86819.kim@samsung.com	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE	Samsung Electronics France SA	ETSI	3GPPMEMBE Y
Mr.	Kim	Youngbum	Delegate	youngbum.kim@samsung.com	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE	Samsung R&D Institute India	TSDSI	3GPPMEMBE Y
Dr.	Kim	Younsun	Vice Chairman	younsun@samsung.com	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE Y
	Kim	Yuchul	Delegate	yuchul_kim@apple.com	Apple Italia S.R.L.	ETSI	3GPPMEMBE	Apple Italia S.R.L.	ETSI	3GPPMEMBE Y
Mr.	Ko	Hyunsoo	Delegate	hyunsoo.ko@lge.com	LG Electronics Inc.	TTA	3GPPMEMBE	LG Electronics Inc.	TTA	3GPPMEMBE Y
Mr.	Kobayashi	Ryosuke	Delegate	r.kobayashi@jp.fujitsu.com	Fujitsu Limited	TTC	3GPPMEMBE	Fujitsu Limited	ARIB	3GPPMEMBE Y
Dr.	Koorapaty	Havish	Vice Chairman	havish.koorapaty@ericsson.com	Ericsson LM	ETSI	3GPPMEMBE	Ericsson LM	ETSI	3GPPMEMBE Y
Dr.	Kowalski	John	Delegate	kowalskj@sharplabs.com	SHARP Corporation	ARIB	3GPPMEMBE	SHARP Corporation	ARIB	3GPPMEMBE Y
Dr.	Kumagai	Shinya	Delegate	shinya.kumagai.yw@nttdocomo.com	NTT DOCOMO INC.	ARIB	3GPPMEMBE	NTT DOCOMO INC.	ARIB	3GPPMEMBE Y
Dr.	Kundu	Lopamudra	Delegate	lopamudra.kundu@intel.com	M/s Intel Technology India Pvt	TSDSI	3GPPMEMBE	Intel Korea, Ltd.	TTA	3GPPMEMBE Y
Mr.	Kurita	Daisuke	Delegate	kuritad@nttdocomo.com	NTT DOCOMO INC.	ARIB	3GPPMEMBE	NTT DOCOMO INC.	ARIB	3GPPMEMBE Y
Mr.	Kusashima	Naoki	Delegate	naoki.kusashima@jp.sony.com	Sony Corporation	ARIB	3GPPMEMBE	Sony Corporation	ARIB	3GPPMEMBE Y
Dr.	Kwak	Yongjun	Delegate	yongjun.kwak@intel.com	Intel Korea, Ltd.	TTA	3GPPMEMBE	Intel Korea, Ltd.	TTA	3GPPMEMBE Y
Ms.	Lai	Emily	Delegate	Emily_Lai@asus.com	ASUSTEK COMPUTER (SHANGHAI)	CCSA	3GPPMEMBE	ASUSTEK COMPUTER (SHANGHAI)	CCSA	3GPPMEMBE Y
Dr.	Lee	Daewon	Delegate	daewon.lee@intel.com	Intel	ATIS	3GPPMEMBE	Intel Corporation Italia SpA	ETSI	3GPPMEMBE Y
Dr.	Lee	Hyunho	Delegate	hyunho2.lee@lge.com	LG Electronics Inc.	TTA	3GPPMEMBE	LG Electronics Inc.	TTA	3GPPMEMBE Y
Dr.	Lee	Junghoon	Delegate	jh.lee@etri.re.kr	ETRI	TTA	3GPPMEMBE	ETRI	TTA	3GPPMEMBE Y
Mr.	Lee	Moon-il	Delegate	moonil.lee@interdigital.com	Interdigital Asia LLC	TTA	3GPPMEMBE	Interdigital Asia LLC	TTA	3GPPMEMBE Y
Dr.	Lee	Taewoo	Delegate	lee.taewoo@sharp.co.jp	SHARP Corporation	ARIB	3GPPMEMBE	SHARP Corporation	ARIB	3GPPMEMBE Y
Dr.	Lei	Haipeng	Delegate	leihp1@lenovo.com	Lenovo (Beijing) Ltd	CCSA	3GPPMEMBE	Lenovo (Beijing) Ltd	CCSA	3GPPMEMBE Y
Ms.	Lei	Jing	Delegate	leijing@qti.qualcomm.com	QUALCOMM JAPAN LLC.	ARIB	3GPPMEMBE	QUALCOMM JAPAN LLC.	ARIB	3GPPMEMBE Y
Dr.	Lei	Jun	Delegate	ted.lei@nufront.com	NUFRONT	CCSA	3GPPMEMBE	NUFRONT	CCSA	3GPPMEMBE Y
Mr.	Leisse	Volker	Delegate	v.leisse@cablelabs.com	CableLabs	ETSI	3GPPMEMBE	CableLabs	ETSI	3GPPMEMBE Y
Dr.	Leung	Chi-ming	Delegate	Chi-ming.Leung@viavisolutions.com	ViaviSolutions Deutsch. GmbH	ETSI	3GPPMEMBE	Aeroflex/VIAVI	ETSI	3GPPMEMBE Y
Miss	LI	CAN	Delegate	can.li@vivo.com	vivo Mobile Communication Co.,	CCSA	3GPPMEMBE	vivo Mobile Communication Co.,	CCSA	3GPPMEMBE Y
Dr.	Li	Clara	Delegate	clara.q.li@intel.com	Intel Deutschland GmbH	ETSI	3GPPMEMBE	Intel China Ltd.	CCSA	3GPPMEMBE Y
Dr.	Li	Gen	Delegate	reagan.li@vivo.com	vivo Mobile Communication (H)	CCSA	3GPPMEMBE	vivo Mobile Communication (H)	CCSA	3GPPMEMBE Y
Mr.	Li	Hongchao	Delegate	hongchao.li@eu.panasonic.com	PANASONIC R&D Center Germany	ETSI	3GPPMEMBE	PANASONIC R&D Center Germany	ETSI	3GPPMEMBE Y
Mr.	Li	Jun	Delegate	lijun64@huawei.com	HiSilicon Technologies Co. Ltd	CCSA	3GPPMEMBE	HiSilicon Technologies Co. Ltd	CCSA	3GPPMEMBE Y
Mr.	Li	Mingche	Delegate	Mingche_Li@asus.com	ASUSTEK COMPUTER (SHANGHAI)	CCSA	3GPPMEMBE	ASUSTEK COMPUTER (SHANGHAI)	CCSA	3GPPMEMBE Y
Miss	Li	Mingju	Delegate	limingju@xiaomi.com	Beijing Xiaomi Mobile Software	CCSA	3GPPMEMBE	Beijing Xiaomi Electronics	CCSA	3GPPMEMBE Y
Miss	Li	Na	Delegate	lina5g@vivo.com	vivo Mobile Communication Co.,	CCSA	3GPPMEMBE	vivo Mobile Communication (H)	CCSA	3GPPMEMBE Y
Mr.	LI	Nanxi	Delegate	linanxi@chinatelecom.cn	China Telecommunications	ETSI	3GPPMEMBE	China Telecom Corporation Ltd.	CCSA	3GPPMEMBE Y
Dr.	Li	Qiaoyu	Delegate	qiaoli@qti.qualcomm.com	Qualcomm Korea	TTA	3GPPMEMBE	Qualcomm Korea	TTA	3GPPMEMBE Y
Ms.	Li	Qing	Delegate	li.qing@convidawireless.com	Convida Wireless	ETSI	3GPPMEMBE	Convida Wireless	ETSI	3GPPMEMBE Y
Mr.	Li	Ruyue Yu-Ngok	Delegate	li.ruyue@zte.com.cn	ZTE Corporation	CCSA	3GPPMEMBE	ShenZhen Zhongxing Shitong	CCSA	3GPPMEMBE Y
Mr.	Li	Shuang	Delegate	lishuang@cbn.cn	CBN	CCSA	3GPPMEMBE	CBN	CCSA	3GPPMEMBE Y
Mr.	Li	Shupeng	Delegate	shupeng.li@ztetx.com	Nubia Technology Co.,Ltd	CCSA	3GPPMEMBE	Nubia Technology Co.,Ltd	CCSA	3GPPMEMBE Y
Dr.	LI	XUN CHUN	Delegate	lixunchun@abs.ac.cn	ABS	CCSA	3GPPMEMBE	ABS	CCSA	3GPPMEMBE Y
Miss	Li	Yan	Delegate	liyanwx@chinamobile.com	China Mobile Group Device Co.	CCSA	3GPPMEMBE	China Mobile Group Device Co.	CCSA	3GPPMEMBE Y
Mr.	Li	Yingyang	Delegate	yingyang.li@intel.com	Intel Belgium SA/NV	ETSI	3GPPMEMBE	Intel Belgium SA/NV	ETSI	3GPPMEMBE Y
Miss	Li	Yuanyuan	Delegate	liyuanyuan10@xiaomi.com	Xiaomi Technology	CCSA	3GPPMEMBE	Xiaomi Technology	CCSA	3GPPMEMBE Y
Mr.	Liang	Lin	Delegate	liang_lin@nec.cn	NEC Corporation	ARIB	3GPPMEMBE	NEC Corporation	ETSI	3GPPMEMBE Y
Mr.	Liang	Yachao	Delegate	liangych@pcl.ac.cn	Pengcheng laboratory	CCSA	3GPPMEMBE	Pengcheng laboratory	CCSA	3GPPMEMBE Y
Dr.	Liao	Pei-Kai	Delegate	pk.liao@mediatek.com	MediaTek Inc.	ETSI	3GPPMEMBE	MediaTek Inc.	ETSI	3GPPMEMBE Y
Mr.	Lin	Eddie	Delegate	eddie1_lin@asus.com	ASUSTEK COMPUTER (SHANGHAI)	CCSA	3GPPMEMBE	ASUSTEK COMPUTER (SHANGHAI)	CCSA	3GPPMEMBE Y
Mr.	lin	hao	Delegate	lin.hao@oppo.com	Guangdong OPPO Mobile Telecom.	CCSA	3GPPMEMBE	Guangdong OPPO Mobile Telecom.	CCSA	3GPPMEMBE Y
Mr.	Lin	Kuang-hsun	Delegate	f03942140@ntu.edu.tw	National Taiwan University	ETSI	3GPPMEMBE	National Taiwan University	ETSI	3GPPMEMBE Y
Dr.	Lin	Qiongjie	Delegate	qiongjie.l@samsung.com	Samsung Research America	ATIS	3GPPMEMBE	Samsung Research America	ATIS	3GPPMEMBE Y
Dr.	Lin	Xingqin	Delegate	xingqin.lin@ericsson.com	Ericsson Inc.	ATIS	3GPPMEMBE	Ericsson India Private Limited	TSDSI	3GPPMEMBE Y
Mr.	Lin	Zhipeng	Delegate	zhipeng.lin@ericsson.com	Nanjing Ericsson Panda Com Ltd	CCSA	3GPPMEMBE	Ericsson Limited	ETSI	3GPPMEMBE Y
Mr.	Lindholm	Jari	Delegate	jari.lindholm@nokia.com	Nokia Germany	ETSI	3GPPMEMBE	Nokia Korea	TTA	3GPPMEMBE Y
Mr.	Liou	Alex	Delegate	alex_liou@asus.com	ASUSTEK COMPUTER (SHANGHAI)	CCSA	3GPPMEMBE	ASUSTEK COMPUTER (SHANGHAI)	CCSA	3GPPMEMBE Y
Dr.	Liu	Bingchao	Delegate	liubc2@lenovo.com	Beijing Lenovo Software Ltd.	CCSA	3GPPMEMBE	Beijing Lenovo Software Ltd.	CCSA	3GPPMEMBE Y
Mr.	LIU	GUANG	Delegate	gliu@sequans.com	Sequans Communications	ETSI	3GPPMEMBE	Sequans Communications	ETSI	3GPPMEMBE Y
Dr.	Liu	Le	Delegate	leliu@qti.qualcomm.com	QUALCOMM Europe Inc. - Italy	ETSI	3GPPMEMBE	Qualcomm communications-France	ETSI	3GPPMEMBE Y
Dr.	Liu	Liqing	Delegate	liu.liqing@sharp.co.jp	SHARP Corporation	ARIB	3GPPMEMBE	SHARP Corporation	ARIB	3GPPMEMBE Y
Ms.	LIU	Min	Delegate	mina.liu@sony.com	Sony Corporation	ARIB	3GPPMEMBE	Sony Corporation	ARIB	3GPPMEMBE Y
Mrs.	Liu	Ming	Delegate	liuming3@caict.ac.cn	CAICT			CAICT	CCSA	3GPPMEMBE Y
Dr.	Liu	Renmao	Delegate	liurenmao@cn.sharp-world.com	SHARP Corporation	ARIB	3GPPMEMBE	SHARP Corporation	ARIB	3GPPMEMBE Y
Miss	Liu	Siqi	Delegate	liusiqi@vivo.com	vivo Mobile Communication Co.,	CCSA	3GPPMEMBE	vivo Mobile Communication (S)	CCSA	3GPPMEMBE Y
Mr.	Liu	Yang	Delegate	liuyang24@xiaomi.com	Beijing Xiaomi Mobile Software	CCSA	3GPPMEMBE	Beijing Xiaomi Mobile Software	CCSA	3GPPMEMBE Y
Dr.	liu	yang	Delegate	liuyang@chinagci.com	CENC	CCSA	3GPPMEMBE	CENC	CCSA	3GPPMEMBE Y
Mr.	Lo	Li-chung	Delegate	lichunglo@itri.org.tw	ITRI	ETSI	3GPPMEMBE	ITRI	ETSI	3GPPMEMBE Y
Mr.	Lu	Youxiong	Delegate	lu.youxiong@zte.com.cn	ZTE Wistron Telecom AB	ETSI	3GPPMEMBE	ZTE Wistron Telecom AB	ETSI	3GPPMEMBE Y
Mr.	Lunttila	Timo	Delegate	timo.lunttila@nokia.com	Nokia Corporation	ETSI	3GPPMEMBE	Nokia Poland	ETSI	3GPPMEMBE Y
Mr.	Luo	Chao	Delegate	chao.luo@cn.sharp-world.com	SHARP Corporation	ARIB	3GPPMEMBE	SHARP Corporation	ARIB	3GPPMEMBE Y
Miss	Lv	Yeqing	Delegate	lvyeqing@hisense.com	Hisense Co., Ltd.	CCSA	3GPPMEMBE	Hisense Co., Ltd.	CCSA	3GPPMEMBE Y
Mr.	Ly	Hung	Delegate	hdly@qti.qualcomm.com	Qualcomm Incorporated	ATIS	3GPPMEMBE	Qualcomm communications-France	ETSI	3GPPMEMBE Y

Miss	LYU	Yongxia	Delegate	lvyongxia@huawei.com	Huawei Technologies Co. Ltd.	ETSI	3GPPMEMBE	Huawei Technologies Co. Ltd.	ETSI	3GPPMEMBE Y
Mr.	M. Soleymani	Dariush	Delegate	dariush.soleymani@iis.fraunhofer.de	Fraunhofer IIS	ETSI	3GPPMEMBE	Fraunhofer IIS	ETSI	3GPPMEMBE Y
Mr.	Ma	Teng	Delegate	mateng@catt.cn	CATT	ETSI	3GPPMEMBE	GOHIGH DATA NETWORKS TECH.	CCSA	3GPPMEMBE Y
Mr.	Maki	Shotaro	Delegate	maki.shotaro@jp.panasonic.com	Panasonic Corporation	ARIB	3GPPMEMBE	Panasonic Corporation	ARIB	3GPPMEMBE Y
Dr.	Manolakis	Konstantinos	Delegate	konstantinos.manolakis@huawei.com	HUAWEI TECH. GmbH	ETSI	3GPPMEMBE	HUAWEI TECH. GmbH	ETSI	3GPPMEMBE Y
Dr.	Manolakos	Alexandros	Delegate	amanolak@qti.qualcomm.com	Qualcomm Incorporated	ATIS	3GPPMEMBE	Qualcomm Finland RFFE Oy	ETSI	3GPPMEMBE Y
Dr.	Mao	Xiaomao	Delegate	kathy.mao@nokia-bell-labs.com	Nokia Shanghai Bell	CCSA	3GPPMEMBE	Nokia Shanghai Bell	CCSA	3GPPMEMBE Y
Dr.	Marinier	Paul	Delegate	paul.marinier@interdigital.com	InterDigital, Inc.	ETSI	3GPPMEMBE	InterDigital, Europe, Ltd.	ETSI	3GPPMEMBE Y
Mr.	Maso	Marco	Delegate	marco.maso@nokia.com	Nokia France	ETSI	3GPPMEMBE	Nokia France	ETSI	3GPPMEMBE Y
Mr.	Matsuda	Hiroki	Delegate	Hiroki.Matsuda@jp.sony.com	Sony Corporation	ARIB	3GPPMEMBE	Sony Corporation	ARIB	3GPPMEMBE Y
Mr.	Matsumura	Yuki	Delegate	yuuki.matsumura.vz@nttdocomo.com	NTT DOCOMO INC.	ARIB	3GPPMEMBE	NTT DOCOMO INC.	ARIB	3GPPMEMBE Y
Dr.	Mazzarese	David	Delegate	david.mazzarese@huawei.com	Huawei Tech.(UK) Co., Ltd	ETSI	3GPPMEMBE	HuaWei Technologies Co., Ltd	CCSA	3GPPMEMBE Y
Dr.	Medina	Gerardo	Delegate	gerardo.agni.medina.acosta@ericsson.com	Ericsson Japan K.K.	ARIB	3GPPMEMBE	Ericsson España S.A.	ETSI	3GPPMEMBE Y
Mr.	Merias	Patrick	Secretary	patrick.merias@etsi.org	ETSI	ETSI	3GPPORG_R	ETSI	ETSI	3GPPORG_R Y
Dr.	MI	XIANG	Delegate	shawn.mixiang@huawei.com	HUAWEI Technologies Japan K.K.	ARIB	3GPPMEMBE	HUAWEI Technologies Japan K.K.	ARIB	3GPPMEMBE Y
Mr.	Miao	Deshan	Delegate	miaodeshan@catt.cn	CATT	CCSA	3GPPMEMBE	CATT	ETSI	3GPPMEMBE Y
Mr.	Miao	Zhaobang	Delegate	miao_zhaobang@nec.cn	NEC Corporation	ARIB	3GPPMEMBE	NEC Corporation	ARIB	3GPPMEMBE Y
Miss	Minyan	Shi	Delegate	1832915@tongji.edu.cn	Tongji University	CCSA	3GPPMEMBE	Tongji University	CCSA	3GPPMEMBE Y
Mr.	Mohandoss	Chandrasekaran	Delegate	chandrasekaran@cewit.org.in	CEWiT	TSDSI	3GPPMEMBE	CEWiT	TSDSI	3GPPMEMBE Y
Dr.	Mondal	Bishwarup	Delegate	bishwarup.mondal@intel.com	M/s Intel Technology India Pvt	TSDSI	3GPPMEMBE	Intel Belgium SA/NV	ETSI	3GPPMEMBE Y
Mr.	Morozov	Gregory	Delegate	gregory.v.morozov@intel.com	Intel Corporation (UK) Ltd	ETSI	3GPPMEMBE	Intel Deutschland GmbH	ETSI	3GPPMEMBE Y
Miss	Mu	Qin	Delegate	muqin@xiaomi.com	Xiaomi Communications	CCSA	3GPPMEMBE	Xiaomi Communications	CCSA	3GPPMEMBE Y
Dr.	Munier	Florent	Delegate	florent.munier@ericsson.com	Ericsson Inc.	ATIS	3GPPMEMBE	Ericsson Telecomunicazioni SpA	ETSI	3GPPMEMBE Y
Dr.	Nahler	Achim	Delegate	achim.nahler@ni.com	National Instruments Corp.	ETSI	3GPPMEMBE	National Instruments Corp.	ETSI	3GPPMEMBE Y
Mr.	Nam	Wooseok	Delegate	wnam@qti.qualcomm.com	Qualcomm Incorporated	ATIS	3GPPMEMBE	Qualcomm Korea	TTA	3GPPMEMBE Y
Dr.	Nhan	Quang	Delegate	nhat-quang.nhan@nokia.com	Nokia Solutions & Networks (I)	TSDSI	3GPPMEMBE	Nokia Solutions & Networks (I)	TSDSI	3GPPMEMBE Y
Dr.	Nimbalker	Ajit	Delegate	ajit.nimbalker@ericsson.com	Ericsson India Private Limited	TSDSI	3GPPMEMBE	Ericsson India Private Limited	TSDSI	3GPPMEMBE Y
Mr.	Nishio	Akihiko	Delegate	nishio.akihiko@jp.panasonic.com	Panasonic Corporation	ARIB	3GPPMEMBE	Panasonic Corporation	ARIB	3GPPMEMBE Y
Dr.	Nogami	Toshizo	Delegate	nogami.toshizoh@sharp.co.jp	SHARP Corporation	ARIB	3GPPMEMBE	SHARP Corporation	ARIB	3GPPMEMBE Y
Dr.	Noh	Hoondong	Delegate	hoondong.noh@samsung.com	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE	Samsung Electronics Iberia SA	ETSI	3GPPMEMBE Y
Mr.	Noh	Minseok	Delegate	minseok.noh@wilusgroup.com	WILUS Inc.	TTA	3GPPMEMBE	WILUS Inc.	TTA	3GPPMEMBE Y
Mr.	Nory	Ravikiran	Delegate	ravikiran.nory@ericsson.com	Ericsson Inc.	ATIS	3GPPMEMBE	Ericsson Japan K.K.	ARIB	3GPPMEMBE Y
Mr.	Nunome	Tomoya	Delegate	nunome.tomoya@jp.panasonic.com	Panasonic Corporation	ARIB	3GPPMEMBE	Panasonic Corporation	ARIB	3GPPMEMBE Y
Dr.	Oh	Jinyoung	Delegate	jy81.oh@samsung.com	Samsung R&D Institute UK	ETSI	3GPPMEMBE	Samsung Electronics Polska	ETSI	3GPPMEMBE Y
Mr.	Ohara	Tomoya	Delegate	tomoya.ohara.vs@nttdocomo.com	NTT DOCOMO INC.	ARIB	3GPPMEMBE	NTT DOCOMO INC.	ARIB	3GPPMEMBE Y
Mr.	Ohseki	Takeo	Delegate	ohseki@kddi-research.jp	KDDI Corporation	ARIB	3GPPMEMBE	KDDI Corporation	ARIB	3GPPMEMBE Y
Mr.	Ohukainen	Niko	Delegate	niko.ohukainen@nordicsemi.no	Nordic Semiconductor ASA	ETSI	3GPPMEMBE	Nordic Semiconductor ASA	ETSI	3GPPMEMBE Y
Mr.	Okamura	Masaya	Delegate	masaya.okamura.ea@nttdocomo.com	NTT DOCOMO INC.	TTC	3GPPMEMBE	NTT DOCOMO INC.	TTC	3GPPMEMBE Y
Dr.	Oltean	Marius	Delegate	moltean@bouyguestelecom.fr	BOUYGUES Telecom	ETSI	3GPPMEMBE	BOUYGUES Telecom	ETSI	3GPPMEMBE Y
Dr.	Onggosanusi	Eko	Rapporteur	eko.o@samsung.com	Samsung Research America	ATIS	3GPPMEMBE	Samsung Research America	ATIS	3GPPMEMBE Y
Dr.	oteri	oghenekome	Delegate	ooteri@apple.com	Apple GmbH	ETSI	3GPPMEMBE	Apple Benelux B.V.	ETSI	3GPPMEMBE Y
Mr.	Pan	Xueming	Delegate	panxueming@vivo.com	vivo Communication Technology	CCSA	3GPPMEMBE	vivo Communication Technology	CCSA	3GPPMEMBE Y
Mr.	Panteleev	Sergey	Delegate	sergey.panteleev@intel.com	Intel Korea, Ltd.	TTA	3GPPMEMBE	Intel Ireland	ETSI	3GPPMEMBE Y
Dr.	Papasakellariou	Aris	Delegate	aris.papas@samsung.com	Samsung Research America	ATIS	3GPPMEMBE	Samsung Research America	ATIS	3GPPMEMBE Y
Mr.	Park	Dan	Delegate	dan.park@nokia.com	Nokia	ATIS	3GPPMEMBE	Nokia Korea	TTA	3GPPMEMBE Y
Dr.	Park	Donghyun	Delegate	park.donghyun@goditl.com	ITL	TTA	3GPPMEMBE	ITL	TTA	3GPPMEMBE Y
Dr.	Park	Jinhyun	Delegate	jhyun85.park@samsung.com	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE	Samsung Electronics Nordic AB	ETSI	3GPPMEMBE Y
Dr.	Park	Ki-Hyeon	Delegate	kihyeon.park@kt.com	KT Corp.	TTA	3GPPMEMBE	KT Corp.	TTA	3GPPMEMBE Y
Dr.	Park	SUNGJIN	Delegate	sj100.park@samsung.com	Samsung R&D Institute UK	ETSI	3GPPMEMBE	Samsung Electronics Romania	ETSI	3GPPMEMBE Y
Dr.	Pittampalli	Eshwar	Delegate	eshwar.pittampalli@firstnet.gov	FirstNet	ATIS	3GPPMEMBE	FirstNet	ATIS	3GPPMEMBE Y
Mr.	Popp	Julian	Delegate	julian.popp@iis.fraunhofer.de	Fraunhofer IIS	ETSI	3GPPMEMBE	Fraunhofer IIS	ETSI	3GPPMEMBE Y
Dr.	Priyanto	Basuki	Delegate	basuki.priyanto@sony.com	Sony Europe B.V.	ETSI	3GPPMEMBE	Sony Mobile Communications	ARIB	3GPPMEMBE Y
Dr.	Qu	Xin	Delegate	xin.qu@unisoc.com	Spreadtrum Communications	CCSA	3GPPMEMBE	Spreadtrum Communications	CCSA	3GPPMEMBE Y
Mr.	Ramireddy	Venkatesh	Delegate	venkatesh.ramireddy@iis.fraunhofer.de	Fraunhofer IIS	ETSI	3GPPMEMBE	Fraunhofer IIS	ETSI	3GPPMEMBE Y
Mr.	Ranta-aho	Karri	Delegate	karri.ranta-aho@nokia.com	Nokia Corporation	ETSI	3GPPMEMBE	Nokia Hungary	ETSI	3GPPMEMBE Y
Mr.	Rao	Song	Delegate	song.rao@mediatek.com	MediaTek Inc.	ETSI	3GPPMEMBE	MediaTek Beijing Inc.	CCSA	3GPPMEMBE Y
Mr.	Raschkowski	Leszek	Delegate	leszek.raschkowski@hhi.fraunhofer.de	Fraunhofer HHI	ETSI	3GPPMEMBE	Fraunhofer HHI	ETSI	3GPPMEMBE Y
Dr.	Ratasuk	Rapeepat	Delegate	rapeepat.ratasuk@nokia-bell-labs.com	Nokia	ATIS	3GPPMEMBE	Nokia	ATIS	3GPPMEMBE Y
Mr.	Ren	Guangliang	Delegate	glren@mail.xidian.edu.cn	Xidian University	CCSA	3GPPMEMBE	Xidian University	CCSA	3GPPMEMBE Y
Mr.	Robert	Michel	Delegate	michel.robert@nokia.com	Nokia Belgium	ETSI	3GPPMEMBE	Nokia Belgium	ETSI	3GPPMEMBE Y
Mr.	Russell	Paul	Delegate	Paul.Russell@InterDigital.com	Convida Wireless	ETSI	3GPPMEMBE	Convida Wireless	ETSI	3GPPMEMBE Y
Dr.	Ryu	Hyun Suk	Delegate	hswill.ryu@samsung.com	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE	Samsung Electronics Benelux BV	ETSI	3GPPMEMBE Y
Dr.	Sarkis	Gabi	Delegate	gsarkis@qti.qualcomm.com	Qualcomm Incorporated	ATIS	3GPPMEMBE	Qualcomm Austria RFFE GmbH	ETSI	3GPPMEMBE Y
Ing.	Schier	Thorsten	Delegate	thorsten.schier@huawei.com	HiSilicon Technologies Co. Ltd	CCSA	3GPPMEMBE	HiSilicon Technologies Co. Ltd	CCSA	3GPPMEMBE Y
Dr.	Schober	Karol	Delegate	karol.schober@nokia-bell-labs.com	Nokia Germany	ETSI	3GPPMEMBE	Nokia Corporation	ETSI	3GPPMEMBE Y
Mr.	Seidel	Eiko	Delegate	seidel@nomor.de	Nomor Research GmbH	ETSI	3GPPMEMBE	Nomor Research GmbH	ETSI	3GPPMEMBE Y
Mr.	Selvanesan	Sarun	Delegate	sarun.selvanesan@hhi.fraunhofer.de	Fraunhofer HHI	ETSI	3GPPMEMBE	Fraunhofer HHI	ETSI	3GPPMEMBE Y
Dr.	Sengupta	Avik	Delegate	avik.sengupta@intel.com	M/s Intel Technology India Pvt	TSDSI	3GPPMEMBE	M/s Intel Technology India Pvt	TSDSI	3GPPMEMBE Y
Mr.	Sergeev	Victor	Delegate	victor.sergeev@intel.com	Intel Corporation SAS	ETSI	3GPPMEMBE	Intel Corporation SAS	ETSI	3GPPMEMBE Y
Mr.	Shen	Jia	Delegate	sj@oppo.com	Guangdong OPPO Mobile Telecom.	CCSA	3GPPMEMBE	Shenzhen YZF Network Technolog	CCSA	3GPPMEMBE Y
Ms.	shen	xia	Delegate	shenxia@caict.ac.cn	CAICT			CAICT	CCSA	3GPPMEMBE Y
Mr.	Shen	Xiaodong	Delegate	shenxiaodong@vivo.com.cn	vivo Mobile Communication Co.,	CCSA	3GPPMEMBE	vivo Mobile Communication Co.,	CCSA	3GPPMEMBE Y
Mr.	Shen	Xingya	Delegate	shia.shen@unisoc.com	Spreadtrum Communications	CCSA	3GPPMEMBE	Spreadtrum Communications	CCSA	3GPPMEMBE Y
Dr.	Shen	Zukang	Delegate	shenzukang@huawei.com	Huawei Technologies France	ETSI	3GPPMEMBE	HuaWei Technologies Co., Ltd	CCSA	3GPPMEMBE Y
Mr.	Sheng	Jia	Delegate	jia.sheng@tcl.com	TCL Communication Ltd.	CCSA	3GPPMEMBE	TCL Communication Ltd.	CCSA	3GPPMEMBE Y
Dr.	SHI	Zhihua	Delegate	szh@oppo.com	Guangdong OPPO Mobile Telecom.	CCSA	3GPPMEMBE	Dongguan OPPO Precision Elec.	CCSA	3GPPMEMBE Y
Mr.	Shibaike	Naoya	Delegate	shibaike.naoya@jp.panasonic.com	Panasonic Corporation	ARIB	3GPPMEMBE	Panasonic Corporation	ARIB	3GPPMEMBE Y

Dr.	Shieh	Shin-Lin	Delegate	slshieh@gm.ntpu.edu.tw	NTPU	ETSI	3GPPMEMBER	NTPU	ETSI	3GPPMEMBER
Dr.	Shimizu	Takayuki	Delegate	tshimizu@us.toyota-itc.com	TOYOTA Info Technology Center	ETSI	3GPPMEMBER	TOYOTA Info Technology Center	ETSI	3GPPMEMBER
Dr.	Shimodaira	Hidekazu	Delegate	hidekazu.shimodaira.sa@nttdocomo.com	NTT DOCOMO INC.	ARIB	3GPPMEMBER	NTT DOCOMO INC.	ARIB	3GPPMEMBER
Mr.	Shimomura	Tsuyoshi	Delegate	tcsimomura@jp.fujitsu.com	Fujitsu Limited	ARIB	3GPPMEMBER	Fujitsu Limited	ARIB	3GPPMEMBER
Dr.	Shin	Cheolkyu	Delegate	ck13.shin@samsung.com	Samsung R&D Institute UK	ETSI	3GPPMEMBER	Samsung Research America	ATIS	3GPPMEMBER
Mr.	Shitomi	Takuya	Delegate	shitomi.t-gy@nhk.or.jp	NHK	ARIB	3GPPMEMBER	NHK	ARIB	3GPPMEMBER
Mr.	Shokri Razaghi	Hazhir	Delegate	hazhir.shokri.razaghi@ericsson.com	Ericsson LM	ETSI	3GPPMEMBER	Ericsson Hungary Ltd	ETSI	3GPPMEMBER
Mr.	Si	Ye	Delegate	ye.si@vivo.com	vivo Mobile Com. (Chongqing)	CCSA	3GPPMEMBER	vivo Mobile Com. (Chongqing)	CCSA	3GPPMEMBER
Mr.	Singer	Jean-Michel	Delegate	jean-michel.singer@etsi.org	ETSI	ETSI	3GPPORG_R	ETSI	ETSI	3GPPORG_R
Dr.	Song	Xinghua	Delegate	songxinghua@huawei.com	Huawei Technologies France	ETSI	3GPPMEMBER	HuaWei Technologies Co., Ltd	CCSA	3GPPMEMBER
Mr.	Song	Yang	Delegate	songyang@vivo.com	vivo Mobile Communication Co.,	CCSA	3GPPMEMBER	vivo Mobile Communication Co.,	CCSA	3GPPMEMBER
Mr.	Sosnin	Sergey	Delegate	sergey.d.sosnin@intel.com	Intel Corporation SAS	ETSI	3GPPMEMBER	Intel Sweden AB	ETSI	3GPPMEMBER
Mr.	Su	Xin	Delegate	suxin@catt.cn	CATT	CCSA	3GPPMEMBER	CATT	CCSA	3GPPMEMBER
Dr.	Subramani	Siva	Delegate	siva.subramani@futurewei.com	Futurewei Technologies	ATIS	3GPPMEMBER	Futurewei Technologies	ATIS	3GPPMEMBER
Mr.	Sui	Yutao	Delegate	yutao.sui@ericsson.com	Ericsson India Private Limited	TSDSI	3GPPMEMBER	Ericsson Hungary Ltd	ETSI	3GPPMEMBER
Dr.	Sun	Chengjun	Delegate	chengjun.sun@samsung.com	BEIJING SAMSUNG TELECOM R&D	CCSA	3GPPMEMBER	BEIJING SAMSUNG TELECOM R&D	CCSA	3GPPMEMBER
Dr.	Sun	Feifei	Delegate	feifei.sun@samsung.com	BEIJING SAMSUNG TELECOM R&D	CCSA	3GPPMEMBER	BEIJING SAMSUNG TELECOM R&D	CCSA	3GPPMEMBER
Mr.	Sun	Haitong	Delegate	haitong_sun@apple.com	Apple GmbH	ETSI	3GPPMEMBER	Apple GmbH	ETSI	3GPPMEMBER
Mr.	Sun	Hanchen	Delegate	627131159@qq.com	Southwest Jiaotong university	CCSA	3GPPMEMBER	Southwest Jiaotong university	CCSA	3GPPMEMBER
Mr.	Sun	Peng	Delegate	peng.sun@vivo.com	vivo Mobile Communication Co.,	CCSA	3GPPMEMBER	vivo Mobile Communication Co.,	CCSA	3GPPMEMBER
Ms.	Sun	Weiqi	Delegate	sunwq@docomolabs-beijing.com.cn	NTT DOCOMO INC.	ARIB	3GPPMEMBER	NTT DOCOMO INC.	ARIB	3GPPMEMBER
Mr.	Sun	Zhennian	Delegate	sunzn1@lenovo.com	Lenovo (Beijing) Ltd	CCSA	3GPPMEMBER	Lenovo (Beijing) Ltd	CCSA	3GPPMEMBER
Mr.	Sunell	Kai-Erik	Secretary	kai-erik.sunell@etsi.org	ETSI	ETSI	3GPPORG_R	ETSI	ETSI	3GPPORG_R
Dr.	Svedman	Patrick	Delegate	svedman.patrick@convidawireless.com	Convida Wireless	ETSI	3GPPMEMBER	Convida Wireless	ETSI	3GPPMEMBER
Mr.	Takahashi	Yugen	Delegate	yuki.takahashi.sd@nttdocomo.com	DOCOMO Communications Lab.	ETSI	3GPPMEMBER	DOCOMO Communications Lab.	ETSI	3GPPMEMBER
Dr.	Takeda	Fred	Delegate	ktakeda@qti.qualcomm.com	QUALCOMM JAPAN LLC.	ARIB	3GPPMEMBER	QUALCOMM JAPAN LLC.	ARIB	3GPPMEMBER
Mr.	Talarico	Salvatore	Delegate	salvatore.talarico@intel.com	Intel Korea, Ltd.	TTA	3GPPMEMBER	Intel	ATIS	3GPPMEMBER
Mr.	Tamrakar	Rakesh	Delegate	rakesh@vivo.com	vivo Communication Technology	CCSA	3GPPMEMBER	vivo Mobile Communication (S)	CCSA	3GPPMEMBER
Dr.	Tan	Jun	Delegate	jun.tan@nokia-bell-labs.com	Nokia Germany	ETSI	3GPPMEMBER	Nokia Japan	ARIB	3GPPMEMBER
Mr.	Tang	Yifu	Delegate	yifu.tang@sony.com	Sony Corporation	ARIB	3GPPMEMBER	Sony Corporation	ARIB	3GPPMEMBER
Dr.	Thiele	Lars	Delegate	lars.thiele@hhi.fraunhofer.de	Fraunhofer HHI	ETSI	3GPPMEMBER	Fraunhofer HHI	ETSI	3GPPMEMBER
Dr.	Tian	Li	Delegate	tian.li150@zte.com.cn	Nubia Technology Co.,Ltd	CCSA	3GPPMEMBER	Sanechips	CCSA	3GPPMEMBER
Mr.	Tian	Li	Delegate	tian.li@tcl.com	TCL Communication Ltd.	CCSA	3GPPMEMBER	TCL Communication Ltd.	CCSA	3GPPMEMBER
Dr.	Tian	Wenqiang	Delegate	tianwenqiang@oppo.com	Guangdong OPPO Mobile Telecom.	CCSA	3GPPMEMBER	OnePlus	CCSA	3GPPMEMBER
Mr.	Tian	Zhong	Delegate	zhong.tian@sony.com	Sony Corporation	ARIB	3GPPMEMBER	Sony Corporation	ARIB	3GPPMEMBER
Mr.	Tidestav	Claes	Delegate	claes.tidestav@ericsson.com	Oy LM Ericsson AB	ETSI	3GPPMEMBER	Oy LM Ericsson AB	ETSI	3GPPMEMBER
Mr.	TIE	XIAOLEI	Delegate	tiexiaolei@hisilicon.com	HiSilicon Technologies Co. Ltd	CCSA	3GPPMEMBER	HiSilicon Technologies Co. Ltd	CCSA	3GPPMEMBER
Dr.	Tosato	Filippo	Delegate	filippo.tosato@nokia.com	Nokia Germany	ETSI	3GPPMEMBER	Nokia Italy	ETSI	3GPPMEMBER
Dr.	Tsai	Chiou-Wei	Delegate	cw.tsai@mediatek.com	MediaTek Inc.	ETSI	3GPPMEMBER	Shanghai Chen Si Electronics	CCSA	3GPPMEMBER
Mr.	Tsumachi	Naoto	Delegate	na-tsumachi@kddi-research.jp	KDDI Corporation	TTC	3GPPMEMBER	KDDI Corporation	TTC	3GPPMEMBER
Mr.	Umehara	Masahito	Delegate	ma-umehara@kddi.com	KDDI Corporation	ARIB	3GPPMEMBER	KDDI Corporation	TTC	3GPPMEMBER
Mr.	Varatharaajan	Sutharshun	Delegate	varathsu@iis.fraunhofer.de	Fraunhofer IIS	ETSI	3GPPMEMBER	Fraunhofer IIS	ETSI	3GPPMEMBER
Dr.	Vargas	David	Delegate	david.vargas@bbc.co.uk	BBC	ETSI	3GPPMEMBER	BBC	ETSI	3GPPMEMBER
Miss	Verma	Sindhu	Delegate	sindhu.verma@broadcom.com	BROADCOM CORPORATION	ETSI	3GPPMEMBER	BROADCOM CORPORATION	ETSI	3GPPMEMBER
Dr.	Visoz	Raphael	Delegate	raphael.visoz@orange.com	Orange	ETSI	3GPPMEMBER	Orange	ETSI	3GPPMEMBER
Mr.	Vogedes	Jerome	Delegate	jvogedes@omnispace.com	Omnispace	ATIS	3GPPMEMBER	Omnispace	ATIS	3GPPMEMBER
Mr.	Vos	Gustav	Delegate	gvos@sierrawireless.com	Sierra Wireless, S.A.	ETSI	3GPPMEMBER	Sierra Wireless, S.A.	ETSI	3GPPMEMBER
Mr.	Wachter	Andreas	Delegate	awachter@polariswireless.com	Polaris Wireless	ATIS	3GPPMEMBER	Polaris Wireless	ATIS	3GPPMEMBER
Mr.	WANG	FEI	Delegate	wangfei@chinamobile.com	China Mobile Com. Corporation	CCSA	3GPPMEMBER	China Mobile Com. Corporation	CCSA	3GPPMEMBER
Mr.	Wang	Guotong	Delegate	guotong.wang@intel.com	Intel China Ltd.	CCSA	3GPPMEMBER	Intel China Ltd.	CCSA	3GPPMEMBER
Mr.	Wang	Huan	Delegate	wanghuan@vivo.com	vivo Mobile Communication Co.,	CCSA	3GPPMEMBER	vivo Mobile Communication Co.,	CCSA	3GPPMEMBER
Dr.	Wang	Jiaqing	Delegate	wangjiaqing@catt.cn	CATT	CCSA	3GPPMEMBER	CATT	CCSA	3GPPMEMBER
Mr.	Wang	Ke	Delegate	wangke@catt.cn	CATT	ETSI	3GPPMEMBER	CICT	CCSA	3GPPMEMBER
Miss	Wang	Lihui	Delegate	wanglh@docomolabs-beijing.com.cn	NTT DOCOMO INC.	TTC	3GPPMEMBER	NTT DOCOMO INC.	ARIB	3GPPMEMBER
Miss	Wang	Lulu	Delegate	wangll958@chinaunicom.cn	China Unicom	CCSA	3GPPMEMBER	China Unicom	CCSA	3GPPMEMBER
Dr.	Wang	Qiwei	Delegate	qwwang@xidian.edu.cn	Xidian University	CCSA	3GPPMEMBER	Xidian University	CCSA	3GPPMEMBER
Ms.	Wang	Ting	Delegate	ting1.wang@intel.com	Intel China Ltd.	CCSA	3GPPMEMBER	Intel China Ltd.	CCSA	3GPPMEMBER
Dr.	Wang	Xiaofeng	Delegate	wangxiao@qti.qualcomm.com	Qualcomm CDMA Technologies	ETSI	3GPPMEMBER	Qualcomm Wireless GmbH	ETSI	3GPPMEMBER
Dr.	Wang	Xin	Delegate	wangxin@cn.fujitsu.com	Fujitsu Limited	ETSI	3GPPMEMBER	Fujitsu Limited	ETSI	3GPPMEMBER
Dr.	Wang	Xin	Delegate	wangx@docomolabs-beijing.com.cn	DOCOMO Communications Lab.	ETSI	3GPPMEMBER	NTT DOCOMO INC.	ARIB	3GPPMEMBER
Dr.	Wang	Yi	Delegate	yi.wang@huawei.com	HuaWei Technologies Co., Ltd	CCSA	3GPPMEMBER	HuaWei Technologies Co., Ltd	CCSA	3GPPMEMBER
Mr.	Wang	Yi	Delegate	wangyi6@huawei.com	HUAWEI Technologies Japan K.K.	ARIB	3GPPMEMBER	HUAWEI Technologies Japan K.K.	ARIB	3GPPMEMBER
Dr.	Wannemacher	Georg	Delegate	georg.wannemacher@telekom.de	Deutsche Telekom AG	ETSI	3GPPMEMBER	Deutsche Telekom AG	ETSI	3GPPMEMBER
Ms.	Ward	Lisa	Delegate	lisa.ward@rsa.rohde-schwarz.com	ROHDE & SCHWARZ	ETSI	3GPPMEMBER	ROHDE & SCHWARZ	ETSI	3GPPMEMBER
Dr.	Webb	Matthew	Delegate	matthew.webb@huawei.com	Huawei Tech.(UK) Co.. Ltd	ETSI	3GPPMEMBER	Huawei Tech.(UK) Co.. Ltd	ETSI	3GPPMEMBER
Mr.	Wei	Chao	Delegate	weichao@qti.qualcomm.com	Qualcomm Korea	TTA	3GPPMEMBER	Qualcomm Korea	TTA	3GPPMEMBER
Mr.	Wei	Xingguang	Delegate	wei.xingguang@zte.com.cn	ZTE Corporation	CCSA	3GPPMEMBER	Jetflow	CCSA	3GPPMEMBER
Mr.	Wildschek	Torsten	Delegate	torsten.wildschek@nokia.com	Nokia UK	ETSI	3GPPMEMBER	Nokia Belgium	ETSI	3GPPMEMBER
Mr.	Wirth	Thomas	Delegate	thomas.wirth@hhi.fraunhofer.de	Fraunhofer HHI	ETSI	3GPPMEMBER	Fraunhofer HHI	ETSI	3GPPMEMBER
Dr.	Wong	Shin horng	Delegate	ShinHorng.Wong@sony.com	Sony Europe B.V.	ETSI	3GPPMEMBER	Sony Europe B.V.	ETSI	3GPPMEMBER
Mr.	Wu	Hao	Delegate	wu.hao89@zte.com.cn	ZTE Corporation	CCSA	3GPPMEMBER	Nubia Technology Co.,Ltd	CCSA	3GPPMEMBER
Dr.	Wu	Huaming	Delegate	huaming.wu@vivo.com	vivo Mobile Communication Co.,	CCSA	3GPPMEMBER	vivo Mobile Com. (Chongqing)	CCSA	3GPPMEMBER
Dr.	Wu	Jianming	Delegate	jianming.wu@fujitsu.com	Fujitsu Limited	TTC	3GPPMEMBER	Fujitsu Limited	TTC	3GPPMEMBER
Mr.	Wu	Kai	Delegate	wukai5g@vivo.com	vivo Communication Technology	CCSA	3GPPMEMBER	vivo Communication Technology	CCSA	3GPPMEMBER
Dr.	Wu	Wei-De	Delegate	weide.wu@mediatek.com	MediaTek Inc.	ETSI	3GPPMEMBER	MediaTek (Wuhan) Inc.	CCSA	3GPPMEMBER
Miss	Wu	Zuomin	Delegate	wuzuomin@oppo.com	Guangdong OPPO Mobile Telecom.	CCSA	3GPPMEMBER	Beijing OPPO Com. corp., ltd	CCSA	3GPPMEMBER
Dr.	Xia	Jinhuan	Delegate	jinhuan.xia@huawei.com	Huawei Technologies Sweden AB	ETSI	3GPPMEMBER	Huawei Technologies Co. Ltd.	ETSI	3GPPMEMBER

Mr.	Xia	Liang	Delegate	xialiang@chinamobile.com	China Mobile Com. Corporation	CCSA	3GPPMEMBE	China Mobile (Suzhou) Software	CCSA	3GPPMEMBE	Y
Mr.	XIA	Zhiping	Delegate	xiazhiping@abs.ac.cn	ABS	CCSA	3GPPMEMBE	ABS	CCSA	3GPPMEMBE	Y
Mr.	Xiang	Wei	Delegate	wxiang@astri.org	ASTRI	ETSI	3GPPMEMBE	ASTRI	ETSI	3GPPMEMBE	Y
Ms.	XIAO	JINGTING	Delegate	xiaojingting@abs.ac.cn	ABS	CCSA	3GPPMEMBE	ABS	CCSA	3GPPMEMBE	Y
Dr.	Xiao	Weimin	Delegate	wxiao@futurewei.com	Futurewei Technologies	ATIS	3GPPMEMBE	Futurewei	ETSI	3GPPMEMBE	Y
Mr.	Xiaodong	Xu	Delegate	xuxiaodong@chinamobile.com	CMDI	CCSA	3GPPMEMBE	CMDI	CCSA	3GPPMEMBE	Y
Ms.	Xing	Yanping	Delegate	xingyanping@catt.cn	CATT	ETSI	3GPPMEMBE	Datang Mobile Com. Equipment	CCSA	3GPPMEMBE	Y
Mr.	Xiong	Gang	Delegate	gang.xiong@intel.com	Intel Deutschland GmbH	ETSI	3GPPMEMBE	Intel Russia A/O	ETSI	3GPPMEMBE	Y
Dr.	Xiong	Zhilan	Delegate	zhilan.xiong@nokia.com	Nokia UK	ETSI	3GPPMEMBE	Nokia Denmark	ETSI	3GPPMEMBE	Y
Miss	Xu	Boyuan	Delegate	xuboyuan@abs.ac.cn	ABS	CCSA	3GPPMEMBE	ABS	CCSA	3GPPMEMBE	Y
Dr.	Xu	Changlong	Delegate	changlon@qti.qualcomm.com	Qualcomm CDMA Technologies	ETSI	3GPPMEMBE	QUALCOMM Europe Inc. - Spain	ETSI	3GPPMEMBE	Y
Dr.	Xu	Chi	Delegate	xuchi@sia.cn	SIA	CCSA	3GPPMEMBE	SIA	CCSA	3GPPMEMBE	Y
Mr.	Xu	Hua	Delegate	hua.xu2@huawei.com	HuaWei Technologies Co., Ltd	CCSA	3GPPMEMBE	HuaWei Technologies Co., Ltd	CCSA	3GPPMEMBE	Y
Dr.	Xu	Huilin	Delegate	huilinxu@qti.qualcomm.com	Qualcomm UK Ltd	ETSI	3GPPMEMBE	Qualcomm UK Ltd	ETSI	3GPPMEMBE	Y
Dr.	Xu	Jin	Delegate	jin.xu@bupt.edu.cn	BUPT	CCSA	3GPPMEMBE	BUPT	CCSA	3GPPMEMBE	Y
Mr.	Xu	2-Jun	Delegate	xu.jun2@zte.com.cn	ZTE Corporation	ETSI	3GPPMEMBE	ZONSON	CCSA	3GPPMEMBE	Y
Mr.	Xu	Yin	Delegate	xuyin@sjtu.edu.cn	Shanghai Jiao Tong University	CCSA	3GPPMEMBE	Shanghai Jiao Tong University	CCSA	3GPPMEMBE	Y
Mr.	Xue	Yifan	Delegate	xueyifan1@huawei.com	Huawei Device Co., Ltd	CCSA	3GPPMEMBE	Huawei Device Co., Ltd	CCSA	3GPPMEMBE	Y
Dr.	Yamamoto	Tetsuya	Delegate	yamamoto.tetsuya001@jp.panasonic.com	Panasonic Corporation	ARIB	3GPPMEMBE	Panasonic Corporation	ARIB	3GPPMEMBE	Y
Miss	Yan	Kaiyue	Delegate	yanky5@chinaunicom.cn	China Unicom	CCSA	3GPPMEMBE	China Unicom	CCSA	3GPPMEMBE	Y
Mr.	Yan	Zhi	Delegate	yanzhi1@lenovo.com	Lenovo (Beijing) Ltd	CCSA	3GPPMEMBE	Beijing Lenovo Software Ltd.	CCSA	3GPPMEMBE	Y
Mrs.	Yan	Zhiyu	Delegate	yanzhiyu@caict.ac.cn	CAICT			CCSA	CCSA	3GPPORG_R	Y
Mr.	Yang	Fan	Delegate	james.yangfan@huawei.com	HiSilicon Technologies Co. Ltd	CCSA	3GPPMEMBE	HiSilicon Technologies Co. Ltd	CCSA	3GPPMEMBE	Y
Mr.	Yang	Weidong	Delegate	wyang23@apple.com	Apple Europe Limited	ETSI	3GPPMEMBE	Apple (UK) Limited	ETSI	3GPPMEMBE	Y
Dr.	Yang	Yubo	Delegate	yangyubo1@huawei.com	HUAWEI TECHNOLOGIES Co. Ltd.	ETSI	3GPPMEMBE	HUAWEI TECHNOLOGIES Co. Ltd.	ETSI	3GPPMEMBE	Y
Mr.	Yao	Chunhai	Delegate	Chunhai_yao@apple.com	Apple Computer Trading Co. Ltd	CCSA	3GPPMEMBE	Apple Computer Trading Co. Ltd	CCSA	3GPPMEMBE	Y
Dr.	Ye	Chunxuan	Delegate	chunxuan_ye@apple.com	Apple GmbH	ETSI	3GPPMEMBE	Apple Portugal	ETSI	3GPPMEMBE	Y
Ms.	Ye	Sigen	Delegate	sigen.ye@nokia.com	Nokia	ATIS	3GPPMEMBE	Nokia Italy	ETSI	3GPPMEMBE	Y
Mr.	Yeo	Jeongho	Delegate	jeongho7.yeo@samsung.com	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE	Samsung Electronics GmbH	ETSI	3GPPMEMBE	Y
Dr.	Yi	Huang	Delegate	yihuang@qti.qualcomm.com	Qualcomm Incorporated	ATIS	3GPPMEMBE	QUALCOMM Europe Inc. - Italy	ETSI	3GPPMEMBE	Y
Mr.	Yin	Hang	Delegate	yinh6@chinatelecom.cn	China Telecom Corporation Ltd.	CCSA	3GPPMEMBE	China Telecom Corporation Ltd.	CCSA	3GPPMEMBE	Y
Dr.	Yin	Lu	Delegate	inlu_mail@bupt.edu.cn	BUPT	CCSA	3GPPMEMBE	BUPT	CCSA	3GPPMEMBE	Y
Ms.	Yin	Xiaoxue	Delegate	xiaoxue.yin@tcl.com	TCL Communication Ltd.	CCSA	3GPPMEMBE	TCL Communication Ltd.	CCSA	3GPPMEMBE	Y
Dr.	Yin	Zhanping	Delegate	zyin@sharplabs.com	SHARP Corporation	ARIB	3GPPMEMBE	SHARP Corporation	ARIB	3GPPMEMBE	Y
Dr.	Ying	Kai	Delegate	yingk@sharplabs.com	SHARP Corporation	ARIB	3GPPMEMBE	SHARP Corporation	ARIB	3GPPMEMBE	Y
Dr.	Yokomakura	Kazunari	Delegate	yokomakura.kazunari@sharp.co.jp	SHARP Corporation	ARIB	3GPPMEMBE	SHARP Corporation	ARIB	3GPPMEMBE	Y
Mr.	Yoshioka	Shohei	Delegate	syouhei.yoshioka.py@nttdocomo.com	DOCOMO Communications Lab.	ETSI	3GPPMEMBE	DOCOMO Communications Lab.	ETSI	3GPPMEMBE	Y
Mr.	Yu	Bin	Delegate	bin82.yu@samsung.com	BEIJING SAMSUNG TELECOM R&D	CCSA	3GPPMEMBE	SAMSUNG R&D INSTITUTE JAPAN	ARIB	3GPPMEMBE	Y
Mr.	Yu	Xiaodong	Delegate	yuxd1@lenovo.com	Lenovo (Beijing) Ltd	CCSA	3GPPMEMBE	Lenovo Mobile Com. Technology	CCSA	3GPPMEMBE	Y
Dr.	Yuan	Fang	Delegate	yuan_fang@nec.cn	NEC Corporation	ARIB	3GPPMEMBE	NEC Corporation	ARIB	3GPPMEMBE	Y
Dr.	Yuan	Yifei	Delegate	yifei.yuan@ztetx.com	ZTE Corporation	ETSI	3GPPMEMBE	ZTE Corporation	ETSI	3GPPMEMBE	Y
Dr.	Yuk	Youngsoo	Delegate	youngsoo.yuk@nokia.com	Nokia Korea	TTA	3GPPMEMBE	Nokia Korea	TTA	3GPPMEMBE	Y
Ing.	Yun	Ana	Delegate	ana.yungarcia@thalesaleniaspace.com	THALES	ETSI	3GPPMEMBE	THALES	ETSI	3GPPMEMBE	Y
Mr.	Zarifi	Keyvan	Delegate	keyvan.zarifi@huawei.com	HUAWEI TECHNOLOGIES Co. Ltd.	ETSI	3GPPMEMBE	HUAWEI TECHNOLOGIES Co. Ltd.	ETSI	3GPPMEMBE	Y
Dr.	Zeineddine	Khalid	Delegate	khalid@motorola.com	Motorola Mobility Germany GmbH	ETSI	3GPPMEMBE	Motorola Mobility Germany GmbH	ETSI	3GPPMEMBE	Y
Dr.	Zeng	Wei	Delegate	wzeng@apple.com	Apple Europe Limited	ETSI	3GPPMEMBE	Apple Europe Limited	ETSI	3GPPMEMBE	Y
Dr.	Zhang	Dawei	Delegate	dawei_zhang@apple.com	Apple France	ETSI	3GPPMEMBE	Apple France	ETSI	3GPPMEMBE	Y
Mrs.	Zhang	Guo ting	Delegate	zhangguoting@abs.ac.cn	ABS	CCSA	3GPPMEMBE	ABS	CCSA	3GPPMEMBE	Y
Mr.	Zhang	Haiming	Delegate	haimingzhang@astri.org	ASTRI	ETSI	3GPPMEMBE	ASTRI	ETSI	3GPPMEMBE	Y
Dr.	Zhang	Jian	Delegate	zhangjian1288@cn.fujitsu.com	Fujitsu Limited	ARIB	3GPPMEMBE	Fujitsu Limited	ETSI	3GPPMEMBE	Y
Ms.	Zhang	Jianwei	Delegate	jianwei.zhang@ericsson.com	Nanjing Ericsson Panda Com Ltd	CCSA	3GPPMEMBE	Nanjing Ericsson Panda Com Ltd	CCSA	3GPPMEMBE	Y
Mr.	Zhang	Jiayin	Delegate	zhangjiayin@huawei.com	HuaWei Technologies Co., Ltd	CCSA	3GPPMEMBE	HUAWEI TECHNOLOGIES Co. Ltd.	ETSI	3GPPMEMBE	Y
Miss	Zhang	Jinyu	Delegate	Jinyu.Zhang@unisoc.com	Spreadtrum Communications	CCSA	3GPPMEMBE	Spreadtrum Communications	CCSA	3GPPMEMBE	Y
Mr.	Zhang	Junfeng	Delegate	zhang.junfeng@zte.com.cn	ZTE Corporation	ETSI	3GPPMEMBE	ZTE Photonics	CCSA	3GPPMEMBE	Y
Miss	Zhang	Lei	Delegate	zhanglei@cn.fujitsu.com	Fujitsu Limited	ARIB	3GPPMEMBE	Fujitsu Limited	ETSI	3GPPMEMBE	Y
Dr.	Zhang	Leiming	Delegate	zhangleiming.zhang@huawei.com	HuaWei Technologies Co., Ltd	CCSA	3GPPMEMBE	HuaWei Technologies Co., Ltd	CCSA	3GPPMEMBE	Y
Dr.	Zhang	Min	Delegate	min.zhang1@huawei.com	Huawei Technologies Co. Ltd.	ETSI	3GPPMEMBE	Huawei Telecommunication India	TSDSI	3GPPMEMBE	Y
Mr.	Zhang	Nan	Delegate	zhang.nan152@zte.com.cn	ZTE Corporation	CCSA	3GPPMEMBE	ZXNE	CCSA	3GPPMEMBE	Y
Mr.	Zhang	Shichang	Delegate	zhang_shichang@nec.cn	NEC Corporation	ARIB	3GPPMEMBE	NEC Corporation	TTC	3GPPMEMBE	Y
Mr.	Zhang	Wenfeng	Delegate	wfzhang@ztetx.com	Sanechips	CCSA	3GPPMEMBE	Sanechips	CCSA	3GPPMEMBE	Y
Dr.	Zhang	Xi	Delegate	panda.zhang@huawei.com	HUAWEI TECHNOLOGIES Co. Ltd.	ETSI	3GPPMEMBE	HUAWEI TECHNOLOGIES Co. Ltd.	ETSI	3GPPMEMBE	Y
Miss	ZHANG	XIAOHONG	Delegate	zhangxh@docomolabs-beijing.com.cn	DOCOMO Communications Lab.	ETSI	3GPPMEMBE	DOCOMO Communications Lab.	ETSI	3GPPMEMBE	Y
Mr.	Zhang	Yang	Delegate	zhang.yang220@zte.com.cn	ZTE Corporation	ETSI	3GPPMEMBE	ZTE Trunking Technology Corp.	CCSA	3GPPMEMBE	Y
Miss	Zhang	Yi	Delegate	zhangyiyjy@chinamobile.com	China Mobile Research Inst.			China Mobile M2M Company Ltd.	CCSA	3GPPMEMBE	Y
Dr.	Zhang	Yu	Delegate	zhangyu@qti.qualcomm.com	Qualcomm Incorporated	ATIS	3GPPMEMBE	Qualcomm Finland RFFE Oy	ETSI	3GPPMEMBE	Y
Mr.	Zhang	Yushu	Delegate	yushu_zhang@apple.com	Apple Computer Trading Co. Ltd	CCSA	3GPPMEMBE	Apple Switzerland AG	ETSI	3GPPMEMBE	Y
Dr.	Zhao	Qun	Delegate	zhaoqun1@xiaomi.com	Beijing Xiaomi Mobile Software	CCSA	3GPPMEMBE	Xiaomi Communications	CCSA	3GPPMEMBE	Y
Mr.	Zhao	Rui	Delegate	zhaorui@catt.cn	CATT	CCSA	3GPPMEMBE	Morningcore Technology Co.,Ltd	CCSA	3GPPMEMBE	Y
Dr.	Zhao	Ying	Delegate	zhaoying@potevio.com	Potevio Company Limited	CCSA	3GPPMEMBE	Potevio Company Limited	CCSA	3GPPMEMBE	Y
Mr.	Zhao	Zhenshan	Delegate	zhaozhenshan@oppo.com	Guangdong OPPO Mobile Telecom.	CCSA	3GPPMEMBE	Guangdong OPPO Mobile Telecom.	CCSA	3GPPMEMBE	Y
Mr.	Zheng	Guozeng	Delegate	zheng.guozeng@zte.com.cn	ZTE Corporation	ETSI	3GPPMEMBE	ZXNE	CCSA	3GPPMEMBE	Y
Miss	Zhou	Miao	Delegate	miao.zhou@samsung.com	BEIJING SAMSUNG TELECOM R&D	CCSA	3GPPMEMBE	Samsung R&D Institute UK	ETSI	3GPPMEMBE	Y
Mr.	Zhou	Yan	Delegate	yanzhou@qti.qualcomm.com	Qualcomm communications-France	ETSI	3GPPMEMBE	Qualcomm Tech. Netherlands B.V	ETSI	3GPPMEMBE	Y
Mr.	ZHOU	YUHAN	Delegate	yuhan.zhou@samsung.com	Samsung Research America	ATIS	3GPPMEMBE	Samsung Electronics Co., Ltd	TTA	3GPPMEMBE	Y
Dr.	Zhu	Chenxi	Delegate	zhucx1@lenovo.com	Lenovo (Beijing) Ltd	CCSA	3GPPMEMBE	Lenovo (Beijing) Ltd	CCSA	3GPPMEMBE	Y
Mr.	Zhu	Jianchi	Delegate	zhujianchi.bri@chinatelecom.cn	China Telecommunications	ETSI	3GPPMEMBE	China Telecommunications	ETSI	3GPPMEMBE	Y
Mr.	Zhu	Yajun	Delegate	zhuyajun@xiaomi.com	Beijing Xiaomi Mobile Software	CCSA	3GPPMEMBE	Beijing Xiaomi Mobile Software	CCSA	3GPPMEMBE	Y

Mr.	Zuo	Zhisong	Delegate	zuozhisong@oppo.com		Guangdong OPPO Mobile Telecom.	CCSA	3GPPMEMBE	Guangdong OPPO Mobile Telecom.	CCSA	3GPPMEMBE	Y		

Appendix F

TITLE;Family Name;Given Name;Role;Fixed Phone;Mobile Phone;Email;Employer Organization;Employer Category Code;Employer Status Code;Organization Represented;Organization Represented Category Code;Organization Represented Status Code;USER REGISTRATION DATE;PRESENCE TYPE;PRESENCE;MEETING REFERENCE;MEETING START DATE;MEETING END DATE;TIME ZONE;MEETING LOCATION CITY;LAST PRESENCE CONFIRMATION DATE;LAST PRESENCE CONFIRMATION BY;LATE REGISTRATION

Mr.;"Abdul Latheef";"Fasil";"Delegate";"";"";"";"Samsung R&D Institute India";"TSDSI";"3GPPMEMBER";"Samsung Electronics Polska";"ETSI";"3GPPMEMBER";"2019-09-06 06:31";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 19:34";"10.10.7.230";"NO"

Dr.;"Adjakple";"Pascal";"Delegate";"";"+1 631-622-4396";"";"Convida Wireless LLC";"";"";"Convida Wireless LLC";"";"";"2018-05-23 22:00";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2018-05-24 01:17";"";"NO"

Dr.;"Adjakple";"Pascal";"Delegate";"";"16316224396";"";"InterDigital Inc.";"ETSI";"3GPPMEMBER";"Convida Wireless";"ETSI";"3GPPMEMBER";"2018-09-27 22:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 19:33";"10.10.1.254";"NO"

Mr.;"Agiwal";"Anil";"Delegate";"";"";"";"Samsung Electronics Co. Ltd";"TTA";"3GPPMEMBER";"Harman GmbH";"ETSI";"3GPPMEMBER";"2019-06-19 05:09";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 16:54";"10.10.6.122";"NO"

Mr.;"Ahmed";"Ayaz";"Delegate";"";"";"";"Nokia Solutions & Networks (I)";"TSDSI";"3GPPMEMBER";"Nokia Solutions & Networks (I)";"TSDSI";"3GPPMEMBER";"2019-01-17 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 19:43";"10.10.3.37";"NO"

Mr.;"Aikawa";"Shinichiro";"Delegate";"";"+81-44-280-8477";"";"Fujitsu Limited";"ARIB";"3GPPMEMBER";"Fujitsu Limited";"ARIB";"3GPPMEMBER";"2019-11-05 07:26";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:23";"10.10.4.207";"NO"

Mr.;"Akita";"Koji";"Delegate";"";"";"";"Toshiba";"ETSI";"3GPPMEMBER";"Toshiba";"ETSI";"3GPPMEMBER";"2019-11-12 01:37";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:40";"10.10.11.55";"NO"

Mr.;"Alawieh";"Mohammad";"Delegate";"";"+";"";"Fraunhofer IIS";"ETSI";"3GPPMEMBER";"Fraunhofer IIS";"ETSI";"3GPPMEMBER";"2019-11-13 11:04";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-20 01:25";"10.10.4.89";"NO"

Mr.;"Alfarhan";"Faris";"Delegate";"";"+";"";"InterDigital Inc.";"ETSI";"3GPPMEMBER";"InterDigital Inc.";"ETSI";"3GPPMEMBER";"2019-10-29 18:07";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 16:35";"10.10.8.230";"NO"

Mr.;"Ali";"Amaanat";"Delegate";"";"+358405042330";"";"Nokia Germany";"ETSI";"3GPPMEMBER";"Nokia Italy";"ETSI";"3GPPMEMBER";"2019-11-07 13:51";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-20 21:39";"10.10.8.116";"NO"

Mr.;"Ali";"Ansab";"Delegate";"";"";"";"Intel Deutschland GmbH";"ETSI";"3GPPMEMBER";"Intel Belgium SA/NV";"ETSI";"3GPPMEMBER";"2019-11-13 23:33";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:04";"10.10.8.56";"NO"

Mr.;"Al-Shalash";"Mazin";"Delegate";"";" 14692775780";"";"Futurewei Technologies";"ATIS";"3GPPMEMBER";"Futurewei";"ETSI";"3GPPMEMBER";"2019-10-10 16:43";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 16:45";"10.10.11.227";"NO"

Mr.;"Ambriss";"Mouaffac";"Delegate";"";"+18586514049";"";"Qualcomm Incorporated";"ATIS";"3GPPMEMBER";"Qualcomm Korea";"TTA";"3GPPMEMBER";"2019-10-28 16:35";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 21:42";"10.10.7.23";"NO"

Mr.;"Aquino";"Alan";"Delegate";"";"+810468403100";"";"NTT DOCOMO INC.";"ARIB";"3GPPMEMBER";"NTT DOCOMO INC.";"ARIB";"3GPPMEMBER";"2018-12-08 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 17:23";"10.10.2.200";"NO"

Mr.;"Arad";"Ali";"Delegate";"";"+6475395547";"";"Redline Communications Inc.";"ATIS";"3GPPMEMBER";"Redline Communications Inc.";"ATIS";"3GPPMEMBER";"2019-10-23 19:46";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-20 16:38";"10.10.7.212";"NO"

Mr.;"Araujo";"Lian";"Delegate";"";"+46107131287";"";"Ericsson LM";"ETSI";"3GPPMEMBER";"Ericsson LM";"ETSI";"3GPPMEMBER";"2019-11-15 15:13";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 15:54";"10.10.6.149";"NO"

Mr.;"Arshad";"Malik Wahaj";"Delegate";"";"";"";"Ericsson LM";"ETSI";"3GPPMEMBER";"Ericsson LM";"ETSI";"3GPPMEMBER";"2019-11-07 20:02";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-07 20:02";"arshadm";"NO"

Mr.;"Arzelier";"Claude";"Delegate";"";"";"+33607573140";"";"BlackBerry UK Limited";"ETSI";"3GPPMEMBER";"BlackBerry UK Limited";"ETSI";"3GPPMEMBER";"2019-08-22 12:07";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-20 17:05";"10.10.4.133";"NO"

Mr.;"Augustyniak";"Marcin";"Delegate";"";"";"+48226995370";"";"Orange";"ETSI";"3GPPMEMBER";"Orange";"ETSI";"3GPPMEMBER";"2019-05-16 00:59";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-19 17:13";"10.10.6.43";"NO"

Mr.;"Awad";"Yassin";"Delegate";"";"";"";"Sony Europe B.V.";"ETSI";"3GPPMEMBER";"Sony Corporation";"ARIB";"3GPPMEMBER";"2019-11-07 09:45";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-19 01:42";"10.10.4.174";"NO"

Dr.;"Baboescu";"Florin";"Delegate";"";"";"+1 858 521 4821";"";"BROADCOM CORPORATION";"ETSI";"3GPPMEMBER";"BROADCOM CORPORATION";"ETSI";"3GPPMEMBER";"2019-10-16 17:13";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 23:23";"10.10.4.3";"NO"

Mr.;"Baek";"Sangkyu";"Delegate";"";"";"";"Samsung R&D Institute UK";"ETSI";"3GPPMEMBER";"Samsung Electronics Benelux BV";"ETSI";"3GPPMEMBER";"2019-11-07 12:02";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-19 16:50";"10.10.7.129";"NO"

Mr.;"Baek";"Seung kwon";"Delegate";"";"+82-42-860-5226";"";"ETRI";"";"";"ETRI";"TTA";"3GPPMEMBER";"2019-11-20 07:04";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-20 19:29";"10.10.13.239";"NO"

Mr.;"Bartlett";"David";"Delegate";"";"+447801366681";"";"u-blox AG";"ETSI";"3GPPMEMBER";"u-blox AG";"ETSI";"3GPPMEMBER";"2019-06-19 12:17";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-21 16:28";"10.10.7.120";"NO"

Mr.;"Basu Mallick";"Prateek";"Delegate";"";"+491734762432";"";"Lenovo Mobile Com. Technology";"CCSA";"3GPPMEMBER";"Motorola Mobility España SA";"ETSI";"3GPPMEMBER";"2019-11-07 07:15";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-07 07:15";"basumallickp";"NO"

Mr.;"Bennett";"Steven";"Delegate";"";"+16042337986";"";"Sierra Wireless | S.A.";"ETSI";"3GPPMEMBER";"Sierra Wireless S.A.";"ETSI";"3GPPMEMBER";"2018-04-04 22:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 17:37";"10.10.11.107";"NO"

Mr.;"Berggren";"Anders";"Delegate";"";"+46108018693";"";"Sony Europe B.V.";"ETSI";"3GPPMEMBER";"Sony Mobile Communications";"ARIB";"3GPPMEMBER";"2019-11-07 10:32";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 16:59";"10.10.4.232";"NO"

Mr.;"Bergstrom";"Mattias";"Delegate";"";"+46 10 7164401";"";"Ericsson LM";"ETSI";"3GPPMEMBER";"Oy LM Ericsson AB";"ETSI";"3GPPMEMBER";"2019-02-25 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 19:12";"10.10.11.120";"NO"

Mr.;"Berisot";"Thierry";"Delegate";"";"+33612473918";"";"NOVAMINT";"ETSI";"3GPPMEMBER";"NOVAMINT";"ETSI";"3GPPMEMBER";"2019-11-06 08:07";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 20:48";"10.10.8.95";"NO"

Mr.;"Bertrand";"Pierre";"Delegate";"";"";"";"CATT";"ETSI";"3GPPMEMBER";"CATT";"ETSI";"3GPPMEMBER";"2019-11-15 09:28";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-15 09:28";"bertrandpie";"NO"

Miss;"Bhadauria";"Shubhangi";"Delegate";"";"+49 911 58061-3267";"";"Fraunhofer IIS";"ETSI";"3GPPMEMBER";"Fraunhofer IIS";"ETSI";"3GPPMEMBER";"2019-11-18 17:45";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 16:47";"10.10.5.171";"NO"

Mr.;"Bhaskaran";"Sridhar";"Delegate";"";"";"";"Altiostar";"ETSI";"3GPPMEMBER";"Altiostar";"ETSI";"3GPPMEMBER";"2019-10-04 03:42";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 15:59";"10.10.6.101";"NO"

Mr.;"Bi";"Hao";"Delegate";"";"";"";"Futurewei Technologies";"ATIS";"3GPPMEMBER";"Futurewei Technologies";"ATIS";"3GPPMEMBER";"2019-11-07 04:04";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 21:30";"10.10.11.15";"NO"

Mr.;"Bishop";"Bomber";"Delegate";"";"";"";"U.S. Department of Defense";"ATIS";"3GPPMEMBER";"U.S. Department of Defense";"ATIS";"3GPPMEMBER";"2019-11-11 17:35";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-19 23:07";"10.10.6.106";"NO"

Dr.;"Breuer";"Volker";"Delegate";"";"+4930311028245";"";"Gemalto N.V.";"ETSI";"3GPPMEMBER";"Gemalto N.V.";"ETSI";"3GPPMEMBER";"2019-10-28 07:48";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 17:20";"10.10.8.202";"NO"

Mr.;"Bucknell";"Paul";"Delegate";"";"+44 (0) 20 86064845";"";"FUJITSU Laboratories of Europe";"ETSI";"3GPPMEMBER";"FUJITSU Laboratories of Europe";"ETSI";"3GPPMEMBER";"2018-12-18 23:00";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2018-12-19 13:09";"";"NO"

Mr.;"Burbidge";"Richard";"Delegate";"";"+44 1793 402264";"";"Intel Corporation (UK) Ltd";"ETSI";"3GPPMEMBER";"Intel Corporation (UK) Ltd";"ETSI";"3GPPMEMBER";"2019-01-06 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 17:56";"10.10.7.3";"NO"

Mr.;"Buthler";"Jakob Lindbjerg";"Delegate";"";"+4525394732";"";"Nokia Corporation";"ETSI";"3GPPMEMBER";"Nokia Denmark";"ETSI";"3GPPMEMBER";"2019-11-18 18:11";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 17:13";"10.10.6.32";"NO"

Dr.;"Cai";"Tao";"Delegate";"";"";"";"Huawei Technologies Sweden AB";"ETSI";"3GPPMEMBER";"Huawei Technologies Sweden AB";"ETSI";"3GPPMEMBER";"2019-11-04 14:17";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 18:27";"10.10.7.61";"NO"

Mr.;"Caliguri";"Steven";"Delegate";"";"+1 858.551.1314";"";"Acorn Technologies";"ATIS";"3GPPMEMBER";"Acorn Technologies";"ATIS";"3GPPMEMBER";"2019-09-23 20:33";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-09-23 20:33";"caliguri";"NO"

Mr.;"Catmur";"Richard";"Delegate";"";"+33 9 65 04 44 36";"";"Spirent Communications";"ETSI";"3GPPMEMBER";"Spirent Communications";"ETSI";"3GPPMEMBER";"2019-11-03 19:43";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-19 15:52";"10.10.13.93";"NO"

Mr.;"Cayron";"Noam";"Delegate";"";" +972737003121";"";"Sequans Communications";"ETSI";"3GPPMEMBER";"Sequans Communications";"ETSI";"3GPPMEMBER";"2018-12-30 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 17:13";"10.10.9.127";"NO"

Mr.;"Chakraborty";"Rishikesh";"Delegate";"";"";"";"VODAFONE Group Plc";"ETSI";"3GPPMEMBER";"Vodafone Italia SpA";"ETSI";"3GPPMEMBER";"2019-11-18 17:35";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 17:35";"chakrabortyr";"NO"

Dr.;"Chan";"Yee Sin";"Delegate";"";"+16508621739";"";"Facebook";"ETSI";"3GPPMEMBER";"Facebook";"ETSI";"3GPPMEMBER";"2019-11-18 18:05";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 17:07";"10.10.11.111";"NO"

Mr.;"Chander";"Sharat";"Delegate";"";"+1 (312) 364-6189";"";"AT&T GNS Belgium SPRL";"ETSI";"3GPPMEMBER";"AT&T GNS Belgium SPRL";"ETSI";"3GPPMEMBER";"2018-09-28 22:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 19:40";"10.10.7.237";"NO"

Mr.;"Chang";"Henry";"Delegate";"";"+1 858-882-2033";"";"Kyocera Corporation";"ARIB";"3GPPMEMBER";"Kyocera Corporation";"ARIB";"3GPPMEMBER";"2019-11-07 16:50";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-21 01:58";"10.10.6.142";"NO"

Mr.;"Chang";"Junren";"Delegate";"";"";"";"HiSilicon Technologies Co. Ltd";"CCSA";"3GPPMEMBER";"HiSilicon Technologies Co. Ltd";"CCSA";"3GPPMEMBER";"2019-11-18 17:20";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-21 03:12";"10.10.8.197";"NO"

Mr.;"Chang";"Paul";"Delegate";"";,;"";"OnePlus";"CCSA";"3GPPMEMBER";"OnePlus";"CCSA";"3GPPMEMBER";"2019-10-31 18:14";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-10-31 18:14";"changpa";"NO"

Mr.;"Chang";"Sungcheol";"Delegate";"";"+82-42-860-5456";"";"ETRI";"";"";"ETRI";"TTA";"3GPPMEMBER";"2019-11-08 04:10";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 15:58";"10.10.1.168";"NO"

Ms.;"Chen";"Chiu-Wen";"Delegate";"";"+886 2 660 73 857";"";"III";"ETSI";"3GPPMEMBER";"III";"ETSI";"3GPPMEMBER";"2019-11-06 05:50";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-19 16:52";"10.10.9.244";"NO"

Mr.;"Chen";"Dong";"Delegate";"";"+8601084140827";"";"Nanjing Ericsson Panda Com Ltd";"CCSA";"3GPPMEMBER";"Nanjing Ericsson Panda Com Ltd";"CCSA";"3GPPMEMBER";"2018-02-17 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-22 17:13";"10.10.9.1";"NO"

Mr.;"CHEN";"Eric";"Delegate";"";"";"";"Google Inc.";"ATIS";"3GPPMEMBER";"Google Inc.";"ATIS";"3GPPMEMBER";"2019-10-04 04:31";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-21 18:01";"10.10.4.202";"NO"

Dr.;"Chen";"Hung-chen";"Delegate";"";"";"";"Asia Pacific Telecom co. Ltd";"ETSI";"3GPPMEMBER";"Asia Pacific Telecom co. Ltd";"ETSI";"3GPPMEMBER";"2019-03-27 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 17:06";"10.10.5.83";"NO"

Miss;"chen";"jingjing";"Delegate";"";"+";"";"China Mobile Com. Corporation";"CCSA";"3GPPMEMBER";"China Mobile (Hangzhou) Inf.";"CCSA";"3GPPMEMBER";"2019-11-14 06:47";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:21";"10.10.9.157";"NO"

Mr.;"Chen";"Jun";"Delegate";"";"+862138902175";"";"HiSilicon Technologies Co. Ltd";"CCSA";"3GPPMEMBER";"Huawei Technologies Japan K.K.";"TTC";"3GPPMEMBER";"2019-11-15 09:38";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-21 15:18";"10.10.6.223";"NO"

Dr.;"CHEN";"LI";"Delegate";"";"+86-13810858638";"";"vivo Mobile Communication Co. ;CCSA";"3GPPMEMBER";"vivo Mobile Communication (H)";"CCSA";"3GPPMEMBER";"2019 11-20 01:56";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-20 00:58";"10.10.4.129";"NO"

Dr.;"Chen";"Lin";"Delegate";"";"+";"";"ZTE Corporation";"ETSI";"3GPPMEMBER";"ShenZhen Zhongxing Shitong";"CCSA";"3GPPMEMBER";"2019-11-07 08:31";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-20 00:37";"10.10.12.236";"NO"

Mr.;"Chen";"Ningyu";"Delegate";"";"+";"";"China Mobile Com. Corporation";"CCSA";"3GPPMEMBER";"China Mobile M2M Company Ltd.";"CCSA";"3GPPMEMBER";"2019-11-11 07:59";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:05";"10.10.8.185";"NO"

Ms.;"Chen";"Yuqin";"Delegate";"";"086 18675582015";"";"Apple (UK) Limited";"ETSI";"3GPPMEMBER";"Apple Portugal";"ETSI";"3GPPMEMBER";"2019-11-19 17:49";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 16:50";"10.10.7.175";"NO"

Dr.;"CHENG";"Chien-Chun";"Delegate";"";"";"";"Asia Pacific Telecom co. Ltd";"ETSI";"3GPPMEMBER";"Asia Pacific Telecom co. Ltd";"ETSI";"3GPPMEMBER";"2019-11-12 06:31";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 17:20";"10.10.9.55";"NO"

Ms.;"Cheng";"Ching-Wen";"Delegate";"";"";"+886-3-5914638";"";"ITRI";"ETSI";"3GPPMEMBER";"ITRI";"ETSI";"3GPPMEMBER";"2019-11-18 18:05";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 17:05";"10.10.8.183";"NO"

Mr.;"Cheng";"Peng";"Delegate";"";"+";"";"Qualcomm communications-France";"ETSI";"3GPPMEMBER";"Qualcomm communications-France";"ETSI";"3GPPMEMBER";"2019-10-05 10:20";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 22:33";"10.10.9.237";"NO"

Mr.;"Chin";"Heng-Li";"Delegate";"";"";"";"MTI";"ETSI";"3GPPMEMBER";"MTI";"ETSI";"3GPPMEMBER";"2019-05-08 06:46";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-05-08 06:46";"";"NO"

Mr.;"Chiu";"Chun-yuan";"Delegate";"";"+88635914716";"";"ITRI";"ETSI";"3GPPMEMBER";"ITRI";"ETSI";"3GPPMEMBER";"2019-07-04 01:33";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:22";"10.10.11.17";"NO"

Ms.;"Cho";"Heejeong";"Delegate";"";"+";"";"LG Electronics France";"ETSI";"3GPPMEMBER";"LG Electronics Deutschland";"ETSI";"3GPPMEMBER";"2019-11-07 01:28";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:04";"10.10.8.71";"NO"

Dr.;"Choe";"HyunJung";"Delegate";"";"";"";"LG Electronics UK";"ETSI";"3GPPMEMBER";"LG Electronics UK";"ETSI";"3GPPMEMBER";"2019-11-18 19:11";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 18:41";"10.10.8.27";"NO"

Mr.;"Choi";"Hyung-Nam";"Delegate";"";"+";"";"Motorola Mobility UK Ltd.";"ETSI";"3GPPMEMBER";"Motorola Mobility UK Ltd.";"ETSI";"3GPPMEMBER";"2019-11-06 09:48";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 21:24";"10.10.4.233";"NO"

Dr.;"Chou";"Ching-chun";"Delegate";"";"+88635913275";"";"ITRI";"ETSI";"3GPPMEMBER";"ITRI";"ETSI";"3GPPMEMBER";"2019-11-05 00:50";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:31";"10.10.9.228";"NO"

Mr.;"Christian";"Brett";"Delegate";"";"+1 8164823479";"";"SPRINT Corporation";"ETSI";"3GPPMEMBER";"Sprint Corporation";"ATIS";"3GPPMEMBER";"2019-09-17 18:54";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 18:41";"10.10.5.126";"NO"

Mr.;"Chu";"Jeremy";"Delegate";"";"+61488117430";"";"Telstra Corporation Limited";"ETSI";"3GPPMEMBER";"Telstra Corporation Limited";"ETSI";"3GPPMEMBER";"2019-11-20 00:35";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 23:45";"10.10.9.102";"NO"

Mr.;"Chuberre";"Nicolas";"Delegate";"";"+33 5 34 35 64
97";"";"THALES";"ETSI";"3GPPMEMBER";"THALES";"ETSI";"3GPPMEMBER";"2019-11-18
17:59";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US &
Canada); Tijuana";"Reno Nevada US";"2019-11-18
17:01";"10.10.9.82";"NO"
Mr.;"Cioni";"Stefano";"Delegate";"";"+31 71
5654204";"";"ESA";"ETSI";"3GPPMEMBER";"ESA";"ETSI";"3GPPMEMBER";"2019-09-05
16:42";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US &
Canada); Tijuana";"Reno Nevada US";"2019-11-19
18:25";"10.10.5.47";"NO"
Mr.;"Classon";"Brian";"Delegate";"";"";"";"Classon Consulting";"ATIS";"3GPPMEMBER";"Classon
Consulting";"ATIS";"3GPPMEMBER";"2019-11-06 16:35";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-
22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18
23:13";"10.10.7.52";"NO"
Mr.;"Cong";"Shi";"Delegate";"";"+13426083387";"";"Guangdong OPPO Mobile
Telecom.";"CCSA";"3GPPMEMBER";"Dongguan OPPO Precision Elec.";"CCSA";"3GPPMEMBER";"2019-11-07
09:07";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US &
Canada); Tijuana";"Reno Nevada US";"2019-11-19
22:15";"10.10.6.75";"NO"
Dr.;"Dhanda";"Mungal Singh";"Delegate";"";"+44 (0)1252363253";"";"Qualcomm Technologies
Int";"ETSI";"3GPPMEMBER";"Qualcomm Technologies Int";"ETSI";"3GPPMEMBER";"2019-11-01
11:14";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US &
Canada); Tijuana";"Reno Nevada US";"2019-11-19
16:49";"10.10.6.121";"NO"
Mr.;"DHARMADHIKARI";"OMKAR";"Delegate";"";"";"";"CableLabs";"ETSI";"3GPPMEMBER";"CableLabs";"ETSI";"3GPPMEMBER";"2019-10-08 17:32";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-10-08
17:32";"dharmadhikar";"NO"

Mr.;"Di Girolamo";"Rocco";"Delegate";"";"+1-61--878-5713";"";"Convida Wireless";"ETSI";"3GPPMEMBER";"Convida
Wireless";"ETSI";"3GPPMEMBER";"2019-09-18 14:56";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-
22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-20
00:57";"10.10.4.99";"NO"
Miss;"Diao";"Xueying";"Delegate";"";"";"";"ZTE
Corporation";"ETSI";"3GPPMEMBER";"Sanechips";"CCSA";"3GPPMEMBER";"2019-11-21
16:46";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US &
Canada); Tijuana";"Reno Nevada US";"2019-11-21
17:11";"10.10.9.9";"NO"
Ms.;"Dietrich";"Christiane";"Delegate";"";"+";"";"Nomor Research GmbH";"ETSI";"3GPPMEMBER";"Nomor Research
GmbH";"ETSI";"3GPPMEMBER";"2019-07-17 13:59";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22
17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18
19:33";"10.10.12.71";"NO"

Mr.;"Dijk";"Esko";"Delegate";"";" 31612642103";"";"Philips International B.V.";"ETSI";"3GPPMEMBER";"Philips
International B.V.";"ETSI";"3GPPMEMBER";"2019-11-01 10:40";"F2F";"Present";"3GPPRAN2#108";"2019-11-18
09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19
01:03";"10.10.11.140";"NO"

Mr.;"Dong";"Fei";"Delegate";"";"";"";"ZTE Corporation";"ETSI";"3GPPMEMBER";"ZXNE";"CCSA";"3GPPMEMBER";"2019-
11-08 02:44";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US
& Canada); Tijuana";"Reno Nevada US";"2019-11-22
17:12";"10.10.5.156";"NO"

Mr.;"Dong";"Xiandong";"Delegate";"";"";"";"Beijing Xiaomi Mobile Software";"CCSA";"3GPPMEMBER";"Beijing Xiaomi
Mobile Software";"CCSA";"3GPPMEMBER";"2019-10-30 03:13";"F2F";"Present";"3GPPRAN2#108";"2019-11-18
09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18
15:28";"10.10.5.84";"NO"

Mr.;"Du";"Zhongda";"Delegate";"";"";"";"Guangdong OPPO Mobile Telecom.";"CCSA";"3GPPMEMBER";"Guangdong
OPPO Mobile Telecom.";"CCSA";"3GPPMEMBER";"2019-11-07 23:35";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18
09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-07
23:35";"duzhozh";"NO"
Ms.;"Eklof";"Cecilia";"Delegate";"";"+91 9717391525";"";"Ericsson India Private
Limited";"TSDSI";"3GPPMEMBER";"Ericsson India Private Limited";"TSDSI";"3GPPMEMBER";"2019-11-19
18:23";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US &
Canada); Tijuana";"Reno Nevada US";"2019-11-19
17:24";"10.10.9.126";"NO"
Mr.;"El Hamss";"Aata";"Delegate";"";"+15149046265";"";"InterDigital
Communications";"ATIS";"3GPPMEMBER";"InterDigital Belgium. LLC";"ETSI";"3GPPMEMBER";"2019-10-29
13:41";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US &
Canada); Tijuana";"Reno Nevada US";"2019-11-18
16:00";"10.10.6.114";"NO"
Miss;"EL MOUMOUHI";"Sanaa";"Delegate";"";"";"";"Eutelsat S.A.";"ETSI";"3GPPMEMBER";"Eutelsat
S.A.";"ETSI";"3GPPMEMBER";"2019-11-18 15:22";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22
17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-20
18:33";"10.10.9.53";"NO"

Mr.;"Enbuske";"Henrik";"Delegate";"";"+46730958472";"";"Ericsson Japan K.K.";"ARIB";"3GPPMEMBER";"Ericsson
Inc.";"ATIS";"3GPPMEMBER";"2019-08-07 08:03";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22
17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19
17:21";"10.10.4.126";"NO"
Dr.;"Eroz";"Mustafa";"Delegate";"";"+";"";"HUGHES Network Systems Ltd";"ETSI";"3GPPMEMBER";"HUGHES Network
Systems Ltd";"ETSI";"3GPPMEMBER";"2019-11-20 20:02";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-
11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-20
19:03";"10.10.3.135";"NO"

Mr.;"Fabien";"Jean-Aicard";"Delegate";"";"+720 237
4312";"";"NTIA";"ATIS";"3GPPMEMBER";"NTIA";"ATIS";"3GPPMEMBER";"2019-01-01
23:00";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US &
Canada); Tijuana";"Reno Nevada US";"2019-01-02 16:53";"";"NO"

Mr.;"Fan";"Jiangsheng";"Delegate";"";" 86-01062305566-2030";"";"CATT";"ETSI";"3GPPMEMBER";"GOHIGH DATA
NETWORKS TECH.";"CCSA";"3GPPMEMBER";"2019-11-04 08:11";"F2F";"Present";"3GPPRAN2#108";"2019-11-18
09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18
17:05";"10.10.9.86";"NO"

Dr.;"FAN";"QIANG";"Delegate";"";"";"";"Huawei Telecommunication India";"TSDSI";"3GPPMEMBER";"Huawei
Telecommunication India";"TSDSI";"3GPPMEMBER";"2019-11-15 06:07";"F2F";"Present";"3GPPRAN2#108";"2019-11-18
09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-20
02:43";"10.10.6.206";"NO"
Mr.;"Fan";"Wei";"Delegate";"";"";"";"Spreadtrum Communications";"CCSA";"3GPPMEMBER";"Spreadtrum
Communications";"CCSA";"3GPPMEMBER";"2019-03-21 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18
09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19
17:13";"10.10.4.50";"NO"

Mr.;"Faurie";"Rene";"Delegate";"";"+33 (0)6 71 28 86 63";"";"BlackBerry UK Limited";"ETSI";"3GPPMEMBER";"BlackBerry
UK Limited";"ETSI";"3GPPMEMBER";"2019-11-08 12:04";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-
22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18
16:52";"10.10.3.77";"NO"
Mr.;"Fehrenbach";"Thomas";"Delegate";"";"+";"";"Fraunhofer HHI";"ETSI";"3GPPMEMBER";"Fraunhofer
HHI";"ETSI";"3GPPMEMBER";"2019-11-19 23:13";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22
17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19
22:13";"10.10.12.205";"NO"
Dr.;"Fischer";"Sven";"Delegate";"";"+49 911 54013 518";"";"Qualcomm CDMA
Technologies";"ETSI";"3GPPMEMBER";"Qualcomm Tech. Netherlands B.V";"ETSI";"3GPPMEMBER";"2019-11-01
17:41";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US &
Canada); Tijuana";"Reno Nevada US";"2019-11-18
15:54";"10.10.6.124";"NO"
Mr.;"Folke";"Mats";"Delegate";"";"+46107171385";"";"Ericsson LM";"ETSI";"3GPPMEMBER";"Ericsson Telecomunicazion
SpA";"ETSI";"3GPPMEMBER";"2019-05-16 12:10";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22
17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19
01:13";"10.10.4.147";"NO"

Mr.;"Freda";"Martino";"Delegate";"";"+1-514-904-6248";"";"Interdigital Asia LLC";"TTA";"3GPPMEMBER";"Interdigital
Asia LLC";"TTA";"3GPPMEMBER";"2019-11-19 18:36";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-
22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19
17:38";"10.10.8.131";"NO"

Ms.;"Fu";"Zhe";"Delegate";"";"";"";"";"Guangdong OPPO Mobile Telecom.";"CCSA";"3GPPMEMBER";"Chengdu OPPO
Mobile Com. corp.";"CCSA";"3GPPMEMBER";"2019-11-07 08:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18
09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19
18:34";"10.10.8.39";"NO"

Mr.;"Fujishiro";"Masato";"Delegate";"";"+81459436561";"";"Kyocera Corporation";"ARIB";"3GPPMEMBER";"Kyocera
Corporation";"ARIB";"3GPPMEMBER";"2019-05-13 18:31";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-
11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18
16:07";"10.10.2.153";"NO"
Mr.;"Futaki";"Hisashi";"Delegate";"";"";"";"";"NEC Corporation";"ARIB";"3GPPMEMBER";"NEC
Corporation";"ARIB";"3GPPMEMBER";"2019-11-12 01:52";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-
11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18
18:18";"10.10.6.140";"NO"

Mr.;"Gach";"Guillaume";"Delegate";"";"+33170984311";"";"Union Inter. Chemins de Fer";"ETSI";"3GPPMEMBER";"Union
Inter. Chemins de Fer";"ETSI";"3GPPMEMBER";"2019-11-19 18:25";"F2F";"Present";"3GPPRAN2#108";"2019-11-18
09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19
17:27";"10.10.2.27";"NO"
Mr.;"Gao";"Shuai";"Delegate";"";"";"";"";"China Unicom";"CCSA";"3GPPMEMBER";"China
Unicom";"CCSA";"3GPPMEMBER";"2019-11-08 02:03";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-
22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-08
02:03";"gaoshs";"NO"
Dr.;"Ghimire";"Birendra";"Delegate";"";"";"";"";"Fraunhofer IIS";"ETSI";"3GPPMEMBER";"Fraunhofer
IIS";"ETSI";"3GPPMEMBER";"2019-11-21 04:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22
17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-21
03:01";"10.10.11.116";"NO"
Dr.;"Ghosh";"Arun";"Delegate";"";"+5129638319";"";"AT&T";"ATIS";"3GPPMEMBER";"AT&T";"ATIS";"3GPPMEMBER";"2
019-01-09 23:00";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time
(US & Canada); Tijuana";"Reno Nevada US";"2019-01-10 01:47";"";"NO"
Mrs.;"Goel";"Neha";"Delegate";"";"9253099477";"";"Dish Network";"ATIS";"3GPPMEMBER";"Dish
Network";"ATIS";"3GPPMEMBER";"2019-11-21 17:28";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-
22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-21
20:36";"10.10.5.69";"NO"
Mrs.;"Goldhamer";"Mariana";"Delegate";"";"+972 54
4225548";"";"HERON";"ETSI";"3GPPMEMBER";"HERON";"ETSI";"3GPPMEMBER";"2019-11-12
17:51";"F2F";"Absent";"3GPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US &
Canada); Tijuana";"Reno Nevada US";"2019-11-12
17:51";"goldhamer";"NO"
Mr.;"Golitschek Edler Von Elbwart";"Alexander";"Delegate";"";"";"";"Motorola Mobility Germany
GmbH";"ETSI";"3GPPMEMBER";"Motorola Mobility Germany GmbH";"ETSI";"3GPPMEMBER";"2019-03-10
23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US &
Canada); Tijuana";"Reno Nevada US";"2019-11-22
20:07";"10.10.11.245";"NO"

Mr.;"Grant";"Marc";"Delegate";"";"+1 512 483 1190";"";"AT&T GNS Belgium SPRL";"ETSI";"3GPPMEMBER";"AT&T GNS Belgium SPRL";"ETSI";"3GPPMEMBER";"2019-10-22 14:35";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 15:45";"10.10.5.21";"NO"

Mr.;"Grec";"Florin";"Delegate";"";"+31715655486";"";"ESA";"ETSI";"3GPPMEMBER";"ESA";"ETSI";"3GPPMEMBER";"2019-10-30 09:56";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-10-30 09:56";"grec";"NO"

Mr.;"Griep";"Karl";"Delegate";"";"+1 206 295 8644";"";"Kymeta Corporation";"ETSI";"3GPPMEMBER";"Kymeta Corporation";"ETSI";"3GPPMEMBER";"2019-11-19 16:05";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 16:05";"griep";"NO"

Dr.;"Gunnarsson";"Fredrik";"Delegate";"";"+46107114254";"";"Ericsson LM";"ETSI";"3GPPMEMBER";"Ericsson LM";"ETSI";"3GPPMEMBER";"2019-11-19 04:30";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 03:37";"10.10.13.10";"NO"

Mr.;"Guo";"Roger";"Delegate";"";"+886-2-28943447 1293";"";"ASUSTEK COMPUTER (SHANGHAI)";"CCSA";"3GPPMEMBER";"ASUSTEK COMPUTER (SHANGHAI)";"CCSA";"3GPPMEMBER";"2019-08-22 06:49";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-08-22 06:49";"guor";"NO"

Mr.;"Guo";"Yi";"Delegate";"";"15900449667";"";"Intel Corporation (UK) Ltd";"ETSI";"3GPPMEMBER";"Intel Corporation (UK) Ltd";"ETSI";"3GPPMEMBER";"2019-11-19 18:17";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 17:20";"10.10.9.81";"NO"

Mr.;"Gurumoorthy";"Sethuraman";"Delegate";"";"+17323062517";"";"Apple (UK) Limited";"ETSI";"3GPPMEMBER";"Apple (UK) Limited";"ETSI";"3GPPMEMBER";"2019-10-11 18:12";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:18";"10.10.3.23";"NO"

Mr.;"Gurumurthy";"Venkataramanan";"Delegate";"";"+91-9739788269";"";"Indian Institute of Tech (M)";"TSDSI";"3GPPMEMBER";"Indian Institute of Tech (M)";"TSDSI";"3GPPMEMBER";"2019-10-25 07:56";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-10-25 07:56";"gurumurthyv";"NO"

Dr.;"Haghani";"Ethan";"Delegate";"";"";"";"Apple Portugal";"ETSI";"3GPPMEMBER";"Apple Portugal";"ETSI";"3GPPMEMBER";"2019-11-05 19:24";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 17:46";"10.10.13.115";"NO"

Dr.;"Hampel";"Georg";"Rapporteur";"";"+001 646 584 9831";"";"Qualcomm Incorporated";"ATIS";"3GPPMEMBER";"Qualcomm Tech. Netherlands B.V";"ETSI";"3GPPMEMBER";"2019-11-04 14:35";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 22:12";"10.10.9.75";"NO"

Dr.;"Han";"Jaemin";"Delegate";"";"+";"";"Intel Mobile Communications";"TSDSI";"3GPPMEMBER";"Intel Ireland";"ETSI";"3GPPMEMBER";"2019-02-19 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:25";"10.10.5.76";"NO"

Mr.;"Han";"Jing";"Delegate";"";"";"";"Lenovo Mobile Com. Technology";"CCSA";"3GPPMEMBER";"Lenovo Mobile Com. Technology";"CCSA";"3GPPMEMBER";"2019-11-18 18:16";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 17:17";"10.10.6.123";"NO"

Mr.;"Han";"Lifeng";"Delegate";"";"";"";"Spreadtrum Communications";"CCSA";"3GPPMEMBER";"Spreadtrum Communications";"CCSA";"3GPPMEMBER";"2018-07-09 22:00";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2018-07-10 01:12";"";"NO"

Mr.;"Harada";"Kouhei";"Delegate";"";"+";"";"NTT DOCOMO INC.";"ARIB";"3GPPMEMBER";"NTT DOCOMO INC.";"ARIB";"3GPPMEMBER";"2019-09-26 04:06";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-21 15:44";"10.10.8.237";"NO"

Mr.;"Harper";"Colby";"Delegate";"";"";"";"Pivotal Commware";"ATIS";"3GPPMEMBER";"Pivotal Commware";"ATIS";"3GPPMEMBER";"2019-08-09 18:25";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-22 16:44";"10.10.12.80";"NO"

Dr.;"Hasegawa";"Fumihiro";"Delegate";"";"";"";"Mitsubishi Electric Co.";"ARIB";"3GPPMEMBER";"Mitsubishi Electric Corp";"TTC";"3GPPMEMBER";"2019-10-07 04:37";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 17:44";"10.10.5.48";"NO"

Mr.;"Hausler";"Grant";"Delegate";"";"+";"";"Swift Navigation";"ATIS";"3GPPMEMBER";"Swift Navigation";"ATIS";"3GPPMEMBER";"2019-11-06 06:13";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 20:37";"10.10.13.135";"NO"

;"He";"Linhai";"Delegate";"";"+41 628 661620";"";"Qualcomm Wireless GmbH";"ETSI";"3GPPMEMBER";"Qualcomm Wireless GmbH";"ETSI";"3GPPMEMBER";"2019-08-25 08:11";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 22:13";"10.10.6.203";"NO"

Mr.;"Hedayat";"Reza";"Delegate";"";"";"";"Charter Communications" | Inc";"ATIS";"3GPPMEMBER";"Charter Communications" | Inc";"ATIS";"3GPPMEMBER";"2019-10-14 15:45";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 20:34";"10.10.12.102";"NO"

Mr.;"Henttonen";"Tero";"Vice Chair";"";"+358504836369";"";"Nokia Corporation";"ETSI";"3GPPMEMBER";"Nokia France";"ETSI";"3GPPMEMBER";"2019-09-05 05:59";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 17:05";"10.10.8.245";"NO"

Ms.;"Heo";"Youn hyoung";"Delegate";"";"+1 408 218 8874";"";"Intel Corporation (UK) Ltd";"ETSI";"3GPPMEMBER";"Intel Korea" | Ltd.";"TTA";"3GPPMEMBER";"2019-11-12 18:32";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 17:23";"10.10.8.150";"NO"

Mr.;"Hofmann";"Alexander";"Delegate";"";" 4915123363485";"";"Fraunhofer IIS";"ETSI";"3GPPMEMBER";"Fraunhofer IIS";"ETSI";"3GPPMEMBER";"2019-11-06 17:23";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-19 15:23";"10.10.13.3";"NO"

Dr.;"Hong";"Jongwoo";"Delegate";"";"";"";"LG Electronics Inc.";"TTA";"3GPPMEMBER";"LG Electronics Inc.";"TTA";"3GPPMEMBER";"2019-11-20 02:35";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-20 01:36";"10.10.13.206";"NO"

Mr.;"Hong";"Sungpyo";"Delegate";"";" 82-10-7239-5261";"";"KT Corp.";"TTA";"3GPPMEMBER";"KT Corp.";"TTA";"3GPPMEMBER";"2019-01-08 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 20:13";"10.10.9.26";"NO"

Mr.;"Hong";"Wei";"Delegate";"";"+8613911037638";"";"Beijing Xiaomi Mobile Software";"CCSA";"3GPPMEMBER";"Xiaomi Communications";"CCSA";"3GPPMEMBER";"2019-02-13 23:00";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-02-14 07:22";"";"NO"

Ms.;"Hu";"Haijing";"Delegate";"";"";"";"Apple Switzerland AG";"ETSI";"3GPPMEMBER";"Apple Switzerland AG";"ETSI";"3GPPMEMBER";"2019-11-12 19:01";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-12 19:01";"huhai";"NO"

Mr.;"Hu";"Nan";"Delegate";"";"+861066006688";"";"China Mobile Com. Corporation";"CCSA";"3GPPMEMBER";"China Mobile E-Commerce Co.";"CCSA";"3GPPMEMBER";"2019-11-15 06:29";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-15 06:29";"hun";"NO"

Miss;"Huang";"Xueyan";"Delegate";"";"";"";"China Mobile Com. Corporation";"CCSA";"3GPPMEMBER";"CMDI";"CCSA";"3GPPMEMBER";"2019-11-11 10:02";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 15:59";"10.10.7.166";"NO"

Mr.;"Humbert";"John";"Delegate";"";" +1 (425) 279-4816";"";"T-Mobile USA Inc.";"ATIS";"3GPPMEMBER";"T-Mobile USA Inc.";"ATIS";"3GPPMEMBER";"2019-03-28 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-19 23:28";"10.10.7.9";"NO"

Mr.;"HWANG";"KYUNGMIN";"Delegate";"";"821080804027";"";"LG Uplus";"TTA";"3GPPMEMBER";"LG Uplus";"TTA";"3GPPMEMBER";"2019-11-06 06:56";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 16:32";"10.10.5.200";"NO"

Mr.;"Ingale";"Mangesh";"Delegate";"";"+91 98860 39507";"";"Samsung R&D Institute India";"TSDSI";"3GPPMEMBER";"Samsung R&D Institute India";"TSDSI";"3GPPMEMBER";"2019-11-08 06:27";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 17:11";"10.10.7.232";"NO"

Mr.;"Ishii";"Art";"Delegate";"";"+13608177519";"";"SHARP Corporation";"ARIB";"3GPPMEMBER";"SHARP Corporation";"ARIB";"3GPPMEMBER";"2019-11-07 20:56";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 16:19";"10.10.6.89";"NO"

Mr.;"Iwayama";"Naofumi";"Delegate";"";"+81 3 3218 6407";"";"Mitsubishi Electric Co.";"ARIB";"3GPPMEMBER";"Mitsubishi Electric Co.";"ARIB";"3GPPMEMBER";"2019-09-17 03:06";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 15:05";"10.10.3.221";"NO"

Ms.;"Jaffar";"Munira";"Delegate";"";"+13016017363";"";"HUGHES Network Systems Ltd";"ETSI";"3GPPMEMBER";"HUGHES Network Systems Ltd";"ETSI";"3GPPMEMBER";"2019-11-06 16:14";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-06 16:14";"jaffar";"NO"

Mr.;"Jang";"Jaehyuk";"Delegate";"";"";"";"Samsung Electronics Co.

Ltd";"TTA";"3GPPMEMBER";"Samsung Electronics Iberia SA";"ETSI";"3GPPMEMBER";"2019-11-19 16:29";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno

Nevada

US";"2019-11-19 15:29";"10.10.6.11";"NO"

Dr.;"Jeon";"Ho In";"Delegate";"";"";"+82-10-5277-5321";"";"OnFace Co.

Ltd.";"TTA";"3GPPMEMBER";"OnFace Co.

Ltd.";"TTA";"3GPPMEMBER";"2019-11-18 18:35";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno

Nevada

US";"2019-11-18 17:35";"10.10.9.73";"NO"

Mr.;"Jeong";"Kyeongin";"Delegate";"";"";" 1 971-329-6228";"";"Samsung Research America";"ATIS";"3GPPMEMBER";"Samsung Research America";"ATIS";"3GPPMEMBER";"2019-11-01 19:45";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno

Nevada

US";"2019-11-22 18:12";"10.10.12.200";"NO"

Mr.;"Jha";"Vivek";"Delegate";"";"";"";"Altiostar";"ETSI";"3GPPMEMBER";"Altiostar";"ETSI";"3GPPMEMBER";"2019-11-16 03:46";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno

Nevada

US";"2019-11-22 17:30";"10.10.9.143";"NO"

Ms.;"jia";"meiyi";"Delegate";"";;"";"FUJITSU Laboratories of Europe";"ETSI";"3GPPMEMBER";"FUJITSU Laboratories of Europe";"ETSI";"3GPPMEMBER";"2019-11-15 05:30";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno

Nevada

US";"2019-11-23 00:26";"10.10.8.124";"NO"

Mr.;"JIANG";"XIAOWEI";"Delegate";"";"+";"";"Beijing Xiaomi Mobile Software";"CCSA";"3GPPMEMBER";"Beijing Xiaomi Mobile Software";"CCSA";"3GPPMEMBER";"2018-10-10 22:00";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno

Nevada

US";"2018-10-11 01:45";"";"NO"

Dr.;"Jin";"Seungri";"Delegate";"";"+821093414393";"";"Samsung Electronics Co.

Ltd";"TTA";"3GPPMEMBER";"Samsung Electronics France SA";"ETSI";"3GPPMEMBER";"2019-11-07 10:58";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno

Nevada

US";"2019-11-19 18:22";"10.10.9.63";"NO"

Mr.;"Jo";"Geumsan";"Delegate";"";"+";"";"LG Electronics France";"ETSI";"3GPPMEMBER";"LG Electronics France";"ETSI";"3GPPMEMBER";"2019-08-16 05:49";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno

Nevada

US";"2019-11-18 15:28";"10.10.4.201";"NO"

Mr.;"Johansson";"Johan";"Chair";"";"+46700962260";"";"MediaTek Inc.";"ETSI";"3GPPMEMBER";"MediaTek Beijing Inc.";"CCSA";"3GPPMEMBER";"2019-09-20 00:17";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno

Nevada

US";"2019-09-20 00:17";"johanssonjo1";"NO"

Mr.;"Jose";"Pradeep";"Delegate";"";"";"";"MediaTek Inc.";"ETSI";"3GPPMEMBER";"MediaTek Inc.";"ETSI";"3GPPMEMBER";"2019-11-15 18:22";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno

Nevada

US";"2019-11-19 20:23";"10.10.4.142";"NO"

Mr.;"JOSEPH";"VINAY";"Delegate";"";"";"";"QUALCOMM Europe Inc. - Italy";"ETSI";"3GPPMEMBER";"QUALCOMM Europe Inc. - Italy";"ETSI";"3GPPMEMBER";"2019-11-01 17:11";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno

Nevada

US";"2019-11-18 16:10";"10.10.9.10";"NO"

Mr.;"Jung";"Jungsoo";"Delegate";"";"+82-31-279-5082";"";"Samsung Electronics Co.

Ltd";"TTA";"3GPPMEMBER";"Samsung Electronics Co.

Ltd";"TTA";"3GPPMEMBER";"2018-06-20 22:00";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno

Nevada

US";"2018-06-20 22:53";"";"NO"

Mr.;"Jung";"Sangyeob";"Delegate";"";"";"";"Samsung Electronics Co.

Ltd";"TTA";"3GPPMEMBER";"Samsung Electronics Co.

Ltd";"TTA";"3GPPMEMBER";"2019-11-08 06:10";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno

Nevada

US";"2019-11-19 16:56";"10.10.4.182";"NO"

Mr.;"Jung";"SungHoon";"Delegate";"";"+821030686206";"";"LG Electronics France";"ETSI";"3GPPMEMBER";"LG Electronics France","ETSI";"3GPPMEMBER";"2019-11-20 08:32";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-22 20:10";"10.10.6.233";"NO"

Mr.;"Kadirl";"Veera Prasada";"Delegate";"";"+0018582486924";"";"Qualcomm Incorporated";"ATIS";"3GPPMEMBER";"Qualcomm India Pvt Ltd";"TSDSI";"3GPPMEMBER";"2019-04-07 22:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 19:09";"10.10.11.1";"NO"

Ms.;"Kang";"HyunJeong";"Delegate";"";"+82-31-279-9028";"";"Samsung R&D Institute UK";"ETSI";"3GPPMEMBER";"Tianjin Samsung Telecom";"CCSA";"3GPPMEMBER";"2019-11-08 05:49";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 19:06";"10.10.5.121";"NO"

Dr.;"Karlsson";"Robert";"Delegate";"";"";"";"Ericsson LM";"ETSI";"3GPPMEMBER";"Ericsson GmbH Eurolab";"ETSI";"3GPPMEMBER";"2019-01-31 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 16:47";"10.10.8.16";"NO"

Mr.;"Kerry";"Stuart";"Delegate";"";"+1 408 636 4916";"";"Ruckus";"ETSI";"3GPPMEMBER";"Ruckus";"ETSI";"3GPPMEMBER";"2019-02-18 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 18:48";"10.10.3.217";"NO"

Mr.;"khaliq";"Osaid";"Delegate";"";"+49 30311028308";"";"Gemalto N.V.";"ETSI";"3GPPMEMBER";"Gemalto N.V.";"ETSI";"3GPPMEMBER";"2019-03-18 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 18:32";"10.10.8.63";"NO"

Mr.;"Kii";"Toshihiko";"Delegate";"";"+8588245853";"";"Sony Mobile Communications";"ARIB";"3GPPMEMBER";"Sony Mobile Communications";"ARIB";"3GPPMEMBER";"2018-05-15 22:00";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2018-05-16 16:51";"";"NO"

Mr.;"Kim";"Daegyun";"Delegate";"";"";"";"Samsung R&D Institute UK";"ETSI";"3GPPMEMBER";"BEIJING SAMSUNG TELECOM R&D";"CCSA";"3GPPMEMBER";"2019-11-19 19:40";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 18:48";"10.10.9.33";"NO"

Mr.;"Kim";"Donggun";"Delegate";"";"";"";"Samsung Research America";"ATIS";"3GPPMEMBER";"Harman GmbH";"ETSI";"3GPPMEMBER";"2019-11-07 00:47";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 19:02";"10.10.6.79";"NO"

Mr.;"Kim";"Hongsuk";"Delegate";"";"+82-10-8284-8405";"";"LG Electronics Finland";"ETSI";"3GPPMEMBER";"LG Electronics Finland";"ETSI";"3GPPMEMBER";"2019-02-14 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-20 16:27";"10.10.9.98";"NO"

Mr.;"Kim";"Jaeheung";"Delegate";"";"+82-42-860-6806";"";"ETRI";"";"";"ETRI";"TTA";"3GPPMEMBER";"2019-11-06 23:51";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:06";"10.10.4.110";"NO"

Ms.;"Kim";"JaYeong";"Delegate";"";"";"";"LG Electronics France";"ETSI";"3GPPMEMBER";"LG Electronics Deutschland";"ETSI";"3GPPMEMBER";"2019-11-08 01:07";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 00:02";"10.10.8.135";"NO"

Dr.;"Kim";"Sangbum";"Delegate";"";"+82 31 279 7092";"";"Samsung Research America";"ATIS";"3GPPMEMBER";"Samsung Electronics Czech";"ETSI";"3GPPMEMBER";"2019-11-19 23:05";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 22:06";"10.10.9.57";"NO"

Mr.;"Kim";"Sangjin";"Delegate";"";"";"";"Samsung Electronics Co. Ltd";"TTA";"3GPPMEMBER";"Samsung Electronics Co." Ltd";"TTA";"3GPPMEMBER";"2019-11-14 00:54";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 15:43";"10.10.12.220";"NO"

Mr.;"Kim";"Sangwon";"Delegate";"";"+82-10-2932-0123";"";"LG Electronics Inc.";"TTA";"3GPPMEMBER";"LG Electronics Inc.";"TTA";"3GPPMEMBER";"2019-11-19 18:17";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 18:17";"kimsangw";"NO"

Mr.;"Kim";"Soenghun";"Delegate";"";"+82 31 279 5118";"";"Samsung Electronics Co. Ltd";"TTA";"3GPPMEMBER";"Samsung Electronics Nordic AB";"ETSI";"3GPPMEMBER";"2019-11-19 20:04";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 19:10";"10.10.4.106";"NO"

		;CCSA";"3GPPMEMBER";"2019-11-18 17:37";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22		
Dr.;"Kimba";"Boubacar";"Delegate";"";" 86 10 53520090-7523";"";"vivo Mobile Communication Co.	;CCSA";"3GPPMEMBER";"vivo Mobile Communication Co.	17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno	Nevada	US";"2019-11-18 16:40";"10.10.5.36";"NO"
Mr.;"Kiss";"Krisztian";"Delegate";"";"";"";"Apple (UK) Limited";"ETSI";"3GPPMEMBER";"Apple Hungary Kft.";"ETSI";"3GPPMEMBER";"2019-10-31 17:12";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno	Nevada	US";"2019-11-20 18:20";"10.10.0.187";"NO"		
Mr.;"Kitazoe";"Masato";"Delegate";"";"+81 3 5412 8951";"";"QUALCOMM JAPAN LLC.";"ARIB";"3GPPMEMBER";"QUALCOMM JAPAN LLC.";"ARIB";"3GPPMEMBER";"2019-11-07 04:53";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno	Nevada	US";"2019-11-19 17:28";"10.10.5.35";"NO"		
Dr.;"Kogiantis";"Achilles";"Delegate";"";" 1-732-898-8086";"";"Perspecta Labs Inc.";"ATIS";"3GPPMEMBER";"Perspecta Labs Inc.";"ATIS";"3GPPMEMBER";"2019-11-07 04:52";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno	Nevada	US";"2019-11-18 18:25";"10.10.5.30";"NO"		
Mr.;"Koh";"Benjamin";"Delegate";"";"+6565505481";"";"Panasonic Corporation";"ARIB";"3GPPMEMBER";"Panasonic Corporation";"ARIB";"3GPPMEMBER";"2019-01-29 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno	Nevada	US";"2019-11-18 23:56";"10.10.8.225";"NO"		
Mr.;"Koo";"Eng Wei";"Delegate";"";"+65-66028669";"";"ViaviSolutions Deutsch. GmbH";"ETSI";"3GPPMEMBER";"ViaviSolutions Deutsch. GmbH";"ETSI";"3GPPMEMBER";"2019-05-30 14:24";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno	Nevada	US";"2019-11-18 22:31";"10.10.3.198";"NO"		
Ms.;"Koo";"Hyounhee";"Delegate";"";"+82 10 5777 9817";"";"SyncTechno Inc.";"ETSI";"3GPPMEMBER";"SyncTechno Inc.";"ETSI";"3GPPMEMBER";"2019-11-11 19:58";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno	Nevada	US";"2019-11-18 16:26";"10.10.0.142";"NO"		
Dr.;"Korhonen";"Jouni";"Delegate";"";"+358504873229";"";"Nordic Semiconductor ASA";"ETSI";"3GPPMEMBER";"Nordic Semiconductor ASA";"ETSI";"3GPPMEMBER";"2019-09-10 04:50";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno	Nevada	US";"2019-09-10 04:50";"korhonenjou";"NO"		
Dr.;"Korhonen";"Juha";"Secretary";"";"+33 4 92 94 43 52";"";"ETSI";"ETSI";"3GPPORG_REP";"ETSI";"ETSI";"3GPPORG_REP";"2019-10-22 12:14";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno	Nevada	US";"2019-11-18 16:48";"10.10.1.178";"NO"		
Mr.;"Koskela";"Jarkko";"Delegate";"";"+358407309147";"";"Nokia Corporation";"ETSI";"3GPPMEMBER";"Nokia Belgium";"ETSI";"3GPPMEMBER";"2019-02-14 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno	Nevada	US";"2019-11-18 16:34";"10.10.5.229";"NO"		
Mr.;"Koskinen";"Jussi-pekka";"Delegate";"";"+358408037172";"";"Nokia Corporation";"ETSI";"3GPPMEMBER";"Nokia Corporation";"ETSI";"3GPPMEMBER";"2019-01-20 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno	Nevada	US";"2019-11-18 16:39";"10.10.8.7";"NO"		
Mr.;"Koziol";"Dawid";"Delegate";"";"+48882824222";"";"Nokia Germany";"ETSI";"3GPPMEMBER";"Nokia Italy";"ETSI";"3GPPMEMBER";"2019-11-07 18:09";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno	Nevada	US";"2019-11-19 16:45";"10.10.8.243";"NO"		
Mrs.;"Kuang";"Yiru";"Delegate";"";"";"";"";"Huawei Device Co.	Ltd";"CCSA";"3GPPMEMBER";"Huawei Device Co.	Ltd";"CCSA";"3GPPMEMBER";"2019-11-07 11:29";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno	Nevada	US";"2019-11-18 15:52";"10.10.5.218";"NO"
Mr.;"Kung";"Xinra";"Delegate";"";"";"";"";"ASUSTEK COMPUTER (SHANGHAI)";"CCSA";"3GPPMEMBER";"ASUSTEK COMPUTER (SHANGHAI)";"CCSA";"3GPPMEMBER";"2019-10-07 07:50";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno	Nevada	US";"2019-11-18 15:56";"10.10.7.145";"NO"		
Dr.;"Kuo";"Ping-heng (wallace)";"Delegate";"";"";"";"";"Nokia Uk";"ETSI";"3GPPMEMBER";"Nokia Uk";"ETSI";"3GPPMEMBER";"2019-10-30 08:34";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno	Nevada	US";"2019-11-18 15:36";"10.10.5.169";"NO"		

Dr.,"Kwan","Man Wai","Delegate","","","","","ASTRI","ETSI","3GPPMEMBER","ASTRI","ETSI","3GPPMEMBER","2019-09-27 02:28","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-18 16:13","10.10.9.155","NO"

Mr.,"Kwon","Kibum","Delegate","","","+82-2-3463-9725","","ITL","TTA","3GPPMEMBER","ITL","TTA","3GPPMEMBER","2019-11-08 02:11","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-18 15:57","10.10.6.72","NO"

Mr.,"Kwun","Jonghyung","Delegate","","","","","Samsung Electronics Co.","Ltd","TTA","3GPPMEMBER","Samsung Electronics Co.","Ltd","TTA","3GPPMEMBER","2019-11-21 19:47","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-21 18:48","10.10.13.151","NO"

Mr.,"Lagrange","Pascal","Delegate","","","+33299876800","","CANON Research Centre France","ETSI","3GPPMEMBER","CANON Research Centre France","ETSI","3GPPMEMBER","2019-01-23 23:00","F2F","Absent","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-01-24 08:59","","NO"

Mr.,"Lecompte","David","Delegate","","","","","Huawei Technologies France","ETSI","3GPPMEMBER","Huawei Technologies France","ETSI","3GPPMEMBER","2019-02-11 23:00","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-20 22:49","10.10.4.151","NO"

Mr.,"LEE","Gyeongcheol","Delegate","","+","","LG Electronics Inc.","TTA","3GPPMEMBER","LG Electronics UK","ETSI","3GPPMEMBER","2019-01-30 23:00","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-18 15:59","10.10.8.60","NO"

Mr.,"Lee","Hanul","Delegate","","82165871256","","LG Electronics Inc.","TTA","3GPPMEMBER","LG Electronics Polska","ETSI","3GPPMEMBER","2019-10-07 00:47","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-19 00:02","10.10.5.10","NO"

Mr.,"Lee","Jeonggu","Delegate","","+","","LG Electronics France","ETSI","3GPPMEMBER","LG Electronics Polska","ETSI","3GPPMEMBER","2019-11-03 13:43","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-18 16:57","10.10.8.129","NO"

Mr.,"Lee","KyoungSeok","Delegate","","+82-42-860-6690","","ETRI","","","ETRI","TTA","3GPPMEMBER","2019-11-13 00:23","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-20 00:31","10.10.6.118","NO"

Mr.,"Lee","Oanyong","Delegate","","+82-10-9482-0418","","LG Electronics France","ETSI","3GPPMEMBER","LG Electronics Deutschland","ETSI","3GPPMEMBER","2019-11-11 01:54","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-18 15:54","10.10.6.217","NO"

Prof.,"Lee","Tsernhuei","Delegate","","","","","ITRI","ETSI","3GPPMEMBER","ITRI","ETSI","3GPPMEMBER","2019-10-14 07:06","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-18 15:35","10.10.4.238","NO"

Mr.,"Lee","Youngdae","Delegate","","+82 31 450 1910","","LG Electronics France","ETSI","3GPPMEMBER","LG Electronics Polska","ETSI","3GPPMEMBER","2018-01-25 23:00","F2F","Absent","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2018-01-26 19:41","","NO"

Dr.,"Lei","Yixue","Delegate","","+","","Tencent","CCSA","3GPPMEMBER","Tencent","CCSA","3GPPMEMBER","2019-11-20 18:30","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-20 17:30","10.10.4.57","NO"

Dr.,"Li","Haitao","Delegate","","","","","Guangdong OPPO Mobile Telecom.","CCSA","3GPPMEMBER","Shenzhen YZF Network Technolog","CCSA","3GPPMEMBER","2019-11-07 09:09","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-19 18:05","10.10.7.63","NO"

Mrs.,"Li","Jianxiang","Delegate","","8618501905381","","CATT","ETSI","3GPPMEMBER","CATT","ETSI","3GPPMEMBER","2019-11-08 06:12","F2F","Absent","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-08 06:12","lijiajianx","NO"

Ms.,"Li","PEI","Delegate","","","","","China Unicom","CCSA","3GPPMEMBER","China Unicom","CCSA","3GPPMEMBER","2019-11-04 02:58","F2F","Absent","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-04 02:58","lipeip","NO"

Miss,"Li","Yanhua","Delegate","","+86 13520787506","","Beijing Xiaomi Mobile Software","CCSA","3GPPMEMBER","Xiaomi Technology","CCSA","3GPPMEMBER","2019-11-07 01:50","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-22 19:27","10.10.2.48","NO"

Ms.,"Liang","Jing","Delegate","","","","","CATT","ETSI","3GPPMEMBER","Datang Mobile Com. Equipment","CCSA","3GPPMEMBER","2019-11-14 08:41","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-19 18:13","10.10.9.224","NO"

;CCSA";"3GPPMEMBER";"vivo Mobile Communication (S)";"CCSA";"3GPPMEMBER";"2019-11-15 03:12","F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 17:40";"10.10.8.20";"NO"

Mr.;"Liang";"Jing";"Delegate";"";"";"";"vivo Mobile Communication Co.

Mr.;"Lien";"Shao-Yu";"Delegate";"";"+886 5 272 0411";"";"CCU";"ETSI";"3GPPMEMBER";"CCU";"ETSI";"3GPPMEMBER";"2019-11-17 10:20";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:30";"10.10.9.200";"NO"

Mr.;"Lim";"Seau Sian";"Delegate";"";"";"";"Intel K.K.";"ARIB";"3GPPMEMBER";"Intel K.K.";"ARIB";"3GPPMEMBER";"2019-11-18 17:12","F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:20";"10.10.6.198";"NO"

Mr.;"Lin";"Guanyu";"Delegate";"";"+";"";"MediaTek Inc.";"ETSI";"3GPPMEMBER";"MediaTek Inc.";"ETSI";"3GPPMEMBER";"2019-11-06 12:45";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:09";"10.10.8.64";"NO"

Ms.;"Lin";"Jung-mao";"Delegate";"";"+886-3-5914575";"";"ITRI";"ETSI";"3GPPMEMBER";"ITRI";"ETSI";"3GPPMEMBER";"2019-03-07 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:28";"10.10.9.84";"NO"

Miss;"Lin";"Pei";"Delegate";"";"";"";"Potevio Company Limited";"CCSA";"3GPPMEMBER";"Potevio Company Limited";"CCSA";"3GPPMEMBER";"2019-11-08 03:52";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 17:27";"10.10.11.182";"NO"

Mr.;"Lin";"Yi-Ting";"Delegate";"";"+886 2 6607 3845";"";"III";"ETSI";"3GPPMEMBER";"III";"ETSI";"3GPPMEMBER";"2019-11-06 06:55";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-21 01:27";"10.10.3.180";"NO"

Ms.;"Liu";"Grace Shu-Tsz";"Delegate";"";"+886 2 6600 0100";"";"III";"ETSI";"3GPPMEMBER";"III";"ETSI";"3GPPMEMBER";"2019-11-05 03:58";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:55";"10.10.9.167";"NO"

Dr.;"Liu";"Huichun";"Delegate";"";"";"";"Qualcomm Incorporated";"ATIS";"3GPPMEMBER";"QUALCOMM Europe Inc. - Spain";"ETSI";"3GPPMEMBER";"2019-11-01 04:56";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:16";"10.10.9.94";"NO"

Mr.;"Liu";"Jiaxiang";"Delegate";"";"+01050902569";"";"China Telecommunications";"ETSI";"3GPPMEMBER";"China Telecommunications";"ETSI";"3GPPMEMBER";"2019-11-18 16:21";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:21";"liujijiax";"NO"

Dr.;"LIU";"Liang";"Delegate";"";"+";"";"China Mobile International Ltd";"CCSA";"3GPPMEMBER";"China Mobile International Ltd";"CCSA";"3GPPMEMBER";"2019-11-15 06:03";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:15";"10.10.7.77";"NO"

Mr.;"Liu";"Yansheng";"Delegate";"";"+86 19145583017";"";"ZTE Corporation";"CCSA";"3GPPMEMBER";"ZTE Corporation";"CCSA";"3GPPMEMBER";"2019-11-15 08:40";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-15 08:40";"";"NO"

Mr.;"Loehr";"Joachim";"Delegate";"";"+33 5 34 63 60 00";"";"Motorola Mobility France S.A.S";"ETSI";"3GPPMEMBER";"Motorola Mobility France S.A.S";"ETSI";"3GPPMEMBER";"2019-11-07 08:20";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 21:49";"10.10.4.9";"NO"

Mr.;"Lou";"Chong";"Delegate";"";"";"";"HUAWEI TECHNOLOGIES Co. Ltd.";"ETSI";"3GPPMEMBER";"HUAWEI TECHNOLOGIES Co. Ltd.";"ETSI";"3GPPMEMBER";"2019-11-08 02:05";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 02:01";"10.10.6.210";"NO"

Mr.;"Lovlekar";"Srirang";"Delegate";"";"+1-631-645-1935";"";"Apple GmbH";"ETSI";"3GPPMEMBER";"Apple GmbH";"ETSI";"3GPPMEMBER";"2019-11-02 00:36";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:04";"10.10.9.41";"NO"

Dr.;"Lu";"Qianxi";"Delegate";"";"";"";"Guangdong OPPO Mobile Telecom.";"CCSA";"3GPPMEMBER";"Guangdong OPPO Mobile Telecom.";"CCSA";"3GPPMEMBER";"2019-11-05 02:28";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 16:46";"10.10.2.130";"NO"

Ms.;"Lu";"Ting";"Delegate";"";"+86-18910019051";"";"ZTE Corporation";"ETSI";"3GPPMEMBER";"ZONSON";"CCSA";"3GPPMEMBER";"2019-11-06 15:13";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-21 22:35";"10.10.4.115";"NO"

Dr.;"Maattanen";"Helka-liina";"Delegate";"";"";"";"Ericsson LM";"ETSI";"3GPPMEMBER";"Ericsson Limited";"ETSI";"3GPPMEMBER";"2018-11-15 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 18:31";"10.10.13.89";"NO"

Mr.;"Majmundar";"Milap";"Delegate";"";"+";"";"AT&T GNS Belgium SPRL";"ETSI";"3GPPMEMBER";"AT&T GNS Belgium SPRL";"ETSI";"3GPPMEMBER";"2019-11-07 19:58";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-07 19:58";"majmundar";"NO"

Mr.;"Mangion";"Mathieu";"Delegate";"";"+33 4 92 94 43 07";"";"ETSI";"ETSI";"3GPPORG_REP";"ETSI";"ETSI";"3GPPORG_REP";"2019-08-28 10:03";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 18:55";"10.10.10.1";"NO"

Mr.;"Marco";"Olivier";"Delegate";"";"";"";"Sequans Communications";"ETSI";"3GPPMEMBER";"Sequans Communications";"ETSI";"3GPPMEMBER";"2019-01-24 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 16:59";"10.10.5.247";"NO"

Dr.;"Marinier";"Paul";"Delegate";"";"+1 514 904-6253";"";"InterDigital Inc.";"ETSI";"3GPPMEMBER";"InterDigital Europe. Ltd.";"ETSI";"3GPPMEMBER";"2018-11-05 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 15:42";"10.10.6.24";"NO"

Mr.;"Markman";"Alexander";"Delegate";"";"+1-416-637-2442";"";"Rogers Communications Canada";"ETSI";"3GPPMEMBER";"Rogers Communications Canada";"ETSI";"3GPPMEMBER";"2019-11-15 01:39";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 15:31";"10.10.5.123";"NO"

Mr.;"Martin";"Brian";"Delegate";"";"";"";"HUAWEI TECHNOLOGIES Co. Ltd.";"ETSI";"3GPPMEMBER";"Huawei Tech.(UK) Co. Ltd";"ETSI";"3GPPMEMBER";"2019-11-07 14:26";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 16:44";"10.10.6.133";"NO"

Miss;"Martinez Tarradell";"Marta";"Delegate";"";"+15032648987";"";"Intel";"ATIS";"3GPPMEMBER";"Intel Deutschland GmbH";"ETSI";"3GPPMEMBER";"2019-11-01 14:46";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 16:08";"10.10.8.158";"NO"

Mr.;"Masal";"Abhijeet";"Delegate";"";"+91 9764776577";"";"CEWiT";"TSDSI";"3GPPMEMBER";"CEWiT";"TSDSI";"3GPPMEMBER";"2019-09-24 09:38";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 15:49";"10.10.7.248";"NO"

Mr.;"Masputra";"Adi";"Delegate";"";"+16504551573";"";"Apple Europe Limited";"ETSI";"3GPPMEMBER";"Apple Europe Limited";"ETSI";"3GPPMEMBER";"2019-11-18 18:03";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 17:03";"10.10.9.14";"NO"

Mr.;"Miller";"James";"Delegate";"";"+12012646870";"";"InterDigital Germany GmbH";"ETSI";"3GPPMEMBER";"InterDigital Germany GmbH";"ETSI";"3GPPMEMBER";"2019-10-29 13:45";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 19:13";"10.10.6.138";"NO"

Mr.;"Min";"Tianyang";"Delegate";"";"+";"";"NTT DOCOMO INC.";"ARIB";"3GPPMEMBER";"NTT DOCOMO INC.";"TTC";"3GPPMEMBER";"2019-11-18 06:59";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 17:34";"10.10.2.161";"NO"

Mr.;"Mo";"Yitao";"Delegate";"";"+8618310873398";"";"vivo Mobile Communication Co.";";CCSA";"3GPPMEMBER";"vivo Mobile Communication (S)";"CCSA";"3GPPMEMBER";"2019-11-15 10:38";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 21:33";"10.10.8.133";"NO"

Mr.;"Mohandoss";"Chandrasekaran";"Delegate";"";"+914466469220";"";"CEWiT";"TSDSI";"3GPPMEMBER";"CEWiT";"TSDSI";"3GPPMEMBER";"2019-11-13 11:16";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-13 11:16";"mohandoss";"NO"

Mr.;"Mopidevi";"Rama Kumar";"Delegate";"";"";"";"";"Huawei Technologies Sweden AB";"ETSI";"3GPPMEMBER";"HUAWEI Technologies Japan K.K.";"ARIB";"3GPPMEMBER";"2019-11-15 06:22";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 16:07";"10.10.7.210";"NO"

Mr.;"Muhammad";"Ajmal";"Delegate";"";"";"";"";"Ericsson-LG Co.";"LTD";"TTA";"3GPPMEMBER";"Ericsson-LG Co. LTD";"TTA";"3GPPMEMBER";"2019-11-13 07:52";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 15:15";"10.10.4.185";"NO"

Mr.;"Murray";"Joe";"Delegate";"";"";"";"Convida Wireless";"ETSI";"3GPPMEMBER";"Convida Wireless";"ETSI";"3GPPMEMBER";"2019-11-07 16:25";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 15:57";"10.10.6.243";"NO"

Dr.;"Narasimha";"Murali";"Delegate";"";"";"";"Intel Corporation (UK) Ltd";"ETSI";"3GPPMEMBER";"Intel Russia A/O";"ETSI";"3GPPMEMBER";"2019-11-14 18:32";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 19:26";"10.10.9.173";"NO"

Dr.;"Ni";"Jiqing";"Delegate";"";"+86 13811974612";"";"China Mobile Com. Corporation";"CCSA";"3GPPMEMBER";"China Mobile M2M Company Ltd.";"CCSA";"3GPPMEMBER";"2019-11-16 03:53";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-16 03:53";"niji";"NO"

Dr.;"Ning";"Yang";"Delegate";"";"+86 13911292254";"";"Guangdong OPPO Mobile Telecom.";"CCSA";"3GPPMEMBER";"Guangdong OPPO Mobile Telecom.";"CCSA";"3GPPMEMBER";"2019-11-11 02:55";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-21 16:05";"10.10.5.51";"NO"

Mr.;"Noble";"Fergus";"Delegate";"";"+1 (831) 295 3176";"";"Swift Navigation";"ATIS";"3GPPMEMBER";"Swift Navigation";"ATIS";"3GPPMEMBER";"2019-11-19 22:36";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 21:37";"10.10.13.181";"NO"

Mr.;"Noh";"Minseok";"Delegate";"";"+82-2-552-0110";"";"WILUS Inc.";"TTA";"3GPPMEMBER";"WILUS Inc.";"TTA";"3GPPMEMBER";"2018-10-11 22:00";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2018-10-12 01:42";"";"NO"

Mr.;"Novak";"Robert";"Delegate";"";"";"";"RN-CI";"ATIS";"3GPPMEMBER";"RN-CI";"ATIS";"3GPPMEMBER";"2019-03-05 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:14";"10.10.3.231";"NO"

Dr.;"Nuggehalli";"Pavan";"Delegate";"";" 16502539149";"";"Google Inc.";"ATIS";"3GPPMEMBER";"Google Inc.";"ATIS";"3GPPMEMBER";"2019-10-30 16:41";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 21:56";"10.10.0.80";"NO"

Mr.;"Ohlsson";"Oscar";"Delegate";"";"+46767602586";"";"Ericsson LM";"ETSI";"3GPPMEMBER";"Ericsson Hungary Ltd";"ETSI";"3GPPMEMBER";"2019-11-06 11:16";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:08";"10.10.9.115";"NO"

Dr.;"Ohta";"Yoshiaki";"Delegate";"";"+81448749066";"";"Fujitsu Limited";"ARIB";"3GPPMEMBER";"Fujitsu Limited";"TTC";"3GPPMEMBER";"2019-06-24 01:28";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 20:24";"10.10.4.177";"NO"

Mr.;"Oikonomopoulos";"Nikos";"Delegate";"";"+4922818127002";"";"Deutsche Telekom AG";"ETSI";"3GPPMEMBER";"Deutsche Telekom AG";"ETSI";"3GPPMEMBER";"2019-11-15 08:30";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:05";"10.10.3.239";"NO"

Mr.;"Onno";"Stephane";"Delegate";"";"";"";"InterDigital France R&D SAS";"ETSI";"3GPPMEMBER";"InterDigital France R&D SAS";"ETSI";"3GPPMEMBER";"2019-11-08 14:26";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 22:10";"10.10.6.189";"NO"

Mr.;"Oprescu";"Val";"Delegate";"";"+18475599318";"";"AT&T";"ATIS";"3GPPMEMBER";"AT&T";"ATIS";"3GPPMEMBER";"2019-11-17 16:18";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 17:17";"10.10.0.239";"NO"

Dr.;"Orsino";"Antonino";"Delegate";"";"";"";"Ericsson LM";"ETSI";"3GPPMEMBER";"Ericsson GmbH Eurolab";"ETSI";"3GPPMEMBER";"2019-05-29 07:41";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 22:24";"10.10.6.244";"NO"

Mr.;"Ou";"Ryan";"Delegate";"";"+886-2-28943447";"";"ASUSTEK COMPUTER (SHANGHAI)";"CCSA";"3GPPMEMBER";"ASUSTEK COMPUTER (SHANGHAI)";"CCSA";"3GPPMEMBER";"2019-11-11 07:59";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 02:43";"10.10.4.102";"NO"

Mr.;"Ouchi";"Mikihiro";"Delegate";"";"+815036870171";"";"Panasonic Corporation";"ARIB";"3GPPMEMBER";"Panasonic Corporation";"ARIB";"3GPPMEMBER";"2019-11-05 00:12";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 23:03";"10.10.12.173";"NO"

Dr.;"Ozturk";"Ozcan";"Delegate";"";"+18586582221";"";"Qualcomm CDMA Technologies";"ETSI";"3GPPMEMBER";"Qualcomm CDMA Technologies";"ETSI";"3GPPMEMBER";"2019-04-23 06:34";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 22:02";"10.10.8.176";"NO"

Mr.;"Packer";"Clive";"Delegate";"";"+6137420010";"";"Ligado Networks";"ETSI";"3GPPMEMBER";"Ligado Networks";"ETSI";"3GPPMEMBER";"2019-10-28 00:48";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 15:59";"10.10.6.46";"NO"

Dr.;"Palat";"Sudeep";"Delegate";"";"+447919014557";"";"Intel Corporation (UK) Ltd";"ETSI";"3GPPMEMBER";"Intel Finland Oy";"ETSI";"3GPPMEMBER";"2018-11-12 23:00";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2018-11-13 19:50";"";"NO"

Mr.;"Palle";"Naveen";"Delegate";"";"+18588774655";"";"Intel Corporation (UK) Ltd";"ETSI";"3GPPMEMBER";"M/s Intel Technology India Pvt";"TSDSI";"3GPPMEMBER";"2019-11-20 20:55";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-20 19:56";"10.10.6.197";"NO"

Mr.;"Palm";"Hakan";"Delegate";"";"+46 10 7155363";"";"Ericsson LM";"ETSI";"3GPPMEMBER";"Ericssor Limited";"ETSI";"3GPPMEMBER";"2019-10-22 08:30";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 17:02";"10.10.7.134";"NO"

Mr.;"Pan";"Lider";"Delegate";"";"+886-2-28943447x4256";"";"ASUSTEK COMPUTER (SHANGHAI)";"CCSA";"3GPPMEMBER";"ASUSTEK COMPUTER (SHANGHAI)";"CCSA";"3GPPMEMBER";"2019-11-05 01:29";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 16:51";"10.10.7.158";"NO"

Ms.;"Pani";"Diana";"Delegate";"";"+15149046299";"";"InterDigital Inc.";"ETSI";"3GPPMEMBER";"InterDigital Communications";"ATIS";"3GPPMEMBER";"2019-11-22 03:16";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-22 02:17";"10.10.11.6";"NO"

Dr.;"Panzner";"Berthold";"Delegate";"";" 491603673626";"";"Nokia Germany";"ETSI";"3GPPMEMBER";"Nokia Germany";"ETSI";"3GPPMEMBER";"2019-09-19 14:58";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 17:37";"10.10.8.118";"NO"

Mr.;"Park";"Hyun-Seo";"Delegate";"";"+";"";"ETRI";"";"";"ETRI";"TTA";"3GPPMEMBER";"2019-05-22 08:14";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 18:08";"10.10.11.76";"NO"

Mr.;"Park";"Suyoung";"Delegate";"";"+";"";"Samsung R&D Institute UK";"ETSI";"3GPPMEMBER";"Samsung R&D Institute UK";"ETSI";"3GPPMEMBER";"2019-10-02 04:41";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 16:57";"10.10.12.149";"NO"

Mr.;"Parolari";"Sergio";"Vice Chair";"";"";"";"ZTE Corporation";"ETSI";"3GPPMEMBER";"ZTE Corporation";"ETSI";"3GPPMEMBER";"2019-11-08 08:50";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-22 18:19";"10.10.9.158";"NO"

Dr.;"Phuyal";"Umesh";"Delegate";"";"+1 858 658 3734";"";"Qualcomm Incorporated";"ATIS";"3GPPMEMBER";"Qualcomm Incorporated";"ATIS";"3GPPMEMBER";"2019-11-06 22:25";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:10";"10.10.6.147";"NO"

Dr.;"Pittampalli";"Eshwar";"Delegate";"";"+2025733759";"";"FirstNet";"ATIS";"3GPPMEMBER";"FirstNet";"ATIS";"3GPPMEMBER";"2019-11-16 18:56";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 19:28";"10.10.5.176";"NO"

Mr.;"Popp";"Julian";"Delegate";"";"+49 9131 776 4062";"";"Fraunhofer IIS";"ETSI";"3GPPMEMBER";"Fraunhofer IIS";"ETSI";"3GPPMEMBER";"2019-08-02 14:54";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 19:05";"10.10.3.228";"NO"

Mr.;"Provvedi";"Simone";"Delegate";"";"+44 7588901573";"";"HUAWEI TECHNOLOGIES Co. Ltd.";"ETSI";"3GPPMEMBER";"HUAWEI TECH. GmbH";"ETSI";"3GPPMEMBER";"2019-11-14 22:26";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-20 02:27";"10.10.7.137";"NO"

Dr.;"Qi";"Tao";"Delegate";"";"";"";"ZTE Corporation";"ETSI";"3GPPMEMBER";"ZTE Corporation";"ETSI";"3GPPMEMBER";"2019-06-19 06:13";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-06-19 06:13";"qitao";"NO"

Ms.;"Qiao";"Xiaoyu";"Delegate";"";"+86-10-50902511";"";"China Telecommunications";"ETSI";"3GPPMEMBER";"China Telecom Corporation Ltd.";"CCSA";"3GPPMEMBER";"2019-08-16 02:05";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 15:17";"10.10.3.157";"NO"

Miss;"Qiu";"Zhihong";"Delegate";"";"";"";"ZTE Corporation";"CCSA";"3GPPMEMBER";"Jetflow";"CCSA";"3GPPMEMBER";"2019-11-22 00:43";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-21 23:46";"10.10.8.108";"NO"

Mrs.;"Quan";"Haiyang";"Delegate";"";"+86 10 62305566 2039";"";"CATT";"CCSA";"3GPPMEMBER";"Morningcore Technology Co. Ltd";"CCSA";"3GPPMEMBER";"2019-11-14 08:49";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:53";"10.10.9.208";"NO"

Mrs.;"Raddino";"Daniela";"Delegate";"";"+4989412912049";"";"ROHDE & SCHWARZ";"ETSI";"3GPPMEMBER";"ROHDE & SCHWARZ";"ETSI";"3GPPMEMBER";"2019-05-05 06:42";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 16:49";"10.10.4.17";"NO"

Mr.;"Ramachandra";"Pradeepa";"Delegate";"";"725074075";"";"Ericsson LM";"ETSI";"3GPPMEMBER";"Nanjing Ericsson Panda Com Ltd";"CCSA";"3GPPMEMBER";"2019-10-24 12:31";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 19:49";"10.10.4.122";"NO"

Dr.;"Ramamurthi";"Vishwanath";"Delegate";"";"";"";"Verizon UK Ltd";"ETSI";"3GPPMEMBER";"Verizon UK Ltd";"ETSI";"3GPPMEMBER";"2019-11-14 22:55";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 21:21";"10.10.9.178";"NO"

Mr.;"Rapone";"Damiano";"Delegate";"";"";"";"TELECOM ITALIA S.p.A.";"ETSI";"3GPPMEMBER";"TELECOM ITALIA S.p.A.";"ETSI";"3GPPMEMBER";"2019-09-09 12:34";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-22 16:31";"10.10.7.112";"NO"

Mr.;"Raschkowski";"Leszek";"Delegate";"";"+49 30-31002-487";"";"Fraunhofer HHI";"ETSI";"3GPPMEMBER";"Fraunhofer HHI";"ETSI";"3GPPMEMBER";"2019-11-19 16:09";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 15:12";"10.10.9.204";"NO"

Mrs.;"Rollinger";"Odile";"Delegate";"";"+441223887129";"";"Huawei Technologies R&D UK";"ETSI";"3GPPMEMBER";"Huawei Technologies R&D UK";"ETSI";"3GPPMEMBER";"2019-10-28 18:43";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:09";"10.10.5.184";"NO"

Dr.;"Roth-Mandutz";"Elke";"Delegate";"";"+49 91317766334";"";"Fraunhofer IIS";"ETSI";"3GPPMEMBER";"Fraunhofer IIS";"ETSI";"3GPPMEMBER";"2019-10-22 09:06";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:51";"10.10.11.123";"NO"

Dr.;"Roy";"Abhishek";"Delegate";"";"";"";"MediaTek Inc.";"ETSI";"3GPPMEMBER";"Mediatek India Technology Pvt.";"TSDSI";"3GPPMEMBER";"2019-11-14 18:00";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-14 18:00";"royab";"NO"

Dr.;"Saglam";"izzet";"Delegate";"";"+905332109594";"";"TURKCELL";"ETSI";"3GPPMEMBER";"TURKCELL";"ETSI";"3GPPMEMBER";"2019-04-08 22:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 22:21";"10.10.4.134";"NO"

Mr.;"Sakoda";"Kazuyuki";"Delegate";"";,;"";"Sony Corporation";"ARIB";"3GPPMEMBER";"Sony Corporation";"ARIB";"3GPPMEMBER";"2019-10-15 07:43";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 01:19";"10.10.3.13";"NO"

Ms.;"Sanda";"Takako";"Delegate";"";"+81 50 5213 6529";"";"SHARP Corporation";"ARIB";"3GPPMEMBER";"SHARP Corporation";"ARIB";"3GPPMEMBER";"2019-11-07 02:08";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 17:13";"10.10.9.162";"NO"

Dr.;"Schlienz";"Juergen";"Delegate";"";"+49 89 4129 14339";"";"ROHDE & SCHWARZ";"ETSI";"3GPPMEMBER";"ROHDE & SCHWARZ";"ETSI";"3GPPMEMBER";"2019-03-25 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 17:00";"10.10.4.120";"NO"

Mr.;"Schmidt";"Andreas";"Delegate";"";"+49-5121-6906584";"";"IPCom GmbH & Co.KG";"ETSI";"3GPPMEMBER";"IPCom GmbH & Co.KG";"ETSI";"3GPPMEMBER";"2018-11-14 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 15:12";"10.10.3.220";"NO"

Dr.;"Schwoerer";"Jean";"Delegate";"";"+33 4 38 42 87 15";"";"Orange";"ETSI";"3GPPMEMBER";"Orange Spain";"ETSI";"3GPPMEMBER";"2019-11-19 23:58";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 23:00";"10.10.7.176";"NO"

Mr.;"SEBIRE";"Benoist";"Delegate";"";"";"";"Nokia Germany";"ETSI";"3GPPMEMBER";"Nokia Japan";"ARIB";"3GPPMEMBER";"2018-11-28 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 17:04";"10.10.4.101";"NO"

Mr.;"Sedin";"Jonas";"Delegate";"";"";"";"Ericsson LM";"ETSI";"3GPPMEMBER";"Ericsson Japan K.K.";"ARIB";"3GPPMEMBER";"2019-11-07 16:26";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 22:27";"10.10.9.96";"NO"

Mr.;"Selvaganapathy";"Srinivasan";"Delegate";"";"+919880490658";"";"Nokia Corporation";"ETSI";"3GPPMEMBER";"Nokia Solutions & Networks (I)";"TSDSI";"3GPPMEMBER";"2019-11-06 06:10";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 17:50";"10.10.9.70";"NO"

Mr.;"Shah";"Rikin";"Delegate";"";"+4961037661306";"";"PANASONIC R&D Center Germany";"ETSI";"3GPPMEMBER";"PANASONIC R&D Center Germany";"ETSI";"3GPPMEMBER";"2019-11-07 10:06";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:05";"10.10.8.229";"NO"

Dr.;"Shaheen";"Kamel";"Delegate";"";"+1 484-474-6566";"";"SHARP Corporation";"ARIB";"3GPPMEMBER";"SHARP Corporation";"ARIB";"3GPPMEMBER";"2019-09-30 18:38";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-09-30 18:38";"shaheenka";"NO"

Mr.;"Shao";"Zhe";"Delegate";"";"";";"China Mobile Group Device Co.";"CCSA";"3GPPMEMBER";"China Mobile Group Device Co.";"CCSA";"3GPPMEMBER";"2019-11-13 02:59";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:24";"10.10.9.253";"NO"

Mr.;"Sharma";"Vivek";"Delegate";"";"";";"Sony Europe B.V.";"ETSI";"3GPPMEMBER";"Sony Europe B.V.";"ETSI";"3GPPMEMBER";"2019-11-12 17:43";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 17:01";"10.10.4.128";"NO"

Mr.;"Shen";"Wendi";"Delegate";"";"";";"National Taiwan University";"ETSI";"3GPPMEMBER";"National Taiwan University";"ETSI";"3GPPMEMBER";"2019-11-18 22:55";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 21:56";"10.10.7.5";"NO"

Miss;"Shi";"Jie";"Delegate";"";"";";"Beijing Lenovo Software Ltd.";"CCSA";"3GPPMEMBER";"Beijing Lenovo Software Ltd.";"CCSA";"3GPPMEMBER";"2019-11-20 03:54";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-20 15:28";"10.10.13.15";"NO"

Mr.;"Shi";"Yongsheng";"Delegate";"";"";";"Guangdong OPPO Mobile Telecom.";"CCSA";"3GPPMEMBER";"Guangdong OPPO Mobile Telecom.";"CCSA";"3GPPMEMBER";"2019-02-03 23:00";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-02-04 22:59";"";"NO"

Mr.;"SHI";"YULONG";"Delegate";"";";";"";"Huawei Technologies Sweden AB";"ETSI";"3GPPMEMBER";"HuaWei Technologies Co. Ltd";"CCSA";"3GPPMEMBER";"2019-11-15 01:41";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 17:16";"10.10.7.216";"NO"

Dr.;"Shih";"Mei-ju";"Delegate";"";"";";"";"FGI";"CCSA";"3GPPMEMBER";"FGI";"CCSA";"3GPPMEMBER";"2019-11-15 06:47";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:24";"10.10.7.243";"NO"

Mr.;"Shih";"Tun-Huai";"Delegate";"";"";";"";"ASUSTEK COMPUTER (SHANGHAI)";"CCSA";"3GPPMEMBER";"ASUSTEK COMPUTER (SHANGHAI)";"CCSA";"3GPPMEMBER";"2019-09-04 07:22";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 17:14";"10.10.6.125";"NO"

Mr.;"Shikari";"Murtaza";"Delegate";"";"7322163377";"";"Apple Switzerland AG";"ETSI";"3GPPMEMBER";"Apple Benelux B.V.";"ETSI";"3GPPMEMBER";"2019-10-10 03:50";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 15:59";"10.10.7.168";"NO"

Dr.;"Shimizu";"Takayuki";"Delegate";"";"";";"";"TOYOTA Info Technology Center";"ETSI";"3GPPMEMBER";"TOYOTA Info Technology Center";"ETSI";"3GPPMEMBER";"2019-11-04 23:26";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:02";"10.10.8.120";"NO"

Mr.;"Shitomi";"Takuya";"Delegate";"";"";"+81-3-5494-3454";"";"NHK";"ARIB";"3GPPMEMBER";"NHK";"ARIB";"3GPPMEMBER";"2019-11-12 09:14";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 15:23";"10.10.4.219";"NO"

Mr.;"Shreevastav";"Ritesh";"Delegate";"";"";"+0046763350556";"";"Ericsson India Private Limited";"TSDSI";"3GPPMEMBER";"Ericsson India Private Limited";"TSDSI";"3GPPMEMBER";"2019-11-07 17:25";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 01:10";"10.10.8.174";"NO"

Mr.;"Shrestha";"Bharat";"Delegate";"";"";"+15038964237";"";"Intel Corporation (UK) Ltd";"ETSI";"3GPPMEMBER";"Intel Corporation SAS";"ETSI";"3GPPMEMBER";"2019-11-12 17:08";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 15:51";"10.10.5.195";"NO"

Mr.;"Shrivastava";"Vinay";"Delegate";"";"";"+919740076217";"";"Reliance Jio";"TSDSI";"3GPPMEMBER";"Reliance Jio";"TSDSI";"3GPPMEMBER";"2019-10-09 13:16";"F2F";"Unkown";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-10-09 13:16";"shrivastava4";"NO"

Mr.;"Sirotkin";"Sasha";"Delegate";"";"";";"";"Intel Corporation (UK) Ltd";"ETSI";"3GPPMEMBER";"Intel Corporation (UK) Ltd";"ETSI";"3GPPMEMBER";"2019-11-08 10:02";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-08 10:02";"sirotkins";"NO"

Dr.;"Soghomonian";"Manook";"Delegate";"";"";"+447788352668";"";"VODAFONE Group Plc";"ETSI";"3GPPMEMBER";"Vodafone GmbH";"ETSI";"3GPPMEMBER";"2019-11-05 16:23";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 18:08";"10.10.6.134";"NO"

Mr.;"Sommer";"Markus";"Delegate";"";"";"+492115334010";"";"Vodafone GmbH";"ETSI";"3GPPMEMBER";"Vodafone Telekomünikasyon A.S.";"ETSI";"3GPPMEMBER";"2019-11-15 09:45";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 21:23";"10.10.5.252";"NO"

Dr.;"Song";"Lei";"Delegate";"";"";"9253227508";"";"Verizon UK Ltd";"ETSI";"3GPPMEMBER";"Verizon UK Ltd";"ETSI";"3GPPMEMBER";"2019-07-16 16:06";"F2F";"Unkown";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-15 14:31";"songlle";"NO"

Prof.;"Song";"Liang";"Delegate";"";"+";"";"Fudan University";"CCSA";"3GPPMEMBER";"Fudan University";"CCSA";"3GPPMEMBER";"2019-11-18 00:04";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 16:04";"10.10.8.204";"NO"

Mr.;"Srinivasan";"Nithin";"Delegate";"";"";"";"Fraunhofer HHI";"ETSI";"3GPPMEMBER";"Fraunhofer HHI";"ETSI";"3GPPMEMBER";"2019-08-09 07:24";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 18:45";"10.10.11.42";"NO"

Mr.;"Stanczak";"Jedrzej";"Delegate";"";"";"";"Nokia Germany";"ETSI";"3GPPMEMBER";"Nokia Korea";"TTA";"3GPPMEMBER";"2019-11-06 09:46";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 16:51";"10.10.8.153";"NO"

Mr.;"Takahashi";"Hideaki";"Delegate";"";"+81468403190";"";"DOCOMO Communications Lab.";"ETSI";"3GPPMEMBER";"DOCOMO Communications Lab.";"ETSI";"3GPPMEMBER";"2019-03-14 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 16:47";"10.10.7.72";"NO"

Mr.;"Takeda";"Hiroki";"Delegate";"";"+81-80-6828-8585";"";"KDDI Corporation";"ARIB";"3GPPMEMBER";"KDDI Corporation";"ARIB";"3GPPMEMBER";"2019-11-05 06:39";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 15:43";"10.10.6.2";"NO"

Dr.;"Tao";"Ming-hung";"Delegate";"";"+496103766275";"";"PANASONIC R&D Center Germany";"ETSI";"3GPPMEMBER";"PANASONIC R&D Center Germany";"ETSI";"3GPPMEMBER";"2019-11-06 16:44";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 16:17";"10.10.6.99";"NO"

Dr.;"Tenny";"Nathan";"Delegate";"";"+1 858 257 8552";"";"MediaTek Inc.";"ETSI";"3GPPMEMBER";"MediaTek (Wuhan) Inc.";"CCSA";"3GPPMEMBER";"2019-08-16 01:04";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 16:20";"10.10.3.170";"NO"

Mr.;"Terry";"Stephen";"Delegate";"";"";"";"Convida Wireless";"ETSI";"3GPPMEMBER";"Convida Wireless";"ETSI";"3GPPMEMBER";"2019-05-07 02:50";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 18:08";"10.10.4.93";"NO"

Dr.;"Tesanovic";"Milos";"Delegate";"";"+44 (0)7917 203 158";"";"Samsung R&D Institute UK";"ETSI";"3GPPMEMBER";"Samsung Electronics GmbH";"ETSI";"3GPPMEMBER";"2019-11-07 11:19";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-19 19:38";"10.10.6.156";"NO"

Mr.;"Teyeb";"Oumer";"Delegate";"";"+46722441756";"";"Ericsson LM";"ETSI";"3GPPMEMBER";"Ericssor Inc.";"ATIS";"3GPPMEMBER";"2019-05-28 09:11";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-21 01:01";"10.10.9.50";"NO"

Dr.;"Thomas";"Robin";"Delegate";"";"+33 1 4989 8864";"";"LG Electronics Deutschland";"ETSI";"3GPPMEMBER";"LG Electronics Deutschland";"ETSI";"3GPPMEMBER";"2019-11-04 10:06";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-20 23:04";"10.10.11.88";"NO"

Dr.;"Thompson";"Steve";"Delegate";"";"";"";"Acorn Technologies";"ATIS";"3GPPMEMBER";"Acorn Technologies";"ATIS";"3GPPMEMBER";"2019-11-18 17:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 18:31";"10.10.7.136";"NO"

Mr.;"Thyagarajan";"Manivannan";"Delegate";"";"+1 561 542 9972";"";"Nokia Germany";"ETSI";"3GPPMEMBER";"Nokia";"ATIS";"3GPPMEMBER";"2019-04-05 22:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-19 16:45";"10.10.11.96";"NO"

Dr.;"Tirronen";"Tuomas";"Delegate";"";"";"";"Ericsson LM";"ETSI";"3GPPMEMBER";"Ericsson España S.A.";"ETSI";"3GPPMEMBER";"2019-11-07 12:49";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-19 18:59";"10.10.5.193";"NO"

Mrs.;"Tomala";"Malgorzata";"Delegate";"";"+48 728361369";"";"Nokia Germany";"ETSI";"3GPPMEMBER";"Nokia Poland";"ETSI";"3GPPMEMBER";"2019-11-19 22:40";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-19 21:43";"10.10.6.212";"NO"

Mr.;"Tsai";"Chun-Fan";"Delegate";"";"886-3-567-0766";"";"MediaTek Inc.";"ETSI";"3GPPMEMBER";"MediaTek (Hefei) Inc.";"CCSA";"3GPPMEMBER";"2019-11-07 01:46";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-07 01:46";"tsaichu";"NO"

Mr.;"Tsai";"HsinHsi";"Delegate";"";"";"";"Asia Pacific Telecom co. Ltd";"ETSI";"3GPPMEMBER";"Asia Pacific Telecom co. Ltd";"ETSI";"3GPPMEMBER";"2019-08-12 08:24";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-08-12 08:24";"tsaihh";"NO"

Ms.;"Tsai";"Tzu-jen";"Delegate";"";"+886 3 591 4438";"";"ITRI";"ETSI";"3GPPMEMBER";"ITRI";"ETSI";"3GPPMEMBER";"2018-09-27 22:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 17:02";"10.10.3.183";"NO"

Miss;"Tsao";"Flora";"Delegate";"";"";"";"Acer Incorporated";"ETSI";"3GPMEMBER";"Acer Incorporated";"ETSI";"3GPPMEMBER";"2019-11-18 16:29";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno" Nevada US";"2019-11-18 16:12";"10.10.9.141";"NO"

Dr.;"Tseng";"Li-Chuan";"Delegate";"";"+88635670766";"";"MediaTek Inc.";"ETSI";"3GPPMEMBER";"MediaTek Inc.";"ETSI";"3GPPMEMBER";"2019-11-07 00:56";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 17:11";"10.10.7.143";"NO"

Dr.;"Tseng";"Yung-Lan";"Delegate";"";"+886975200064";"";"Asia Pacific Telecom co. Ltd";"ETSI";"3GPPMEMBER";"Asia Pacific Telecom co. Ltd";"ETSI";"3GPPMEMBER";"2019-11-15 07:19";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-20 18:40";"10.10.9.217";"NO"

Mr.;"Tsuboi";"Hidekazu";"Delegate";"";"+81-43-299-8562";"";"SHARP Corporation";"ARIB";"3GPPMEMBER";"SHARP Corporation";"ARIB";"3GPPMEMBER";"2019-02-18 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:42";"10.10.6.41";"NO"

Mr.;"Turtinen";"Samuli";"Delegate";"";" 358408236977";"";"Nokia";"ATIS";"3GPPMEMBER";"Nokia Germany";"ETSI";"3GPPMEMBER";"2019-11-08 07:26";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:34";"10.10.6.163";"NO"

Mr.;"Uemura";"Katsunari";"Delegate";"";"";"";"SoftBank Corp.";"ARIB";"3GPPMEMBER";"SoftBank Corp.";"ARIB";"3GPPMEMBER";"2019-10-24 06:49";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 23:06";"10.10.4.13";"NO"

Dr.;"Ugurlu";"Umut";"Delegate";"";"";"";"MediaTek Inc.";"ETSI";"3GPPMEMBER";"MediaTek Inc.";"ETSI";"3GPPMEMBER";"2019-10-31 15:54";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 17:33";"10.10.6.208";"NO"

Mr.;"Vaidya";"Maulik";"Delegate";"";"+7205369397";"";"Charter Communications Inc";"ATIS";"3GPPMEMBER";"Charter Communications";"ATIS";"3GPPMEMBER";"2019-03-17 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 21:23";"10.10.12.117";"NO"

Mr.;"Van der Velde";"Himke";"Delegate";"";"+31570614454";"";"Samsung R&D Institute UK";"ETSI";"3GPPMEMBER";"Samsung R&D Institute UK";"ETSI";"3GPPMEMBER";"2019-02-13 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 18:41";"10.10.5.206";"NO"

Mr.;"Van Der Zee";"Martin";"Delegate";"";"";"";"Nanjing Ericsson Panda Com Ltd";"CCSA";"3GPPMEMBER";"L.M. Ericsson Limited";"ETSI";"3GPPMEMBER";"2019-11-02 06:32";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-22 17:20";"10.10.4.241";"NO"

Mr.;"Vangala";"Sarma";"Delegate";"";"+14136877624";"";"Apple GmbH";"ETSI";"3GPPMEMBER";"Apple GmbH";"ETSI";"3GPPMEMBER";"2019-11-12 16:32";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:06";"10.10.7.218";"NO"

Dr.;"Vassilovski";"Dan";"Delegate";"";"+1-858-651-2442";"";"Qualcomm CDMA Technologies";"ETSI";"3GPPMEMBER";"Qualcomm CDMA Technologies";"ETSI";"3GPPMEMBER";"2019-10-23 21:56";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 22:31";"10.10.5.133";"NO"

Miss;"Virtej";"Elena";"Delegate";"";"";"";"Nokia Corporation";"ETSI";"3GPPMEMBER";"Nokia Corporation";"ETSI";"3GPPMEMBER";"2019-10-31 11:38";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 15:48";"10.10.7.70";"NO"

Mr.;"Vogedes";"Jerome";"Delegate";"";"";"";"NextNav";"ATIS";"3GPPMEMBER";"NextNav";"ATIS";"3GPPMEMBER";"2019-08-06 18:44";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 00:29";"10.10.8.24";"NO"

Mr.;"Vutukuri";"Eswar";"Delegate";"";"";"";"ZTE Corporation";"ETSI";"3GPPMEMBER";"ZTE Wistron Telecom AB";"ETSI";"3GPPMEMBER";"2019-11-06 21:54";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 16:48";"10.10.4.44";"NO"

Mr.;"Wachter";"Andreas";"Delegate";"";"+1-650-919-8344";"";"Polaris Wireless";"ATIS";"3GPPMEMBER";"Polaris Wireless";"ATIS";"3GPPMEMBER";"2019-10-18 00:50";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 15:55";"10.10.6.169";"NO"

Mr.;"Wakasa";"Satoshi";"Delegate";"";"";"";"Anritsu Corporation";"ARIB";"3GPPMEMBER";"Anritsu Corporation";"ARIB";"3GPPMEMBER";"2019-10-24 18:04";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:35";"10.10.8.145";"NO"

Dr.;"Wang";"Da";"Delegate";"";"";"";"CATT";"CCSA";"3GPPMEMBER";"Datang Linktester Technology";"CCSA";"3GPPMEMBER";"2019-11-18 18:06";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 17:07";"10.10.11.130";"NO"

Miss;"Wang";"Da";"Delegate";"";"";"";"NEC Corporation";"ARIB";"3GPPMEMBER";"NEC Corporation";"TTC";"3GPPMEMBER";"2019-11-07 06:35";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-07 06:35";"wangd2";"NO"

Mr.;"WANG";"FEI";"Delegate";"";"";"";"China Mobile Com. Corporation";"CCSA";"3GPPMEMBER";"China Mobile Com. Corporation";"CCSA";"3GPPMEMBER";"2019-11-11 07:54";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 15:07";"10.10.4.132";"NO"

Dr.;"WANG";"Jian";"Delegate";"";"+8618601077871";"";"HuaWei Technologies Co. Ltd";"CCSA";"3GPPMEMBER";"Huawei Device Co. Ltd";"CCSA";"3GPPMEMBER";"2019-02-11 23:00";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-02-11 23:40";"";"NO"

Mr.;"Wang";"Ke";"Delegate";"";"+86 10 62305566 2076";"";"CATT";"ETSI";"3GPPMEMBER";"CICT";"CCSA";"3GPPMEMBER";"2019-05-29 10:12";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 16:48";"10.10.11.38";"NO"

Miss;"Wang";"Lihui";"Delegate";"";"+8601082861501";"";"NTT DOCOMO INC.";"TTC";"3GPPMEMBER";"NTT DOCOMO INC.";"ARIB";"3GPPMEMBER";"2019-06-12 02:06";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-19 16:44";"10.10.4.41";"NO"

Miss;"Wang";"Shukun";"Delegate";"";"";"";"Guangdong OPPO Mobile Telecom.";"CCSA";"3GPPMEMBER";"Beijing OPPO Com. corp. ltd";"CCSA";"3GPPMEMBER";"2019-11-19 20:59";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-19 21:28";"10.10.5.125";"NO"

Dr.;"Wang";"Xiaoqiu";"Delegate";"";"";"";"KDDI Corporation";"ARIB";"3GPPMEMBER";"KDDI Corporation";"TTC";"3GPPMEMBER";"2019-11-21 20:37";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-22 02:32";"10.10.2.252";"NO"

Mr.;"Watts";"Dylan";"Delegate";"";"";"";"InterDigital Inc.";"ETSI";"3GPPMEMBER";"InterDigital France R&D SAS";"ETSI";"3GPPMEMBER";"2019-11-21 19:14";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-21 18:18";"10.10.9.54";"NO"

Dr.;"WEI";"CHIA-HUNG";"Delegate";"";"+936357041";"";"Asia Pacific Telecom co. Ltd";"ETSI";"3GPPMEMBER";"Asia Pacific Telecom co. Ltd";"ETSI";"3GPPMEMBER";"2019-11-20 02:13";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-20 01:15";"10.10.7.31";"NO"

Mr.;"Wolfner";"György";"Delegate";"";"+36209777797";"";"Nokia Germany";"ETSI";"3GPPMEMBER";"Nokia Hungary";"ETSI";"3GPPMEMBER";"2019-02-24 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 18:59";"10.10.5.179";"NO"

Ms.;"Wu";"Chunli";"Delegate";"";"+8618600092597";"";"Nokia Shanghai Bell";"CCSA";"3GPPMEMBER";"Nokia Shanghai Bell";"CCSA";"3GPPMEMBER";"2019-02-12 23:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-21 15:41";"10.10.7.116";"NO"

Mr.;"Wu";"Frank";"Delegate";"";"";"";"Google Inc.";"ATIS";"3GPPMEMBER";"Google Inc.";"ATIS";"3GPPMEMBER";"2019-11-07 16:03";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 22:03";"10.10.2.166";"NO"

Dr.;"Wu";"Hanguang";"Delegate";"";"+8613922321455";"";"Fraunhofer HHI";"ETSI";"3GPPMEMBER";"Fraunhofer HHI";"ETSI";"3GPPMEMBER";"2019-09-16 13:15";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-09-16 13:15";"wuhan";"NO"

Dr.;"Wu";"Yumin";"Delegate";"";"";"";"vivo Mobile Com. (Chongqing)";"CCSA";"3GPPMEMBER";"vivo Mobile Com. (Chongqing)";"CCSA";"3GPPMEMBER";"2019-11-19 19:20";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-19 18:21";"10.10.5.75";"NO"

Mr.;"Wu";"Zhibin";"Delegate";"";"";"";"Apple GmbH";"ETSI";"3GPPMEMBER";"Apple Italia S.R.L.";"ETSI";"3GPPMEMBER";"2019-11-05 17:29";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-22 18:17";"10.10.5.58";"NO"

Mr.;"Xia";"Liang";"Delegate";"";"";"";"China Mobile Com. Corporation";"CCSA";"3GPPMEMBER";"China Mobile International Ltd";"CCSA";"3GPPMEMBER";"2019-11-11 08:19";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-18 23:09";"10.10.9.186";"NO"

Dr.;"xiao";"fangying";"Delegate";"";"+";"";"SHARP Corporation";"ARIB";"3GPPMEMBER";"SHARP Corporation";"ARIB";"3GPPMEMBER";"2019-11-07 05:12";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno | Nevada | US";"2019-11-07 05:12";"xiaofa";"NO"

Ms.,"Xie","Fang","Delegate","","","","China Mobile Com. Corporation","CCSA","3GPPMEMBER","China Mobile (Hangzhou) Inf.","CCSA","3GPPMEMBER","2019-11-15 07:05","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-18 16:17","10.10.9.165","NO"

Ms.,"Xing","Yanping","Delegate","","+861062305566","","CATT","ETSI","3GPPMEMBER","Fiberhome Technologies Group","CCSA","3GPPMEMBER","2019-11-15 00:41","F2F","Absent","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-15 00:41","xingya","NO"

Ms.,"Xu","Fangli","Delegate","","","","Apple Portugal","ETSI","3GPPMEMBER","Apple France","ETSI","3GPPMEMBER","2019-11-12 19:05","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-22 23:41","10.10.8.70","NO"

Dr.,"Xu","Min","Delegate","","+8615801696688","","China Mobile Com. Corporation","CCSA","3GPPMEMBER","China Mobile E-Commerce Co.","CCSA","3GPPMEMBER","2019-11-11 08:05","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-18 15:44","10.10.2.238","NO"

Mr.,"xu","sen","Delegate","","","","China Telecommunications","ETSI","3GPPMEMBER","China Telecommunications","ETSI","3GPPMEMBER","2019-11-07 03:24","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-18 15:21","10.10.5.28","NO"

Mr.,"Yaghmour","Salim","Delegate","","+7035597287","","Intelsat","ATIS","3GPPMEMBER","Intelsat","ATIS","3GPPMEMBER","2019-10-08 03:13","F2F","Absent","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-10-08 03:13","yaghmour","NO"

Mr.,"Yamada","Shohei","Delegate","","+81-43-299-8532","","SHARP Corporation","ARIB","3GPPMEMBER","SHARP Corporation","ARIB","3GPPMEMBER","2019-05-14 16:23","F2F","Absent","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-05-14 16:23","","NO"

Miss,"Yang","Hyosun","Delegate","","+82-2-3463-9728","","ITL","TTA","3GPPMEMBER","ITL","TTA","3GPPMEMBER","2019-11-08 04:45","F2F","Absent","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-08 04:45","yanghyo","NO"

Mr.,"Yang","Xiaodong","Delegate","","+86 13520157126","","vivo Mobile Communication Co.","CCSA","3GPPMEMBER","vivo Communication Technology","CCSA","3GPPMEMBER","2019-11-18 17:46","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-18 17:20","10.10.6.63","NO"

Mr.,"yang","xing","Delegate","","","","","Beijing Xiaomi Mobile Software","CCSA","3GPPMEMBER","Beijing Xiaomi Software Tech","CCSA","3GPPMEMBER","2018-09-03 22:00","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-18 17:33","10.10.6.8","NO"

Dr.,"Yavuz","Emre A.","Delegate","","+46 10 7163746","","Ericsson France S.A.S","ETSI","3GPPMEMBER","Ericsson France S.A.S","ETSI","3GPPMEMBER","2019-02-13 23:00","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-19 04:04","10.10.8.73","NO"

Mr.,"Yenihayat","Guven","Delegate","","+","+","","ASELSAN","ETSI","3GPPMEMBER","ASELSAN","ETSI","3GPPMEMBER","2019-11-07 10:30","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-18 19:27","10.10.4.172","NO"

Mr.,"Yi","SeungJune","Delegate","","+82-10-8184-1257","","LG Electronics Inc.","TTA","3GPPMEMBER","LG Electronics Finland","ETSI","3GPPMEMBER","2019-08-15 05:21","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-18 15:56","10.10.8.37","NO"

Dr.,"Yiu","Candy","Delegate","","+15032644344","","Intel","ATIS","3GPPMEMBER","M/s Intel Technology India Pvt","TSDSI","3GPPMEMBER","2019-11-19 17:35","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-19 16:35","10.10.12.40","NO"

Miss,"You","Xin","Delegate","","","","","Guangdong OPPO Mobile Telecom.","CCSA","3GPPMEMBER","OnePlus","CCSA","3GPPMEMBER","2019-11-07 09:55","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-18 16:52","10.10.7.69","NO"

Mr.,"Yuan","Ping","Delegate","","","","","Nokia Shanghai Bell","CCSA","3GPPMEMBER","Nokia Shanghai Bell","CCSA","3GPPMEMBER","2019-06-25 03:34","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-20 15:50","10.10.8.249","NO"

Ing.,"Yun","Ana","Delegate","","","+33607621872","","THALES","ETSI","3GPPMEMBER","THALES","ETSI","3GPPMEMBER","2019-08-29 05:41","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-18 17:58","10.10.11.147","NO"

Miss,"Yun","Miyoung","Delegate","","","","","ETRI","TTA","3GPPMEMBER","ETRI","TTA","3GPPMEMBER","2019-11-15 17:39","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-19 16:45","10.10.5.224","NO"

Dr.,"Zeng","Erlin","Delegate","","","","","Datang Mobile Com. Equipment","CCSA","3GPPMEMBER","CICT","CCSA","3GPPMEMBER","2019-11-05 01:06","F2F","Present","3GPPRAN2#108","2019-11-18 09:00","2019-11-22 17:30","(GMT-08:00) Pacific Time (US & Canada); Tijuana","Reno Nevada US","2019-11-18 17:11","10.10.9.226","NO"

Ltd";"CCSA";"3GPPMEMBER";"2019-01-20 23:00";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-01-21 00:08";"";"NO"

Dr.;"Zeng";"Qinghai";"Delegate";"";"+86-21-28920613";"";"HuaWei Technologies Co. Ltd";"CCSA";"HuaWei Technologies Co.

Mr.;"Zhang";"Boyuan";"Delegate";"";"+86075526774642";"";"ZTE Trunking Technology Corp.";"CCSA";"3GPPMEMBER";"Jetflow";"CCSA";"3GPPMEMBER";"2019-11-22 18:37";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-22 17:37";"10.10.8.32";"NO"

Mr.;"Zhang";"Congchi";"Delegate";"";"";"";"";"Ericsson GmbH Eurolab";"ETSI";"3GPPMEMBER";"Ericsson Japan K.K.";"ARIB";"3GPPMEMBER";"2019-11-07 11:15";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:43";"10.10.7.207";"NO"

Dr.;"Zhang";"Jingwen";"Delegate";"";"";"";"";"China Mobile E-Commerce Co.";"CCSA";"3GPPMEMBER";"China Mobile (Suzhou) Software";"CCSA";"3GPPMEMBER";"2019-11-11 08:03";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-11 08:03";"zhangjingw";"NO"

Miss;"Zhang";"Lei";"Delegate";"";"";"";"";"Fujitsu Limited";"ARIB";"3GPPMEMBER";"Fujitsu Limited";"ETSI";"3GPPMEMBER";"2018-10-09 22:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 18:20";"10.10.7.7";"NO"

Mr.;"Zhang";"Xiangdong";"Delegate";"";"";"";"";"HiSilicon Technologies Co. Ltd";"CCSA";"3GPPMEMBER";"Huawei Technologies (Korea)";"TTA";"3GPPMEMBER";"2019-11-17 17:57";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-21 18:11";"10.10.4.218";"NO"

Miss;"Zhang";"Xiaoran";"Delegate";"";"+86 13811174420";"";"China Mobile Com. Corporation";"CCSA";"3GPPMEMBER";"China Mobile Com. Corporation";"CCSA";"3GPPMEMBER";"2019-11-15 05:58";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 15:26";"10.10.4.119";"NO"

Ms.;"Zhang";"Yuanyuan";"Delegate";"";"+";"";"MediaTek Beijing Inc.";"CCSA";"3GPPMEMBER";"Shanghai Chen Si Electronics";"CCSA";"3GPPMEMBER";"2019-11-06 07:38";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-06 07:38";"zhangyuany";"NO"

Mr.;"Zhang";"Yujian";"Delegate";"";"+8613511008996";"";"Intel China Ltd.";"CCSA";"3GPPMEMBER";"Intel China Ltd.";"CCSA";"3GPPMEMBER";"2018-09-30 22:00";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:16";"10.10.7.28";"NO"

Mr.;"Zheng";"Ruiming";"Delegate";"";"+861057760671";"";"Qualcomm communications France";"ETSI";"3GPPMEMBER";"Qualcomm Austria RFFE GmbH";"ETSI";"3GPPMEMBER";"2019-11-08 01:28";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:32";"10.10.7.192";"NO"

Dr.;"Zhuo";"Chen";"Delegate";"";"+1-61--878-5713";"";"Convida Wireless";"ETSI";"3GPPMEMBER";"Convida Wireless";"ETSI";"3GPPMEMBER";"2019-11-12 18:14";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 16:19";"10.10.8.172";"NO"

Dr.;"Zou";"Jialin";"Delegate";"";"+1(973)207-9287";"";"Futurewei Technologies";"ATIS";"3GPPMEMBER";"Futurewei Technologies";"ATIS";"3GPPMEMBER";"2019-11-06 16:31";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-19 22:06";"10.10.4.228";"NO"

Dr.;"Zou";"Zhenhua";"Delegate";"";"";"";"";"Ericsson GmbH Eurolab";"ETSI";"3GPPMEMBER";"Ericsson GmbH Eurolab";"ETSI";"3GPPMEMBER";"2018-11-22 23:00";"F2F";"Absent";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2018-11-23 13:49";"";"NO"

Dr.;"Zou";"Zhenhua";"Delegate";"";"+358 (0)9 2991";"";"Oy LM Ericsson AB";"ETSI";"3GPPMEMBER";"Oy LM Ericssor AB";"ETSI";"3GPPMEMBER";"2019-11-04 07:17";"F2F";"Present";"3GPPRAN2#108";"2019-11-18 09:00";"2019-11-22 17:30";"(GMT-08:00) Pacific Time (US & Canada); Tijuana";"Reno Nevada US";"2019-11-18 17:04";"10.10.8.192";"NO"