R1-1904651 Consideration on HARQ in NTN Nokia, Nokia Shanghai Bell
R1-1904768 Discussion on the HARQ procedure for NTN ZTE
R1-1904859 Discussion on HARQ for NTN InterDigital, Inc.
R1-1905017 Delay-tolerant Retransmission Mechanisms for NTN Qualcomm Incorporated
R1-1905093 On adapting HARQ procedures for NTN Ericsson

R1-1905733 Summary Delay-tolerant re-transmission mechanisms in NR-NTN Mediatek
R1-1905840 Summary#2 Delay-tolerant re-transmission mechanisms in NR-NTN Mediatek

7.2.5.5 Other

R1-1905704 Corrections for TR38.811 Chapter 6 Non-Terrestrial Networks channel models Huawei, HiSilicon, Nokia, Nokia Shanghai Bell, Thales, Fraunhofer HHI, Fraunhofer IIS, Keysight, ZTE, ESA, Intelsat, Mitsubishi Electric (rev of R1-1903995)
R1-1903996 Overview of NTN Huawei, HiSilicon
R1-1903998 Discussion on link budget for NTN Huawei, HiSilicon
R1-1904001 Evaluation of DL synchronization and central frequency tracking for NTN Huawei, HiSilicon
R1-1904002 Discussion on cell measurement for mobility management in NTN Huawei, HiSilicon
R1-1904245 Considerations on Doppler compensation for Non-GEO-based NTN Sony
R1-1904665 UE Positioning in NTN Nokia, Nokia Shanghai Bell
R1-1904712 Discussion on PAPR in NTN Huawei, HiSilicon
R1-1904769 Discussion on the issues for UL scheduling in NTN ZTE
R1-1904770 Performance evaluation on the DL synchronization in NTN ZTE
R1-1904771 Preliminary simulation results for NTN ZTE
R1-1904772 Preliminary consideration on the link budget for NTN ZTE
R1-1905018 On NTN Initial Search and Handover Qualcomm Incorporated
R1-1905098 PAPR reduction for NTN Ericsson
R1-1905100 NTN Overview Ericsson
R1-1905102 On Measurement Metrics for NTN Ericsson
R1-1905120 Link Budget Analysis in NTN Nokia, Nokia Shanghai Bell
R1-1905225 On 2-step rancom access for NTN Ericsson
R1-1905226 PHY aspects of a moving RAN in non-terrestrial networks Ericsson
R1-1905230 On Sync and PBCH reading in NTN Ericsson
R1-1905239 Time and frequency synchronization (initial access) Mitsubishi Electric RCE

7.2.6 Physical Layer Enhancements for NR URLLC

NR_L1enh_URLLC-Core; WID in RP-190726. Please refer to the WID for detailed scoping
Also include:

- *NR_IIOT-Core; WID in RP-190728. Please refer to the WID for detailed scoping*

R1-1904831 Work Plan for NR Industrial IoT WI Nokia
Decision: The document is noted.

R1-1905455 Work plan for Rel-16 WI on physical layer enhancements for URLLC Huawei, HiSilicon
Decision: The document is noted.

7.2.6.1 PDCCH enhancements

R1-1903954 PDCCH enhancements for URLLC Huawei, HiSilicon

Observation 1: Counting the number of non-overlapping CCEs and counting the required number of blind decodes is a complicated procedure for the UE, because it needs to check e.g. all search space sets, all aggregations levels, all potential different starting positions of search space.
Observation 2: The PDCCH dropping rules in Rel-15 seem simple but are unfriendly for URLLC traffic. Dropping a whole USS set can lead to significant loss of PDCCH monitoring possibilities which increases the URLLC latency. Furthermore, after dropping, the UE might operate far under its capability.
Proposal 1: Possible PDCCH monitoring enhancements for Rel-16 should not result in a UE complexity increase for counting the number of non-overlapping CCEs and BDs in any given slot.

Proposal 2: The PDCCH candidate dropping rules for Rel-15 should be re-considered for enabling low latency operation.
Observation 3: Limiting #BDs/#CCEs per monitoring occasion/span can increase the UE complexity when multiple occasions/spans are configured within one slot and the #BD/#CCE counting is executed for each occasion/span.
Observation 4: A limit on the maximum number of #BDs/#CCEs per monitoring occasion/span is needed so that the UE can guarantee to meet the processing time requirements for N1 and N2.
Proposal 3: When selecting the maximum #CCEs/#BDs per monitoring occasion/span the UE complexity for the #CCE/#BD counting has to be considered as well as their impact on the UE processing time.
Proposal 4: When defining the maximum number of CCE/BDs per monitoring occasion/span, take the following aspects into account:

- Shall the maximum number of BDs/CCEs be the same for all monitoring occasions/spans in a slot?
- Can we allow monitoring spans of different duration in the slot, and if yes, shall they have the same or different maximum limits?
- Can a PDCCH candidate only be mapped to one span? For example, if there are two consecutive non-overlapping spans, can a PDCCH candidate cross the span boundary? If yes, how to count the CCEs/BDs for this PDCCH candidate?
- Is it sufficient to limit the number on BDs/CCEs per monitoring occasion/span or is it needed to additionally also define maximum numbers per slot? If maximum numbers of CCEs/BDs per slot are defined, what is their relationship to the same maximum numbers in each span?
- If the PDCCH candidate dropping from Rel-15 will be applied on the monitoring occasions/spans, how will this impact URLLC latency?
- The combined complexity of the #BD/#CCE counting over all monitoring occasions/spans within one slot shall not be increased compared to Rel-15.

Proposal 5: The enhanced number of non-overlapping CCEs shall be defined per component carrier. At least the total number of concurrently supported component carriers shall be restricted.
Observation 5: Enhancements for PDCCH monitoring capability on the maximum number of monitored PDCCH candidates per slot (with potential restrictions) for Rel-16 NR URLLC should not be supported at least for some UEs.
For the DCI design, we are making the following proposals:
Proposal 6: The fields of FDRA, TDRA, HARQ process number, MCS, HARQ-ACK timing, DAI, VRB-to-PRB mapping, and PUCCH resource in format 1_0 could be compressed or removed to generate the DL DCI with smaller size.
Proposal 7: Some configurable fields, such as Rate Matching Indicator, AL8/AL16 identifier could be added in DL DCI scheduling Rel-16 NR URLLC.
Proposal 8: The fields of FDRA, TDRA, HARQ process number, MCS, and UL/SUL indicator in format 0_0 could be compressed or removed to generate the UL DCI with smaller size.
Proposal 9: Some configurable fields, such as Beta-offset indicator, Power adjusting indicator for inter-UE prioritization could be added in UL DCI scheduling Rel-16 NR URLLC.

Decision: The document is noted.

R1-1904627 **PDCCH enhancements for NR URLLC LG Electronics**

- Proposal 1: Whether or not to keep the current DCI size budget needs to be discussed. If so, the additional DCI size alignment with configured DCI format scheduling URLLC needs to be further investigated.
- Proposal 2: Support increased PDCCH monitoring capability on the maximum number of monitored PDCCH candidates per slot.
  - Explicit limitation on the maximum number of monitored PDCCH candidates per monitoring occasion and/or per monitoring span
- Proposal 3: The potential limitation on PDSCH/PUSCH processing needs to be taken into account for supporting increased PDCCH monitoring capability.
- Proposal 4: Different CCE counting rule can be defined considering the impact of wideband RS.
- Proposal 5: Allowing partial dropping of search space set due to the limitation of BDs/CCEs can be taken into account.

Decision: The document is noted.

Monday conclusion: Continue offline discussion – Chengyan (Huawei)

Tuesday session

R1-1905656 **Summary of 7.2.6.1 Potential enhancements to PDCCH Huawei**

Decision: The document is noted.

Proposals:

Take the following frame work as the potential working assumption for increased UE capability on the maximum number of non-overlapping CCEs for channel estimation:

- Support increased PDCCH monitoring capability with limitation on the maximum number of non-overlapping CCEs for channel estimation per PDCCH monitoring span.
  - FFS whether to also define the limitation per OFDM symbol
- The limitation on the maximum number of non-overlapping CCEs for channel estimation per PDCCH monitoring span is reported by UE together with the span duration (i.e. Y consecutive OFDM symbols) and span gaps (i.e. the minimum time separation of X OFDM symbols between the start of two spans) as a capability.
  - The location of a certain span is determined by the starting symbol and the span duration
    - It is assumed that there is no overlap between any two spans
    - FFS Same starting symbol for all the PDCCH monitoring occasions within the same span (may depend on the outcome from the discussion of UE feature 3-5b)
  - One or more the following cases can be reported by UE:
    - M is the maximum number of non-overlapping CCEs for channel estimation per PDCCH monitoring span for the corresponding case
      - FFS the value of M

	X	Y	M
Case 1	1	1	
Case 2	2	1	
Case 3	2	2	
Case 4	4	1	
Case 5	4	2	
Case 6	4	3	
Case 7	7	1	
Case 8	7	2	
Case 9	7	3	
Note: Other cases are not precluded			

- FFS the monitoring capability on the maximum number of non-overlapped CCEs per slot for channel estimation for handling of the mandatory PDCCH monitoring capability

Thursday session

R1-1905740 **Summary of 7.2.6.1 Potential enhancements to PDCCH Huawei**

Decision: The document is noted.

Agreements:

Support configurable number of bits for the following fields for DL DCI format scheduling Rel-16 URLLC.

- Carrier indicator (0 bit or at least one non-zero bit)
- PRB bundling size indicator (0 or 1 bit)
- Rate matching indicator (0, 1 or 2 bits)
- ZP CSI-RS trigger (0, 1 or 2 bits)

Agreements:

The following fields from Rel-15 DCI format 1_1 are not included (in case new DCI format) or can be configured to be absent (0 bit) as in Rel-15 (in case reusing the existing format) in the DL DCI format scheduling Rel-16 URLLC.

- Modulation and coding scheme for TB 2
- New data indicator for TB 2
- Redundancy version for TB 2
- CBG transmission information
- CBG flushing information

Agreements:

Keep the following two fields without any change from Rel-15 DCI in DCI format scheduling Rel-16 URLLC:

- Identifier for DCI formats (1 bit) (when applicable)
- New data indicator (1 bit)

Proposal:

- For time domain resource allocation indication for PDSCH for Rel-16 URLLC, the reference of the SLIV is the starting symbol of the PDCCH monitoring occasion in which the DL assignment is detected.

Proposal:
Support configurable number of bits (0, 1, 2, 3 or 4 bits) for "Time domain resource assignment" for the DL DCI format scheduling Rel-16 URLLC.

- Also UL aspects

Proposal:

- Support configurable number of bits (0 or 1 bit) for "VRB-to-PRB mapping" in DL DCI format scheduling Rel-16 URLLC.

Friday session

R1-1905876 Summary of Thursday offline discussion on PDCCH enhancements for NR eURLLC Huawei

Decision: The document is noted.

Agreements:
The following field from Rel-15 DCI format 0_1 are not included (in case new DCI format) or can be configured to be absent (0 bit) as in Rel-15 (in case reusing the existing format) in the UL DCI format scheduling Rel-16 URLLC:

- CBG transmission information

R1-1904042	PDCCH enhancements for URLLC	OPPO
R1-1904081	PDCCH enhancements for URLLC	vivo
R1-1904122	PDCCH Enhancements for NR URLLC	Ericsson
R1-1904143	On PDCCH enhancements for NR URLLC	ZTE
R1-1904305	PDCCH enhancements for URLLC	Intel Corporation
R1-1904440	DL Control for URLLC	Samsung
R1-1904503	PDCCH enhancements for NR URLLC	MediaTek Inc.
R1-1904775	Discussion on PDCCH enhancements for URLLC	Spreadtrum Communications
R1-1904827	On PDCCH enhancements for NR URLLC	Nokia, Nokia Shanghai Bell
R1-1904882	On DCI enhancements for URLLC	InterDigital, Inc.
R1-1904929	PDCCH enhancements for URLLC	Motorola Mobility, Lenovo
R1-1904957	PDCCH enhancements for URLLC	NTT DOCOMO, INC.
R1-1905019	PDCCH Enhancements for eURLLC	Qualcomm Incorporated
R1-1905061	PDCCH enhancements for NR URLLC	Asia Pacific Telecom co. Ltd
R1-1905091	PDCCH enhancements for NR URLLC	Panasonic Corporation
R1-1905121	PDCCH enhancements for URLLC	Sequans Communications
R1-1905359	PDCCH enhancements for URLLC	CATT
R1-1905430	On DCI enhancement for NR URLLC	WILUS Inc.

7.2.6.2 UCI enhancements

Including i) more than one PUCCH for HARQ-ACK transmission within a slot; ii) at least two HARQ-ACK codebooks simultaneously constructed, intended for supporting different service types for a UE; iii) UL data/control and control/control resource collision as detailed in RP-190728

R1-1904043 UCI enhancements for URLLC OPPO

- Observation 1: If cancelation of eMBB HARQ-ACK transmission is supported without any enhancement, significant loss of system efficiency can be expected.
- Proposal 1: Sub-slot-based HARQ-ACK feedback is supported for multi-PUCCH transmission in one slot.
- Proposal 2: Sub-slot level K1 shall be supported for the configurable DCI format for URLLC.
- Proposal 3: Dynamical indication, based on K1, to UE the HARQ-ACK for one URLLC PDSCH is not transmitted should be considered.
- Proposal 4: The maximum number of PUCCHs for HARQ-ACK can equal to the number of uplink sub-slots in one slot.

- Proposal 5: A number which is not more than the number of the uplink sub-slots in one slot can be configured to UE as the maximum number of PUCCHs for HARQ-ACK in one slot.
- Proposal 6: At most one PUCCH is used to transmit eMBB HARQ-ACK in one slot.
- Proposal 7: L1 singling to indicate different service types should be supported in Rel-16.
- Proposal 8: If L1 singling to indicate different service types is supported, high layer parameters referring to HARQ-ACK transmission can be separately configured for different services.
- Proposal 9: At most 2 HARQ-ACK codebooks can be simultaneously constructed.
- Proposal 10: When SR triggered by URLLC collides with long PUCCH, the positive SR should be transmitted.
- Proposal 11: URLLC HARQ-ACK and eMBB HARQ-ACK can be multiplexed into one channel if the multiplexing conditions and requirements are satisfied.
- Proposal 12: Beta offset smaller than 1.0 is supported for URLLC PUSCH.
- Proposal 13: If eMBB HARQ-ACK is canceled by URLLC transmission, a PUCCH resource for eMBB HARQ-ACK should be reallocated.
- Proposal 14: PUSCH should be punctured by HARQ-ACK bits corresponding to URLLC.
- Proposal 15: PUSCH should be punctured by short-periodicity SR, if SR is positive.

Decision: The document is noted.

R1-1904144 **UL control enhancements for NR URLLCZTE**

- Proposal 1: At least two PUCCH transmissions for HARQ-ACK for only URLLC traffic should be allowed in a slot. The maximum number of PUCCH opportunities for HARQ-ACK in a slot can be 14.
- Proposal 2: The unit of k1 should be kept as one slot. In supporting more than one PUCCH for HARQ-ACK transmission in one slot, schemes based on one-slot k1 unit assumption should be prioritized.
- Proposal 3: Introduce explicit or implicit signaling mechanism in the physical layer for dynamic PDSCH grouping to support Type I and Type II codebook for multiple PUCCHs for HARQ-ACK transmission in one slot. For example, 1-bit signaling overhead is considered in DCI.
- Proposal 4: For a Rel-16 UE, at least two HARQ-ACK codebooks can be simultaneously constructed, intended for supporting different service types for a UE. Detailed requirements includes:
  - All PDSCHs within a PDSCH group should correspond to one service type.
  - Each separate HARQ-ACK codebook should be generated based on a PDSCH group.
  - PUCCH resource configuration in Rel-15 is reused.
  - The unified PUCCH resource sets is used for all HARQ-ACK codebooks.
  - The same or different PUCCH resources can be allocated for different HARQ-ACK codebooks according to the actual scheduling requirements.
    - If different and overlapping PUCCH resources are allocated, the new conditions can be considered for PUCCH multiplexing, for example, when a new PUCCH satisfies the requirements of the URLLC in terms of delay and performance.
  - The above requirements apply to both Type I and Type II codebook.
- Proposal 5: RAN1 should consider the following solutions to resolve the UL data/control resource collision with different service types:
  - If the eMBB UCI is to be multiplexed on the URLLC PUSCH, the base station can set beta < 1 or even 0. However, RAN1 should consider the transmission performance and opportunities of eMBB UCI.
  - URLLC PUCCH is transmitted through the punctured eMBB PUSCH in overlapping symbols.
- Proposal 6: New conditions and methods should be considered for multiplexing overlapping PUCCHs containing URLLC PUCCH in one PUCCH (denoted as a new PUCCH), for example:
  - The end of the new PUCCH is no later than the end of the URLLC PUCCH.
  - The URLLC UCI and eMBB can be independently encoded, and then they are transmitted using the new PUCCH resource.
  - The URLLC PUCCH can be transmitted through the punctured eMBB PUCCH in overlapping symbols.

Decision: The document is noted.

Monday conclusion: Continue discussion offline – Jia (OPPO)

Tuesday session

R1-1905716 **Summary on UCI enhancements for URLLC** **OPPO** (rev of R1-1905522)

Decision: The document is noted.

Samsung Exhibit 1026, Page 455 of 900

Agreements:
For supporting multiple PUCCHs for HARQ-ACK within a slot for constructing HARQ-ACK codebook, support sub-slot-based HARQ-ACK feedback procedure.

- A UL slot consists of a number of sub-slots. No more than one transmitted PUCCH carrying HARQ-ACKs starts in a sub-slot.
  - PDSCH transmission is not subject to sub-slot restrictions (if any)
  - FFS: PDSCH-to-sub-slot association.
  - FFS: Allowing PUCCH across sub-slot boundary or not.
- R15 HARQ-codebook construction is applied in unit of sub-slot at least for Type II HARQ-ACK codebook.
  - FFS for Type I HARQ-ACK codebook.
- R15 PUCCH resource overriding procedures is applied in unit of sub-slot.
- Number or length of UL sub-slots in a slot is UE-specifically semi-statically configured.
  - FFS: Limit of number of PUCCH transmissions carrying HARQ-ACKs in a slot.
- FFS: K1 definition.
- FFS: Details of PUCCH resource configuration and determination.

FFS: Use "Codebook-less HARQ" as a complementary or not.
FFS: If HARQ-ACK can be omitted in case latency requirement cannot be met.
FFS: PDSCH groupings and PHY identification for separate HARQ-ACK constructions for different service types.

Thursday session
R1-1905829 **Summary#2 on UCI enhancements for URLLC** **OPPO**
Decision: The document is noted.

Agreement:
For supporting multiple PUCCHs for HARQ-ACK within a slot for constructing HARQ-ACK codebook, K1 is defined following R15 approach but in unit of sub-slot.

Agreements:
When at least two HARQ-ACK codebooks are simultaneously constructed for supporting different service types for a UE, for both Type I (if supported) and Type II HARQ-ACK codebooks (if supported), and for dynamically-scheduled PDSCH, down-select from below for the PHY identification for identifying a HARQ-ACK codebook:

- Opt.1: By DCI format
- Opt.2: By RNTI
- Opt.3: By explicit indication in DCI (FFS: new field or reuse existing field)
- Opt.4: By CORESET/search space
- FFS additional option(s) for Type I HARQ-ACK codebook

FFS: For SPS PDSCH (including SPS release PDCCH)

R1-1903955 UCI enhancements for URLLC Huawei, HiSilicon
R1-1904082 UCI enhancements for URLLC vivo
R1-1904123 UCI Enhancements for NR URLLC Ericsson
R1-1904223 UCI enhancements for NR URLLC NEC
R1-1904235 Multiple HARQ-ACK PUSCH transmissions in a slot Sony
R1-1904306 UCI enhancements for URLLC Intel Corporation
R1-1904441 UL Control for URLLC Samsung
R1-1904504 Multiple HARQ procedures and intra-UE UCI prioritization MediaTek Inc.
R1-1904628 UCI enhancements for NR URLLC LG Electronics
R1-1904670 UCI enhancements ETRI
R1-1904776 Discussion on UCI enhancements for URLLC Spreadtrum Communications
R1-1904828 On UCI Enhancements for NR URLLC Nokia, Nokia Shanghai Bell
R1-1904883 On UCI enhancements for URLLC InterDigital, Inc.
R1-1904907 UCI enhancements for URLLC China Telecommunications
R1-1904930 UCI enhancement for URLLC Motorola Mobility, Lenovo

R1-1904958 UCI enhancements for URLLC NTT DOCOMO, INC.
R1-1905020 UCI Enhancements for eURLLC Qualcomm Incorporated
R1-1905092 Discussion on UCI enhancement for URLLC Panasonic Corporation
R1-1905132 UCI enhancements for URLLC CAICT
R1-1905360 UL control enhancements for URLLC CATT
R1-1905396 UCI enhancements for URLLC Sharp
R1-1905431 On UCI enhancement for NR URLLC WILUS Inc.
R1-1905487 UCI enhancements for URLLC Fujitsu

7.2.6.3 PUSCH enhancements

R1-1904442 PUSCH enhancement for eURLLC Samsung

- Proposal #1: Support Option 4 in TR 38.824 for PUSCH enhancement for eURLLC.
- Proposal #2: Symbol number L indicated in TDRA is smaller or equal to 28.
- Proposal #3: S+L >14 is allowed and calculation of SLIV is SLIV =14*(L-1) +S.
- Proposal #4: Not transmit the repetition when there is only one symbol due to slot boundary or DL/UL switching point.
- Proposal #5: The total symbols number indicated by L in TDRA and K repetitions represents the actual number of symbols for UL transmission.
- Proposal #6: TBS is determined based on the number of symbol L indicated in TDRA. Further study on the determination of modulation scheme in each repetition.
- Proposal #7: Introduce RRC signaling to configure one or more sets where some symbols cannot be used for PUSCH transmission. Introduce a new DCI field (e.g., 0~2 bits) to dynamic indicate one of the sets.

Decision: The document is noted.

R1-1905145 On PUSCH enhancements for NR URLLC Nokia, Nokia Shanghai Bell

- Observation 1: Option 5 does not allow mini-slot repetition operation in case the overall transmission instance spans across the slot boundary / UL periods which seems rather restrictive by design. MCS / TBS determination issues for uneven transmission segments identified during the SI are present for Option 5 and cannot be that well controlled by the gNB compared to Options 4 and 6.
- Proposal 1: Do not support Option 5 for PUSCH enhancements and focus the further discussions on down-selection between Option 4 and Option 6.
- Proposal 2: If Option 4 is supported, the repetition factor K is dynamically indicated in the respective UL grant for scheduled PUSCH.
  - Number of bits and mapping to repetition factor are FFS.
- Proposal 3: If Option 4 is supported, the Rel-15 limitations in terms of number of symbols L (i.e. L<=14), the TDRA field / parameter size (i.e. 4bits) and the related Rel-15 TBS determination procedure is to be reused.
- Proposal 4: If Option 6 is supported, the TDRA field / parameter size can be increased to provide the needed flexibility for URLLC PUSCH operation.
  - FFS on maximum number of bits.
- Observation 3: The interaction of Option 6 with (flexible) TDD may result in possible PUSCH transmission dropping. For CG operation, this will impact the reliability negatively (i.e. no guaranteed number of PUSCH symbols / repetitions).
- Observation 4: Option 6 is having severe limitations in terms of discussed Rel-16 CG enhancements, such as CG configuration groups and/or single CG configurations to cross the periodicity boundary for both FDD and TDD.
- Proposal 5: Support PUSCH enhancements according to Option 4, as Option 4 is having less limitations compared to Option 6 with respect to TDD operation as well as specifically considering the intended Rel-16 URLLC CG enhancements.

Decision: The document is noted.

Monday conclusion: Continue discussion offline – Sigen (Nokia)

Tuesday session

R1-1905631 Summary of contributions on PUSCH enhancements for NR eURLLC Nokia, Nokia Shanghai Bell
R1-1905702 Summary of Tuesday offline discussion on PUSCH enhancements for NR eURLLC Nokia, Nokia Shanghai Bell
Decision: The document is noted.

Agreement:

- Option 5 is not considered further as part of PUSCH enhancements.

Thursday session

R1-1905815 **Summary of Thursday offline discussion on PUSCH enhancements for NR eURLLC** **Nokia, Nokia** Shanghai Bell

Decision: The document is noted.

Agreements:

For option 4, dynamic indication of the nominal number of repetitions in the DCI scheduling dynamic PUSCH is supported for PUSCH enhancements. The dynamic indication can be enabled or disabled by the gNB.

- FFS the exact signaling method
- FFS the exact DCI format(s)
- FFS the exact mechanism to enable or disable
- FFS the DCI activating type 2 configured grant PUSCH

Proposals: For option 6,

- For dynamic PUSCH, it is not expected that the resource allocation has conflict with semi-static or SFI-indicated DL symbol(s).
- For configured grant PUSCH, if a repetition conflicts with semi-static or SFI-indicated DL symbol(s), the repetition is not transmitted.

Friday session

R1-1905885

Agreements:

For option 6,

- For dynamic PUSCH
  - For semi-static DL symbol(s), to down-select
    - Option 1: it is not expected that the resource allocation has conflict with semi-static DL symbol(s).
    - Option 2: if the resource allocation has conflict with semi-static DL symbol(s), the repetition is not transmitted.
  - For dynamically indicated DL symbol(s) (via format 2_0), it is not expected at the UE that the resource allocation has conflict with dynamically indicated DL symbol(s).
    - Note: this is the same as Rel-15 behavior.
- For configured grant PUSCH,
  - For type 1 configured grant PUSCH, and PUSCH other than the first PUSCH (including all repetitions) associated with the type 2 configured grant activation,
    - If a repetition conflicts with semi-static DL symbol(s), the repetition is not transmitted.
    - FFS: If a repetition conflicts with dynamically indicated DL symbol(s) (via format 2_0), the repetition is not transmitted.
  - FFS For the first PUSCH (including all repetitions) associated with the type 2 configured grant activation, follow the same handling as dynamic PUSCH.

Agreement:

- For option 6, at least for dynamic grants, it is not expected that one repetition (i.e., one SLIV) spans across slot boundary.

Proposals:

For option 4, when one nominal repetition is split into multiple repetitions due to segmentation at the slot/UL period boundary,

- For front-loaded-only DMRS, DMRS is transmitted at the beginning of each repetition.
  - FFS the case when additional DMRS is configured for the transmission
  - FFS whether it is handled differently when there is only one symbol in the repetition

Discuss till next meeting (also consider type A vs. type B DM-RS aspects)

Agreement:

For both option 4 and 6, frequency hopping is supported

- FFS details

R1-1903956	PUSCH enhancements for URLLC	Huawei, HiSilicon
R1-1904044	PUSCH enhancements for URLLC	OPPO
R1-1904083	PUSCH enhancements for URLLC	vivo
R1-1904124	PUSCH Enhancements for NR URLLC	Ericsson
R1-1904145	PUSCH enhancements for NR URLLC	ZTE
R1-1904188	On PUSCH enhancements for NR URLLC	Panasonic
R1-1904236	Considerations in PUSCH enhancements for eURLLC	Sony
R1-1904307	PUSCH enhancements for URLLC	Intel Corporation
R1-1904505	On repetition schemes for NR PUSCH	MediaTek Inc.
R1-1904629	PUSCH enhancements for NR URLLC	LG Electronics
R1-1904788	Discussion on PUSCH enhancements for URLLC	Spreadtrum Communications
R1-1904884	On PUSCH enhancements for URLLC	InterDigital, Inc.
R1-1904908	PUSCH enhancements for URLLC	China Telecommunications
R1-1904931	PUSCH enhancement for URLLC	Motorola Mobility, Lenovo
R1-1904959	PUSCH enhancements for URLLC	NTT DOCOMO, INC.
R1-1905021	PUSCH enhancements for eURLLC	Qualcomm Incorporated
R1-1905117	Discussion on PUSCH enhancements	Potevio
R1-1905361	PUSCH enhancements for URLLC	CATT
R1-1905397	Views on enhancements to PUSCH for eURLLC	Sharp
R1-1905418	PUSCH enhancements for URLLC	CAICT
R1-1905432	On PUSCH enhancement for NR URLLC	WILUS Inc.

7.2.6.4 Enhancements to scheduling/HARQ

R1-1904308 Scheduling/HARQ enhancements for URLLC Intel Corporation

Proposal 1:

- For a Rel. 16 eURLLC UE and dynamic downlink scheduling, on the active BWP of a given serving cell, the HARQ-ACK associated with the second PDSCH with HARQ process ID x received after the first PDSCH with HARQ process ID y (x != y) can be sent before the HARQ-ACK of the first PDSCH.
  - The UE only expects a maximum of one OOO PDSCH-to-HARQ-ACK flow on the active BWP of a given serving cell.
  - The UE processes both the first and second PDSCHs as a UE capability with no condition (Solution 2).

Proposal 2:

- For a Rel. 16 UE, on the active BWP of a given serving cell, the UE can be scheduled with a second PUSCH associated with HARQ process x starting earlier than the end of the first PUSCH associated with HARQ process y (x != y) with a PDCCH that does not end earlier than the ending symbol of first scheduling PDCCH. Under the condition that the two PUSCHs do not overlap in time:
  - The UE only expects a maximum of one OOO PDCCH-to-PUSCH flow on the active BWP of a given serving cell.
  - The UE processes both the first scheduled and second scheduled PUSCHs as a UE capability with no condition (Solution 2).

Proposal 3:

- For a Rel. 16 UE, on the active BWP of a given serving cell, the UE can be scheduled with a second PUSCH associated with HARQ process x starting earlier than the end of the first PUSCH associated with HARQ process y (x != y) with a PDCCH that does not end earlier than the ending symbol of first scheduling PDCCH. Under the condition that the two PUSCHs have time-domain overlaps:
  - The UE processes the second scheduled PUSCH and drops the processing of the first scheduled PUSCH on the same serving cell.

Proposal 4

- The handling of the case wherein the UE is not able to receive and process more than one unicast PDSCH simultaneously is prioritized.
- Further consideration on simultaneous reception of multiple PDSCHs as an optional UE capability within eURLLC WI is deferred until further clarity is achieved within eMIMO WI on related issue.

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Observation 1: PHY layer service differentiation is not necessary for DL intra-UE prioritization.
Proposal 5: In case of DL data/data resource conflicts for overlapping PDSCHs in time-domain, scheduled by dynamic DL assignments, UE prioritizes the latter PDSCH and may terminate the processing of the earlier PDSCH.

Decision: The document is noted.

R1-1905022 **Enhancements to Scheduling and HARQ for eURLLC** **Qualcomm Incorporated**

- Proposal 1: The out-of-order PDCCH to PDSCH is only supported for transmission of different TBs.
- Proposal 2: A UE only expects a maximum of one out-of-order PDCCH-to-PDSCH flow on the active BWP of a given serving cell.
- Proposal 3: In eURLLC WI, when out-of-order PDCCH-to-PDSCH with colliding PDSCHs take place, the two PDSCHs are FDM'ed.
- Proposal 4: When multiple PDSCHs carrying different TBs collide in the time domain, a UE only decodes the higher priority PDSCH, and should report its HARQ-ACK. In addition, the UE should report a NAK for a low priority, suspended, PDSCH.
- Proposal 5: The priority of PDSCHs are indicated at the PHY layer. Out-of-order PDCCH-to-PDSCH is only supported across two PDSCHs associated with different priorities.
- Proposal 6: In case of out-of-order PDCCH-to-PDSCH, and for a UE that does not support decoding of concurrently received PDSCHs, increasing the minimum PDSCH processing procedure time (N1) of the higher priority PDSCH by d symbols can be considered.
- Proposal 7: For supporting the out-of-order HARQ and PUSCH operation in NR Rel. 16:
  - The UE declares the number of CCs that can be configured for high priority channels and the number of CCs that can be configured for low priority channels.
  - When scheduled, the priority of the channels is indicated explicitly at the PHY layer.
  - Within each priority, the transmissions are in order.
  - Out-of-order HARQ and (non-overlapping) PUSCH across channels with different priorities are supported with no additional constraint.
  - If two PUSCHs are colliding, the low priority PUSCH should be dropped. When the UE drops the processing of the low priority PUSCH, increasing the minimum PUSCH preparation procedure time (N2) of the high priority PUSCH by d symbols can be considered.
- Proposal 8: The TPC accumulation of NR Rel. 15 is performed across the channels of the same priority, where the channel priority is given by a physical layer indication.

Decision: The document is noted.

Monday conclusion: Continue offline discussion – Kianoush (Qualcomm)

Wednesday session

R1-1905660 **Summary of Enhancements to Scheduling/HARQ Qualcomm**

Decision: The document is noted. Continue discussion offline regarding the different solutions listed in R1-1905660 (potential email discussion).

Thursday session

R1-1905833 **Summary#2 of Enhancements to Scheduling/HARQ** **Qualcomm**

Decision: The document is noted.

Agreements:
In case two unicast PDSCHs for a UE are overlapping, the following scenarios are identified:

- Scenario 1-1: Overlapping in the time domain and not in the frequency domain
- Scenario 1-2: Overlapping both in the time and frequency domains

Working assumption:

- When the two unicast PDSCHs for a UE are overlapping, the UE generates HARQ-ACK for both of the PDSCHs.

Proposals:

- If the two unicast PDSCHs for a UE are overlapping, the UE may drop the processing of the lower priority unicast PDSCH under both Scenario 1-1 and 1-2
  - FFS details for determining the lower priority

Friday session

R1-1905902
Decision: The document is noted.

Proposals:
If the two unicast PDSCHs for a UE are overlapping, the UE may drop the processing of the low priority unicast PDSCH under both Scenario 1-1 and 1-2.

- The UE shall generate a NAK if the processing of the low priority PDSCH is dropped
- ~~Note:~~ From the starting symbol of the high priority PDSCH, the UE is not expected to receive the low priority PDSCH ~~is not transmitted~~.

Revisit in RAN1#97

Email discussion regarding the OoO issue (particularly to potential further refine descriptions of each solution) as summarized in Section 2 of R1-1905902 till April 26th – Kianoush (Qualcomm)

R1-1903902	Non-Periodic Scheduling Request Transmitter for NR Release 16	Idaho National Laboratory
R1-1903957	Enhancements to scheduling/HARQ	Huawei, HiSilicon
R1-1904045	Ehancements to scheduling and HARQ	OPPO
R1-1904084	Enhancement for Scheduling/HARQ	vivo
R1-1904125	Scheduling/HARQ Enhancements for NR URLLC	Ericsson
R1-1904146	On scheduling/HARQ enhancements for NR URLLC	ZTE
R1-1904237	Intra-UE multiplexing/prioritisation under Out-of-Order Scheduling	Sony
R1-1904443	On enhancements to scheduling/HARQ for eURLLC	Samsung
R1-1904506	Enhancements for URLLC scheduling/HARQ	MediaTek Inc.
R1-1905673	Enhancements to scheduling/HARQ for NR URLLC	LG Electronics (rev of R1-1904630)
R1-1904734	Discussion on enhancements on scheduling and HARQ	CMCC
R1-1904789	Discussion on enhancements to scheduling and HARQ for URLLC	Spreadtrum Communications
R1-1904829	Discussion on enhancements to scheduling/HARQ for NR URLLC	Nokia, Nokia Shanghai Bell
R1-1904885	On enhancements for overlapping PUSCHs	InterDigital, Inc.
R1-1904960	Enhancements to scheduling/HARQ for URLLC	NTT DOCOMO, INC.
R1-1905094	Discussion on scheduling/HARQ enhancement for URLLC	Panasonic Corporation
R1-1905105	Enhancements to HARQ for eURLLC	III
R1-1905362	Discussion on out-of-order scheduling/HARQ	CATT
R1-1905398	Discussion on enhancements to scheduling/HARQ	Sharp

7.2.6.5 Enhanced inter UE Tx prioritization/multiplexing

R1-1904085 UL inter UE Tx prioritization for URLLC vivo

Observation 1: Compact DCI with reduction of 10-16 bits payload size compared to Rel.15 fallback DCI has been demonstrated to meet the URLLC 10-5 reliability requirement in eURLLC SI.
Observation 2: For PDCCH, configurable monitoring and blind detection are supported in NR such that the complexity for detecting PDCCH with UL cancellation indication can be controlled by gNB, i.e. configured with limited BD candidates.
Observation 3: If DCI for UL cancellation indication has very small payload (e.g. X-bits + padding bits <= 11bits), UE could improve the detection performance by taking sequence detection like method at receiver side.
Observation 4: Sequence-based channel may only include very limited bits to indicate coarse granularity assuming similar overhead for PDCCH and sequence-based channel.
Observation 5: In case of inter-UE multiplexing with configured grant transmissions, UL cancellation indication may not be applicable.
Proposal 1: Further clarification on the performance gain of sequence-based channel is needed, taking into account the FAR, payload size and overhead.
Proposal 2: Support PDCCH for UL cancellation indication.
Proposal 3: Group common DCI is supported for UL cancellation indication.
Proposal 4: Followings principle can be considered for design of group common DCI carrying UL cancellation indication.

- Alt. 1: Structure of DCI format 2_1 is used for UL cancellation indication, i.e. cancellation indication is provided for a group of UEs in the group common DCI.
- Alt. 2: Structure of DCI format 2_2 is used for UL cancellation indication, i.e. cancellation indication for each UE is separately provided in the group common DCI.

Proposal 5: Define minimum UE processing time for UL cancelation indication, e.g. $N_{cancellation}$

- At least $N_{cancellation}$ equal to $N2$ in Rel-15 UE processing time Capability #2 is supported
  - $N_{cancellation}$ could be a new UE capability
- FFS $N_{cancellation}$ less than $N2$ in Rel-15 UE processing time Capability #2

Proposal 6: For UL cancellation for eMBB UE, it is necessary to take into account the impact of TA and ensure minimum UL cancelation time can be met.

Proposal 7: For group common DCI used for UL cancelation indication, gNB should ensure sufficient processing time for the UE with maximum TA in the group that monitor the UL cancellation indication.

Proposal 8: Upon receiving the UL cancellation indication, UE cancels a scheduled PUSCH (e.g. of lower priority) and does not resume the non-preempted transmission after the overlapping part, if cancellation timeline is met.

- When UL cancellation indication is received before a transmission and cancellation timeline can be met, UE cancels the entire PUSCH and does not resume the non-preempted transmission after the overlapping part.
- When UL cancellation indication is received during a transmission, UE may cancel the PUSCH in a slot from the symbol that the cancellation timeline is met and drop does not resume the non-preempted transmission within the slot.

Proposal 9: For eMBB UE supporting UL cancellation, UE can be configured with slot-level or mini-slot level monitoring for UL cancellation indication monitoring.

- For mini-slot level monitoring, monitoring occasion and number for blind decoding for UL cancellation indication, should be configurable.

Proposal 10: For eMBB UEs configured with UL cancellation indication, UEs only monitor UL cancellation indication only when UL grant scheduling a PUSCH is detected.

Proposal 11: An enhanced PDCCH monitoring capability is needed to be defined for eMBB UE.

- At least an enhanced PDCCH monitoring capability in terms of number of CCEs should be defined.

Proposal 12: Supporting UL cancellation indication is an optional UE feature.

Proposal 13: Upon receiving UL cancellation indication, UE determines the starting position of cancelled time resources based on following options

- Option 1: an offset indicated by DCI relative to the timing of UL cancellation indication
- Option 2: an offset configured by RRC relative to the timing of UL cancellation indication
- Option 3: an offset implicitly determined based on minimum cancellation time relative to the timing of UL cancellation indication

Proposal 14: The ending position of cancelled time resources can be implicitly determined by UE, e.g. at the slot boundary.

Proposal 15: UL cancelation indication with finer frequency domain indication or UE-specific cancellation indication can be adopted.

Proposal 16: Enhanced UL power control for determination of power control parameter set (e.g. P_0, alpha) based on scheduling DCI indication without using SRI is supported

Proposal 17: For enhanced power control based on group common DCI, followings need to be further studied.

- Monitoring for group common DCI carrying power control parameter for URLLC
- Effective time for group common DCI carrying power control parameter for URLLC

Proposal 18: Increased TPC range can be considered for enhanced power control.

Decision: The document is noted.

R1-1904189 **On inter UE Tx prioritization/multiplexing enhancements for NR URLLC Panasonic**

- Observation 1: Clarification related to the cancellation mechanism of cancel and resume should be clarified if only the remaining transmission is continued or the entire transmission from the beginning of cancellation is shifted and transmitted
- Observation 2: Cancel and stop technique provides a simple solution and might be useful to to support where inefficient usage of resource is not a problem such that very few or no symbols remaining in a slot after the URLLC UL transmission.

- Observation 3: Cancel and continue technique provides a resource efficient solution as the remaining resources within a slot can be used for eMBB UL transmission, but degradation of channel estimation in the continued eMBB UL transmission might be an issue
- Observation 4: Pause and resume provides an optimal solution from the point of view eMBB UL transmission as complete traffic is transmitted, but it could have both the issues of degraded channel estimation and possibly phase discontinuity.
- Observation 5: In NR URLLC grant-based UL in Rel. 16, if PDCCH is used for UL cancellation indication, then it could be assumed that the gNB doesn't schedule other PDCCHs in the slot and therefore, increased number of CCEs/BDs per slot would not be necessary for the purpose of UL cancellation only.
- Observation 6: In NR URLLC grant-based UL in Rel. 16, in order to ensure the end-to-end reliability of 10E-6, the reliability of the UL cancellation indication should also satisfy similar reliability criteria.
- Proposal 1: In NR URLLC grant-based UL in Rel. 16, the specification support both cancel & stop and cancel & continue techniques for eMBB UL cancellation/pre-emption. The UE feature/capability should distinguish them.
- Proposal 2: In NR URLLC grant-based UL in Rel. 16, sequence based UL cancellation indication should not be supported due to possibly significant specification effort.
- Proposal 3: In NR URLLC grant-based UL in Rel. 16, if it is agreed to use PDCCH for the UL cancellation indication, then group-common signalling for UL pre-emption indication should be supported, where the DCI size for carrying pre-emption indication can be same as the DCI format size for URLLC.
- Proposal 4: In NR URLLC grant-based UL in Rel. 16, if it is agreed to support both the cancellation mechanisms, then to dynamically configure either one of the option as part of the pre-emption indication could be considered.
- Proposal 5: In case of grant-based PUSCH without SRI field, priority indication is used to differentiate open-loop parameter sets.
- Proposal 6: In case of grant-free PUSCH, certain L1 identification mechanism is needed to implicitly signal URLLC UL power boosting.
- Proposal 7: Linking grant-free resource with specific open-loop parameter or introducing new CS-RNTI for URLLC or URLLC identification by the flag is added to current DCI format should be considered.
- Proposal 8: For LTE-NR dual connectivity, the priority rule between NR URLLC and LTE should be revisited.

Decision: The document is noted.

Monday conclusion: Continue offline discussion – Xueming (vivo)

Wednesday session

R1-1905598 **Summary of UL inter UE Tx prioritization/multiplexing vivo**

Decision: The document is noted.

Working assumption:

- PDCCH is used for UL cancelation indication
  - The Working assumption can be revisited if the DCI for cancelation indication only carry very small number of information bits, e.g. 1 bit.

Agreements:

- Upon detecting an UL cancelation indication, at least stop without resuming is supported
  - FFS whether and how to support stop with resume

Agreements:

- Further discuss which UL transmissions that can potentially be cancelled by the UL cancelation indication, including
  - Dynamic scheduled UL transmissions, including PUSCH, PUCCH, SRS
  - Semi-persistent UL transmissions, including PUSCH, PUCCH, SRS
  - Periodic UL transmissions, including configured grant PUSCH, PUCCH, SRS
  - PRACH

Agreements:

- Further discuss, aiming for down-selection, the group common DCI and UE-specific DCI for UL cancelation indication
  - For group common DCI (different from Rel-15 SFI)
    - UE is configured to monitor a group common DCI which indicates the time/frequency region on which the UL cancellation indication applies
  - For UE specific-DCI

- When applicable, UE is configured to monitor a second UL grant for the same TB as an earlier PUSCH indicating UL cancellation before the end of the earlier PUSCH transmission. In this case, the UE follows the UL cancellation indication.

Friday session

R1-1905884 **Summary#2 of UL inter UE Tx prioritization/multiplexing** **vivo**

Decision: The document is noted.

Conclusion:

- Further discuss the following power control enhancements
  - Increased TPC range
    - FFS details, e.g. supported value range, number of TPC bits, accumulated and/or absolute TPC, configurability of the TPC tables, applicability to SRS/PUCCH.
  - Indication of open-loop parameter sets based on scheduling DCI without using SRI
  - Indication of open-loop parameter sets based on GC-PDCCH

R1-1903958	UL inter-UE transmission prioritization and multiplexing	Huawei, HiSilicon
R1-1904046	Inter UE Tx prioritization and multiplexing	OPPO
R1-1904126	Inter-UE Prioritization and Multiplexing of UL Transmissions	Ericsson
R1-1904147	UL inter-UE multiplexing between eMBB and URLLC	ZTE
R1-1904224	Enhanced inter-UE Tx prioritisation and multiplexing	NEC
R1-1904238	Inter-UE Uplink Tx Prioritisation & Multiplexing	Sony
R1-1904309	Enhanced inter-UE multiplexing	Intel Corporation
R1-1904444	Uplink inter UE multiplexing/prioritization for enhanced URLLC	Samsung
R1-1904507	On uplink inter-UE transmission prioritization and multiplexing	MediaTek Inc.
R1-1904631	Discussion on UL inter UE Tx prioritization	LG Electronics
R1-1904671	Enhanced inter UE Tx prioritization/multiplexing	ETRI
R1-1904733	Discussion on UL inter UE Tx prioritization/multiplexing	CMCC
R1-1904886	On enhanced inter UE Tx prioritization/multiplexing	InterDigital, Inc.
R1-1904909	UL inter-UE multiplexing between eMBB and URLLC	China Telecommunications
R1-1904932	Enhanced inter UE Tx prioritization/multiplexing for URLLC	Motorola Mobility, Lenovo
R1-1904961	UL inter-UE transmission prioritization/multiplexing	NTT DOCOMO, INC.
R1-1904979	Considerations on URLLC UL Inter UE Tx prioritization/multiplexing	Apple Inc.
R1-1905023	Uplink Inter-UE Tx Multiplexing and Prioritization	Qualcomm Incorporated
R1-1905054	Views on UL cancellation schemes	Mitsubishi Electric Corp
R1-1905122	Considerations on UL inter-UE multiplexing for URLLC	Sequans Communications
R1-1905146	UL inter-UE eMBB and URLLC multiplexing enhancements	Nokia, Nokia Shanghai Bell
R1-1905214	Considerations on Enhanced inter UE Tx prioritization/multiplexing	KT Corp.
R1-1905363	Discussion on inter-UE UL multiplexing	CATT
R1-1905433	On UL cancellation scheme for NR URLLC	WILUS Inc.
R1-1905483	UL Inter UE Tx multiplexing	III
R1-1905488	Discussion on UL preemption indication	Fujitsu

7.2.6.6 Enhanced UL configured grant transmission

R1-1904127 **Enhancements to UL Configured Grant Transmission for NR URLLC** **Ericsson**

- Observation 1: Multiple configurations of UL CG is a feasible solution to support multi-streams/flows for industrial TSN traffic.
- Observation 2: Introducing more CS-RNTI for different configuration increases the false alarm rate.
- Observation 3: Existing mechanism for identifying HARQ Process ID of configured grant is not tailored for active multiple configured grant configurations (with short periodicity) per UE's BWP.
- Proposal 1: Indicate each configuration by introducing an index into ConfiguredGrantConfig IE table.
- Proposal 2: Maximum number of simultaneously active configured grant configurations is 16.
- Proposal 3: Parameters in the rel-15 single UL CG configuration are also configurable per configuration for multiple configured grant.
- Proposal 4: Configured grant Type1 and Type2 cannot be simultaneously active in one BWP.

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- Proposal 5: New periodicity values are added for supporting V2X services: {sym50x14, sym100x14, sym200x14, sym300x14, …., sym1000x14}, {sym50x12, sym100x12, sym200x12, sym300x12, …., sym1000x12}.
- Proposal 6: Add a configurable offset per each configured grant configuration in the HARQ process ID calculation rule.
- Proposal 7: Allow CG transmissions to cross the periodicity boundary to ensure K repetition.

Decision: The document is noted.

R1-1904962 **Enhanced UL transmission with configured grant for URLLC** **NTT DOCOMO, INC.**

- Proposal 1: The maximum number of configured grant configurations for a given BWP of a serving cell in the specification is at most 8.
- Proposal 2: Introduce a concept of configured grant configuration group.
  - UE can be configured with one or more configured grant configuration group.
  - Within a group,
    - UE can be configured with one or more configured grant configurations.
    - Use of multiple configured grant configurations is to ensure K repetitions with reduced latency.
    - Some parameters should be common across configured grant configurations.
    - Some parameters should be independent across configured grant configurations.
  - Across groups,
    - Some parameters should be common across the groups.
    - Some parameters should be independent across the groups.
  - Use of multiple configured grant configuration groups is to support various service/traffic types.
- Proposal 3: A configuration index should be introduced for each configured grant configuration.
  - The configuration index is used to manage and distinguish the configurations.
- Proposal 4:
  - nrofHARQ-Processes should be configured per configured grant configuration.
  - A HARQ Process ID offset should be introduced per configured grant configuration.
- Proposal 5: For Type2 configured grant with multiple configured grant configurations, single activation/deactivation DCI should be able to activate/deactivate one or multiple configured grant configurations for a given BWP of a serving cell.
  - A field(s) in the activation/deactivation DCI should be able to indicate which configured grant configuration(s) to be activated/released
    - FFS RV field and/or HPN field can be the re-used for this purpose.

Decision: The document is noted.

Tuesday conclusion: Continue discussion offline – Lihui (NTT DOCOMO)

Wednesday session

R1-1905609 **Summary of 7.2.6.6 Enhanced UL configured grant transmission** **NTT DOCOMO**

Decision: The document is noted.

Agreements:

- Support separate RRC parameters for different configured grant configurations (for both type 1 and type 2 configured grants) for a given BWP of a serving cell.
  - FFS whether or not some parameters can be common among different configured grant configurations

Agreements:

- Support separate activation for different configured grant Type 2 configurations for a given BWP of a serving cell.
  - FFS whether or not to support joint activation in a DCI for two or more configured grant Type 2 configurations
- Support separate release for different configured grant Type 2 configurations for a given BWP of a serving cell.
  - FFS whether or not to support joint release in a DCI for two or more configured grant Type 2 configurations

Proposals:

- One or multiple Type 1 configured grant configuration(s) and one or multiple Type 2 configured grant configuration(s) can be simultaneously active for a given BWP of a serving cell.
  - Supporting companies: Huawei, NTT DOCOMO, Nokia, vivo, Spreadtrum, Sharp, LGE
- Only support same Type of multiple configured grant configurations
  - Supporting companies: Ericsson, MediaTek, Qualcomm, ZTE

Friday session
R1-1905893
Decision: The document is noted.

Conclusion:
RAN1 believes that it is feasible from physical layer perspective to support multiple active configured grant configurations with different Types for a given BWP of a serving cell. However, there is no conclusion in RAN1 whether or not to support it.

- No further action in RAN1 until RAN2 has made progress on this topic (whether or not to support, use cases, etc.)

Proposal:

- From RAN1 perspective, the maximum number of UL configured grant configurations for a given BWP of a serving cell can be 16.

Discussion till RAN1#97 (particularly related to potential RAN2's decision related to DL)

R1-1903959	Enhanced UL configured grant transmission	Huawei, HiSilicon
R1-1904047	Configured grant enhancements for URLLC	OPPO
R1-1904086	Enhanced UL configured grant transmissions for URLLC	vivo
R1-1904148	Enhancements for UL grant-free transmissions	ZTE
R1-1904239	Consideration on enhanced UL grant-free transmissions	Sony
R1-1904310	Enhanced UL CG PUSCH	Intel Corporation
R1-1904445	Multiple active configured grant for URLLC	Samsung
R1-1904508	Enhancements for NR configured-grant	MediaTek Inc.
R1-1904632	Enhanced UL configured grant transmission for NR URLLC	LG Electronics
R1-1904787	Discussion on UL grant-free transmission enhancements for URLLC	Spreadtrum Communications
R1-1905024	Enhanced Grant-Free Transmissions for eURLLC	Qualcomm Incorporated
R1-1905096	Discussion on URLLC enhancements for grant-free transmission	Panasonic Corporation
R1-1905364	Discussion on enhanced UL configured grant transmission	CATT
R1-1905460	Discussion on enhanced UL configured grant transmission	KDDI Corporation

7.2.6.7 Other

Including other aspects led by RAN2 (with RAN1 as secondary) as in RP-190728, e.g., addressing resource conflicts between dynamic grant (DG) and configured grant (CG) PUSCH and conflicts involving multiple CGs, support for multiple simultaneous active semi-persistent scheduling (SPS) configurations for a given BWP of a UE, support for TSC message periodicities with non-integer multiple of NR supported CG/SPS periodicities, support for shorter SPS periodicities than the existing ones, etc.

Tuesday: No contributions have been treated
Continue offline discussion – Hyunho (LGE)

Wednesday session
R1-1905625 **Summary of 7.2.6.7 Others** **LG Electronics**
Decision: The document is noted.

Proposals:
If shorter periodicity than 1 slot for DL SPS is supported, RAN1 further investigates the following aspects:

- HARQ-ACK codebook determination (including the possibility of HARQ-less), PUCCH resource determination
- Whether/how to address excessive PUCCH overhead, e.g., ACK skipping or HARQ-ACK skipping
- Feasibility to support lower periodicities than 0.5 ms

Note: The exact supported periodicities of DL SPS configuration are up to RAN2

R1-1905694 Draft response to LS on Combinations of Uu QoS characteristics values for V2X services Huawei

Decision: The document is noted.

Friday session

R1-1905813 **Summary#2 of 7.2.6.7 Other** **LG Electronics**

Decision: The document is noted.

Agreements:

- Support separate activation for different DL SPS configurations for a given BWP of a serving cell.
  - FFS whether or not to support joint activation in a DCI for two or more DL SPS configurations
- Support separate release for different DL SPS configurations for a given BWP of a serving cell.
  - FFS whether or not to support joint release in a DCI for two or more DL SPS configurations

R1-1905843 **Draft response to LS on Combinations of Uu QoS characteristics values for V2X services** **Huawei**

Decision: The draft LS is endorsed. Final LS is approved in R1-1905904.

R1-1903961	Discussion on evaluation for Combinations of Uu QoS characteristics values for V2X services	Huawei, HiSilicon
R1-1903962	Evaluation results on Combinations of Uu QoS characteristics values for V2X services	Huawei, HiSilicon
R1-1904048	Consideration on UL intra UE Tx prioritization and multiplexing	OPPO
R1-1904049	On eMBB and URLLC data differentiation	OPPO
R1-1904087	Intra UE multiplexing for UL configured grant transmissions	vivo
R1-1904088	DL SPS enhancements	vivo
R1-1904089	Power control enhancements for UL intra-UE multiplexing	vivo
R1-1904128	Intra-UE Prioritization and Multiplexing of UL Data Transmissions	Ericsson
R1-1904129	Intra-UE Prioritization and Multiplexing of DL Transmissions	Ericsson
R1-1904130	On Intra-UE Prioritization Enablers	Ericsson
R1-1904131	Support for Multiple Active DL SPS Configurations	Ericsson
R1-1904132	Support for Shorter DL SPS Periodicities	Ericsson
R1-1904133	Support for TSC Message Periodicities with Non-integer Multiple of CG/SPS Periodicities	Ericsson
R1-1904134	On Uu QoS Characteristics Values for V2X Services	Ericsson
R1-1904135	PDCCH Monitoring Capability Enhancements for URLLC	Ericsson
R1-1904136	Multiplexing of UCI with UL CG PUSCH	Ericsson
R1-1904137	HARQ-ACK Handling for URLLC	Ericsson
R1-1904138	Uplink Power Control Enhancement for NR URLLC	Ericsson
R1-1904139	Configuration of Flexible TDD DL/UL Patterns	Ericsson
R1-1904140	Initial Transmission Opportunity in UL Configured Grant	Ericsson
R1-1904141	Designs to Improve Reliability and Latency of UL Configured Grant	Ericsson
R1-1904142	URLLC Use Cases and Deployments for Beyond 52.6 GHz	Ericsson
R1-1904149	Discussion on prioritization and/or multiplexing between dynamic grant and configured grant PUSCH	ZTE
R1-1904150	Enhancements for DL SPS configurations	ZTE
R1-1904151	Discussion on TSC message periodicity	ZTE
R1-1904152	Conflicts among multiple configured grant PUSCH	ZTE
R1-1904446	On scheduling/HARQ enhancements for IIoT	Samsung
R1-1904633	Discussion on resource conflict between PUSCHs	LG Electronics
R1-1904634	Discussion on enhanced DL semi-persistent scheduling	LG Electronics
R1-1904693	DCI design for URLLC	Huawei, HiSilicon
R1-1904694	Discussion on resource conflicts between uplink grants	Huawei, HiSilicon
R1-1904695	Discussion on differentiation of eMBB and URLLC services	Huawei, HiSilicon
R1-1904696	Discussion on rate matching in URLLC due to the ambiguity between PDCCH AL8 and AL16	Huawei, HiSilicon
R1-1904697	Extended CRC for URLLC	Huawei, HiSilicon
R1-1904713	Discussion on DL SPS enhancement	Huawei, HiSilicon

R1-1904714 Discussion on message periodicities with non-integer multiple of NR supported CG/SPS periodicities Huawei, HiSilicon
R1-1904830 On resource conflicts between UL grants Nokia, Nokia Shanghai Bell
R1-1904963 some general aspects for URLLC enhancements NTT DOCOMO, INC.
R1-1904964 UL intra-UE transmission prioritization/multiplexing and physical layer enhancements for DL SPS NTT DOCOMO, INC.
R1-1904980 NR URLLC enhancement for cell edge UE Apple Inc.
R1-1905106 Discussion on TSC traffic patterns III
R1-1905277 Preliminary Evaluation Results for Uu QoS Characteristics Values for V2X Services Ericsson Inc.
R1-1905365 Discussion on PUSCH resource collision CATT
R1-1905366 Discussion on DL SPS transmission CATT
R1-1905386 Increasing Number of Repetitions to Ensure Reliability Ericsson Inc.
R1-1905399 Discussion on Intra-UE prioritization and multiplexing Sharp
R1-1905434 On shorter SPS PDSCH periodicity for NR URLLC WILUS Inc.
R1-1905449 On Intra-UE prioritization Convida Wireless
R1-1905451 TPC based enhancements for inter-UE multiplexing Huawei, HiSilicon
R1-1905452 DL intra-UE transmission prioritization and multiplexing Huawei, HiSilicon
R1-1905456 UL intra-UE multiplexing between control channels Huawei, HiSilicon
R1-1905457 UL intra-UE multiplexing between control channel and data channel Huawei, HiSilicon
R1-1905489 Considerations on handling resource conflicts between dynamic grant and configured grant PUSCHs Fujitsu

7.2.7 Study on Self Evaluation towards IMT-2020 Submission

FS_5G_eval; SID in RP-181318. Please refer to the SID for detailed scoping

Note: no online time intended for this agenda item during this meeting

R1-1904311 Considerations for IMT-2020 Self-Evaluations Intel Corporation
R1-1905606 Clarification on NR Frequency Range Definition in TR 37.910 Intel Corporation
Late submission

7.2.7.1 Evaluation methodology

R1-1904465 Discussion on evaluation methodology for Dense Urban eMBB scenario Samsung
R1-1904552 Discussions on calculation of shadow fading margin for link budget in LOS cases CATT
R1-1905240 Consideration on IMT-2020 evaluation towards final submission in June 2019 Huawei, HiSilicon

7.2.7.2 Other

Including evaluation results

R1-1903898 Updated DL spectral efficiency in the eMBB usage scenario for IMT-2020 self evaluation ZTE
R1-1903899 Updated UL spectral efficiency in the eMBB usage scenario for IMT-2020 self evaluation ZTE
R1-1903900 Updated reliability for IMT-2020 self-evaluation ZTE
R1-1903963 Considerations and evaluation results for IMT-2020 for eMBB spectral efficiency in NR Huawei, HiSilicon
R1-1903964 Consideration on self evaluation of IMT-2020 for area traffic capacity in NR Huawei, HiSilicon
R1-1903965 Consideration on LTE evaluation features and parameters for IMT-2020 self evaluation on eMBB spectral efficiency Huawei, HiSilicon
R1-1903966 Considerations and evaluation results for IMT-2020 for Indoor hotspot-eMBB spectral efficiency in LTE Huawei, HiSilicon
R1-1903967 Consideration on self evaluation of IMT-2020 for area traffic capacity in LTE Huawei, HiSilicon
R1-1903968 Considerations and evaluation results for IMT-2020 for mMTC connection density Huawei, HiSilicon
R1-1904090 Link budget evaluation for IMT-2020 self-evaluation vivo
R1-1904091 Evaluation on spectral efficiency in Dense Urban-eMBB for IMT-2020 self-evaluation vivo
R1-1904092 Evaluation on spectral efficiency in Indoor Hotspot-eMBB for IMT-2020 self-evaluation vivo

R1-1904093 Evaluation on mobility in Dense Urban-eMBB for IMT-2020 self-evaluation vivo
R1-1904094 Evaluation on mobility in Indoor Hotspot-eMBB for IMT-2020 self-evaluation vivo
R1-1904553 Self-evaluation on LTE Spectrum Efficiency in Indoor Hptspot-eMBB CATT
R1-1904554 Self-evaluation on Spectrum Efficiency in Dense Urban-eMBB for LTE and NR CATT
R1-1904555 Self-evaluation on LTE Area Traffic Capacity in Indoor Hptspot-eMBB CATT
R1-1904556 Self-evaluation on User Experienced Data Rate in Dense Urban-eMBB for LTE and NR CATT
R1-1904557 Self-evaluation on Mobility for LTE CATT
R1-1904558 Further Self-Evaluation on Link Budget for NR CATT
R1-1904559 Further Self-Evaluation on Link Budget for LTE CATT
R1-1904698 Considerations and evaluation results for IMT-2020 for Dense urban-eMBB spectral efficiency in LTE Huawei, HiSilicon
R1-1904699 Consideration on self evaluation of IMT-2020 for user experiences data in LTE Huawei, HiSilicon
R1-1904878 Evaluation results of spectral efficiency in Indoor Hotspot – eMBB in FR1 for IMT-2020 self-evaluation Sharp
R1-1904910 Update results of Dense Urban-eMBB for IMT-2020 self-evaluation China Telecommunications
R1-1904911 Updated results on spectral efficiency and area traffic capacity of Indoor Hotspot-eMBB China Telecommunications
R1-1904912 Updated results of rural-eMBB for NR and LTE in TDD China Telecommunications
R1-1904913 Updated results on FDD eMBB spectrum efficiency for IMT-2020 self-evaluation China Telecommunications
R1-1905187 IMT-2020 self-evaluation - mMTC coverage, data rate, latency & battery life Ericsson
R1-1905188 IMT-2020 self-evaluation - mMTC non-full buffer connection density for LTE-MTC and NB-IoT Ericsson
R1-1905189 IMT-2020 self-evaluation - CP latency Ericsson
R1-1905190 IMT-2020 self-evaluation - NR URLLC Reliability Ericsson
R1-1905191 IMT-2020 self-evaluation - NR URLLC user plane latency Ericsson

7.2.8 Enhancements on MIMO for NR

NR_eMIMO-Core; WID in RP-182863. Please refer to the WID for detailed scoping
Evaluation methodology, if necessary, can be discussed in each respective sub-agenda.

R1-1905803 Chairman's notes of AI 7.2.8 Enhancements on MIMO for NR Ad-Hoc Chair (Samsung)
Decision: The document is endorsed, content incorporated below.

7.2.8.1 CSI Enhancement for MU-MIMO Support

R1-1904448 Feature lead summary for MU-MIMO CSI Samsung
R1-1905629 Feature lead summary for MU-MIMO CSI – revision on selected issues Samsung

Agreement: Table 1 of R1-1905629 is agreed for the support of UCI parameters for MU-CSI

Agreement
On RI=3-4 extension:

- K_0 setting: agree on supporting Alt1, i.e. total max # NZ coefficients across all layers $\leq 2K_0$ where the K_0 value set for RI $\in \{1,2\}$
- FD basis subset selection: agree on layer-specific subset selection
- Coefficient subset selection: agree on layer-specific subset selection

Agreement
SD basis subset selection is layer-common

Agreement
On RI=3-4 extension:

- (L,p) setting: In RAN1#97 (Reno), down select and decide from the following alternatives:
  - Alt2B, Alt3C, Alt6E (see Table 9 from R1-1905629)

Agreement
Support L=6 for the following combinations of p and *beta*
- p value equals to 1/4, *beta* value equals to {1/4, ½, 3/4}
- p value equals to 1/2, *beta* value equals to 1/4

Above applies only for the case of 32 ports, rank 1 or 2, R=1
Note that the payload size for L=6 should not exceed that of Rel-15 type-2 codebook
The above feature is UE optional
FFS: Further specification support to relax UE processing complexity

Agreement
On "zero" in the reference amplitude value set, "zero" is removed and the associated code point is designated as "reserved".
- Note: "Reserved" implies that the associated code point is not used in reference amplitude reporting or, at least in Rel-16, any other purpose(s)

R1-1905741 **Feature lead summary for MU-MIMO CSI offline email discussion on N_3 Samsung**

Agreement
On the value of N_3 for (N_3=N_{SB}×R)>13:
- For Alt1:
  - Identify alternatives for padding schemes in RAN1#97 (Reno)
  - Select one from the alternatives for padding scheme by RAN1#98 (Prague)
- For Alt2:
  - Identify alternatives in RAN1#97 (Reno)
  - Select one from the alternatives by RAN1#98 (Prague)

Agreement
On the choice of oversampling factor O_3, agree on O_3=1
- The rotation factor q3 is therefore not needed

The previous working assumption on O_3 is reverted

R1-1905724 **Feature lead summary for MU-MIMO CSI Tuesday offline session Samsung**

Agreement
The scheme for indicating the number of NZ coefficients (NZC) will be chosen from the following alternatives in RAN1#97 (Reno):
- Alt1.1: RI + # NZC summed across layers where # NZC = {0, 1, 2, …, $2K_0$} (if sufficiency indicator is supported) or {1, 2, …, $2K_0$}
- Alt1.2: Per-layer # NZC without RI where # NZC = {0, 1, 2, …, K_0}
- Alt1.3: RI + differential of # NZC summed across layers
  - Differential means fraction of $2K_0$ with smaller number of possible values compared to the regular # NZC (in Alt1.1)
- Alt1.4: RI + per-layer differential # NZC
  - Differential means fraction of K_0 with smaller number of possible values compared to the regular # NZC (in Alt1.2)

Agreement
For RI=3-4, the bitmap design will be chosen from the following alternatives in RAN1#97 (Reno):
- Alt2.1: $2LM_i$ bits per layer, i=0, 1, …, (RI-1)
- Alt2.2: One joint bitmap 1 for all layers, where an indicator bit is 1 if at least one of the RI layers has non-zero coefficient (UCI part 2) + Additional bitmap 2 (or, alternatively, a combinatorial indicator) indicating which layer(s) have either non-zero or zero coefficient(s) (UCI part 2) + Bitmap 2 (or, alternatively, a combinatorial indicator) size indicator (UCI part 1)
- Alt2.2B: Bitmaps 1 for each layer, where an indicator bit is 1 if at least one of the RI beams has non-zero coefficient (UCI part 2) + Additional bitmap 2 (or, alternatively, a combinatorial indicator) indicating which layer(s) have either non-zero or zero coefficient(s) (UCI part 2) + Bitmap 2 (or, alternatively, a combinatorial indicator) size indicator (UCI part 1)

- Alt2.3: LM_i bits for the layer in which the weaker polarization is dropped (else $2LM_i$ bits) + up to 4-bit bitmap to indicate the layer where the weaker polarization is dropped (UCI part 1); i=0, 1, …, (RI-1)

Agreement

For RI=1, strongest coefficient indicator (SCI) is a $\lceil \log_2 K_{NZ} \rceil$-bit indicator. For RI>1, SCI design will be chosen from the following alternatives in RAN1#97 (Reno):

- Alt3.1 (applicable to Alt1.2): Per-layer SCI, where SCI_i is a $\lceil \log_2 K_{NZ,i} \rceil$–bit indicator ($i$=0, 1, …, ($RI$-1))
- Alt3.2 (applicable to Alt1.1): Per-layer SCI, where SCI_i is a $\left\lceil \log_2 \min\left\{ \sum_{i=0}^{RI-1} K_{NZ,i}, 2LM_i \right\} \right\rceil$–bit indicator
- Alt3.3: Per-layer SCI, where SCI_i is a $\lceil \log_2 2K_0 \rceil$–bit or $\lceil \log_2 K_0 \rceil$ indicator (i=0, 1, …, (RI-1))
- Alt3.4: Per-layer SCI, where SCI_i is a $\lceil \log_2 2L \rceil$–bit (i=0, 1, …, (RI-1))

Agreement

SD basis subset selection indicator is a $\left\lceil \log_2 \binom{N_1 N_2}{L} \right\rceil$-bit indicator.

Agreement

On FD basis subset selection indicator, the design will be chosen from the following alternatives in RAN1#97 (Reno):

- Alt5.1: FD basis subset selection indicator is per layer where it is a $\left\lceil \log_2 \binom{N_3}{M_i} \right\rceil$-bit indicator or $\left\lceil \log_2 \binom{N_3 - 1}{M_i - 1} \right\rceil$-bit indicator or size-$N_3$ bitmap, (i=0, 1, …, (RI-1))
- Alt5.2: Two-step FD basis subset selection where
  - The 1st (intermediate) step uses an intermediate FD basis set of size-N_3' ($N_3' \leq N_3$) and N_3' is either reported in UCI part 1 or fixed in specification or higher-layer configured, and the intermediate set in UCI part 2
    - $M_{initial}$ indicated by $\lceil \log_2 N_3 \rceil$ (or other values) bits indicates starting point of the intermediate FD basis set. The FD basis in this intermediate set is given by mod($M_{initial}$+n,N_3), n=0,1,..,N_3'-1
  - The 2nd step uses either N_3'-bit bitmap or $\left\lceil \log_2 \binom{N_3'}{M_i} \right\rceil$-bit indicator to indicate the FD basis used for each layer
- Alt5.3: Two-step FD basis subset selection where
  - The 1st (intermediate) step uses an intermediate FD basis set of size-N_3' ($N_3' \leq N_3$) selected from multiple higher-layer configured intermediate sets and the value of N_3' is indicated in UCI part 1
  - The 2nd step uses $\left\lceil \log_2 \binom{N_3'}{M_i} \right\rceil$-bit indicator to indicate the FD basis used for each layer
- Alt5.4: FD basis subset is selected as mod($M_{i\_initial}$ + n,N_3), n=0,1,..,M_i–1
  - The subset selection is done per layer
- Alt5.5: The intermediate FD basis subset of size N_3' is higher layer configured per rank, and N_3' is not reported in UCI part 1.
  - FFS: FD basis subset of size N_3' per rank
  - The UE reports N_3'-bit bitmap or $\left\lceil \log_2 \binom{N_3'}{M_i} \right\rceil$ or $\left\lceil \log_2 \binom{N_3'}{M_i - 1} \right\rceil$ bit indicator to indicate the FD basis used for each layer
- Alt5.6: Two-step FD basis subset selection where
  - The 1st (intermediate) step uses an intermediate FD basis set of size-N_3' ($N_3' \leq N_3$) and the value of N_3' is either fixed or higher-layer configured

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- The FD basis in this intermediate set is reported either by N_3-bit bitmap or $\left\lceil \log_2 \binom{N_3}{N_3'} \right\rceil$ bit indicator
- The 2nd step uses either N_3'-bit bitmap or $\left\lceil \log_2 \binom{N_3'}{M_i} \right\rceil$-bit indicator to indicate the FD basis used for each layer

- Alt5.7: Two-step FD basis subset selection where
  - The 1st (intermediate) step uses an intermediate FD basis set of size-N_3' ($N_3' \leq N_3$) and the value of N_3' is indicated in UCI part 1
    - The FD basis in this intermediate set is the union of FD basis for all layers, and is reported by $\left\lceil \log_2 \binom{N_3}{N_3'} \right\rceil$ bit indicator
  - The 2nd step uses either N_3'-bit bitmap or $\left\lceil \log_2 \binom{N_3'}{M_i} \right\rceil$-bit indicator to indicate the FD basis used for each layer
- Alt5.8:
  - For RI > 2, two-step FD basis subset selection
    - The 1st (intermediate) step uses an intermediate set of size-N_3' ($N_3' = \lceil N_3/2 \rceil$)
      - Intermediate set is the union of FD basis for all layers, and is reported by size-N_3 bitmap
    - The 2nd step uses size-N_3' bitmap to indicate the FD basis used for each layer
  - For RI < 3, FD basis subset selection indicator is per layer where it is a size- N_3 bitmap

Agreement

On RI=3-4 extension, with the agreed total max # NZ coefficients across all layers $\leq 2K_0$ where the K_0 value (hence β) set for RI$\in\{1,2\}$, the scheme for determining the # NZC per layer will be chosen from the following alternatives in RAN1#97 (Reno):

- Alt0. $K_{NZ,i}$ is unrestricted as long as $\sum_{i=0}^{RI-1} K_{NZ,i} \leq 2K_0$
- Alt1. $K_{NZ,i} \leq K_0$ as long as $\sum_{i=0}^{RI-1} K_{NZ,i} \leq 2K_0$

R1-1903969	Discussion on CSI enhancement	Huawei, HiSilicon
R1-1904012	CSI Enhancement for MU-MIMO Support	ZTE
R1-1904035	Enhancements on overhead reduction and rank extension for type II CSI feedback	OPPO
R1-1904095	Further discussion on type II CSI compression and feedback for high rank extension	vivo
R1-1904207	Discussion on overhead reduction for Type II codebook	LG Electronics
R1-1904218	Enhancements on Type-II CSI reporting	Fraunhofer IIS/Fraunhofer HHI
R1-1904312	On CSI Enhancements for MU-MIMO	Intel Corporation
R1-1905618	CSI enhancement for MU-MIMO	Samsung (rev of R1-1904447)
R1-1904474	CSI Enhancement for MU-MIMO Support	MediaTek Inc.
R1-1904560	Discussions on Type II CSI enhancement	CATT
R1-1905512	Discussion on CSI Reporting	NEC (Revision of R1-1904662)
R1-1904780	Discussion on Type II CSI overhead reduction	Spreadtrum Communications
R1-1905681	MU-MIMO CSI Enhancement	Motorola Mobility, Lenovo (rev of R1-1904934)
R1-1904965	Type II CSI Enhancement for MU-MIMO Support	NTT DOCOMO, INC.
R1-1904981	Considerations on CSI enhancement for MU-MIMO support	Apple Inc.
R1-1905025	CSI enhancement for MU-MIMO support	Qualcomm Incorporated
R1-1905063	Enhanced Type II codebook for CSI feedback	Nokia, Nokia Shanghai Bell
R1-1905519	On CSI enhancements for MU-MIMO support	Ericsson (Revision of R1-1905110)
R1-1905828	Efficient Bit Map Signaling for MU-MIMO CSI Enhancement	Motorola Mobility, Lenovo
R1-1905831	On UCI reporting of SCI and FD basis	Nokia, Nokia Shanghai Bell

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7.2.8.2 Enhancements on Multi-TRP/Panel Transmission

R1-1905683 Offline notes for Multi-TRP/Panel for Monday Huawei, HiSilicon

Agreement
At least for eMBB with multi-DCI based multi-TRP/panel transmission, different PDSCH scrambling sequences can be supported for PDSCHs, and selection one from the following alternatives in RAN1#97:
- Alt 1: enhance c_init, FFS detailed design in RAN1 97
- Alt 2: enhance RRC configurations to support multiple dataScramblingIdentityPDSCH

Agreement
For PDCCH monitoring and blind decoding for multi-DCI based multi-TRP/panel transmission,
- Increase the maximal number of CORESETs per "PDCCH-config" up to N=[4, 5, or 6] subject to UE capability
- Increase the maximal number of BD/CCE per slot per serving cell, subject to UE capability

Agreement
For separate ACK/NACK payload/feedback for received PDSCHs where multiple DCIs are used
- Support TDMed PUCCH transmission within a slot to convey, at least separate ACK/NACK only feedback, with separated HARQ-ACK codebook for two TRPs
- FFS: Details on how this feature is supported in the specifications (for examples, introduction of restrictions and/or further enhancements)

Above applies at least for FR1

R1-1905684 Summary of AI: 7.2.8.2 Enhancements on Multi-TRP/Panel Transmission of Offline Discussion Huawei, HiSilicon

R1-1905805 Offline Discussion for Multi-TRP/Panel Transmission on Wednesday Huawei, HiSilicon

Agreement
Take into account following principles for single-PDCCH multi-TRP DMRS port indication:
- Whether/how MU pairing cases between, e.g. UE1 from TRP1 and TRP 2 and UE 2 from TRP 1 and TRP 2, or UE1 from TRP1 and TRP 2 and UE 2 from TRP 1, is needed
- Whether/how DMRS port indication using DMRS type 1 with 1 or 2 frontloaded symbols, and DMRS type 2 with 1 or 2 frontloaded symbols need to be enhanced

Agreement
For multi-TRP based URLLC, scheduled by single DCI, support scheme 3 and 4 agreed in email discussion [96-NR-09]
- FFS any restrictions/modification of supporting scheme 3/4 for FR2
  - For example, considering the number of beam switches within the slot, and the delay from scheduling DCI indicating beam switch to scheduled PDSCH
- Note how to address M-TRP/panel based URLLC operation in FR2 can be discussed from RAN1 #98

Agreement
For multi-TRP based URLLC, scheduled by single DCI,
- Support scheme 1a as agreed in email discussion [96-NR-09]
  - FFS: Whether additional specification impact is necessary for URLLC
- On the support of schemes 2a, 2b
  - Select one of the following: support 2a only, support 2b only, support both 2a and 2b, support none
  - To facilitate further comparisons among 2a, 2b and baseline to understand technical benefits and use cases, consider both SLS and LLS simulation results
  - Specification impact, and UE complexity need to be considered as well.
  - Companies are encouraged to provide simulation results for LLS using at least the following parameters
    - Pathloss delta between two TRPs: 0dB, 3dB, 6dB
    - Details on blockage to be provided by each company if any (for example, the probability that one out of 2 links is blocked is 5% or 10% with 10dB blockage loss for the blocked link)

Conclusion

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No consensus in RAN1 on the support enhancing codeword layer mapping, by which transmission layers from each TRP can be mapped to a separate codeword when the total number of layers is ≤4.

R1-1905849 **Offline Discussion for Multi-TRP/Panel Transmission on Thursday** **Huawei, HiSilicon**

Agreement
For TDMed PUCCH transmission within a slot for separate ACK/NACK, study following alternatives for PUCCH resource configurations:

- Alt 1: PUCCH resource groups can be explicitly configured by the NW.
  - All PUCCH resources configured within the first PUCCH resource group do not overlap in time with any PUCCH resources configured within the second PUCCH resource group, considering
  - how to support PUCCH resource groups composed with resources or resource sets
- Alt 2: PUCCH resources can be configured by the NW to ensure TDM PUCCH resources among M-TRPs
  - PUCCH resource groups are not needed.
- Alt 3: PUCCH resources configured by the NW may be overlapped among M-TRPs.

Email discussion until 17th of April to be coordinated by Min (Huawei) on simulation parameters for multi-TRP based URLLC scheduled by single DCI. As a starting point for discussions:

- The number of PRBs: 8, 16, 24, 40
- Target coding rates: MCS6~=0.12, MCS8~=0.19, MCS12~=0.44, MCS14~=0.6 in MCS Table 5.1.3.1-3
  - Above target coding rate is for scheme 2a. Each CW in scheme 2b have twice the target coding rate.
- The number of layers: 1-2 layers
- The angles of AOD, ZOD, AOA, ZOA are generated by a fixed random seed in one frame(10ms) to keep channel continuity, but the seed is changed one frame by one frame to keep angles uniformly distributed;
- TDL-C with delay spread 100ns, CDL-C and CDL-D with delay spread =100ns/300ns

R1-1905523	Enhancements on multi-TRP/panel transmission	Huawei, HiSilicon	(Revision of R1-1903970)
R1-1904013	Enhancements on Multi-TRP and Multi-panel Transmission	ZTE	
R1-1904036	Enhancements on multi-TRP and multi-panel transmission	OPPO	
R1-1905817	Further discussion on multi TRP transmission	vivo	(rev of R1-1904096)
R1-1904190	On multi-TRP enhancements for NR MIMO in Rel. 16	Panasonic	
R1-1904208	Enhancements on multi-TRP/panel transmission	LG Electronics	
R1-1904240	Considerations on Multi-TRP/Panel Transmission	Sony	
R1-1904313	On multi-TRP/multi-panel transmission	Intel Corporation	
R1-1905614	Enhancements on multi-TRP/panel transmission	Samsung	(rev of R1-1904449)
R1-1904475	Enhancements on Multi-TRP/Panel Transmission	MediaTek Inc.	
R1-1904561	Consideration on multi-TRP/panel transmission	CATT	
R1-1904572	Discussion of multi-panel/TRP transmission	Lenovo, Motorola Mobility	
R1-1904597	Enhancements on multi-TRP transmission	Fujitsu	
R1-1904663	Discussion on multi-TRP operation	NEC	
R1-1904735	Discussion on multi-TRP/panel transmission	CMCC	
R1-1905513	On multi-TRP and multi-panel	Ericsson	(Revision of R1-1904750)
R1-1904784	Discussion on Multi-TRP transmission	Spreadtrum Communications	
R1-1904860	Link-level Evaluation of Multi-TRP Schemes	InterDigital, Inc.	
R1-1904879	Discussion on multi-TRP/panel techniques for URLLC	Sharp	
R1-1904914	Discussion on Multi-TRP/Panel Transmission enhancements	China Telecommunications	
R1-1904966	Enhancements on multi-TRP/panel transmission	NTT DOCOMO, INC.	
R1-1904982	Considerations on PDCCH design for NCJT	Apple Inc.	
R1-1905026	Multi-TRP Enhancements	Qualcomm Incorporated	
R1-1905056	Enhancements on Multi-TRP/panel transmission	KDDI Corporation	
R1-1905057	Enhancements on Multi-TRP/Panel Transmission	Asia Pacific Telecom co. Ltd	
R1-1905064	Enhancements on Multi-TRP/Panel Transmission	Nokia, Nokia Shanghai Bell	
R1-1905153	Enhancements on multiple TRP or panel transmission	ASUSTEK COMPUTER (SHANGHAI)	
R1-1905806	Summary of evaluation results for reliability robustness based multi-TRP transmission	Huawei	

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7.2.8.3 Enhancements on Multi-beam Operation

R1-1905627 Feature lead summary of Enhancements on Multi-beam Operations LG Electronics

Agreement
In Rel-16, only introduce specification enhancement for MPUE-Assumption3
- MPUE-Assumption3: Multiple panels are implemented on a UE and multiple panels can be activated at a time but only one panel can be used for transmission.
  - Note that this does not require a UE to always activate multi-panels simultaneously
  - Note: UE can control the panel activation/deactivation
- Possible use cases at least include
  - (General) UL coverage enhancement for FR2 considering the UE power consumption
- Discussion topics in Rel-16 include:
  - Details on the identification for a panel and corresponding panel definition
- Any enhancement introduced in Rel-16 should take further enhancement of simultaneous transmission across multiple panels for future releases into account.

This is a UE optional feature

R1-1905712 Feature lead summary of Enhancements on Multi-beam Operations LG Electronics

Agreement
The working assumption made in RAN1#96 is confirmed
For UL beam management latency and overhead reduction, support MAC CE based spatial relation update for aperiodic SRS per resource level
- FFS: Whether this is a UE optional feature

FFS: Whether above is applicable regardless of the aperiodic SRS target use

Agreement
Simultaneous update/indication of a single spatial relation per group of PUCCH is supported by using one MAC CE
- As a starting point, the group should correspond to all the PUCCHs in a BWP when a single active spatial relation is applied before and after activation
- If there is no consensus on the details of the grouping, only one group per BWP will be supported in Rel-16 which will correspond to all the PUCCHs in a BWP

Detailed design on the MAC CE is up to RAN2

Agreement
Support the configuration of up to 64 candidate beams for BFR by RRC signalling, without introducing additional MAC CE signalling for down-selecting a subset of beams.
- The total number of RSs for new beam identification and layer 1 RSRP measurement are part of UE capability signaling

This applies per BWP.

R1-1905638 Summary on SCell BFR and L1-SINR Intel

Agreement
RAN1 to determine one of the following for L1-SINR in RAN1#97:
- L1-SINR based on ZP+NZP IMR
- L1-SINR based on ZP IMR only
- L1-SINR based on NZP IMR only

If there is no agreement on this issue in RAN1#97, L1-SINR will not be supported in Rel-16.

Agreement
Downlink RS for new beam identification can be based on SSB and CSI-RS for BM

Agreement

Downlink RS for new beam identification can be transmitted in active BWP of the CC which is configured to be monitored for BFR or another CC within the same band

Agreement
New beam identification threshold is based on L1-RSRP

Agreement
At least for explicit configuration, downlink RS for BFD is in current CC
- FFS: Downlink RS for BFD in another CC within the same band for implicit configuration

R1-1905784 **Updated feature lead summary of Enhancements on Multi-beam Operations** **LG Electronics**

R1-1905821 **Summary#2 on SCell BFR and L1-SINR** **Intel**

Agreement
- For SCell with downlink only, UE reports failed CC index(es) and new beam information (if present) by PUSCH or PUCCH
  - FFS: whether it is carried by MAC CE or UCI-like PUSCH or PUCCH
  - Down-select at least one options for BFRQ procedure in RAN1 #97:
    - Option 1: Failed CC index(es), new beam information (if present) and beam failure event to be reported by a single report by MAC CE
      - FFS: whether or not to have spec impact on resource for MAC CE
      - Resource for MAC CE is not triggered by dedicated PUCCH/PRACH for BFR
    - Option 2: step 1: UE conveys beam failure event, and step 2: UE reports new beam information (if present) and failed CC index(es)
      - Step 1 is carried by dedicated PUCCH/PRACH resource
      - Step 2 is carried by MAC CE or UCI
    - Option 3: step 1: UE conveys beam failure event and failed CC index(es), and step 2: UE reports new beam information (if present)
      - Step 2 is carried by MAC CE or UCI, e.g. AP-CSI
      - PUCCH/PRACH is used for step 1 to carry failed CC index(es) implicitly
        - FFS: whether it is single-bit PUCCH or multi-bit PUCCH
  - The failed CC index(es) should be selected from up to N_max CCs for SCell BFR
    - FFS: N_max

R1-1905838 **Updated feature lead summary of Enhancements on Multi-beam Operations** **LG Electronics**

Working Assumption
The agreed ID (not excluding to reuse existing ID) for a panel can be used for panel-selection-based transmission of PUSCH, PUCCH and SRS, among multiple activated panels.
- FFS details, including an explicit/implicit indication of the panel, also considering beam correspondence at UE.
- FFS on whether the ID can be used for panel-specific PRACH transmission, if supported.

R1-1905844 **Summary#3 on SCell BFR and L1-SINR** **Intel**

Agreement
At least support gNB can configure UE to report up to N reported SSBRI/CRIs defined in Rel-15 and corresponding L1-SINR values for in a beam reporting instance
- N is configured by RRC signaling with candidate values of {1, 2, 3, 4}
- FFS: SSBRI/CRI implies a CMR/IMR combination configured by gNB based on CSI framework
- FFS: details on information on CMR/IMR association
- Make a decision in RAN1 #97 whether to support gNB to configure UE to report [IMR index] and RSRP additionally in a beam reporting instance
  - Companies are encouraged to provide evaluation results

R1-1903971	Enhancements on multi-beam operation	Huawei, HiSilicon
R1-1904014	Enhancements on Multi-beam Operation	ZTE
R1-1904038	Discussion on Multi-beam Operation Enhancements	OPPO
R1-1904097	Further discussion on multi beam operation	vivo
R1-1904191	On enhancements for multi-beam operations for NR MIMO in Rel. 16	Panasonic
R1-1904209	Discussion on multi-beam based operations and enhancements	LG Electronics
R1-1904217	Enhancements on UE multi-beam operation	Fraunhofer IIS/Fraunhofer HHI
R1-1904241	Enhancements on multi-beam operation	Sony
R1-1904314	On beam management enhancement	Intel Corporation
R1-1904450	Enhancements on multi-beam operation	Samsung
R1-1904476	Enhancements on Multi-beam Operation	MediaTek Inc.
R1-1904562	Consideration on multi-beam operation enhancement	CATT
R1-1904573	Discussion of multi-beam operation	Lenovo, Motorola Mobility
R1-1904598	Enhancements on multi-beam operation	Fujitsu
R1-1904664	Discussion on multi-beam operation	NEC
R1-1904736	Enhancements on multi-beam operation	CMCC
R1-1904781	Discussion on multi-beam operation	Spreadtrum Communications
R1-1904840	On Beam Failure Recovery for SCell	Convida Wireless
R1-1904861	MPUE and Panel Specific Uplink Transmission	InterDigital, Inc.
R1-1904915	Enhancements on multi-beam operation	China Telecommunications
R1-1904967	Discussion on multi-beam enhancement	NTT DOCOMO, INC.
R1-1904983	Considerations on multi-panel and MPE in FR2	Apple Inc.
R1-1905027	Enhancements on Multi-beam Operation	Qualcomm Incorporated
R1-1905042	Discussion on enhancements on multi-beam operation	ITRI
R1-1905053	Views on NR multi-beam operations	Mitsubishi Electric Corp
R1-1905058	Enhancement on multi-beam operation	KDDI Corporation
R1-1905065	Enhancements on Multi-beam Operation	Nokia, Nokia Shanghai Bell
R1-1905073	Enhancements on Multi-beam Operations	Asia Pacific Telecom co. Ltd
R1-1905075	Enhancements on beam management	Beijing Xiaomi Electronics
R1-1905156	Enhancements to multi-beam operation	Ericsson

7.2.8.4 Full TX Power UL transmission

R1-1905637 Feature lead summary on Full TX Power UL transmission vivo

Agreement
For the the 2TX and 4TX case, the linear value of power after power scaling, is divided equally among the non-zero PUSCH ports

- The above applies for the cases including when UE transmitting at P_c_max

Agreement
Supported UE capabilities and supported scheme for UE capability 1

- Option 3
- FFS: Whether to additionally support Option 1-2

R1-1905693 Outcome of offline discussion on Full TX Power UL vivo

Agreement
Regardless of UE capability 1, 2, or 3, signalling of "UL full power tx capability" is supported for UEs with full power uplink transmission capability

- FFS: For UE capability 1, if any other information is necessary
- For UE capability 2 and UE capability 3, in addition to signalling "UL full power tx capability", further information on UE capability are signalled if needed

- FFS: Details such as support of UE capability signaling of supported one or group of TPMI precoder(s) for full power transmission, support different number of SRS ports for resources for codebook, and other UE capability signaling can be introduced
- FFS: Whether full uplink TX power capability can be explicitly/implicitly derived from the TPMI/TPMI group precoders for full power transmission

UEs with full power uplink transmissions are those Rel-16 UEs which can transmit at full power at least for rank1
The signalling of above information does not imply any specific UE PA architecture implementation.

R1-1905848 **Outcome of offline discussion on Full TX Power UL transmission #2** **vivo**

Agreement
RAN1 will select one of the alternative solutions below to support UE capability 2. Further clarification or details are needed for Alt1, Alt3-1, Alt3-2, and Alt5. Email discussion by 17th of April for companies to provide clarification on Alt1, Alt3-1, Alt3-2, and Alt5. To be coordinated by Rakesh (vivo).

- Alt1: Option1-1 (Support a new codebookSubset for non-coherent and partial-coherent transmission capable UEs, e.g. for 2Tx the new codeboookSubset is all non-antenna selection TPMIs or with only TPMI [1 1] for rank 1)
- Alt3-1: Option3+Option2 (Multiple SRS resources with different number of SRS port(s) in each resource)
  - FFS: Whether to additionally support Option 1-2
- Alt3-2: Option3+Option2+ Option1-1 (Multiple SRS resources with different number of SRS port(s) in each resource)
- Alt5: FDM multi-port simultaneous transmission

R1-1903972 **Enhancements on UL MIMO with multiple PAs to allow full power transmission** **Huawei, HiSilicon**

R1-1904015 Full TX Power UL transmission ZTE
R1-1904039 Discussion on the Full TX power UL transmission OPPO
R1-1904098 Further discussion on full Tx power in UL transmission vivo
R1-1904210 Discussion on full Tx power uplink transmission LG Electronics
R1-1904315 On full power uplink transmissionIntel Corporation
R1-1904451 View on full power UL transmission Samsung
R1-1904477 Full TX Power UL transmission MediaTek Inc.
R1-1904563 Considerations on UL full Tx power CATT
R1-1904737 Full Tx power UL transmission CMCC
R1-1904797 Discussion on full TX power for UL transmission Spreadtrum Communications
R1-1904847 On full power UL transmission Ericsson
R1-1904880 Capability Signaling for Full TX Power UL InterDigital, Inc.
R1-1904968 Full Tx Power UL transmission NTT DOCOMO, INC.
R1-1905028 Full Tx power for UL transmissions Qualcomm Incorporated
R1-1905066 On the Full TX Power UL transmission Nokia, Nokia Shanghai Bell

7.2.8.5 Low PAPR RS

R1-1905668 **Feature lead summary of low PAPR RS** **Ericsson**

Agreement
For length-6 CGS, specify the sequences given by the following table for both comb#1 and comb#2.

Table 1: Length 6 CGS

u	$\phi(0),\ldots,\phi(5)$

Samsung Exhibit 1026, Page 478 of 900

0	-1	-7	-3	-5	-1	3
1	-1	3	7	-3	7	3
2	-1	3	1	5	-1	-5
3	-7	-3	-7	5	-7	-3
4	7	5	-1	-7	-3	1
5	3	-3	1	5	-1	-1
6	-7	-3	-7	-3	7	-5
7	-7	-3	1	-5	-1	-5
8	-7	-3	3	-3	-7	-3
9	-7	-7	-1	1	-5	1
10	-7	-3	-7	5	-1	5
11	-7	-7	-3	1	5	-1
12	5	7	-3	-5	5	-5
13	-3	7	-5	-1	-5	-1
14	5	-7	7	1	5	1
15	-7	3	1	5	-1	3
16	-7	-5	-1	-7	-5	5
17	-7	1	-3	3	7	5
18	-7	-7	3	5	1	5
19	-7	-3	3	-1	3	-5
20	-7	-5	5	3	-7	-1
21	1	5	1	5	3	7
22	1	-3	1	-5	-1	3
23	1	7	1	-5	-7	-1
24	1	-1	3	-1	-7	-3
25	1	-1	-5	-1	3	-3
26	1	-1	3	-1	3	7
27	-5	3	7	5	3	7
28	-7	1	-3	1	5	1
29	1	5	3	-7	5	-3

Agreement
When scheduled by DCI format 0_0 with CSS, the new Rel-16 DMRS is not supported.

Agreement
For initialization of Rel-16 π/2-BPSK modulated DM-RS using time domain Gold sequences, the OFDM symbol number l in the c_{init} formula for two-adjacent symbol DM-RS (*maxLength*=2) should correspond to the OFDM symbol number of the first DM-RS symbol of the pair of adjacent symbols

Conclusion
For DCI format 1_0, SPS use port 0 and Rel-15 sequence applies
- No specification impact necessary

Agreement
When Rel-16 DMRS sequence for pi/2 BPSK PUCCH Format 3 and Format 4 is configured, the Rel-16 sequence is used for all sequence lengths.

Agreement
Rel-16 DMRS sequence for pi/2 BPSK PUCCH Format 3 for length >30 is determined according to the following: the Gold sequence shall be initialized in the same way as for the DMRS for PUCCH format 2 in NR Rel-15, i.e.,

$$c_{init} = \left(2^{17}\left(N_{symb}^{slot} n_{s,f}^{\mu} + l + 1\right)(2N_{ID}^{0} + 1) + 2N_{ID}^{0}\right) \bmod 2^{31}$$

If a UE is configured with both *dmrs-UplinkForPUSCH-MappingTypeA* and *dmrs-UplinkForPUSCH-MappingTypeB*, *scramblingID0* is obtained from *dmrs-UplinkForPUSCH-MappingTypeB*.

Agreement
The group and sequence hopping procedures in section 6.3.2.2.1 of TS38.211 in Release 15 are applied to Rel-16 DMRS sequence for pi/2 BPSK PUCCH Format 3 for length ≤ 30.

R1-1905745 **Feature lead summary 2 of low PAPR RS Ericsson**

Agreement
Rel-15 NR DM-RS Type 1 mapping is used for the DM-RS sequences of PUSCH transmission with π/2-BPSK modulation.
- Applies for Rel-16 for all sequence lengths

R1-1905714 **Low PAPR DMRS sequence for Pi/2-BPSK for Comb-2 Huawei, HiSilicon**

R1-1903897 Low PAPR Reference Signals Indian Institute of Tech (H)
R1-1903973 Discussion on DMRS sequence design for low PAPR Huawei, HiSilicon
R1-1904016 Remaining issues on low PAPR RS ZTE
R1-1904037 Discussion on RS enhancement for PAPR reduction OPPO
R1-1904099 Further discussion on low PAPR RS vivo
R1-1904211 Discussion on low PAPR RS LG Electronics
R1-1904316 Low PAPR reference signals Intel Corporation
R1-1904452 View on Low PAPR RS Samsung
R1-1904478 Low PAPR RS MediaTek Inc.
R1-1904751 Remaining details on low PAPR RS Ericsson
R1-1904783 Discussion on power imbalance for DMRS Spreadtrum Communications
R1-1904881 Remaining Details on Low PAPR RS InterDigital, Inc.
R1-1905029 Lower PAPR reference signals Qualcomm Incorporated
R1-1905067 Discussion on Low PAPR RS Nokia, Nokia Shanghai Bell
R1-1905604 Joint Proposal on Deterministic Sequence Hopping for pi/2 BPSK CGS Sequences Intel Corporation, ZTE, Sanechips, Qualcomm
R1-1905605 Joint Proposal on Length-6 CGS Design for pi/2 BPSK DMRS Intel Corporation, ZTE, Sanechips, Qualcomm, Ericsson, MediaTek, InterDigital, vivo

7.2.8.6 Other

R1-1903974 UL/DL BM for latency/overhead reduction Huawei, HiSilicon
R1-1903975 Panel-based UL beam selection Huawei, HiSilicon
R1-1903976 Beam measurement and reporting using L1-SINR Huawei, HiSilicon
R1-1903977 Beam failure recovery for SCell Huawei, HiSilicon
R1-1903978 Evaluation results of multi-beam operation Huawei, HiSilicon
R1-1903979 Evaluation results of DFT-based compression codebook Huawei, HiSilicon
R1-1903980 Phase Randomization and Correction for CSI quantization in frequency domain Huawei, HiSilicon
R1-1903981 Single PDCCH based multi-TRP/panel transmission Huawei, HiSilicon
R1-1903982 CSI measurement enhancement for multi-TRP/panel transmission Huawei, HiSilicon
R1-1903983 Reliability/robustness enhancement with multi-TRP/panel Huawei, HiSilicon
R1-1903984 Evaluation results of full power transmission for UL MIMO with multiple PAs Huawei, HiSilicon
R1-1903985 Discussion on CW to layer mapping in single-DCI based multi-TRP transmission Huawei, HiSilicon
R1-1903986 Evaluation methodology for multi-beam enhancements Huawei, HiSilicon
R1-1904017 Evaluation results on alternatives for higher rank Type II compression CSI ZTE
R1-1904018 On single PDCCH design for multi-TRP and multi-panel ZTE
R1-1904019 On multi-PDCCH design for multi-TRP ZTE
R1-1904020 Details and evaluation results on multi-TRP for URLLC ZTE
R1-1904021 Considerations on beam management for multi-TRP ZTE
R1-1904022 Details of latency and overhead reduction for beam management ZTE
R1-1904023 Details and evaluation on UL simultaneous transmission for single TRP ZTE
R1-1904024 Details and evaluation on UL simultaneous transmission for multi-TRP ZTE
R1-1904025 Details and LLS evaluation on L1-SINR measurement and reporting ZTE
R1-1904026 Details and SLS evaluation on L1-SINR measurement and reporting ZTE
R1-1904027 Discussion on UL power control for multi-panel operation ZTE
R1-1904028 Enhancements on UL beam management ZTE
R1-1904029 Leftover issues on aperiodic CSI-RS ZTE

R1-1904030 PUSCH spatial relation and power control after BFR ZTE
R1-1904031 Configuration of SRS and PUSCH in the same symbol ZTE
R1-1904032 Enhancements on simultaneous Tx/Rx of channels/signals ZTE
R1-1904100 Performance evaluation on type II CSI compression for high rank extension vivo
R1-1904101 Discussion on Multi-TRP based URLLC transmission vivo
R1-1904102 Performance evaluation and observations for Multi-TRP transmission vivo
R1-1904212 Evaluation and analysis on simultaneous multi-panel Tx LG Electronics
R1-1904213 Evaluation results on number of SD beams for Rel-16 Type II CSI LG Electronics
R1-1904214 Discussion on DMRS port indication for NCJT LG Electronics
R1-1904215 Comparison between multi-TRP schemes for improving reliability LG Electronics
R1-1904216 Evaluation results on beam selection based on L1-SINR with dedicated IMR LG Electronics
R1-1904219 Enhancements on Type-II CSI: Doppler Approach Fraunhofer IIS/Fraunhofer HHI
R1-1904453 LLS evaluation on Multi-TRP/panel transmission Samsung
R1-1904454 SLS evaluation on MU-MIMO CSI: N3 value Samsung
R1-1904455 SLS evaluation on MU-MIMO CSI: Rank 3-4 parameter setting and subset selection Samsung
R1-1905611 SLS evaluation on MU-MIMO CSI: support for L=6 Samsung (rev of R1-1904456)
R1-1904457 On UCI design for DFT-based compression Samsung
R1-1904458 On CBSR for DFT-based compression Samsung
R1-1904459 Evaluation on SINR metrics for beam selection Samsung
R1-1904460 Discussion on IMR for L1-SINR measurement Samsung
R1-1904564 Evaluation results of multi-TRP/panel transmission CATT
R1-1904574 Discussion on UL multi-panel transmission Lenovo, Motorola Mobility
R1-1904700 Evaluation results for multi-TRP/panel transmission for eMBB Huawei, HiSilicon
R1-1904701 Evaluation results of sequence design for Pi/2-BPSK DFT-S-OFDM Huawei, HiSilicon
R1-1904763 Further observations on length-6 CGS for low PAPR RS Ericsson
R1-1904764 Further observations on port multiplexing of low PAPR RS Ericsson
R1-1904782 Discussion on CSI enhancement for multiple TRP/Panel transmission Spreadtrum Communications
R1-1904935 Interrupted transmission indication for Multi-TRP Transmission Motorola Mobility, Lenovo
R1-1904936 Power control for multi-panel uplink transmission Motorola Mobility, Lenovo
R1-1904984 Further considerations on beam management enhancement Apple Inc.
R1-1905030 Comparison between SFN and other multi-TRP schemes for PDSCH Reliability Qualcomm Incorporated
R1-1905085 Discussion on preemption indication enhancement ASUSTEK COMPUTER (SHANGHAI)
R1-1905111 On CBSR for Type II CSI enhancements Ericsson
R1-1905112 On UCI design for Type II CSI enhancements Ericsson
R1-1905113 Evaluation results on the value of N3 for Type II CSI enhancements Ericsson
R1-1905520 Evaluation results for different parameter settings for Type II CSI enhancements Ericsson (rev of R1-1905114)
R1-1905115 On the necessity of feeding back oversampling index for Type II CSI enhancements Ericsson
R1-1905157 On event-driven reporting for beam management Ericsson
R1-1905158 Further simulation results for UL multi-panel transmission Ericsson
R1-1905159 Latency analysis of SCell BFR solutions Ericsson
R1-1905160 Performance of beam selection based on L1-SINR Ericsson
R1-1905163 Additional system-level results on NC-JT with different codeword to layer mappings Ericsson
R1-1905164 Link-level results on the codeword-to-layer mapping for single-PDCCH NC-JT Ericsson
R1-1905165 Performance comparison of different RV combinations for SDM and FDM based schemes Ericsson
R1-1905166 NC-JT performance with layer restriction between TRPs Ericsson
R1-1905167 On the number of TRPs for high reliability at 4 GHz Ericsson
R1-1905168 Performance evaluation of NC-JT with different clustering approaches Ericsson
R1-1905169 On MAC-CE signaling impact of Rel-16 TCI indication framework Ericsson
R1-1905170 Views on CSI framework for multi-TRP Ericsson
R1-1905171 Sequence design for Alt.1 length-6 CGS for low PAPR RS Ericsson
R1-1905514 Additional evaluation results on different multi-trp schemes for reliable PDSCH transmission in URLLC Ericsson (rev of R1-1905179)

R1-1905217 Comparison of MAC CE signalling options for spatial relation update of aperiodic SRS Ericsson
R1-1905218 L1-SINR estimation using ZP and NZP IMR Ericsson
R1-1905266 Evaluation results of DFT-based compression codebook for rank 3 and 4 Huawei, HiSilicon
R1-1905267 Performance evaluation for sequence reordering Huawei, HiSilicon
R1-1905268 Discussion of rate matching methods for PDSCH reliability enhancement schemes with multi-TRP panel Huawei, HiSilicon
R1-1905269 Reliability enhancement on PDCCH with multi-TRP panel in consideration of low blind detection numbers Huawei, HiSilicon
R1-1905270 Reliability enhancement on PUCCH&PUSCH with multi-TRP panel Huawei, HiSilicon
R1-1905271 Discussion on the supporting cases for full power transmission Huawei, HiSilicon
R1-1905272 Link level Evaluation results for reliability/robustness based multi-TRP transmission Huawei, HiSilicon
R1-1905273 System level Evaluation results for reliability/robustness based multi-TRP transmission Huawei, HiSilicon
R1-1905274 Assumptions for multi-panel UEs and simultaneous multi-UE-panel transmission Huawei, HiSilicon
R1-1905615 Alignment of TBS and LDPC BG for URLLC NC-JT Samsung

7.2.9 UE Power Saving for NR

NR-PowerSaving-Core; WID in RP-190727. Please refer to the WID for detailed scoping

R1-1905367 Work plan of UE power saving in NR CATT
Decision: The document is noted.

7.2.9.1 PDCCH-based power saving signal/channel

R1-1904317 On PDCCH-based power saving signal Intel Corporation

- Observation 1: If UE monitors WUS in a given BWP, UE may need to tune to the given BWP before WUS transmit occasion and may need to stop any other running BWP-inactivity-timer.
- Proposal 1: WUS PDCCH is monitored before DRX ON duration.
- Proposal 2:
  - WUS DCI at least includes BWP indication field, covering both single CC and CA case like shown in Table 2.
  - FFS: A-CSI trigger, cross-slot scheduling configuration
- Proposal 3:
  - WUS DCI format should have UE-specific fields to ensure the power saving efficiency.
  - FFS: UE-specific or group-common DCI format for WUS PDCCH based on the exact IEs for a single UE.
- Proposal 4: RAN1 considers RS enhancements for tracking to aid PDCCH-based WUS detection.
- Proposal 5: GTS DCI at least includes indication of duration for skipping PDCCH monitoring occasions.
- Proposal 6: Support a group-common DCI format for GTS DCI design.
- Proposal 7: The aggregation level and blind decoding candidates for WUS and GTS DCI can be separately configured as part of respective search space configuration.

Decision: The document is noted.

R1-1904738 Discussion on power saving signal triggering UE adaptation CMCC

- Proposal 1: Two different PDCCH-based power saving signals could be designed for different UE operation states, e.g., during DRX off time during DRX active time, in non-DRX operation.
  - Power saving signal #1 could be designed to be transmitted in DRX off time in order to wake up UE, trigger CSI report before DRX ON, or other potential power saving schemes such as adaptation in BWP/Scell operation.
  - Power saving signal #2 could be designed to be transmitted in DRX active time and non-DRX operation in order to trigger UE adaptation to PDCCH monitoring, cross-slot scheduling, maximum MIMO layer or other schemes.
- Proposal 2. PDCCH-based Power saving signal used in DRX off time could be transmitted at least to trigger UE wake up in the next DRX cycle or not, and some other fields for triggering CSI before DRX ON or other potential power saving schemes such as adaptation in BWP/Scell operation should also be considered when designing this PDCCH-based power saving signal.
- Proposal 3. Power saving signal used in DRX off time could trigger an on demand CSI report before DRX ON. Aperiodic CSI-RS or periodic CSI-RS could be used as the CSI measurement resource and PUCCH could be used as the CSI report resource for the on demand CSI report before DRX ON. The aperiodic CSI-RS configuration index or the periodic CSI-RS configuration index and associated shifted duration could be indicated in the power saving signal used in DRX off time.

- Proposal 4. PDCCH-based power saving signal could be used to indicate UE to go to sleep for a duration in DRX active time or non-DRX operation for triggering UE skipping PDCCH monitoring.
- Proposal 5. Introduce the concept of power saving states when designing the PDCCH-based power saving signal to trigger UE adaptation in DRX active time and non-DRX operation. Several different power saving states could be configured with RRC signalling, and then PDCCH-based power saving signal could be used to further dynamically indicate UE which power saving state to use.
- Proposal 6. To avoid BWP switch in power saving signal based DRX operation before UE waking up in next DRX cycle, the following schemes can be further studied:
  - UE stops or restarts bwp-InactivityTimer after detecting the power saving signal.
  - UE ignores the configuration of bwp-InactivityTimer after receiving the power saving signal configuration in one DL BWP.

Decision: The document is noted.

R1-1905368 **PDCCH based power saving signal/channel design** **CATT**

- Observation 1: AL=8 and the payload size of DCI=12 can provide good miss detection performance for PDCCH based power saving signal/channel.
- Proposal 1: PDCCH based power saving signal/channel can include the following information in the DCI content.
  - WUS and GTS indication
  - skipping PDCCH monitoring indication
  - configuration of DRX for upcoming DRX ON
  - BWP switching and SCells activation/deactivation
- Proposal 2: The CORESET/search space configuration of PDCCH-based power saving signal/channel should be UE-specific and not shared with other UEs.
- Proposal 3: One aggregation level is configured for the PDDCH-based power saving signal/channel based on the deployment scenario and the operation point.
- Proposal 4: The number of blind decoding for the PDDCH-based power saving signal/channel is one.
- Proposal 5: PDCCH based power saving signal/channel should be transmitted before or at DRX ON period.
- Proposal 6: The monitoring occasion of the PDDCH-based power saving signal/channel could be dynamic indicated in the DCI field.
- Proposal 7: The CORESET of the PDDCH-based power saving signal/channel should be configured with each of multiple Tx beams to provide better power saving signal/channel detection performance.

Decision: The document is noted.

R1-1905384 **PDCCH-based power saving signal/channel** **Nokia, Nokia Shanghai Bell**

- Observation 1: The detection performance of DCI + DMRS degrades significantly in the presence of more frequency selective channel (i.e. 100ns w.r.t. 300ns).
- Observation 2: Since precoder cycling associated with PDCCH and related DMRS is UE transparent and precoding is not specified in NR Rel-15, using time domain detection with DCI+ DMRS sequence prevents using precoder cycling.
- Observation 3: DCI + DMRS sequence can not be considered as a preferable solution for Rel-16 power saving signal.
- Observation 4: Rel-15 DMRS of PDCCH can carry only 1-bit information as payload, and as such is not attractive option for Rel-16 power saving signal/channel.
- Observation 5: PDCCH enables efficient support for multiplexing with existing Rel-15 channels/signals/reference signals. Furthermore, support for multiple triggering options with minimal specification efforts for Rel-16 can be provided.
- Observation 6: To reduce specification impacts as well as improve reliability and coverage, it is beneficial to consider existing Rel-15 DCI formats with small payload sizes for power saving wake-up channel.
- Proposal 1: Support PDCCH as a power saving channel for Rel-16.
- Observation 7: The supported Rel-15 DCI formats can carry payload from 1 bit up to 128 bits. For Rel-15 the minimum payload size has been agreed to be 12 bits with zero padding.
- Observation 8: To achieve the targeted miss-detection rate for wake-up signal/channel, i.e. 0.1%, around 2 dB performance gain can be obtained by reducing the payload size from 48 bits to 10 bits with large ALs=8, 16.
- Proposal 2: Consider the following principles for PDCCH-based power saving channel:
  - define a power saving specific DCI format,
  - the size of new DCI format should be able to be configured to have the same size as some other DCI format and
  - introduce a new RNTI, e.g. PS-C-RNTI, which the UE searches for new DCI format when configured.
- Proposal 3: Study further whether power saving signal DCI format is associated to search space set(s) used for existing unicast DCI formats or a new dedicated search space set for the new DCI format.
- Proposal 4: Investigate the feasibility of using dedicated CORESET for monitoring power saving channel.

- In section 2.3 we consider the applicability of the signal inline with the target of achieving power saving and observe as follows:
- Observation 9: Using Release-15 mechanisms network can optimize between UE power saving and scheduling latency using DRX.
- Observation 10: Use of power saving channel should be considered only when DRX is configured.

Decision: The document is noted.

Monday conclusion: Continue discussion offline – Fang-chen (CATT)

Tuesday session

R1-1905676 **Summary of offline discussion on PDCCH-based power saving signal/channel** **CATT**

Decision: The document is noted.

Agreements:

- The PDCCH-based power saving signal/channel is UE-specifically configured.
- The DCI format(s) contain information for (including potential down-selection, which may or may not depend on power saving techniques/scenarios):
  - Alt 1: triggering a single UE only
  - Alt 2: triggering UE(s) within a group
    - FFS whether to always trigger all UEs in a group or a subset of it
  - Alt 3: Alt 1 & Alt 2

Agreements:

The assumptions of the DCI design of the PDCCH-based power saving signal/channel include:

- No increase of DCI format size budget
  - FFS whether or not the same or different sets of DCI format sizes for Active time vs. out of Active time
- Working assumption: no increase of UE BD/non-overlapping CCE limit

Agreements:

Possible candidates of DCI format design for the PDCCH-based power saving signal/channel (including potential down-selection, which may or may not depend on power saving techniques/scenarios):

- New DCI format(s)
  - The size of new DCI format may or may not be the same size as the existing DCI size
- Enhancement of existing DCI. E.g.,:
  - Additional new field(s)
  - Using the existing DCI format for the power saving purpose
    - Re-purpose field(s) in the DCI
    - The detection of existing DCI format as the indication for the power saving technique

Wednesday session

R1-1905713 **Summary#2 of offline discussion on PDCCH-based power saving signal/channel** **CATT**

Decision: The document is noted.

Agreements:

The DCI format(s) of the PDCCH-based power saving signal/channel is designed to provide:

- Indication of one or more power saving associated operations.
- Supporting configurability (e.g., 0, 1, 2, …bits, etc.), if needed, for one or more information fields in the DCI at least for one DCI format

Agreements:

Potential DCI contents in DCI format(s), to be further investigated:

- Power saving technique associated with C-DRX–
  - Essential for UE function for the C-DRX
    - Wakeup –
      - UE is indicated to transition from outside Active Time to Active Time
      - UE is indicated to stay at Active Time
    - *Go to sleep–*

        - *UE is indicated to transition from Active Time to outside Active Time.*
        - *UE is indicated to stay outside Active Time*
    - FFS: The time of receiving the wakeup and go-to-sleep indication inside or outside Active Time.
- Cross-slot scheduling
- Triggering RS transmission
- CSI report
- Single vs. multi-cell operation
- *BWP /SCell*
    - *BWP & SCell together*
    - *BWP and SCell have separated fields*
- *MIMO layer adaptation/number of Anenna adaptation*
    - *May further depend on RAN4's work*
- *Indication of CORESET/search space/candidate of subsequent PDCCH decoding*
- *PDCCH monitoring periodicity*
- *PDCCH skipping (skipping duration)-*
    - *PDCCH skipping – UE is indicated to skip number of the PDCCH monitoring occasions and stays in the Active Time*

Note that

- For the bullets in *italic*, there are concerns that some of which may have dependence on the ongoing SI in RAN2.
- For the last two bullets, there are additional concerns that these are deemded by some companies to be not in the scope of the power saving WI approved so far

The following candidates may be discussed after RAN2's SI is completed:

- Skipping number of DRX monitoring
- SPS activation
- DRX configuration

Thursday session

R1-1905791 **Summary#3 of offline discussion on PDCCH-based power saving signal/channel** **CATT**

Decision: The document is noted.

Agreements:

- The design of the DCI format(s) and size needs to account for one or more of the following aspects
    - Within or outside Active Time
    - DCI format size for the power saving signal/channel to fit the DCI format size budget
        - Including aspects whether or not it is necessary to align it with existing DCI format size
    - Other aspects are not precluded

Agreements:

- Support at least one CORESET with configured search space(s) for the power saving signal/channel
    - FFS separate vs. shared with a CORESET (and/or search space(s)) configured for other purposes (when applicable)

Agreements:

- For PDCCH-based power saving signal/channel,
    - The set of AL(s) is configured
    - The number of PDCCH candidate(s) for each AL is configured

Friday session

R1-1905846 **Aspects to address in the design of PDCCH-based power saving signal/channel** **CATT**

Decision: The document is noted. Companies are encouraged to check it.

R1-1903988 PDCCH-based power saving signal/channel Huawei, HiSilicon
R1-1904103 PDCCH-based power saving signal/channel design vivo
R1-1904461 On PDCCH-based power saving signal/channel Samsung
R1-1904487 Design of PDCCH-based power saving signal/channel for NR MediaTek Inc.

R1-1904635 Discussion on PDCCH-based power saving signal/channel LG Electronics
R1-1904799 Discussion on PDCCH-based power saving signal Spreadtrum Communications
R1-1904902 PDCCH-based power saving signal/channel for UE adaptation ASUSTEK COMPUTER (SHANGHAI)
R1-1904985 Design of PDCCH-based power saving signal and channel Apple Inc.
R1-1905031 PDCCH-based power saving channel design Qualcomm Incorporated
R1-1905045 Discussion on PDCCH-based power saving signal ZTE Corporation
R1-1905050 Discussion on PDCCH-based power saving signal/channel OPPO
R1-1905185 Discussion on PDCCH-based power saving signal/channel triggering adaptation Panasonic
R1-1905409 PDCCH-based Power Saving Signal Design Considerations InterDigital, Inc.
R1-1905411 Considerations on PDCCH-based power saving signal/channel NEC Corporation
R1-1905417 PDCCH-based power saving channel Motorola Mobility, Lenovo
R1-1905428 Discussion on PDCCH-based power saving signal/channel NTT DOCOMO, INC.
R1-1905466 Design of PDCCH-based power saving signal/channel Ericsson
R1-1905474 Triggering UE adaptation using a PDCCH-based power saving channel Sony

7.2.9.2 Procedure of cross-slot scheduling power saving techniques

R1-1904488 Enabling cross-slot scheduling for NR MediaTek Inc.

- Observation 1: Ensuring the minimum K0 value in the active PDSCH TDRA table larger than zero is a necessary condition for enabling cross-slot scheduling.
- Observation 2: For UE-specific data of C/MCS-C/CS-RNTI scheduled by PDCCH in common search space associated with CORESET 0, cross-slot scheduling is applied if the TDRA table in pdsch-ConfigCommon is configured with minimum K0 value larger than zero.
- Observation 3: For UE-specific data of C/MCS-C/CS-RNTI scheduled by PDCCH in common search space not associated with CORESET 0 or in UE-specific search space, cross-slot scheduling is applied if the TDRA table in pdsch-Config is configured with minimum K0 value larger than zero or it is not configured but the TDRA table in pdsch-ConfigCommon is configured with minimum K0 value larger than zero.
- Observation 4: For the data of SI/RA/TC/P-RNTI, cross-slot scheduling is applied if the TDRA table in pdsch-ConfigCommon is configured with minimum K0 value larger than zero. However, if a TDRA different from the default TDRA tables are configured, network needs to accommodate two sets of users expecting different PDSCH locations for a common broadcast data.
- Proposal 1: To enable cross-slot scheduling for at least UE-specific data of C/MCS-C/CS-RNTI scheduled by PDCCH in common search space not associated with CORESET 0 or in UE-specific search space, the TDRA table in pdsch-Config should be configured with minimum K0 value larger than zero.
- Observation 5: For aperiodic CSI-RS, the triggering offset is fixed to zero if all the associated trigger states do not have the higher layer parameter qcl-Type set to 'QCL-TypeD' in the corresponding TCI states and the PDCCH SCS is equal to the CSI-RS SCS. In this case, the power saving benefit of cross-slot scheduling is broken.
- Proposal 2: The enable cross-slot scheduling, the triggering offset of aperiodic CRS-RS is set to minimum K0 value of the active TDRA table if all the associated trigger states do not have the higher layer parameter qcl-Type set to 'QCL-TypeD' in the corresponding TCI states and the PDCCH SCS is equal to the CSI-RS SCS.
- Observation 6: To ensure DL setting can provide the power saving benefit with cross-slot scheduling, it is sufficient to configure PDSCH TDRA table(s) if Proposal 2 is enforced.
- Observation 7: Ensuring the minimum K2 value in the active PUSCH TDRA table larger than zero is a necessary condition for enabling cross-slot scheduling.
- Proposal 3: To enable cross-slot scheduling, the TDRA table in pusch-Config, if configured, should have minimum K2 value larger than zero.
- Proposal 4: To enable cross-slot scheduling, the minimum value over the set of the maximum value in the reportSlotOffsetList of each CSI-ReportConfig should be larger than zero so that no PUSCH arises in the same slot as the PDCCH for the case of CSI report(s) in PUSCH without an UL transport block.
- Proposal 5: To realize the power saving gain with cross-slot scheduling, the default value slotOffset of aperiodic SRS transmission is set to minimum K2 value of the active PUSCH TDRA table for the case slotOffset is not configured for SRS.
- Observation 8: To ensure UL setting can accommodate the power saving benefit with cross-slot scheduling, it is sufficient to configure PUSCH TDRA table(s) if Proposal 5 can be enforced.
- Observation 9: Adaptation on the UE processing timeline is beneficial for the network to exploit UE processing capability while optimizing UE power consumption when no data intended for the UE.
- Proposal 6: For dynamic adaptation on UE processing timeline, the following options are for further down-selection:
  - Reusing BWP framework with multiple BWP configurations of different processing timelines
  - Dynamic indication of minimum values for K0, K2, and aperiodic RS triggering offset and new UE behaviour when a DCI indicated value is smaller than the corresponding minimum value

- Switching cross/same-slot scheduling according to DRX timer behaviour

Decision: The document is noted.

R1-1904986 **Cross-slot scheduling for UE power saving** **Apple Inc.**

- Observation 1: In R15 NR, TDRA table could be RRC configured and gNB indicates K0 dynamically using DCI for schedule PDSCH.
- Observation 2: To support cross slot scheduling with R15, gNB could configure TDRA table such that minimum K0 value greater than or equal to 1 to give enough gap between PDCCH and corresponding PDSCH.
- Observation 3: In R15, BWP framework could be configured to support cross-slot scheduling only.
- Observation 4: Providing enough gap between PDCCH and corresponding potential PDSCH for UE to finish the PDCCH decoding before the PDSCH starts allows UE avoid unnecessary buffering.
- Observation 5: The required gap between the last symbol of PDCCH and the first symbol of PDSCH is *PDCCH decoding time*. As long as the gap is larger than the UE PDCCH decoding time, UE can avoid unnecessary buffering.
- Observation 6: The PDCCH decoding delay could be inferred from *timeDurationForQCL.*
- Observation 7: Minimum K0 required for cross slot scheduling in FR1 and FR2 could be different.
- Proposal 1: Remove "If all the associated trigger states do not have the higher layer parameter *qcl-Type* set to 'QCL-TypeD' in the corresponding TCI states, the CSI-RS triggering offset is fixed to zero." from section 5.2.1.5.1 of 38.214.
- Proposal 2
  - NR supports a MAC CE which can indicates a bitmap for indicating a subset of TDRA entries of the configured TDRA table.
  - If gNB sends MACCE to indicate a subset of TDRA entries, a scheduling DCI thereafter can indicate one of the subsets of entries.
- Proposal 3
  - NR supports that UE reports its preferred TDRA entries back to gNB among the entries in the RRC-configured TDRA table.
  - NR supports UE preferred K0_min value indication.
- Observation 8: According to R15, UE is not expected to receive cross BWP scheduling DCI including K0 value which is smaller than required BWP switching delay.
- Observation 9: K0 values in TDRA tables for non active BWPs which are less than BWP switching delay will not limit power saving opportunity in active BWP.
- Observation 10: Cross slot scheduling technique for UE power saving in cross carrier scheduling with the same numerology case could be same as that in the same carrier scheduling.
- Proposal 4: Allow gNB configure K0_min per BWP per component carrier.

Decision: The document is noted.

R1-1905032 **Cross-slot scheduling power saving techniques** **Qualcomm Incorporated**

- Observation 1: In Rel-15, the default TDRA tables have very little to no support for cross-slot scheduling. On the other hand, it is expected that usage of the default TDRA table can be infrequent enough to not hamper UE power saving due to cross-slot scheduling.
- Observation 2: It is not complete to consider minimum k0/k2 only for UE power saving with cross-slot scheduling. DCI-triggered signal reception/transmission should have cross-slot support for minimum triggering offset ("x").
- Observation 3: The granularity of "x" can be defined to be slot-level. Slot granularity based on the currently active DL/UL BWP can be considered.
- Observation 4: Explicit configuration/signaling of the minimum scheduling offsets can be a unified mechanism that works for both self-carrier scheduling and cross-carrier scheduling with same or different numerologies.
- Observation 5: DCI-signaling of minimum scheduling offsets is preferable to MAC-CE signaling. Use of the power saving channel (which is currently being specified) can be considered.
- Observation 6: DCI-based A-SRS triggering may not support enough flexibility in terms of the variety of triggering offsets supported as part of SRS resource sets configuration.
- Observation 7: TDRA entry selection does not address the general aspect of DCI-triggered signal reception/transmission (e.g. aperiodic CSI) for cross-slot triggering offset. It is not a complete solution.
- Observation 8: To guarantee k0>=x using TDRA entry selection with multiple configured BWP, update to TDRA entry selection for the non-active BWPs may be needed, leading to extra signaling overhead.
- Proposal 1: For CSI acquisition, allow non-zero aperiodic CSI-RS triggering offset in the case that all the associated trigger states do not contain QCL Type D information. The upper limit on the permissible values for the offset may be increased.
- Proposal 2: NR should support explicit configuration/signaling of minimum scheduling offset ("x") for Rel-16. If needed, it can be defined separately for DL and UL, i.e. minimum DL scheduling offset and minimum UL scheduling offset respectively.

- Proposal 3: The minimum DL scheduling offset explicitly controls the lower limit on k0 that UE is expected to handle for PDSCH-scheduling DCI scrambled with C-RNTI, MCS-C-RNTI, CS-RNTI, including the case for cross-BWP scheduling.
- Proposal 4: Timing determination for A-CSI-RS relative to the triggering grant can be based on the configured A-CSI triggering offset and the minimum DL scheduling offset.
- Proposal 5: Minimum DL/UL scheduling offset values greater than one slot should be supported.
- Proposal 6: Minimum DL scheduling offset or minimum UL scheduling offset configuration is per DL or UL BWP respectively, and RRC-configured as part of the BWP configuration.
- Proposal 7: Adaptation of minimum scheduling offsets is based on BWP adaptation. The minimum scheduling offsets in use is the set that is associated with the currently active DL/UL BWP.
- Proposal 8: Minimum scheduling offset determination should be based on UE capability signaling and/or UE-assistance framework.

Decision: The document is noted.

Monday conclusion: Continue offline discussion – Weide (MediaTek)

Tuesday session

R1-1905707 **Summary of Cross-Slot Scheduling** **MediaTek**

Decision: The document is noted.

Agreements:

- Regarding aperiodic CSI-RS triggering, at least if a UE is operated with cross-slot scheduling based power saving,
  - If all the associated trigger states do not have the higher layer parameter *qcl-Type* set to 'QCL-TypeD' in the corresponding TCI states and the PDCCH SCS is equal to the CSI-RS SCS, specification allows the aperiodic CSI-RS triggering offset to be set to a non-zero value.

Wednesday

R1-1905755 **Summary of offline on Cross-Slot Scheduling** **MediaTek**

Decision: The document is noted.

Proposals:

For cross-slot scheduling power saving, within an active BWP, a UE is indicated via signalling from gNB the set of min scheduling time, where the signalling is to be down-selected from:

- Alt 1: MAC-CE based
- Alt 2: L1 based (e.g., PDCCH-based power saving signal/channel)
- FFS: the delay associated with the signalling

Thursday

R1-1905819 **Summary of offline on Cross-Slot Scheduling** **MediaTek**

Decision: The document is noted.

Agreements:

- For an active DL and an active UL BWP, a UE can be indicated via signalling(s) from gNB to adapt the minimum applicable value(s) of K0, K2 and/or aperiodic CSI-RS triggering offset (with/without QCL_typeD configured) where the signalling type is to be down-selected from:
  - Alt 1: MAC-CE based
  - Alt 2: L1 based
- FFS: How to determine the minimum applicable value if explicit value is not provided.

Proposals:

- Possible candidate indication methods to adapt the minimum applicable value of K0 (or K2) for an active DL (or UL) BWP, where the indication method is to be down-selected from:
  - Alt 1: Indication of a subset of TDRA entries
  - Alt 2: Indication of one active table from multiple configured TDRA tables
  - Alt 3: Indication of the minimum applicable value
  - Alt 4: Indication of a power-saving state with preconfigured K0 (or K2) value(s)

- Note: The indicated minimum applicable K0 (or K2) value also applies to cross-BWP scheduling

Proposals:

- Possible candidate indication methods to to adapt the minimum applicable value of the aperiodic CSI-RS triggering offset for an active DL BWP, where the indication method is to be down-selected from:
  - Alt 1: Indication by defining the minimum applicable value the same as the minimum applicable K0 value
  - Alt 2: Indication of the minimum applicable value
  - Alt 3: Indication of a power-saving state with preconfigured value(s)

Friday session

R1-1905869 **Summary#2 of offline on Cross-Slot Scheduling MediaTek**

Decision: The document is noted.

Agreements:

Possible candidate indication methods to adapt the minimum applicable value of K0 (or K2) for an active DL (or UL) BWP, where the indication method is to be selected from:

- Alt 1: Indication of a subset of TDRA entries, e.g., bit-map based indication
- Alt 2: Indication of one active table from multiple configured TDRA tables
- Alt 3: Indication of the minimum applicable value
- Note: Other option is not precluded

Note: PDCCH monitoring case 1-1 is prioritized for the design.

FFS: Whether and how the minimum applicable K0 (or K2) value of the active DL (or UL) BWP is also applied to cross-BWP scheduling

Agreements:

Possible candidate indication methods to adapt the minimum applicable value of the aperiodic CSI-RS triggering offset for an active DL BWP, where the indication method is to be selected from:

- Alt 1: Implicit indication by defining the minimum applicable value the same as the minimum applicable K0 value when indicated
- Alt 2: Indication of the minimum applicable value
- Note: Other option is not precluded

Note: PDCCH monitoring case 1-1 is prioritized for the design.

Agreements:

- The adaptation on the minimum applicable value of K0 does not apply to at least the following cases:

RNTI	PDCCH search space
SI-RNTI	Type0 common
SI-RNTI	Type0A common
RA-RNTI, TC-RNTI	Type1 common
P-RNTI	Type2 common

Conclusion:

Companies are encouraged to further investigate whether to apply the adaptation for at least the following cases:

- K0 related:

RNTI	PDCCH search space
C-RNTI, CS-RNTI	
MCS-C-RNTI	

- K2 related:

RNTI	PDCCH search space
PUSCH scheduled by MAC RAR as described in subclause 8.2 of TS 38.213	
C-RNTI, TC-RNTI, CS-RNTI	
MCS-C-RNTI	

R1-1903987 Procedure of cross-slot scheduling for UE power saving Huawei, HiSilicon

R1-1904104 Procedure of cross-slot scheduling power saving techniques vivo

R1-1904318 Support cross-slot scheduling for power saving Intel Corporation
R1-1904462 On corss-slot scheduling power saving techniques Samsung
R1-1904636 Discussion on cross-slot scheduling for power saving LG Electronics
R1-1904803 Discussion on cross-slot scheduling for UE power saving Spreadtrum Communications
R1-1904903 Cross-slot scheduling for UE power saving ASUSTEK COMPUTER (SHANGHAI)
R1-1905046 Procedure of cross-slot scheduling power saving technique ZTE Corporation
R1-1905049 Cross-slot Scheduling Procedure for Power Saving OPPO
R1-1905186 Discussion on procedure of cross-slot scheduling power saving techniques Panasonic
R1-1905369 Power saving scheme with cross-slot scheduling CATT
R1-1905385 Procedure of cross-slot scheduling power saving techniques Nokia, Nokia Shanghai Bell
R1-1905410 On Cross-slot Scheduling for UE Power Saving InterDigital, Inc.
R1-1905429 Discussion on procedure of cross-slot scheduling power saving techniques NTT DOCOMO, INC.
R1-1905467 Procedure for cross-slot scheduling technique Ericsson

7.2.9.3 Other

R1-1904105 Discussion on UE adaptation in antenna domain vivo
R1-1904106 Consideration on RAN1 recommendation for power saving study vivo
R1-1904120 UE assistant information vivo
R1-1904121 UE Power Consumption Reduction in RRM Measurement vivo
R1-1904463 On UE assistance information Samsung
R1-1904464 Evaluation results for power saving schemes Samsung
R1-1904489 Recommendations on UE adaptation MediaTek Inc.
R1-1904637 Discussion on power saving schemes LG Electronics
Late submission
R1-1904702 UE dynamic adaptation to the maximum number of receive antennas Huawei, HiSilicon
R1-1904739 Discussion on dynamic adaption of power saving states CMCC
R1-1904798 Consideration on NR RRM for UE power saving Spreadtrum Communications
R1-1905047 Discussion on potential techniques for UE power saving ZTE Corporation
R1-1905370 Power saving schemes for UE adaptation to the BWP/SCell operation CATT
R1-1905371 PDCCH skipping and switching of PDCCH monitoring periodicity CATT
R1-1905372 Power saving scheme with UE adaptation to maximum MIMO layer CATT
R1-1905373 UE assistance information CATT
R1-1905453 Reduction of PDCCH monitoring for UE power saving Huawei, HiSilicon
R1-1905454 On the reduction of SSB measurements Huawei, HiSilicon
R1-1905468 PS considerations from high-level modeling Ericsson
R1-1905469 RRM measurement aspects of NR UE power saving Ericsson
R1-1905470 PDCCH monitoring related aspects of power saving Ericsson
R1-1905471 Discussion on MIMO layers Ericsson
R1-1905472 Discussion on UE assistance Ericsson
R1-1905473 Cross-slot scheduling for group paging Ericsson

7.2.10 NR positioning support

NR_pos-Core; WID in RP-190752. Please refer to the WID for detailed scoping

R1-1905804 **Chairman's notes of AI 7.2.10 Study on NR positioning support Ad-Hoc Chair (Ericsson)**
Decision: The document is endorsed, content incorporated below.

R1-1904319 **Work plan for NR positioning work item Intel Corporation**

7.2.10.1 DL and UL Reference Signals for NR Positioning

R1-1903901 Discussion on DL&UL PRS ZTE Corporation,Sanechips
R1-1904004 DL and UL Reference Signals for NR Positioning Huawei, HiSilicon
R1-1904107 Discussion on DL and UL RS for NR positioning vivo

R1-1904158 **DL and UL Reference Signals for NR Positioning BUPT, ZTE, CAICT**
R1-1904200 Discussion on DL and UL Reference Signals for NR Positioning LG Electronics
R1-1904258 Considerations on DL and UL reference signals for NR positioning Sony
R1-1904320 Downlink and uplink reference signal design for NR positioning Intel Corporation
R1-1904394 DL and UL Reference Signals Design for NR Positioning Samsung
R1-1904500 Reference signal design for NR positioning MediaTek Inc.
R1-1904600 Views on reference signal designs for NR positioning Mitsubishi Electric Corp
R1-1904740 Discussion on reference signal design for NR positioning CMCC
R1-1904790 Discussion on DL reference signals for NR positioning Spreadtrum Communications
R1-1905033 DL & UL Reference Signals for NR Positioning Qualcomm Incorporated
R1-1905262 Views on DL and UL reference signals for NR Positioning Nokia, Nokia Shanghai Bell
R1-1905346 DL and UL Reference Signals for NR Positioning CATT
R1-1905347 UL Reference Signals for NR Positioning CATT
Withdrawn
R1-1905461 DL and UL Reference Signals for NR Positioning Ericsson
R1-1905484 SRS Enhancements for NR positioning Fraunhofer IIS, Fraunhofer HHI

R1-1905651 **Summary for AI 7.2.10.1 – DL Reference Signals for NR Positioning**

Agreement:
- A DL PRS Resource Set is defined as a set of DL PRS Resources, where each DL PRS Resource has a DL PRS Resource ID
  - The DL PRS Resources in a DL PRS Resource set are associated with the same TRP
- A DL PRS Resource ID in a DL PRS Resource set is associated with a single beam transmitted from a single TRP (A TRP may transmit one or more beams)
- Note: This does not have any implications on whether the TRPs and beams from which signals are transmitted are known to the UE.

Agreement:
- DL PRS sequence is generated using a Gold sequence generator as defined in TS 38.211 Section 5.2.1
  - FFS: cinit value for DL PRS
- QPSK modulation is used for the DL PRS signal transmitted using CP-OFDM
- FFS: Whether a DL PRS sequence generated using a different mechanism is also specified

R1-1905703 **Summary for NR Positioning AI - 7.2.10.1 DL and UL Reference Signals for NR Positioning (UL Part) Ericsson**

Proposal:
Define a new usage of Rel-16 SRS for positioning purpose

Agreement:
Support the following configurations of SRS for positioning
- Semi-persistent configuration
- Periodic configuration
- Aperiodic configuration

R1-1905751 **Offline session1 notes for NR Positioning AI - 7.2.10.1 DL and UL Reference Signals for NR Positioning (UL Part) Ericsson**

Agreement:
For positioning, regarding the number of SRS symbols per resource, decide by RAN1#97 whether to increase the set of allowable number of SRS symbols per resource compared to the NR Rel-15 allowable set {1,2,4}.

- If it is not decided to increase the number of SRS symbols per resource by RAN1#97, increasing the set of allowable number of SRS symbols per resource compared to the NR Rel-15 allowable set {1,2,4} will not be considered further after RAN1#97.

Agreement:
For positioning, regarding the possible SRS symbol locations per slot decide by RAN1#97 whether the SRS can be configured only in the last N symbols of a slot with N>6
- If the above decision is not made by RAN1#97, configuring SRS only in the last N symbols of a slot with N>6 will not be discussed further after RAN1#97.

Agreement:
Select one or both of the following options to support staggered SRS transmissions for UL SRS positioning
- Staggered patterns (a collection of SRS symbols from the same antenna port with different offsets for at least some symbols) in a single SRS resource
- Configuration of the same antenna port for the transmission of SRS symbols in different SRS resources in a SRS resource set.

R1-1905847 **Offline Discussion Outcome on DL Reference Signals for NR Positioning Intel Corporation**

Agreement:
Comb-N resource element pattern per DL PRS Resource is supported to map DL PRS sequence to resource elements in frequency domain
- Comb-N pattern can shift in frequency domain across symbols within DL PRS Resource
- FFS values for N. The potential values for down-selection are provided in the set {1,2,3,4,6,8,12}
- FFS relationship between N and number of symbols per DL PRS Resource
- FFS support of staggered and non-staggered patterns and exact definition of staggered pattern

Agreement:
DL PRS configuration including DL PRS transmission schedule is to be indicated to the UE for DL PRS positioning measurements
- The UE is not expected to perform any blind detection of DL PRS configurations

Agreement:
Number of DL PRS Sequence IDs is at least 4096

Agreement:
Support of numerologies (CP length and sub-carrier spacing) for the DL PRS is the same as for data transmissions in Rel-15.

Agreement:
DL PRS muting is supported. The UE is expected to be indicated when the DL PRS is muted.

7.2.10.2 UE and gNB measurements for NR Positioning

R1-1904005	NR positioning measurements	Huawei, HiSilicon
R1-1904034	Measurements for NR positioning	ZTE Corporation,Sanechips
R1-1904108	Discussion on UE and gNB measurements for NR positioning	vivo
R1-1904201	Discussion on UE and gNB measurements for NR Positioning	LG Electronics
R1-1904259	Considerations on UE and gNB measurements for NR Positioning	Sony
R1-1904321	UE and gNB measurements for NR positioning	Intel Corporation
R1-1904395	Discussion on UE and gNB measurements for NR Positioning	Samsung
R1-1904501	On measurement aspect for NR positioning	MediaTek Inc.
R1-1904682	UE and gNB measurements for NR Positioning	BUPT
R1-1905034	UE & gNB measurements for NR Positioning	Qualcomm Incorporated
R1-1905263	Measurements for NR Positioning	Nokia, Nokia Shanghai Bell
R1-1905348	UE and gNB measurements for NR Positioning	CATT

R1-1905462 UE and gNB measurements for NR positioning Ericsson
R1-1905485 Enhancement of timing-based NR positioning with carrier phase measurements Fraunhofer IIS, Fraunhofer HHI

R1-1905601 Summary of UE and gNB measurements for NR Positioning CATT
R1-1905760 Summary#2 of UE and gNB measurements for NR Positioning CATT
R1-1905808 Summary#3 of UE and gNB measurements for NR Positioning CATT

Agreement:
Intra-frequency and inter-frequency DL RSTD measurements (currently supported to be based at least on DL PRS) are supported in RRC_CONNECTED mode

Agreement:
At least intra-frequency DL PRS-RSRP measurements are supported in RRC_CONNECTED mode
- FFS: Inter-frequency DL PRS-RSRP measurements in RRC_CONNECTED mode

Agreement:
- The network can indicate one or more of the following for the UE to use to determine a reference (reference time based on the DL PRS Resource ID(s)) for DL RSTD measurements.
  - A DL PRS Resource ID
  - A subset of DL PRS Resource IDs from a single DL PRS Resource set
  - A DL PRS Resource set

Agreement:
- The UE may use different DL PRS Resource ID(s) (with the condition that the multiple DL PRS Resource IDs belong to a single DL PRS Resource set) or a different DL PRS Resource set for determining the reference for the RSTD measurement, and if it chooses to do so, it should report the DL PRS Resource ID(s) and/or the information on the DL PRS Resource set used to determine the reference

7.2.10.3 Necessity and details for physical-layer procedures to support UE/gNB measurements

R1-1904006 Physical layer procedure for NR positioning Huawei, HiSilicon
R1-1904109 Discussion on physical-layer procedures for UE/gNB measurements vivo
R1-1904202 Discussion on necessity and details for physical-layer procedures to support UE/gNB measurements LG Electronics
R1-1904260 On physical-layer procedures to support UE and gNB measurements Sony
R1-1904322 On radio-layer procedures for NR positioning Intel Corporation
R1-1904360 Physical-layer procedure for NR PRS ZTE Corporation,Sanechips
R1-1904396 Discussion on necessity and details for physical-layer procedures to support UE/gNB measurements Samsung
R1-1904502 On procedure aspect for NR positioning MediaTek Inc.
R1-1904741 Discussion on necessity of physical-layer procedure to support UE/gNB measurements CMCC
R1-1905035 Considerations on Phy-layer procedures for NR Positioning Qualcomm Incorporated
R1-1905082 Discussion on Potential Techniques for NR Positioning ITRI
R1-1905264 Views on physical layer procedures for NR Positioning Nokia, Nokia Shanghai Bell
R1-1905349 Physical-layer procedures to support UE/gNB measurements CATT
R1-1905463 On the necessity and details for physical-layer procedures to support UE/gNB measurements Ericsson
R1-1905486 Procedures to support UE/gNB measurements Fraunhofer IIS, Fraunhofer HHI

R1-1905658 Summary of 7.2.10.3: PHY procedures for positioning measurements Qualcomm Incorporated
R1-1905811 Summary#2 of 7.2.10.3: PHY procedures for positioning measurements Qualcomm Incorporated

Agreement:
The potential physical layer procedures to support UE/gNB measurements for NR positioning may include:
1) UE procedures for receiving DL PRS, including

a) DL PRS timing aspects
b) Bandwidth part operation
c) Beam management aspects
d) Measurement/reporting related aspects

2) UE procedures for transmitting UL PRS, including
   a) Transmission timing and timing adjustments
   b) Power control
   c) Beam management aspects
3) gNB procedures to support NR positioning measurements, including
   a) DL PRS configuration aspects
   b) UL PRS configuration aspects
   c) Beam management aspects
   d) Measurement/reporting related aspects

Agreement:
The DL PRS configuration provided to the UE is independent of the configured DL BWPs of the UE

Agreement:
For intra-frequency measurements:
- The UE is expected to measure the DL PRS resource outside the active DL BWP or with a numerology different from the numerology of the active DL BWP if the measurement is made during a configured measurement gap.
  - Select from one of the following options for the measurement bandwidth
    - Option 1: The UE measurement is within the DL BWP configuration
    - Option 2: The UE can measure outside the DL BWP configuration
  - FFS: Scenarios when measurements gaps would need to be configured.
- When not configured with a measurement gap, the UE is only required to measure DL PRS within the active DL BWP and with the same numerology as the active DL BWP.

Agreement:
For positioning purposes, to assist UE to perform Rx beamforming, consider one or more of the following options:
- Option 1: The DL PRS can be configured to be QCLed Type D with a DL Reference Signal from a serving or neighboring cell.
  - Discuss further which DL reference signal can be used (e.g., SSB, CSI-RS, DL-PRS).
- Option 2: The UE may perform a Rx beam sweeping on DL PRS resources which are transmitted with the same downlink spatial domain transmission filter.
- Option 3: The UE may use a fixed Rx beam to receive DL PRS resources which are transmitted with different downlink spatial domain transmission filter.
  - FFS: Whether this option can be achieved by Option 1
- FFS on specification impacts.

Agreement:
For positioning purposes, with regard to the UL SRS transmission timing**,** at least the following options have been identified:
- Option 1: No adjustment is made to the configured TA. That is, support only a TA configuration which is based only on the serving cell (i.e., the TA value applied to the corresponding UL symbol is the same as the latest TA for regular UL symbols).
- Option 2: The configured TA can be adjusted for the purpose of transmitting UL SRS intended to a neighboring cell. The adjustment value can be provided by the UE to the network upon request.
  - Note: The adjustment value is not needed to be known at the measuring cell for the purpose of UL-AoA measurement
- Option 3: The configured TA can be adjusted for the purpose of transmitting UL SRS intended to a neighboring cell. The adjustment value is provided by the network to the UE.

Agreement:
For positioning purposes, with regards to the UL SRS transmission power, at least the following options have been identified:
- Option 1: The UL SRS Tx power is constant (i.e., no power control is supported).
  - FFS: The value of the constant Tx power and how it is determined

- Option 2: The UL SRS Tx power is based on the existing power control procedure.
- Option 3: The UL SRS Tx power is determined by modifying the existing power control procedure, for example:
  - Support configuring a DL reference signal of a neighboring cell to be used for SRS path loss estimation.
    - FFS: Which reference signals can be used (e.g. a CSI-RS, or a SSB, or DL PRS).
  - FFS: which power control modes are supported (e.g., open loop only, or open loop and closed loop).

Agreement:
For positioning purposes, with regard to UL Beam management/alignment towards serving and neighbouring cells, consider one or more of at least the following options:

- Option 1: Support configuration of a spatial relation between a reference DL RS from serving or neighbouring cells and the target SRS.
  - FFS: Which Reference DL RS can be used (e.g., SSB/CSI-RS/DL-PRS).
- Option 2: Support UE Tx beam-sweeping on UL SRS transmissions across multiple UL SRS Resources.
- Option 3: The Tx beam is fixed for UL SRS transmissions across multiple UL SRS Resources, for both FR1 and FR2.
  - FFS: How the fixed beam is selected

7.2.10.4 Other

R1-1904110	Discussion on UE based positioning in idle/inactive states	vivo
R1-1904323	Association of NR positioning techniques, reference signals and measurements	Intel Corporation
R1-1905265	Measurements for PRS on-demand	Nokia, Nokia Shanghai Bell
R1-1905350	Network synchronization based on RAT-dependent signals	CATT
R1-1905458	Evaluation for hybrid RAT-dependent techniques	Huawei, HiSilicon
R1-1905464	On reusing the TRS for positioning purposes	Ericsson
R1-1905465	Design parameters for downlink positioning reference signals	Ericsson

7.2.11 Study on Channel Modeling for Indoor Industrial Scenarios

FS_IIIOT_CM; SID in RP-182862. Please refer to the SID for detailed scoping

R1-1904115	Channel characterization in industrial environment with high clutter density	CEA-LETI

Withdrawn

R1-1905192	Summary of email discussion on measurements	Ericsson
R1-1905193	Summary of email discussion on scenario description	Ericsson
R1-1905194	Summary of email discussion on path loss	Ericsson
R1-1905195	Summary of email discussion on LOS probability	Ericsson
R1-1905196	Summary of email discussion on fast fading modeling and parameters	Ericsson
R1-1905197	Summary of email discussion on additional modeling components	Ericsson
R1-1905198	List of agreements from email discussions	Ericsson
R1-1905199	Addition of indoor industrial channel model	Ericsson
R1-1905715	Updated list of measurements	Ericsson

R1-1905695 Revised list of agreements from email discussions after offline Ericsson
Decision: The document is noted.

Agreements:

- The channel model should cover 0.5-[100] GHz, where the upper range can be less than 100 GHz depending on the availability of scientifically validated measurement and/or simulation data that the model can be validated against
  - Note: According to the SID, priority should be given to channel modeling for frequency ranges below 52.6GHz

Agreements:

- A common modeling methodology for all bands should be adopted, where model parameters can be frequency-dependent
  - Note: Some additional model components, such as oxygen absorption or EM interference from machinery, may be applicable only to a subset of frequencies

Agreements:

- LOS state is stochastically determined using a LOS probability function dependent on distance, [tx and rx height, clutter height, clutter density, subarea, time, …].
  - Separate path loss and shadow fading models are used for LOS and NLOS
  - The correlation of LOS probability for different links TBD
  - Spatial consistent transitions between LOS and NLOS states to be further studied

Agreements:

- Absolute time of arrival of multipath components in LOS and NLOS is added as an additional modeling component
  - Note: This modeling component is provided to support simulations in which absolute time of arrival is important (e.g., ToA based positioning)

Agreements:

- Doppler due to moving clutter or dual mobility is added as an optional feature in the model
  - Note: the channel coefficient equations will need to be updated for these cases

Agreements:

A new Indoor - Industrial scenario (IIoT) is added to TR 38.901

- This scenario can have one or more sub-scenarios where some environment parameters and/or channel model parameters may differ between the sub-scenarios (note: compare InH-open office and InH mixed office in 38.901)
  - A sub-scenario is defined by the range of validity of the environment parameters and the channel model parameters
  - FFS on the number and details of these sub-scenarios, including homogeneity or heterogeneity of environment parameters and channel model parameters within a sub-scenario
- When possible, the channel model components should cover the range of the environment parameters of the different sub-scenarios
  - E.g. a LOS probability model with a functional dependence on the clutter density is preferable to separate LOS probability models for different clutter densities
- For channel model calibration purposes, the sub-scenario description can be complemented with additional simulation assumptions, including:
  - BS deployment and user distribution
  - Mobility
  - Antenna models
  - Output powers and noise figures
  - etc

Agreements:

Adopt a sub-scenario according to the table below

- Note: Further sub-scenarios may be adopted if needed

Parameters		Sub-scenario 1
Layout	Room size	Rectangular: [FFS, e.g. 5000-20000 m^2]
	Ceiling height	[FFS: e.g. 10-25 m]
	External wall type	[Concrete walls with metal-coated windows]
Clutter type		[Small to medium metallic machinery and objects]
Clutter density and distribution		FFS
Clutter height		FFS
BS antenna height h_{BS}		[clutter-embedded or above clutter]
UT location	LOS/NLOS	LOS and NLOS
	Height h_{UT}	[Clutter-embedded]

Agreements:

The baseline scenario may be extended by any of the following options

- Sources of EM interference: TBD how to specify

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- Clutter mobility: TBD how to specify
- Mobile gNBs or D2D communication leading to dual mobility

Agreements:
For comparison results from different sources, the following is recommended
- For mean angle and angular spread, the definitions in 38.901 Annex A should be used
- For all other parameters, the definitions and procedures for calculation of parameter values should follow WINNER II part 2
- Consider the guidance for comparability in mmMAGIC D2.2 Table 3.1 when comparing results from different frequencies
- Companies are encouraged to describe any additional methods used for data extraction like super-resolution methods

Agreements:
Introduce four industrial sub-scenarios
- Sub-scenario 1: Low clutter density, both Tx and Rx antennas are clutter-embedded (LOS or NLOS)
- Sub-scenario 2: High clutter density, both Tx and Rx antennas are clutter-embedded (LOS or NLOS)
- Sub-scenario 3: Low clutter density, one of Tx or Rx is elevated above the clutter (LOS or NLOS)
- Sub-scenario 4: High clutter density, one of Tx or Rx is elevated above the clutter (LOS or NLOS)
- Definition of "low" and "high" clutter density is FFS
- As a starting point, a common set of fast fading parameters are used for LOS in all four sub-scenarios
- FFS if other parameters can be merged across scenarios
- Companies are encouraged to provide parameterizations for each of the sub-scenarios
    - Path loss model
    - LOS probability
    - Fast fading model parameters
- FFS on the need for further sub-scenarios, e.g. for sensors embedded within cubicles or machinery

Agreements:
Develop new path loss models for the industrial scenario by collecting reported and new path loss measurements
- Companies are encouraged to provide path loss curves and the distance ranges for which these have been derived
    - The data should be categorized according to the (sub-)scenario, e.g. LOS or NLOS, clutter density, antenna heights
- Derive path loss models by averaging over similar (sub-)scenarios
    - Note: It is suggested to plot the path loss or excess loss curves vs distance from different sources in the same diagram to find overall trends

Agreements:
If O2I modelling is needed, use the high penetration loss model from TR 38.901 as a starting point
- Revisit this if measurements become available

Agreements:
At least the dependency on Tx-Rx 2D distance and clutter density should be considered for the modeling LOS probability.
- Derive LOS probability curves for each sub-scenario
- Companies are encouraged to provide results on the LOS probability

Agreements:
Modelling on the spatial consistency of LOS probability should be supported with followings:
- As a starting point, reuse the "soft LOS" in TR38.901 to model the LOS/NLOS transition
    - Companies are encouraged to provide the value of auto-correlation distance of LOS state
- The LOS states for different BS-UT links for the same UT are assumed to be independent as baseline
    - Cross-correlation of the LOS probability among such links can be considered if simulation/measurements data are available

Agreements:
LOS state is defined by the visual/optical line of sight between Tx and Rx

Agreements:
Use the fast fading modelling framework of TR 38.901 for the industrial scenario
- Companies are encouraged to provide contributions on parameter values for the different sub-scenarios
- For parameters where there are no measurements, use values from InH as the baseline

- Note: The InH parameters may be "smartly adapted"

Agreements:
The hall volume dependence of the channel model parameters such as the delay spread is FFS
- Companies are encouraged to provide CDFs and percentiles + parameterizations per sub-scenario

Agreements:
FFS on how to capture the dense multipath as observed in some measurements
- Options could include:
  - Increasing the number of clusters to emulate the dense multipath but keeping fixed 20 rays per cluster according to the modeling framework
  - Or, keeping the number of cluster but increasing the number of rays and intra-cluster delay spread

Agreements:
The blocking model in 38.901 may be adapted for industrial scenarios as an additional component
- Derive new model parameters for Blocking models A and B to represent industrial objects (AGVs, robots)
  - Companies are encouraged to provide parameters
  - The resulting blocking loss should be checked against measurements
  - FFS to understand the combination of shadow fading and blocking model

Agreements:
- Add an additional delay τ_0 to all cluster delays for absolute time of arrival modeling
- In LOS, $\tau_0 = d_{3D}/c$
- In NLOS, $\tau_0 = d_{3D}/c + \Delta\tau$
  - FFS on how to model $\Delta\tau$, e.g. by random or deterministic procedure

Agreements:
The Doppler model considering dual mobility shall be based on TR 37.885. The random component due to scatterer mobility is FFS
- Note: Random Doppler of moving scatterers may be different in the industrial scenario than in V2X

Agreements:
Model the channel between the EM interferer(s) and BS or UT using the same channel model(s) as for the BS-UT links
- Note: The interfering equipment may not necessarily be a point source
- Note: Characterization of the EM interference source is out of the scope of the present SI, and other groups (e.g. RAN4) may be more competent to handle such work

Agreement:
Revisit spatial consistency procedures when the fast fading model is stable

R1-1905696 Additional proposals from offline discussions Ericsson
Decision: The document is noted.

Agreements:
In the scenario description of sub-scenarios 1-4, the factory hall size and height are given by
- Hall size is [20]-[160000] m^2, ceiling height is [3]-[25] m
  - Note: The sizes may be different for different sub-scenarios
  - Note: The range may be collapsed into a single value

Agreements:
Specify the external wall and ceiling type for the sub-scenarios 1-4 as "concrete or metal walls and ceiling with metal-coated windows"
- Note: For worst-case coexistence or interference evaluations, low loss external wall type may need to be considered
- Note: FFS on need for specifying internal walls and floor/ceiling for multi-floor or multi-hall factories

Agreements:
Clutter density can be defined as the percentage of area occupied by clutters inside factory. Threshold between high density and low density is FFS.
- Note: Whether the clutter is solid or hollow may also affect the effective clutter density

- Considerations on clutter height is FFS
- Companies are encouraged to quantify the clutter density in their studies

Agreements:
Consider using the proposed simulation settings in the table below as a starting point for channel model calibration.

Parameter	Values
Scenario	Indoor industrial – sub-scenarios 1-4
Room size	100x100 m
Room height	10 m
Sectorization	None
BS antenna configurations	1 element (vertically polarized), Isotropic antenna gain pattern
UT antenna configurations	1 element (vertically polarized), Isotropic antenna gain pattern
Handover margin (for calibration)	0dB
BS deployment	Rectangular grid with ISD = 20 m, FFS on exact grid and number BS height = [1.5] m or 8 m
UT distribution	uniform dropping for indoor with minimum distance ([2D or 3D]) of [1] m UT height = 1.5 m
UT attachment	Based on pathloss

Email discussion till next meeting on additional modeling of IIoT using similar email structure as before – Henrik (Ericsson)

7.2.11.1 Description of indoor industrial scenario

R1-1903989 Consideration on channel model for industrial factory environment Huawei, HiSilicon
R1-1904116 Discussion on scenario for IIOT channel model ZTE, Sanechips, BJTU, Tongji University
R1-1904823 Classification of indoor industrial scenariosNokia, Nokia Shanghai Bell
R1-1905508 Discussion on description of indoor industrial scenario NTT DOCOMO, INC., Fraunhofer HHI, Rohde & Schwarz (Revision of R1-1904969)
R1-1905036 Discussion on Description of Indoor Industrial Scenarios Qualcomm Incorporated
R1-1905200 Views on the scenario description Ericsson

7.2.11.2 Path loss and O2I penetration loss, LOS probability

R1-1904227 Pathloss model in IIOT scenario ZTE, Sanechips, BJTU, Tongji University
R1-1904703 Survey of frequency band of interest for Industrial IOT Huawei, HiSilicon
R1-1904742 New measurements and modelling on pathloss in IIOT scenarios CMCC, BUPT
R1-1904824 Modeling of clutter densities and antenna configurations in industrial scenarios Nokia, Nokia Shanghai Bell
R1-1905509 Discussion on path loss model for indoor industrial scenarios NTT DOCOMO, INC., Fraunhofer HHI, Rohde & Schwarz (Revision of R1-1904970)
R1-1905201 Views on the LOS probability modeling Ericsson

7.2.11.3 Fast fading model

R1-1904704 Investigation of characteristics of industrial factory environment Huawei, HiSilicon
R1-1904743 New measurements and modelling on fast fading in IIOT scenarios CMCC, BUPT
R1-1904825 Preliminary results of cross-polarization ratio based on measurements from two operational factory halls at 3.5 GHz Nokia, Nokia Shanghai Bell
R1-1905510 Discussion on fast fading model for indoor industrial scenarios NTT DOCOMO. INC., Fraunhofer HHI (Revision of R1-1904971)
R1-1905202 A review on Delay Spread results in industrial environment Ericsson, CEA-LETI
R1-1905231 Channel model requirements for positioning Fraunhofer IIS, Fraunhofer HHI

7.2.11.4 Other

Including any other additional modelling components, background material on measurements and simulations, etc.

R1-1905209 Channel characterization in industrial environment with high clutter density CEA-LETI (rev of R1-1904114)

R1-1904117 Correlation distance on LOS probability model in IIOT scenario ZTE, Sanechips, BJTU, Tongji University
R1-1904118 Absolute time of arrival model in IIOT scenario ZTE, Sanechips, BJTU, Tongji University
R1-1904543 NLOS channel modeling CATT
R1-1904705 Existing literature and measurement review for industrial factory environment Huawei, HiSilicon
R1-1904706 Preliminary channel measurement on large-scale propagation loss for indoor factory environment Huawei, HiSilicon
R1-1904707 Preliminary channel measurement on fast fading parameters for indoor factory environment Huawei, HiSilicon
R1-1904708 Summary of IIOT path loss results Huawei,HiSilicon, CEA-LETI
R1-1904744 New measurements and modelling on additional components in IIOT scenarios CMCC, BUPT
R1-1904804 Discussion on LOS probability model in IIOT scenario ZTE, Sanechips, BJTU, Tongji University
R1-1905511 Proposal for additional delay for absolute time of arrival modeling in NLOS environment NTT DOCOMO, INC., Fraunhofer HHI, Rohde & Schwarz (Revision of R1-1904972)
R1-1905037 Blockage Modeling and Spatial-Consistency Aspects for Indoor Industrial Scenarios Qualcomm Incorporated
R1-1905203 Views on additional modeling components Ericsson
R1-1905734 Modelling of absolute delay for positioning in industrial IOT environments Huawei, HiSilicon
R1-1905735 Scenario specific path loss models for IIOT Huawei, HiSilicon, NTT DOCOMO, CMCC, Fraunhofer HHI

7.2.12 NR Mobility Enhancements

NR_Mob_enh-Core; WID in RP-190489. Please refer to the WID for detailed scoping

7.2.12.1 Physical Layer Aspects for Mobility Enhancements during HO and SCG Change

R1-1903990 Physical layer aspects for NR mobility enhancements Huawei, HiSilicon

- Observation 1: DC-based HO keeps links to source and target gNBs simultaneously active, i.e. the UE does not experience any interruption due to mobility.
- Observation 2: According to the LS reply from RAN4 in R4-1706913, simultaneous connectivity is feasible in FR1 for UEs with one or two Tx/Rx RF chains in a synchronous network. The case for asynchronous networks is still under study.
- Observation 3: RAN1 impact for DC-based handover at least includes:
  - UE's monitoring/decoding behavior for multiple PDCCH from different cells.
  - HARQ-ACK feedback procedure to multiple PDSCH from different cells.
- Proposal 1: The agreements made in eMIMO WI on multi-TRP transmission as A1, A2, A3, A4 as listed apply to DC-based handover for RAN1 impact/specification.
- Proposal 2: For uplink power control for DC-based handover, power sharing is assumed.
- Observation 4: Power sharing discussed in Rel-16 NR-NR DC with FR1+FR1 band combinations applies to the power sharing for DC-based handover.
- Observation 5: From RAN1's perspective, DC-based HO and enhanced Make-Before-Break HO have the same level of specification impact.

Decision: The document is noted.

R1-1904157 Discussion on NR Mobility Enhancements in Physical Layer ZTE

- Observation 1: LTE eMBB and DC-based handover have the same physical layer impacts.
- Proposal 1: Some enhancements on UL grant configuration are needed in NR RACH-less handover and configured grant can be reused.
- Proposal 2: Multiple configured grant resources can be configured for a UE in RACH-less handover and each configured grant resource corresponds to each beam, such as SSB or CSI-RS. The UE selects the resource corresponding the best signal quality for configured grant PUSCH transmission to the target cell.
- Proposal 3: If the signal quality of all the configured RS are below the configured threshold, UE will use traditional random access procedure to access target cell.
- Proposal 4: PUSCH repetition with different transmission beams should be supported in RACH-less handover.
- Proposal 5: Power ramping should be supported for PUSCH transmission in RACH-less handover.
- Proposal 6: It should be supported to transmit uplink signals to two cells simultaneously.
- Proposal 7: Power sharing is supported for simultaneous transmission to two cells. For the case that uplink power is limited in handover with dual connectivity, the power sharing framework can be extended to support TDM pattern for switching between uplink transmissions to different cells.

- Proposal 8: Multi-panel uplink transmission should be supported for handover in FR2.
- Proposal 9: UE can be communicated with source cell and target cell in FDM/TDM manner to avoid mutual interference when the bandwidth of two cells are overlapping.
- Proposal 10: DC-based downlink joint transmission can be considered if we have some time allows in this WI.

Decision: The document is noted.

R1-1904324 **Physical layer aspects of enhanced mobility** **Intel Corporation**

- Proposal 1: Discuss further on the reply LS to RAN2 based on draft reply LS R1-1904261.
- Proposal 2: Continue discuss on the potential solutions for NR mobility enhancement, and collect specification impact and feasibility information further in RAN1.

Decision: The document is noted.

R1-1904397 **Physical Layer Aspects for Mobility Enhancements** **Samsung**

- RACH-less HO
  - Proposal 1: The configured grant is reused to pre-allocate the uplink grant for UE configured with RACH-less HO.
  - Proposal 2: To set the initial value of the PUSCH power control adjustment state, $f_{b,f,c}(i,l) = 0$, for the target cell.
- DC based HO
  - Observation 1: In case of CA/DC capable UE, one RF chain can be allocated for source cell and the other can be allocated for target cell. In other words, this means UE CA/DC capability cannot be fully supported for a source cell.

Decision: The document is noted.

R1-1904490 **Physical Layer Considerations for RACH-less and DC-based Handover** **MediaTek Inc.**

Observation 1: In NR, without considering the feasibility, RACH-less HO can save about 53% of interruption time and 2-step RACH can save about 22% of interruption time. Both solutions still have more than 30ms interruption time.
Observation 2: In NR, without considering the feasibility, DC-based and enhanced MBB based handover can achieve 0ms interruption time.
Observation 3: RAN1 impacts on RACH-less HO is how can UE obtain UL grant, power control, timing advance, and UL beam pair selection for initial PUSCH transmission.
Observation 4: The UL grant configuration mechanism and power control in LTE RACH-less HO can be used as a starting point for NR RACH-less HO.
Observation 5: The requirement of TA measurement in SMTC window by UE may have RAN4 impact.
Proposal 1: If RAN4 replies that the same limitations in R4-166817 applies to NR, then RACH-less HO in NR should be limited to synchronous deployments with target cell TA = 0 or source cell TA = target cell TA.
Proposal 2: The feasibility of TA estimation for RACH-less HO for NR UE should be studied considering various subcarrier spacing.
Observation 6: The feasibility of TA estimation for RACH-less HO in asynchronous network is up to RAN3 to determine.
Proposal 3: If the beam sweeping results from RRM is reused for UL beam selection in RACH-less handover, the performance should be evaluated since the information can be outdated, especially for FR2.
Proposal 4: For scenarios where RACH-less handover is not applicable, 2-step RACH can be used to decrease the handover interruption time.
Observation 7: From RAN1's perspective, DC-based HO and enhanced Make-Before-Break HO have the same level of specification impact.
Observation 8: The physical layer feasibility of DC-based handover is the same as those studied in DC-CA agenda item. UE can follow the procedure define in DC to add the target cell and release the source cell.
Proposal 5: Classify the capability to perform simultaneous DL/UL in three different categories:

- Category 1: feasible to support simultaneous Tx/Rx with the source and target cells during HO; (inter-frequency synchronous inter-band/intra-band, inter-frequency asynchronous inter-band and intra-frequency synchronous)
- Category 2: feasible to support simultaneous Rx with the source and target cells during HO; (e.g. intra-frequency asynchronous)
- Category 3: no support of simultaneous Tx/Rx with the source and target cell during HO.

Proposal 6: DC-based HO is supported for the category 1 scenarios, including inter-frequency synchronous inter-band/intra-band, inter-frequency asynchronous inter-band and intra-frequency synchronous.
Proposal 7: DC-based HO is supported for the category 2 scenarios, e.g. intra-frequency asynchronous or single UL transmission. TDM pattern for UL transmission is coordinated between the source and target cells.
Proposal 8: DC-based HO doesn't need to be supported for the category 3 scenarios.
Proposal 9: The UL power control and TDM patterns for DC-based HO can be optimized on top of the rules defined in DC-CA agenda.

Decision: The document is noted.

R1-1904937 **NR mobility enhancement** **Motorola Mobility, Lenovo**

- Observation 1: With multi-beam operation, RACH-less HO may require reservation of multiple PUSCH resources, which may lead inefficiency in radio resource utilization.
- Proposal 1: Support conditional RACH-less HO in multi-beam based operation. Depending on UE's beam selection, UE performs skipping of RACH procedure, contention-free RACH, or contention-based RACH to a target cell.
- Proposal 2: Support to indicate a different TA reference for a different SS/PBCH block or CSI-RS resource in RACH-less HO.
- Proposal 3: L1 beam failure in the source cell can be configured as one of handover conditions for conditional handover.

Decision: The document is noted.

R1-1905038 **On mobility enhancements** **Qualcomm Incorporated**

Observation 1: NR PHY aspects such as flexible numerology, two uplink waveforms (CP-OFDM and SC-OFDM), BWP, multi-beam, multi-TRP call for additional considerations on the feasibility of simultaneous connectivity with source and target cells than considerations in LTE.

Observation 2: For FR1 intra-frequency,

- Synchronous deployment
  - Simultaneous Rx is possible for UE with single Rx chain under conditions that received timing difference and power difference between the cells are limited. Source cell active DL BWP contains target cell active DL BWP, and source cell BW contains target cell BW. Furthermore, PSD difference between the cells need further consideration. The simultaneous Rx is also possible for intra-band DLCA capable UE with separate Rx chains.
  - Simultaneous Tx is possible for UE with single Tx chain under conditions that the cells have same uplink waveform, are in the same PC group, and have limitations on PSD difference, PRB allocation and MTTD. Furthermore, source cell active UL BWP contains target cell active UL BWP and source cell BW contains target cell BW. The simultaneous Tx is also possible for UL-MIMO capable UE with separate Tx chains with considerations on PSD difference and MPR/A-MPR.
- Asynchronous deployment
  - Simultaneous Rx is possible for DC capable UE with separate Rx chains.
  - Simultaneous Tx is not possible for UE with single Tx chain and is FFS for UE with ULCA capability (e.g., MTTD needs to be relaxed which impacts inter-mod IM impairment).
- Different numerology between source and target cells is not a practical situation to be considered.

Observation 3: For FR1 inter-frequency intra-band,

- Synchronous deployment
  - Simultaneous Rx is possible for UE with single Rx chain if carrier frequency separation and total BW of source and target cells are limited. Furthermore, PSD difference needs further study. With separate Rx chains, it is feasible for a DLCA capable UE if carrier frequency separation is beyond a limit.
  - Simultaneous Tx is possible for ULCA capable UE with a single Tx chain under conditions that BWP/CC allocations for the cells are contiguous and same uplink waveform are configured for the cells. Furthermore, MTTD and PSD difference should be restricted. It is also possible for UE with separate Tx chains. Although MTTD can be relaxed with separate Tx chains, PSD difference and MPR/A-MPR need further study.
- Asynchronous deployment
  - Simultaneous Rx is not possible for UE with single Rx. It is possible for DC capable UE with separate Rx chains and carrier frequency separation is beyond a limit.
  - Simultaneous Tx is not possible with single Tx chain and is FFS for ULCA capable UE's.
- Different numerology between source and target cells is not a practical situation to be considered.
- Combination of supported source and target frequencies depend on UE's band combination capabilities.

Observation 4: For FR1 inter-frequency inter-band,

- Synchronous case
  - Simultaneous Rx is feasible for DLCA capable UE with separate Rx chains.
  - Simultaneous Tx is feasible for ULCA+mTAG capable UE with separate Tx chains.
- Asynchronous case
  - Simultaneous Rx is feasible for DC capable UE with separate Rx chains.
  - Simultaneous Tx is feasible for DC capable UE.
- Different or same numerology between source and target cells is possible.
- Combination of supported source and target frequencies depend on UE's band combination capabilities.

Observation 5: For FR2 inter-frequency intra-band or intra-frequency,

- Synchronous deployment is assumed.

- Simultaneous Rx is possible for UE w/ separate Rx chains, multiple antenna panels and Rel.16 multi-TRP capability.
- Simultaneous Tx is under discussion in RAN1.
- Different numerology between source and target cells is not a practical situation to be considered.

Proposal 1: Capture observations 1-5 in RAN1 reply to RAN2 LS (R2-1902745).
Proposal 2: UE estimates target cell TA based on source cell TA, RSTD, and timing offset between DL Tx and UL Rx ($\Delta\tau$), and inherent timing offset between source and target cells (Δt)

$$TA_{target} = TA_{source} + 2(RSTD - \Delta t) + \Delta\tau$$

where Δt and $\Delta\tau$ are indicated to UE, and

$$RSTD = T_{target} - T_{source}$$

where T_{target} is the time when the UE receives the start of one subframe from target cell and T_{source} is the time when the UE receives the corresponding start of one subframe from source cell that is closest in time to the subframe received from target cell.
Proposal 3: Target cell can estimate the timing advance based on uplink RS (e.g., SRS) to source cell. SRS configuration is configured to UE and known to the target cell.
Proposal 4: Define PUSCH occasion for PUSCH transmission in multi-beam deployments.
Proposal 5: Discuss PUSCH configuration on numerology, waveform and MCS.
Proposal 6: RACH-less HO supports PUSCH repetition.

Decision: The document is noted.

R1-1905161 **Physical Layer Aspects for Mobility Enhancements** **Ericsson**

- Observation 1: Simultaneous Rx/Tx required for intra-frequency MBB and DC-based HO is equivalent to the simultaneous Rx/Tx required for multi-TRP Rx/Tx using multiple PDCCH.
- Observation 2: UE designs for multi-TRP using multiple PDCCHs will require synchronous deployments where the TRPs are coordinated to some level.
- Observation 3: Simultaneous Rx/Tx for intra-frequency MBB and DC-based HO are associated with restrictions in network deployment.
- Observation 4: In the context of MBB and DC-based HO, beam based operation is equivalent to FR2 operation.
- Observation 5: If simultaneous Rx/Tx is not feasible in FR2, there are no beam related aspects to MBB and DC-based HO solutions.
- Observation 6: The lower-layer mobility procedures have no impact on the procedures described in the RAN2 specifications.
- Proposal 1: Further investigate the possibility for the UE to perform autonomous TA adjustment before transmitting Msg3 in the target cell.
- Proposal 2: To transmit Msg3, the UE shall use a spatial relation defined by a DL RS signalled by the NW.
- Proposal 3: Until reconfigured/activated, the UE may assume that all DL signals from the target gNB are quasi co-located with respect to QCL-TypeA, and QCL-TypeD properties with a DL RS signalled by the NW.
- Proposal 4: The Msg3 Tx power is determined using the PUSCH power control rules specified in section 7.1.1. in [38.213] using the RS used for QCL assumptions and spatial relation determination as pathloss reference RS.
- Proposal 5: The feasibility for simultaneous Rx/Tx for intra-frequency MBB and DC-based HO can be based on the agreements from the multi-TRP work.
- Proposal 6: Beam related aspects of intra-frequency MBB and DC-based HO solutions are described in the multi-TRP work, and any agreements and solutions are reused in the mobility work.
- Proposal 7 Support CSI reporting in Msg3 triggered by the CSI request bit in the RAR grant, both for contention-based and non-contention-based random access.

Decision: The document is noted.

Tuesday session conclusion: Continue discussion offline – Daewon (Intel)

Wednesday session

R1-1905759 **Summary of discussions on physical layer aspects of enhanced mobility** **Intel Corporation**

Decision: The document is noted.

R1-1905757 **[DRAFT] Reply LS on NR mobility enhancements** **Intel**

Decision: The draft LS is endorsed with the following updates:

- multiple waveforms in
- asynchronous intra-frequency intra-band or asynchronous inter-frequency intra-band

- ~~Additionally, synchronous deployment mentioned above should be understood as in the context of aligned NR SFN and slot timing between two cells.~~
- UEs could support such functionality and is subject to further discussion ~~in RAN1~~
- would like kindly to ask RAN2 (two occurrences)

Final LS is approved in R1-1905780.

7.2.12.2 Other

R1-1904709 Beam-based NR mobility enhancements Huawei, HiSilicon
R1-1905162 Details on lower-layer mobility enhancements Ericsson
R1-1905219 Make-Before-Break, DC-based HO and the relation to multi-TRP Ericsson
R1-1905220 Physical layer aspects of RACH-less HO Ericsson
R1-1905221 Early CSI reporting in HO Ericsson
R1-1905224 On simultaneous connectivity Nokia, Nokia Shanghai Bell
R1-1905765 Views on RACH-less HO in NR Huawei, HiSilicon

7.2.13 Multi-RAT Dual-Connectivity and Carrier Aggregation enhancements (LTE, NR)

LTE_NR_DC_CA_enh-Core; WID in RP-190452. Please refer to the WID for detailed scoping

7.2.13.1 Uplink Power Control for Supporting NR-NR Dual-Connectivity

Including both synchronous & asynchronous, covering only cases not covered in Rel-15

From [96-NR-13] email thread
R1-1903837 Email discussion on summarizing the details of the proposed NR-NR DC power control schemes Qualcomm
Decision: The document is noted.

Tuesday session conclusion: Continue discussion offline – Hong (Intel)

Thursday session
R1-1905839 Feature Lead summary on uplink power control for supporting NR-NR Dual-Connectivity Intel Corporation
Decision: The document is noted. Companies are encouraged to check the alternatives listed in R1-1905839, and use them as the reference to provide further analysis. Revisit in RAN1#97

R1-1903993 UL power control for NR-NR dual connectivity Huawei, HiSilicon
R1-1904040 UL power control for NR-NR DC OPPO
R1-1904111 Uplink power control for Supporting NR-NR DC vivo
R1-1904153 Discussion on uplink power control for NR DC ZTE
R1-1904325 On uplink power control for NR-NR Dual Connectivity Intel Corporation
R1-1904398 Power Control for NR-DC Samsung
R1-1904544 UL Power control for NR-DC CATT
R1-1904719 Uplink PC for NR-NR Dual Connectivity Nokia, Nokia Shanghai Bell
R1-1904938 Uplink power control for NR-NR dual-connectivity Motorola Mobility, Lenovo
R1-1905141 Power Control for NR-NR DC Ericsson
R1-1905278 Uplink Power Control Solutions for NR-NR Dual Connectivity Qualcomm Incorporated

7.2.13.2 Cross-carrier Scheduling with Different Numerologies

CA only, targeting completion by RAN#84

R1-1905690 Feature lead summary on Cross-carrier Scheduling with Different Numerologies Nokia, Nokia Shanghai Bell
Decision: The document is noted.

Agreements:

- For case 1-1 scheduling (PDCCH in the beginning of the slot), when a lower SCS PDCCH schedules a higher SCS PDSCH:
  - The Δ is determined a number of symbols based on PDCCH SCS counting from the end of the last symbol of the received PDCCH symbol to the beginning of the first symbol of the corresponding received PDSCH, quantized (using the granularity of PDSCH slot duration) to the next PDSCH slot boundary

Proposals:

- FFS for case 1-2 and case 2 scheduling
  - UE capability is additional to the case 1-1 UE capability
  - FFS if the same rule could be used for the timing as for case 1-1, or if an additional offset is added

Proposal:

- Regarding PDCCH-to-PDSCH timing, when the scheduling PDCCH has a higher SCS than that of the scheduled PDSCH, no additional standardization is necessary compared with existing Rel-15 specs.

Proposal:

- Regarding PDSCH-to-HARQ-ACK timing, no additional standardization is necessary compared with existing Rel-15 specs

Thursday session

R1-1905756 **Feature lead summary#2 on Cross-carrier Scheduling with Different Numerologies** Nokia, Nokia Shanghai Bell

Decision: The document is noted.

Agreements:

- Regarding PDSCH-to-HARQ-ACK minimum allowed timing under cross-carrier scheduling with different numerologies:
  - Use the Rel-15 specification without changes

Agreements:

- Regarding PDCCH-to-PUSCH minimum allowed timing under cross-carrier scheduling with different numerologies:
  - Use the Rel-15 specification without changes

Conclusion:

- The PDCCH monitoring occasion determination is based on the numerology of scheduling cell in cross-carrier scheduling with different numerologies
  - No spec change is intended

For the case of cross-carrier scheduling from lower SCS to higher SCS for PDSCH, companies are encouraged to provide sufficient details for the design alternative(s) for scheduling – to finalize in RAN1#97.

Email discussion for the remaining details for CCS till next meeting – Karri (Nokia)

R1-1903991	Remaining issues on cross-carrier scheduling with different numerologies	Huawei, HiSilicon
R1-1904041	On Cross-carrier Scheduling with Different Numerologies	OPPO
R1-1904112	Support of cross-carrier scheduling with mix numerologies	vivo
R1-1904154	Discussion on cross-carrier scheduling with different numerologies	ZTE
R1-1904326	Cross-carrier Scheduling with Different Numerologies	Intel Corporation
R1-1904399	Cross-carrier Scheduling with Different Numerologies	Samsung
R1-1904545	Discussion on cross-carrier scheduling with different numerologies	CATT
R1-1904720	On cross-carrier scheduling with mixed numerologies	Nokia, Nokia Shanghai Bell
R1-1904745	Discussion on cross-carrier scheduling with different numerologies	CMCC
R1-1904777	Discussion on cross-carrier scheduling with different numerologies	Spreadtrum Communications
R1-1904973	Cross-carrier scheduling with different numerologies	NTT DOCOMO, INC.
R1-1905142	Cross-carrier scheduling with different numerologies	Ericsson

R1-1905154	Cross-carrier scheduling with different numerologies	ASUSTEK COMPUTER (SHANGHAI)
R1-1905279	Cross-Carrier Scheduling with Different Numerologies	Qualcomm Incorporated

7.2.13.3 Potential Enhancements to Single Tx Switched Uplink Solution for EN-DC

R1-1903994 **Enhancements for single UL operation for EN-DC** **Huawei, HiSilicon**

- Proposal 1: For single UL operation in EN-DC with TDD PCell and the PCell is configured with DL-reference TDD configuration, UE is allowed to transmit LTE SRS in subframes that designated as UL and special by DL-reference TDD configuration.
- Proposal 2: For type 1 UE incapable of dual PA, LTE PUSCH is only allowed in the UL subframes designated as UL in the DL-reference configuration.
- Proposal 3: If there is a collision between LTE PUSCH and NR PUCCH/PRACH/PUSCH/SRS in UL subframes other than the subframes designated as UL by DL-reference TDD configuration, UE drops LTE PUSCH.
- Proposal 4: For type 1 UE that is capable of dual PA, it can transmit LTE SRS in UL or special subframes that designated as DL by DL-reference TDD configuration, and it can transmit NR SRS in subframes that designated as UL or special.
- Proposal 5: For single UL operation in EN-DC with TDD PCell and the PCell is configured with DL-reference TDD configuration, UE is allowed to transmit LTE PRACH in all uplink subframes configured by cell-specific TDD configuration.
- Proposal 6: Do not support HARQ-offset for type 1 UE configured with DL-reference TDD configuration.
- Proposal 7: If HARQ-offset is supported by type 2 UE configured with DL-reference TDD configuration, specification should guarantee to avoid possible error cases regarding configuration of HARQ-offset.
- Proposal 8: Allow EN-DC UE to transmit NR SRS overlapping in time with the last symbol of a LTE uplink subframe designated by subframeAssignment-r15
    - The last LTE symbol thereof is reserved and not transmitted.

Decision: The document is noted.

R1-1905280 **Enhancements for EN-DC Single-Tx TDM Operation** **Qualcomm Incorporated**

- Proposal 1: For single tx switched UL in EN-DC with TDD Pcell, the type 1 UE should consider LTE and NR uplink collisions either as an error case or should drop the NR transmission.
- Proposal 2: For single tx switched UL in EN-DC with FDD Pcell, the type 1 UE should not assume that LTE PUSCH is only scheduled in the UL subframes configured by the downlink reference configuration.
- Proposal 3: The HARQ offset should be configured for the users in case of EN-DC with TDD Pcell.
- Proposal 4: For a UE configured with EN-DC and more than one DL LTE serving cell:
    - The downlink HARQ timing reference configuration of the FDD secondary cell is the RRC DL/UL configuration of the Pcell.
    - The downlink HARQ timing reference configuration of the TDD secondary cell is given by the pair of its own SIB1 DL/UL configuration and the RRC DL/UL configuration of the Pcell similar to the LTE TDD-TDD CA with different DL/UL configurations.

Decision: The document is noted.

Tuesday session conclusion: Continue discussion offline – Wei (Apple)

Thursday session

R1-1905781 **Feature lead summary of remaining issues on potential enhancements to single Tx switched uplink for EN-DC Apple Inc.**

Decision: The document is noted.

Proposals:

DL-reference config can be applied to dual Tx capable UE in EN-DC with LTE FDD PCell to avoid self-interference due to harmonics

- RRC configuration will be decided by RAN2 (send LS to RAN2)
- UEs can be scheduled for NR or LTE uplink transmission in an arbitrary slot (NR) or subframe (LTE)
- UEs can be scheduled for NR or LTE downlink transmission in an arbitrary slot (NR) or subframe (LTE)
- RAN1 to further study and conclude on remaining designs, including at least
    - LTE PUSCH HARQ timing

Proposals:

For single UL operation in EN-DC with LTE TDD PCell, where UE operates on only one carrier at a time, and UE is configured with DL-reference UL/DL configuration,

- Only support LTE PUCCH formats 3/4/5, PUCCH fallback operation based on implication resource determination is not supported.
    - FFS PUCCH resource determination when the UE only receives DAI=1

Thursday decision: Revisit in RAN1#97

Proposals:
For DL HARQ timing corresponding to the DL-reference UL/DL configuration used in single Tx in EN-DC with TDD Pcell, the following clarifications are agreed:

- For the LTE TDD PCell and TDD Scell with the same UL/DL configuration (as in SIB1) as the TDD Pcell: use the PDSCH ACK timeline for Pcell as in the case of eIMTA (i.e., Table 10.1.3.1-1 in 36.213) with the same DL-reference UL/DL configuration
- For the LTE FDD SCell: use the PDSCH ACK timeline defined for Scell as in case of LTE FDD-TDD CA with LTE TDD PCell (i.e. Table 10.1.3A-1 in 36.213) with the same DL-reference UL/DL configuration
- For the LTE TDD SCell with different UL/DL configuration (as in SIB1) as the TDD Pcell: use the PDSCH ACK timeline for Scell as in case of LTE FDD-TDD CA with LTE TDD PCell (i.e. Table 10.1.3A-1 in 36.213) with the same DL-reference UL/DL configuration

Friday session

R1-1905862 Summary of offline discussions on remaining issues on potential enhancements to single Tx switched uplink for EN-DC Apple Inc.

Decision: The document is noted.

Agreements:
For DL HARQ timing corresponding to the DL-reference UL/DL configuration used in single Tx in EN-DC with TDD Pcell, the following clarifications are agreed:

- For the LTE TDD PCell: use the PDSCH ACK timeline as in ~~the case with the same DL-reference UL/DL configuration (i.e.,~~ Table 10.1.3.1-1 in 36.213~~)~~.
- For LTE DL CA, the SCell uses the same DL-reference UL/DL configuration as the PCell
    - For the LTE FDD SCell: use the PDSCH ACK timeline defined for SCell as in case of LTE FDD-TDD CA with LTE TDD PCell (i.e. Table 10.1.3A-1 in 36.213)
    - FFS
        - For the LTE TDD SCell with different UL/DL configuration (as in SIB1) as the TDD PCell: use the PDSCH ACK timeline for SCell as in case of LTE FDD-TDD CA with LTE TDD PCell (i.e. Table 10.1.3A-1 in 36.213)
        - For the LTE TDD SCell with the same UL/DL configuration (as in SIB1) as the TDD PCell: use the same PDSCH ACK timeline as the LTE TDD PCell (i.e. Table 10.1.3.1-1 in 36.213)

Agreements:
For single UL operation in EN-DC with LTE TDD PCell, and UE is configured with DL-reference UL/DL configuration,

- Support PUCCH formats 3/4/5, PUCCH fallback operation based on implicit resource indication is not supported.
    - FFS PUCCH format and resource determination when the UE only receives DAI=1
    - FFS whether or not there are any additional issues related to SPS

Proposals:
When UE is configured with DL-reference config on the LTE PCell to support single UL in EN-DC with LTE TDD PCell, the LTE PCell's TDD pattern (as configured in SIB1) should not include TDD pattern 0 or 6 for R16.

Note: this does not preclude the consideration of TDD pattern 0 or 6 if commercial need arises in future.

Friday decision: Revisit in RAN1#97

R1-1904155 Discussion on single Tx switched uplink solution for EN-DCZTE
R1-1904327 Remaining issues for single uplink operation enhancement for EN-DC Intel Corporation
R1-1904400 Enhancements to Single Tx Switched UL for EN-DC Samsung

R1-1904638	HARQ related issues on single TX-switched UL operation for EN-DC	LG Electronics
R1-1904721	Discussion on single uplink operation enhancement for EN-DC	Nokia, Nokia Shanghai Bell
R1-1904987	Remaining issues for single Tx switched uplink for EN-DC with TDD PCell	Apple Inc.
R1-1905143	Enhancements to single-tx operation for EN-DC	Ericsson
R1-1905677	TDD Timing on FDD Bands for Dual Uplink	VODAFONE (rev of R1-1905134)

7.2.13.4 Support of efficient and low latency serving cell configuration/activation/setup

R1-1905144 Reduced latency Scell management for NR-NR CA Ericsson

Two approaches have been considered to improveg the latency needed for Scell activation and data transmission:

- Approach 1: Use L1 based activation signaling in place of the existing MAC CE based activation/deactivation used for Rel15.
- Approach 2
  - Use MAC CE based activation signaling as specified in Rel15 without any changes for activating/deactivating Scells,
  - In addition to the MAC CE based signaling, use additional L1 based on/off signaling for fast control of PDCCH monitoring and PUCCH/SRS transmission on activated Scells.

Proposal: Support approach 2

Decision: The document is noted.

Tuesday session conclusion: Continue discussion offline – Ravi (Ericsson)

Thursday session

R1-1905835 Summary of efficient and low latency serving cell configuration/activation/setup Ericsson

Decision: The document is noted.

Possible observations

- For NR, when cross-carrier scheduling is not configued, additional L1 mechanisms (if supported) can allow activated Scells without PDCCH monitoring and with CSI measurement/reporting
  - Possible L1 signaling mechanisms include
    - DCI on Pcell to control PDCCH monitoring on activated Scells
    - BWP switching between 'dormant BWP' (i.e., BWP on which UE does not monitor PDCCH) and BWP on which UE monitors PDCCH. For example using
      - *Implicit linking between Pcell and Scell BWP switching*
      - *DCI on Pcell to switch UE from 'dormant BWP' to BWP on which UE monitors PDCCH on an activated Scell*
- For NR, when cross-carrier scheduling is not configured, it is possible to support activated Scells with sparse/no PDCCH monitoring and with CSI measurement/reporting using existing Rel15 L1 signaling mechanisms (e.g. Scell with two different BWPs configured with different PDCCH monitoring periodicity)
  - Additional L1 signaling mechanisms e.g. on Pcell (if supported) can enable fast adaptation from sparse PDCCH monitoring to more frequent PDCCH monitoring on the activated Scells.
- For NR, when cross-carrier scheduling is configured, it is possible to support activated Scells without PDCCH monitoring and with CSI measurement/reporting using Rel15 L1 signaling mechanisms
  - Additional mechanisms such as per BWP configuration of cross-carrier scheduling (if supported) can enable fast adapatation between cross-carrier and self-scheduling on activated Scells.

R1-1905836 Draft LS on maximum allowed SCell activation delay for Rel16 CA Ericsson

Decision: The document is noted. Discuss further offline focusing on the 1st question in R1-1905836.

Friday session

R1-1905901 Draft LS on maximum allowed SCell activation delay for Rel16 CA Ericsson

Decision: The document is noted, for email discussion/approval till April 19th – Ravi (Ericsson)

R1-1905900 Summary#2 of efficient and low latency serving cell configuration/activation/setup Ericsson

Decision: The document is noted.

Proposed observations:

- For NR, when cross-carrier scheduling is not configured,

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- It is possible using Rel15 signalling to support activated Scells with sparse PDCCH monitoring on the Scell and with CSI measurement/reporting
  - E.g. configuring a Scell with two different BWPs, one with frequent PDCCH monitoring occasions and one with sparse PDCCH monitoring
- If supported, additional L1 signaling mechanisms can enable fast adaptation from sparse/no PDCCH monitoring to more frequent PDCCH monitoring on the activated Scells.
  - Potential additional L1 signalling mechanisms include
    - Using DCI on Pcell to control PDCCH monitoring on Scell(s)
    - Configuring Scell(s) with two different BWPs, one with frequent PDCCH monitoring occasions and one with sparse/no PDCCH monitoring, and using DCI on Pcell to switch BWPs on Scell(s). The BWPs can have different CSI measurement/reporting configuration.
  - Note: In NR, MAC CE based adaptation of CSI measurement/reporting for Scell(s) is possible using Rel15 signalling.

- For NR, when cross-carrier scheduling is configured
  - It is possible using Rel15 signalling to support activated Scells with no PDCCH monitoring on the Scell and with CSI measurement/reporting.
  - If supported, additional mechanisms such as per BWP configuration of cross-carrier scheduling can enable fast adaptation between cross-carrier and self-scheduling for activated Scells.

Email discussion/approval about the above till April 19th – Ravi (Ericsson)

R1-1903992 Low latency of SCell activation Huawei, HiSilicon
R1-1904113 Efficient Scell activation vivo
R1-1904156 Discussion on low latency Scell activation ZTE
R1-1904401 On SCell Activation/Deactivation Samsung
R1-1904491 Efficient and low latency serving cell access switching MediaTek Inc.
R1-1904722 Efficient CA design Nokia, Nokia Shanghai Bell
R1-1904746 Discussion on fast activation and deactivation of scell CMCC
R1-1904904 SCell fast activation and deactivation ASUSTEK COMPUTER (SHANGHAI)
R1-1905281 Fast SCG and Scell activiation Qualcomm Incorporated

7.2.13.5 Other

R1-1904402 Partitioning of UE Capabilities for NR-DC Samsung
R1-1904711 Evaluations for contiguous data transmission with cross-carrier scheduling Huawei, HiSilicon

7.3 Other

R1-1903903 PDMA transmitter side pattern design and optimization Beijing University of Posts and Telecommunications

8 Closing of the meeting

Thanks to all delegates for hard working, managing the very tight offline schedule during the all week.
Thanks again to the feature leads, especially to the new ones who played that key role for the first tme at this meeting. RAN1 chair expressed his satisfaction for the improved quality of the feature lead summaries – anyone who can not attend a session can get a good overview and understand what has been discussed during the corresponding session, thanks to the summaries.
Thanks to the spec editors for preparing CRs.
Thanks to the Vice Chairmen, Hiroki-san for chairing the UE features sessions.
Thanks to the host, CF3. The hotel facilities were excellent – RAN1 will certainly come back again in the future!

Meeting was closed at 16:25.
See you all in Reno.

Annex A: List of Tdocs at RAN1 #96b

Please see excel file attached to this report

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Annex B: List of CRs agreed at RAN1 #96b

TS/TR	CR	rev	Rel	Title	Cat	Vsn	@ Mtg	TD#	Source to WG	Work Item
36.211	0479	-	Rel-15	Correction on NPRACH baseband signal generation	F	15.5.0	R1#96b	R1-1905548	Huawei, HiSilicon	NB_IOTenh2-Core
36.211	0480	-	Rel-15	Handling of invalid PRB for frequency hopping of BL/CE UEs with PUSCH CE Mode A and flexible starting PRB	F	15.5.0	R1#96b	R1-1905579	Qualcomm Incorporated, Ericsson	LTE_eMTC4-Core
36.213	1244		Rel-15	DCI formats for alternative TBS in 1024QAM	F	15.5.0	R1#96b	R1-1905527	Qualcomm Incorporated	LTE_1024QAM_DL-Core
36.213	1245	-	Rel-15	(Late drop) Correction on UL HARQ for NE-DC with SUO Case 1	F	15.5.0	R1#96b	R1-1905541	Huawei, HiSilicon	NR_newRAT-Core
36.213	1246		Rel-14	Dropping rule for PUSCH in UpPTS + aperiodic SRS + periodic SRS	F	14.10.0	R1#96b	R1-1905544	Qualcomm Incorporated	LTE_UL_CAP_enh-Core
36.213	1247		Rel-15	Dropping rule for PUSCH in UpPTS + aperiodic SRS + periodic SRS	A	15.5.0	R1#96b	R1-1905545	Qualcomm Incorporated	LTE_UL_CAP_enh-Core
36.213	1248		Rel-15	Corrections related to CSI feedback with 64-QAM	F	15.5.0	R1#96b	R1-1905546	Qualcomm Incorporated	LTE_eMTC4-Core
36.213	1249	-	Rel-15	Correction on NB-IoT SPS power control	F	15.5.0	R1#96b	R1-1905547	Huawei, HiSilicon	NB_IOTenh2-Core
36.213	1250		Rel-13	Correction for overlapping MPDCCH search spaces	F	13.13.0	R1#96b	R1-1905550	Qualcomm Incorporated, Ericsson	LTE_MTCe2_L1-Core
36.213	1251		Rel-14	Correction for overlapping MPDCCH search spaces	A	14.10.0	R1#96b	R1-1905551	Qualcomm Incorporated, Ericsson	LTE_MTCe2_L1-Core
36.213	1252		Rel-15	Correction for overlapping MPDCCH search spaces	A	15.5.0	R1#96b	R1-1905552	Qualcomm Incorporated, Ericsson	LTE_MTCe2_L1-Core
36.213	1253	-	Rel-13	On set of candidates for different ALs for MPDCCH in USS	F	13.13.0	R1#96b	R1-1905554	Intel Corporation	LTE_MTCe2_L1-Core
36.213	1254	-	Rel-14	On set of candidates for different ALs for MPDCCH in USS	A	14.10.0	R1#96b	R1-1905555	Intel Corporation	LTE_MTCe2_L1-Core
36.213	1255	-	Rel-15	On set of candidates for different ALs for MPDCCH in USS	A	15.5.0	R1#96b	R1-1905556	Intel Corporation	LTE_MTCe2_L1-Core
38.202	0006	-	Rel-15	Correction to simultaneous reception of DL Channels	F	15.5.0	R1#96b	R1-1905823	Intel Corporation, Qualcomm	NR_newRAT-Core
38.202	0007	-	Rel-15	CR on inclusion of TC-RNTI for monitored RNTI for UL-SCH and inclusion of monitoring PDCCH ordering PRACH on SCell	F	15.5.0	R1#96b	R1-1905888	Intel Corporation, Qualcomm	NR_newRAT-Core
38.211	0010	-	Rel-15	CR on PUCCH format 1	F	15.5.0	R1#96b	R1-1905654	ZTE	NR_newRAT-Core
38.211	0011	-	Rel-15	Correction on reference name of UE capability of additional DMRS for co-existence with LTE CRS	F	15.5.0	R1#96b	R1-1905666	Huawei, HiSilicon	NR_newRAT-Core
38.211	0012	-	Rel-15	Correction on mapping from virtual to physical resource blocks	F	15.5.0	R1#96b	R1-1905682	Huawei, HiSilicon, ZTE, Spreadtrum Communications	NR_newRAT-Core
38.212	0014	-	Rel-15	CR on correction to bitwidth of NNZC indicator	F	15.5.0	R1#96b	R1-1905680	Ericsson	NR_newRAT-Core
38.212	0015	-	Rel-15	Correction on DCI size alignment in TS 38.212	F	15.5.0	R1#96b	R1-1905744	Huawei, HiSilicon	NR_newRAT-Core
38.212	0016	-	Rel-15	Correction on UL/SUL indicator in DCI format 0_0	F	15.5.0	R1#96b	R1-1905787	Huawei, HiSilicon	NR_newRAT-Core
38.212	0018	-	Rel-15	CR on maximum modulation order configured for serving cell	F	15.5.0	R1#96b	R1-1905910	Intel Corp.	NR_newRAT-Core
38.213	0035	-	Rel-15	CR on missing case for DCI format 1_1 with CS-RNTI	F	15.5.0	R1#96b	R1-1905750	Samsung	NR_newRAT-Core
38.213	0036	1	Rel-15	CR on the determination of the minimum number of PRBs for PUCCH transmission	F	15.5.0	R1#96b	R1-1905796	MediaTek Inc., Ericsson	NR_newRAT-Core
38.213	0037	-	Rel-15	CR on PHR determination and transmission	F	15.5.0	R1#96b	R1-1905783	Motorola Mobility, Lenovo	NR_newRAT-Core
38.213	39	-	Rel-15	Correction on one port PUSCH power scaling	F	15.5.0	R1#96b	R1-1905871	Ericsson, Verizon, T-Mobile USA, Sprint, NTT DOCOMO, Orange, Nokia, Intel, Qualcomm, Samsung, ZTE	NR_newRAT-Core
38.213	0040	-	Rel-15	Correction on PDCCH monitoring	F	15.5.0	R1#96b	R1-1905883	Huawei, HiSilicon, Samsung	NR_newRAT-Core
38.213	0041	-	Rel-15	Correction on CRC assumption for multi-CSI resource selection and CSI report(s) selection	F	15.5.0	R1#96b	R1-1905886	CATT	NR_newRAT-Core
38.213	0042	-	Rel-15	Clarification of reference to PDSCH processing capability 1 in TS 38.213	F	15.5.0	R1#96b	R1-1905889	Sharp	NR_newRAT-Core
38.213	0043	-	Rel-15	Correction on the timeline condition of multiplexing two HARQ-ACK information in one slot	F	15.5.0	R1#96b	R1-1905890	Huawei, HiSilicon, Qualcomm	NR_newRAT-Core
38.213	0044	-	Rel-15	CR on Type-1 HARQ-ACK codebook determination	F	15.5.0	R1#96b	R1-1905891	ZTE, Samsung	NR_newRAT-Core

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TS/TR	CR	rev	Rel	Title	Cat	Vsn	@ Mtg	TD#	Source to WG	Work Item
38.214	0026	-	Rel-15	Corrections on non-codebook based UL transmission to TS 38.214	F	15.5.0	R1#96b	R1-1905672	MediaTek	NR_newRAT-Core
38.214	0027	-	Rel-15	Final CR on UE procedure for PDSCH and PUSCH	F	15.5.0	R1#96b	R1-1905742	ZTE	NR_newRAT-Core
38.214	0028	-	Rel-15	Correction on configured scheduling PUSCH repetition with dynamic SFI	F	15.5.0	R1#96b	R1-1905743	Qualcomm	NR_newRAT-Core
38.214	0029	-	Rel-15	CR on rate matching for PDSCH scheduled by DCI format 1_0	F	15.5.0	R1#96b	R1-1905826	Nokia, Nokia Shanghai Bell, MediaTek Inc.	NR_newRAT-Core
38.214	0030	-	Rel-15	Clarification on CG transmission opportunities	F	15.5.0	R1#96b	R1-1905827	Ericsson	NR_newRAT-Core
38.214	0032	-	Rel-15	CR to 38.214 clarifying calculation of DataRate and DataRateCC	F	15.5.0	R1#96b	R1-1905887	Ericsson	NR_newRAT-Core
38.215	0006	-	Rel-15	CR on SFTD measurements for NE-DC	F	15.4.0	R1#96b	R1-1905894	Ericsson	NR_newRAT-Core
37.885	0006	-	Rel-15	V2X antenna model and pathloss correction	F	15.2.0	R1#96b	R1-1905913	Fraunhofer HHI, Fraunhofer IIS, Huawei, HiSilicon	FS_LTE_NR_V2X_eval

The following CRs are endorsed.

TS/TR	CR	rev	Rel	Title	Cat	Vsn	@ Mtg	TD#	Source to WG	Work Item
38.211	0014	1	Rel-15	Corrections to 38.211 including alignment of terminology across specifications	F	15.5.0	R1#96b	R1-1905905	Ericsson	NR_newRAT-Core
38.212	0017	-	Rel-15	Corrections to 38.212 including alignment of terminology across specifications	F	15.5.0	R1#96b	R1-1905870	Huawei, HiSilicon	NR_newRAT-Core
38.213	0038	1	Rel-15	Corrections to 38.213 including alignment of terminology across specifications	F	15.5.0	R1#96b	R1-1905881	Samsung	NR_newRAT-Core
38.214	0031	2	Rel-15	Corrections to 38.214 including alignment of terminology across specifications	F	15.5.0	R1#96b	R1-1905907	Nokia	NR_newRAT-Core

Annex C-1: List of Outgoing LSs from RAN1 #96b

TDoc #	Title	Source	Release	Related WIs	Reply to	To	Cc	Original LS	Reply in
R1-1905553	UE capabilities for SRS carrier switching	RAN1, Qualcomm	Rel-14	LTE_SRS_switch-Core		RAN2			
R1-1905570	LS on PUR Working Assumptions for NB-IoT and LTE-M	RAN1, Sierra Wireless	Rel-16	NB_IOTenh3-Core, LTE_eMTC5-Core		RAN2			
R1-1905575	LS on transient period for antenna switching or frequency hopping	RAN1, Qualcomm	Rel-16	LTE_DL_MIMO_EE-Core		RAN4			
R1-1905577	LS on FD-MIMO signalling capabilities	RAN1, Qualcomm	Rel-13	LTE_EBF_FDMIMO-Core		RAN2			
R1-1905578	LS on EPRE for WUS	RAN1, Qualcomm	Rel-15	LTE_eMTC4-Core		RAN2	RAN4		
R1-1905580	LS on DELTA_PREAMBLE value for NPRACH format 2 power control	RAN1, Huawei	Rel-15	NB_IOTenh2-Core		RAN2			
R1-1905593	LS on channel quality report in Msg3 for NB-IoT and LTE-M	RAN1, Huawei	Rel-16	NB_IOTenh3-Core, LTE_eMTC5-Core		RAN2	RAN4		
R1-1905669	Reply LS on Capability signalling of phase discontinuity	RAN1, Intel Corporation	Rel-15	NR_newRAT-Core	R4-1816749	RAN4	RAN2		
R1-1905780	Reply LS on NR mobility enhancements	RAN1, Intel Corporation	Rel-16	NR_Mob_enh-Core	R2-1902745	RAN2	RAN4		
R1-1905842	LS on clarification of OTA timing alignment for IAB	RAN1, Huawei	Rel-16	NR_IAB-Core		RAN4			
R1-1905860	Response LS on short control signaling in NR-U	RAN1, Qualcomm Incorporated	Rel-16	NR_unlic-Core	R1-1901321	IEEE 802.11	RAN		
R1-1905863	Reply LS on SL RLM / RLF in NR V2X for unicast	RAN1, InterDigital	Rel-16	5G_V2X_NRSL-Core	R2-1902504	RAN2	SA2, RAN4		
R1-1905880	Reply LS on collision of RRM measurement and UL transmission	RAN1, Huawei	Rel-15	NR_newRAT-Core	R4-1904682	RAN4			
R1-1905895	LS on UL wideband operation for NR-U	RAN1, LG Electronics	Rel-16	NR_unlic-Core		RAN4			
R1-1905904	Response to LS on Combinations of Uu QoS characteristics values for V2X services	RAN1, Huawei	Rel-16	NR_L1enh_URLLC-Core	S2-1813386	SA2, RAN3	RAN2		
R1-1905906	LS on sidelink HARQ feedback for groupcast	RAN1, LG Electronics	Rel-16	5G_V2X_NRSL-Core		RAN2			
R1-1905909	Reply LS on clarification about CSI-RS measurement	RAN1, Intel Corporation	Rel-15	NR_newRAT-Core	R2-1902730	RAN2	RAN4		
R1-1905689	LS on PDCCH monitoring for NR-DC	RAN1, NTT DOCOMO	Rel-15	NR_newRAT-Core		RAN2	RAN3		
R1-1905917	LS on RAN1 NR UE features update	RAN1, NTT DOCOMO	Rel-15	NR_newRAT-Core		RAN2	RAN4		
R1-1905912	LS on maximum allowed SCell activation delay for Rel16 CA	RAN1, Ericsson	Rel-16	LTE_NR_DC_CA_enh-Core		RAN4			

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Annex C-2: List of Incoming LSs from RAN1 #96b

TDoc #	Title	Source	Release	Related WIs	Reply to	To	Cc	Original LS	Reply in
R1-1903843	LS on FR2 RF Exposure mitigation methods	RAN4, Qualcomm Incorporated	Rel-16	NR_eMIMO-Core		RAN1	RAN	R4-1902193	
R1-1903844	Reply LS on new UE capability for Full TX power UL transmission	RAN4, vivo	Rel-16	NR_eMIMO-Core	R1-1901440	RAN1		R4-1902497	
R1-1903845	Reply LS on wideband carrier operation for NR-U	RAN4, Ericsson	Rel-16	NR_unlic-Core	R1-1901460	RAN1	RAN2	R4-1902503	
R1-1903846	LS on NR ATF Measurements	RAN4, Intel Corporation	Rel-16	FS_NR_MIMO_OTA_test		RAN1, RAN5		R4-1902508	
R1-1903847	Reply LS on NR UE transient period in sidelink channels	RAN4, LG Electronics	Rel-16	FS_NR_V2X	R1-1814165	RAN1		R4-1902514	
R1-1903848	LS on Specification support for SFTD with NR Pcell	RAN4, Ericsson	Rel-15	NR_newRAT-Core		RAN2, RAN1		R4-1902527	
R1-1903849	LS on FR2 Beam Correspondence	RAN4, Samsung	Rel-15	NR_newRAT-Core		RAN1, RAN2	RAN	R4-1902682	
R1-1903850	LS on frequency offset between anchor and non-anchor carrier for TDD NB-IoT standalone operation	RAN4, Huawei	Rel-15	NB_IOTenh2-Core		RAN2	RAN1	R4-1900910	
R1-1903851	Reply LS on the interruption time during mobility in LTE	RAN4, Huawei	Rel-16	LTE_feMob-Core	R2-1815706	RAN2	RAN1	R4-1902030	
R1-1903852	LS on FR1 range	RAN4, Ericsson	Rel-15	NR_newRAT-Core	RP-182876	RAN	RAN1, RAN2, RAN3, RAN5	R4-1902222	
R1-1903853	Reply LS to 3GPP TSG RAN and 3GPP TSG RAN WG2 regarding LTE LAA channel combinations for 5GHz	RAN4, Charter Communications	Rel-13	LTE_LAA-Core	RP-182177	RAN, RAN2	RAN1	R4-1902248	
R1-1903854	LS on SL RLM / RLF in NR V2X for unicast	RAN2, Apple	Rel-16	FS_NR_V2X		RAN1, SA2	RAN4	R2-1902504	
R1-1903855	LS to RAN1 on all RAN2 agreed TPs and RAN2 conclusions for NR V2X SI	RAN2, Huawei	Rel-16	FS_NR_V2X		RAN1		R2-1902725	
R1-1903856	LS on clarification about CSI-RS measurement	RAN2, ZTE	Rel-15	NR_newRAT-Core		RAN1, RAN4		R2-1902730	
R1-1903857	LS on assistance information for TSN traffic flows	RAN2, Nokia	Rel-16	FS_NR_IIOT		SA2	RAN1, RAN3	R2-1902354	
R1-1903858	Reply LS on RAN Impact analysis due to TSN	RAN2, Ericsson	Rel-16	FS_NR_IIOT		SA2	RAN1, RAN3, RAN, SA	R2-1902369	
R1-1903859	Reply LS on TSN integration in the 5G System	RAN2, Nokia	Rel-16	FS_NR_IIOT	S2-189051	SA2	RAN1, RAN3,	R2-1902371	

TDoc #	Title	Source	Release	Related WIs	Reply to	To	Cc	Original LS	Reply in
							SA1, RAN		
R1-1903860	LS response to SA2 on unicast, groupcast and broadcast in NR sidelink	RAN2, Huawei	Rel-16	FS_NR_V2X	S2-1812895	SA2	RAN1, RAN3	R2-1902494	
R1-1903861	Reply LS to TSG RAN regarding LTE LAA channel combinations for 5GHz	RAN2, Charter Communications	Rel-13	LTE_LAA-Core	RP-182177, R4-1902248	RAN, RAN4	RAN1	R2-1902566	
R1-1903862	RAN2 MR-DC enhancement agreements	RAN2, vivo	Rel-16	LTE_NR_DC_CA_enh-Core		RAN4	RAN1	R2-1902734	
R1-1903863	LS on NR mobility enhancements	RAN2, Intel Corporation	Rel-16	NR_Mob_enh-Core		RAN4, RAN1		R2-1902745	
R1-1903864	LS on SFTD measurement for NR-DC in Rel-15	RAN2, ZTE	Rel-15	NR_newRAT-Core		RAN4, RAN1		R2-1902794	
R1-1903865	LS on QoS Support for eV2X over Uu interface	SA2, Huawei	Rel-16	FS_eV2XARC		RAN2, RAN3	RAN1	S2-1902904	
R1-1903866	LS on Automatic Restoration of GFBR QOS	SA2, Vodafone	Rel-16	FS_5G_URLLC		RAN2, RAN3	RAN1	S2-1902906	
R1-1903867	LS in reply to LS on Draft new Recommendation E.RQST – "KPI targets for mobile networks"	RAN, Nokia			ITU_T_SG12-LS68	SA	SA5, RAN1, RAN6	RP-190673	
R1-1903868	Response LS on Invitation to Coexistence Workshop in Vienna	RAN, Nokia	Rel-16	NR_unlic-Core		IEEE 802.11	RAN1, RAN2, RAN4	RP-190745	
R1-1903869	Response LS on Completion of Study on Cellular IoT support and evolution for the 5G System, and LS on Signalling optimization for RRC Inactive N3 path switch	RAN, Qualcomm	Rel-16	FS_CIoT_5G	R2-1902436, R3-191102	RAN2, RAN3, SA2, SA	RAN1, CT	RP-190768	
R1-1904050	LS on UE feature list for NR	RAN4, NTT DOCOMO	Rel-15	NR_newRAT-Core		RAN2, RAN	RAN1, RAN3	R4-1902220	
R1-1904051	LS on NR V2X spectrum allocation	5GAA WG4, Huawei	Rel-16	FS_NR_V2X		RAN	RAN1, RAN2, RAN4	5GAA_S-190056	
R1-1904052	Reply LS to IEEE 802.11 working group in relation to certain channel combinations for LAA in 5GHz	RAN, Charter Communications	Rel-13	LTE_LAA-Core		IEEE 802.11 WG, IEEE-SA Standards Board, IEEE 802 LMSC, IEEE 802.11	RAN4, RAN2, RAN1	RP-190758	

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TDoc #	Title	Source	Release	Related WIs	Reply to	To	Cc	Original LS	Reply in
						WLAN, IEEE 802.11 Coexistence Standing Committee			
R1-1904053	LS in reply to LS on Draft new Recommendation E.RQST – "KPI targets for mobile networks"	SA, Samsung				PCG	SA5, RAN1, RAN6	SP-190269	
R1-1904182	LS on UL sharing applicability in different scenarios	RAN2, Nokia	Rel-15	NR_newRAT-Core		RAN4, RAN1		R2-1902822	
R1-1904220	LS on full data rate support for UP IP	SA3, Qualcomm	Rel-16	FS_UP_IP_Sec		RAN2	RAN, RAN1, RAN3	S3-191020	
R1-1905706	Reply LS on collision of RRM measurement with UL transmission	RAN4, Intel	Rel-15	NR_newRAT-Core	R1-1810008, R1-1814412	RAN1		R4-1904682	
R1-1905845	LS on MsgA content size	RAN2, Nokia	Rel-16	NR_2step_RACH		RAN1		R2-1905304	

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Annex D: List of Approved updated WIDs

None

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Annex E: List of draft TSs/TRs agreed at RAN1 #96b

Tdoc Number	Title	Source	Conclusion/Decision

Annex F: List of actions

- **Outgoing LS**

[96b-NR-01] – Fred (NTT DOCOMO)
Email discussion/approval of the LS to RAN2/RAN3 using the existing agreements.
Done: Further to the conclusion to keep the agreements inc. the 3 FFS points as is, LS to RAN2 Cc RAN3 is approved in (decision posted on April 25th):
R1-1905689 LS on PDCCH monitoring for NR-DC RAN1, NTT DOCOMO

[96b-NR-03] – Hiroki (NTT DOCOMO)
R1-1905867 RAN1 NR UE features NTT DOCOMO
R1-1905868 Draft LS on RAN1 NR UE features update NTT DOCOMO
Email discussion/approval of the above till 04/24
Done: According to decision posted on April 25th, the updated NR UE features list is agreed in:
R1-1905916 RAN1 NR UE features NTT DOCOMO
LS to inform RAN2, Cc RAN4 is approved in:
R1-1905917 LS on RAN1 NR UE features update RAN1, NTT DOCOMO

[96b-NR-10] – Ravi (Ericsson)
R1-1905901 Draft LS on maximum allowed SCell activation delay for Rel16 CA Ericsson
Email discussion/approval till 04/19.
Done: Further to email decision dated on April 20th, final LS to RAN4 is approved in:
R1-1905912 LS on maximum allowed SCell activation delay for Rel16 CA RAN1, Ericsson

- **CR approval**

[96b-NR-04] – Matthew (Huawei)
R1-1904226 V2X antenna model and pathloss correction Fraunhofer HHI, Fraunhofer IIS, Huawei, HiSilicon
Emaill discussion/approval till 4/18
Done: Further to email decision dated on April 24th, final CR is agreed in:
R1-1905913 V2X antenna model and pathloss correction Fraunhofer HHI, Fraunhofer IIS, Huawei, HiSilicon Rel-15 37.885 FS_LTE_NR_V2X_eval CR0006, F

- **Miscellaneous**

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[96b-NR-01] – Fred (NTT DOCOMO)
Email discussion/approval of the FFSs regarding PDCCH blind decoding for Rel.15 NR-DC, including LS, till 04/19.
Done: According to decision posted on April 23rd, no consensus regarding the 3 FFS points – no update to the existing agreements . For further reference, the latest version of summary is captured in:
R1-1905914 Summary of email discussion [96b-NR-01] PDCCH blind decoding for Rel.15 NR-DC NTT DOCOMO

[96b-NR-02] – Yi (Qualcomm
R1-1904538 Correction on PUSCH selection for overlapping of PUCCH and PUSCH CATT
Email discussion to decide potential solution to the issues identified in CR R1-1904538 – until 04/19
Done: According to decision posted on April 23rd, no consensus. Continue discussion until next meeting (summary to be prepared accordingly).

[96b-NR-05] – Kianoush (Qualcomm)
Email discussion regarding the OoO issue (particularly to potential further refine descriptions of each solution) as summarized in Section 2 of R1-1905902 till 4/26
Done: According to decision posted on April 28th, summary of proposals should be made available at the next meeting. Status to be checked in RAN1#97.

[96b-NR-06] – Min (Huawei)
Email discussion until 17th of April on simulation parameters for multi-TRP based URLLC scheduled by single DCI. As a starting point for discussions:

- The number of PRBs: 8, 16, 24, 40
- Target coding rates: MCS6~=0.12, MCS8~=0.19, MCS12~=0.44, MCS14~=0.6 in MCS Table 5.1.3.1-3
  - Above target coding rate is for scheme 2a. Each CW in scheme 2b have twice the target coding rate.
- The number of layers: 1-2 layers
- The angles of AOD, ZOD, AOA, ZOA are generated by a fixed random seed in one frame(10ms) to keep channel continuity, but the seed is changed one frame by one frame to keep angles uniformly distributed;
- TDL-C with delay spread 100ns, CDL-C and CDL-D with delay spread =100ns/300ns

Done: According to decision posted on April 18th, the following set of parameters for multi-TRP based URLLC scheduled by single DCI are agreed for simulations:
Agreements

- **The number of PRBs: 8, 40**
- **Target coding rates:**
  - **MCS6~=0.12, MCS12~=0.44 in MCS Table 5.1.3.1-3**
  - **Above target coding rate is for scheme 2a for layer 1 transmission.**
    - **Each CW in scheme 2b have twice the target coding rate.**
- **Number of Tx/Rx ports:**
  - **To be reported by proponent company**
- **The number of layers:**

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  - **1 or 2 layers**
  - **To compare one-layer versus two-layer transmissions, the code rate of rank 2 transmission is half of that of rank 1 transmission.**
- **LLS models:**
  - **Details of CDL or TDL models are reported by proponent company, e.g. the angle generation mechanism if using CDL model**
- **DMRS configuration:**
  - **single symbol front loaded Type 1 DMRS without additional DMRS,3 dB power boosting, and the number of PDSCH symbols is reported by proponent company**
- **UE speed:**
  - **3km/h**
- **Inter-TRP frequency(time) offsets:**
  - **0 Hz. If phase offset variation is assumed among M-TRP, details of modelling mechanism for phase offset are reported by proponent company.**
- **Baseline scheme:**
  - **Details of the baseline scheme (e.g. SFN with CDD, precoder cycling, etc.) are reported by proponent company.**

[96b-NR-07] – Rakesh (vivo)
Email discussion by 17th of April for companies to provide clarification on Alt1, Alt3-1, Alt3-2, and Alt5.
- Alt1: Option1-1 (Support a new codebookSubset for non-coherent and partial-coherent transmission capable UEs, e.g. for 2Tx the new codeboookSubset is all non-antenna selection TPMIs or with only TPMI [1 1] for rank 1)
- Alt3-1: Option3+Option2 (Multiple SRS resources with different number of SRS port(s) in each resource)
  - FFS: Whether to additionally support Option 1-2
- Alt3-2: Option3+Option2+ Option1-1 (Multiple SRS resources with different number of SRS port(s) in each resource)
- Alt5: FDM multi-port simultaneous transmission

Done: According to decision posted on April 18th, the outcome of email discussion is captured in the following summary, and can be used as an input to next meeting:
R1-1905911 Summary of "[96b-NR-07] clarification on alternative UL full power Tx solutions" vivo

[96b-NR-08] – Henrik (Ericsson)
Email discussion till next meeting on additional modeling of IIoT using similar email structure as before
Done: Status to be checked in RAN1#97.

[96b-NR-09] – Karri (Nokia)
Email discussion for the remaining details for CCS till next meeting
Done: Status to be checked in RAN1#97.

[96b-NR-11] – Ravi (Ericsson)
Possible observations for efficient and low latency Scell operation

- For NR, when cross-carrier scheduling is not configured,
  - It is possible using Rel15 signalling to support activated Scells with sparse PDCCH monitoring on the Scell and with CSI measurement/reporting
    - E.g. configuring a Scell with two different BWPs, one with frequent PDCCH monitoring occasions and one with sparse PDCCH monitoring
  - If supported, additional L1 signaling mechanisms can enable fast adaptation from sparse/no PDCCH monitoring to more frequent PDCCH monitoring on the activated Scells.
    - Potential additional L1 signalling mechanisms include
      - Using DCI on Pcell to control PDCCH monitoring on Scell(s)
      - Configuring Scell(s) with two different BWPs, one with frequent PDCCH monitoring occasions and one with sparse/no PDCCH monitoring, and using DCI on Pcell to switch BWPs on Scell(s). The BWPs can have different CSI measurement/reporting configuration.
    - Note: In NR, MAC CE based adaptation of CSI measurement/reporting for Scell(s) is possible using Rel15 signalling.
- For NR, when cross-carrier scheduling is configured
  - It is possible using Rel15 signalling to support activated Scells with no PDCCH monitoring on the Scell and with CSI measurement/reporting.
  - If supported, additional mechanisms such as per BWP configuration of cross-carrier scheduling can enable fast adaptation between cross-carrier and self-scheduling for activated Scells.

Email discussion/approval about the above till 4/19

Done: According to decision posted on April 24th, the outcome of email discussion is captured in the following summary, and can be used as an input to next meeting:

R1-1905915 Summary of email discussion [96b-NR-11] Ericsson

Annex G: List of participants at RAN1 #96b

Please see excel file attached to this report

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Annex H: TSG RAN WG1 meetings in 2019 – 2020

TITLE	TYPE	DATES	LOCATION	CTRY
3GPPRAN1#97	WG	13 - 17 May 2019	Reno	US
3GPPRAN1-AH-1906-TBC	AH	24 - 28 Jun 2019	Cancelled	-
3GPPRAN1#98	WG	26 - 30 Aug 2019	Prague	CZ
3GPPRAN1#98bis	WG	14 - 18 Oct 2019	TBD	China
3GPPRAN1#99	WG	18 - 22 Nov 2019	Reno	US
3GPPRAN1#100	WG	24 - 28 Feb 2020	Athens	Greece
3GPPRAN1#100bis	WG	20 - 24 Apr 2020	Busan	South Korea
3GPPRAN1#101	WG	25 - 29 May 2020	TBD	China
3GPPRAN1#102	WG	24 - 28 Aug 2020	Toulouse	France
3GPPRAN1#102bis	WG	12 - 16 Oct 2020	TBD	China
3GPPRAN1#103	WG	16 - 20 Nov 2020	TBD	US

MEETING TYPES		
AH = Ad Hoc	ST = Startup Meeting	RG = Rapporteurs Group
JM = Joint	WG = Working Group	SG = Steering Group
PM = Preparatory Meeting	CM = Chairmen's meeting	TG = Task Group
RM = Resolution Meeting	OR = Ordinary	XO = Extraordinary

End of document

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APPENDIX F

TDoc	Title	Source	TDoc Status	Reservation date	Uploaded
R1-1903840	Draft Agenda of RAN1#96bis meeting	RAN1 Chair	revised	2019-03-21 17:53:10	2019-03-24 22:19:00
R1-1903841	Highlights from RAN#83	RAN1 Chair	noted	2019-03-21 17:53:10	2019-04-02 18:33:58
R1-1903842	Report of RAN1#96 meeting	ETSI MCC	revised	2019-03-21 17:53:10	2019-04-05 12:37:53
R1-1903843	LS on FR2 RF Exposure mitigation methods	RAN4, Qualcomm	treated	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903844	Reply LS on new UE capability for Full TX power UL transmission	RAN4, vivo	treated	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903845	Reply LS on wideband carrier operation for NR-U	RAN4,	treated	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903846	LS on NR ATF Measurements	RAN4, Intel Corporation	treated	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903847	Reply LS on NR UE transient period in sidelink	RAN4, LG	treated	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903848	LS on Specification support for SFTD with NR	RAN4,	treated	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903849	LS on FR2 Beam Correspondence	RAN4,	treated	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903850	LS on frequency offset between anchor and non-anchor carrier for TDD NB-IoT standalone	RAN4, Huawei	noted	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903851	Reply LS on the interruption time during mobility in	RAN4, Huawei	noted	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903852	LS on FR1 range	RAN4, Ericsson	noted	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903853	Reply LS to 3GPP TSG RAN and 3GPP TSG RAN WG2 regarding LTE LAA channel combinations for	RAN4, Charter Communicatio	noted	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903854	LS on SL RLM / RLF in NR V2X for unicast	RAN2, Apple	treated	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903855	LS to RAN1 on all RAN2 agreed TPs and RAN2 conclusions for NR V2X SI	RAN2, Huawei	treated	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903856	LS on clarification about CSI-RS measurement	RAN2, ZTE	treated	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903857	LS on assistance information for TSN traffic flows	RAN2, Nokia	noted	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903858	Reply LS on RAN Impact analysis due to TSN	RAN2,	noted	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903859	Reply LS on TSN integration in the 5G System	RAN2, Nokia	noted	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903860	LS response to SA2 on unicast, groupcast and broadcast in NR sidelink	RAN2, Huawei	noted	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903861	Reply LS to TSG RAN regarding LTE LAA channel combinations for 5GHz	RAN2, Charter Communicatio	noted	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903862	RAN2 MR-DC enhancement agreements	RAN2, vivo	noted	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903863	LS on NR mobility enhancements	RAN2, Intel Corporation	treated	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903864	LS on SFTD measurement for NR-DC in Rel-15	RAN2, ZTE	treated	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903865	LS on QoS Support for eV2X over Uu interface	SA2, Huawei	noted	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903866	LS on Automatic Restoration of GFBR QOS	SA2, Vodafone	noted	2019-03-21 17:53:10	2019-03-21 17:54:35
R1-1903867	LS in reply to LS on Draft new Recommendation E.RQST – “KPI targets for mobile networks”	RAN, Nokia	noted	2019-03-24 22:17:20	2019-03-26 10:55:34
R1-1903868	Response LS on Invitation to Coexistence	RAN, Nokia	noted	2019-03-24 22:17:20	2019-03-26 10:55:34
R1-1903869	Response LS on Completion of Study on Cellular IoT support and evolution for the 5G System, and LS on Signalling optimization for RRC Inactive N3	RAN, Qualcomm	noted	2019-03-24 22:17:20	2019-03-26 10:55:34
R1-1903870	Considerations on initinal access signals and channels for NR-U	ZTE, Sanechips	not treated	2019-03-25 00:02:40	2019-03-30 04:52:56
R1-1903871	Considerations on DL reference signals and channels design for NR-U	ZTE, Sanechips	not treated	2019-03-25 00:02:40	2019-03-30 04:52:56
R1-1903872	Considerations on UL reference signals and channels design for NR-U	ZTE, Sanechips	not treated	2019-03-25 00:02:40	2019-03-30 04:52:56
R1-1903873	Discussion on Channel access procedure for NR-	ZTE,	not treated	2019-03-25 00:02:40	2019-03-30 04:57:28
R1-1903874	Discussion on enhancement of the initial access procedure for NR-U	ZTE, Sanechips	not treated	2019-03-25 00:02:40	2019-03-30 04:52:56
R1-1903875	Discussion on scheduling and HARQ for NR-U	ZTE,	not treated	2019-03-25 00:02:40	2019-03-30 04:52:56
R1-1903876	Discussion on configured grant for NR-U	ZTE,	not treated	2019-03-25 00:02:40	2019-03-30 04:52:56
R1-1903877	Discussion on Wide-band operation for NR-U	ZTE,	not treated	2019-03-25 00:02:40	2019-03-30 04:52:56
R1-1903878	On the channel structure of msgA	ZTE,	noted	2019-03-25 01:05:02	2019-03-30 04:48:33
R1-1903879	On 2-step RACH procedures	ZTE,	not treated	2019-03-25 01:05:03	2019-03-30 04:48:33
R1-1903880	Analysis on the collision probability of msgA	ZTE,	not treated	2019-03-25 01:05:04	2019-03-30 04:48:33
R1-1903881	Preliminary evaluation results for 2-step RACH	ZTE,	not treated	2019-03-25 01:05:04	2019-03-30 04:48:33
R1-1903882	UE-group wake-up signal in LTE-MTC	Ericsson	not treated	2019-03-25 01:33:09	2019-03-29 21:56:07

R1-1903883	Support for transmission in preconfigured UL resources in LTE-MTC	Ericsson	not treated	2019-03-25 01:33:09	2019-03-29 21:56:07
R1-1903884	Scheduling of multiple DL/UL transport blocks in LTE-MTC	Ericsson	not treated	2019-03-25 01:33:09	2019-03-29 21:56:07
R1-1903885	Coexistence of LTE-MTC with NR	Ericsson	not treated	2019-03-25 01:33:09	2019-03-29 21:56:07
R1-1903886	Quality report in Msg3 and connected mode in LTE-MTC	Ericsson	not treated	2019-03-25 01:33:09	2019-03-29 21:56:07
R1-1903887	MPDCCH performance improvement in LTE-	Ericsson	not treated	2019-03-25 01:33:09	2019-03-29 21:56:07
R1-1903888	CE mode improvements for LTE-MTC non-BL UEs	Ericsson	not treated	2019-03-25 01:33:09	2019-03-29 21:56:07
R1-1903889	Use of LTE control channel region for DL transmission in LTE-MTC	Ericsson	not treated	2019-03-25 01:33:09	2019-03-29 21:56:07
R1-1903890	Use of RSS for measurement improvements in LTE-MTC	Ericsson	not treated	2019-03-25 01:33:09	2019-03-29 21:56:07
R1-1903891	UE-group wake-up signal in NB-IoT	Ericsson	not treated	2019-03-25 01:33:09	2019-03-29 21:56:07
R1-1903892	Support for transmission in preconfigured UL resources in NB-IoT	Ericsson	noted	2019-03-25 01:33:09	2019-03-29 21:56:07
R1-1903893	Scheduling of multiple DL/UL transport blocks in NB-IoT	Ericsson	not treated	2019-03-25 01:33:09	2019-03-29 21:56:07
R1-1903894	Coexistence of NB-IoT with NR	Ericsson	not treated	2019-03-25 01:33:09	2019-03-29 21:56:07
R1-1903895	Quality report in Msg3 and connected mode in NB-IoT	Ericsson	not treated	2019-03-25 01:33:10	2019-03-29 21:56:07
R1-1903896	Presence of NRS on a non-anchor carrier for paging in NB-IoT	Ericsson	not treated	2019-03-25 01:33:10	2019-03-29 21:56:07
R1-1903897	Low PAPR Reference Signals	Indian Institute of Tech (H)	not treated	2019-03-25 05:53:33	2019-03-29 10:22:56
R1-1903898	Updated DL spectral efficiency in the eMBB usage scenario for IMT-2020 self evaluation	ZTE	not treated	2019-03-25 08:17:07	2019-03-29 10:36:37
R1-1903899	Updated UL spectral efficiency in the eMBB usage scenario for IMT-2020 self evaluation	ZTE	not treated	2019-03-25 08:17:07	2019-03-29 10:36:37
R1-1903900	Updated reliability for IMT-2020 self-evaluation	ZTE	not treated	2019-03-25 08:17:07	2019-03-29 10:36:37
R1-1903901	Discussion on DL&UL PRS	ZTE Corporation,Sa	not treated	2019-03-25 09:05:14	2019-04-03 01:39:44
R1-1903902	Non-Periodic Scheduling Request Transmitter for NR Release 16	Idaho National Laboratory	not treated	2019-03-25 13:45:08	2019-04-02 17:36:10
R1-1903903	PDMA transmitter side pattern design and optimization	Beijing University of Posts and	not treated	2019-03-25 14:05:21	2019-03-27 01:19:23
R1-1903904	LTE-M Preconfigured UL Resources Summary RAN1 #96Bis	Sierra Wireless, S.A.	noted	2019-03-25 20:52:33	2019-04-09 23:47:54
R1-1903905	LTE-M Pre-configured UL Resources Design Considerations	Sierra Wireless, S.A.	revised	2019-03-25 20:54:25	2019-03-29 23:00:28
R1-1903906	NB-IOT Pre-configured UL Resources Design Considerations	Sierra Wireless, S.A.	not treated	2019-03-25 20:55:47	2019-03-29 23:00:52
R1-1903907	LTE-M Multiple Transport Block Grant Design Considerations	Sierra Wireless, S.A.	not treated	2019-03-25 20:56:59	2019-03-29 23:00:52
R1-1903908	NB-IOT Multiple Transport Block Grant Design Considerations	Sierra Wireless, S.A.	not treated	2019-03-25 20:58:01	2019-03-29 23:00:52
R1-1903909	UE-group wake-up signal	Huawei,	not treated	2019-03-25 21:21:44	2019-03-30 04:30:22
R1-1903910	Transmission in preconfigured UL resources	Huawei, HiSilicon	not treated	2019-03-25 21:21:44	2019-03-30 04:30:22
R1-1903911	Scheduling multiple DL/UL transport blocks	Huawei, HiSilicon	not treated	2019-03-25 21:21:44	2019-03-30 04:30:22
R1-1903912	Performance enhancements for NB-IoT	Huawei,	not treated	2019-03-25 21:21:44	2019-03-30 04:30:22
R1-1903913	Support of quality report in Msg3 and Connected Mode	Huawei, HiSilicon	not treated	2019-03-25 21:21:45	2019-03-30 04:30:22
R1-1903914	NRS presence on non-anchor carriers for paging	Huawei, HiSilicon	not treated	2019-03-25 21:21:45	2019-03-30 04:30:22
R1-1903915	Coverage enhancement for Non-BL UE	Huawei, HiSilicon	not treated	2019-03-25 21:21:45	2019-03-30 04:31:20
R1-1903916	DL transmission on LTE control channel region	Huawei, HiSilicon	not treated	2019-03-25 21:21:45	2019-03-30 04:31:20
R1-1903917	Scheduling of multiple transport blocks	Huawei, HiSilicon	not treated	2019-03-25 21:21:45	2019-03-30 04:31:20
R1-1903918	UL transmission in preconfigured resource	Huawei, HiSilicon	not treated	2019-03-25 21:21:45	2019-03-30 04:31:20

R1-1903919	Channel quality reporting in Msg3	Huawei, HiSilicon	not treated	2019-03-25 21:21:45	2019-03-30 04:31:20
R1-1903920	On MPDCCH performance improvement	Huawei,	not treated	2019-03-25 21:21:45	2019-03-30 04:31:20
R1-1903921	Support of sub-groups for MWUS	Huawei,	not treated	2019-03-25 21:21:45	2019-03-30 04:31:20
R1-1903922	On eMTC co-existence with NR	Huawei,	not treated	2019-03-25 21:21:45	2019-03-30 04:31:20
R1-1903923	Further discussion on channel structure for 2-step	Huawei,	noted	2019-03-25 23:12:26	2019-03-29 20:18:15
R1-1903924	Further discussion on 2-step RACH procedure	Huawei,	not treated	2019-03-25 23:12:28	2019-03-29 20:18:15
R1-1903925	Initial access signal and channels in NR	Huawei,	revised	2019-03-25 23:12:28	2019-03-30 04:06:54
R1-1903926	DL channels and signals in NR unlicensed band	Huawei,	not treated	2019-03-25 23:12:29	2019-03-30 04:06:54
R1-1903927	UL channels and signals in NR unlicensed band	Huawei,	not treated	2019-03-25 23:12:29	2019-03-30 04:06:54
R1-1903928	Coexistence and channel access for NR unlicensed band operations	Huawei, HiSilicon	not treated	2019-03-25 23:12:29	2019-03-30 04:06:54
R1-1903929	Initial access in NR unlicensed	Huawei,	not treated	2019-03-25 23:12:29	2019-03-30 04:06:54
R1-1903930	HARQ enhancement in NR unlicensed	Huawei,	revised	2019-03-25 23:12:29	2019-03-30 04:06:54
R1-1903931	Transmission with configured grant in NR	Huawei,	not treated	2019-03-25 23:12:29	2019-03-30 04:06:54
R1-1903932	NRU wideband BWP operation	Huawei,	not treated	2019-03-25 23:12:29	2019-03-30 04:06:54
R1-1903933	Generic design of spectral-domain modulation sequences for 5G NR-U PRACH waveform	Huawei, HiSilicon	not treated	2019-03-25 23:12:29	2019-03-30 04:06:54
R1-1903934	Performance evaluation of initial signals	Huawei,	not treated	2019-03-25 23:12:29	2019-03-30 04:06:54
R1-1903935	Further evaluation of coexistence in 6GHz	Huawei,	not treated	2019-03-25 23:12:29	2019-03-30 04:06:54
R1-1903936	SSB-based discovery and measurement for IAB	Huawei, HiSilicon	noted	2019-03-25 23:12:29	2019-03-30 02:17:12
R1-1903937	RACH design for IAB	Huawei, HiSilicon	not treated	2019-03-25 23:12:29	2019-03-30 02:17:12
R1-1903938	Resource multiplexing between backhaul and access in IAB	Huawei, HiSilicon	not treated	2019-03-25 23:12:29	2019-03-30 02:17:12
R1-1903939	DL transmission timing alignment for IAB	Huawei, HiSilicon	not treated	2019-03-25 23:12:29	2019-03-30 02:17:12
R1-1903940	Beam management reference signals for IAB MT	Huawei,	not treated	2019-03-25 23:12:29	2019-03-30 02:17:12
R1-1903941	On backhaul link radio link failure handling for IAB	Huawei,	not treated	2019-03-25 23:12:29	2019-03-30 02:17:12
R1-1903942	Consideration on slot format configuration for IAB	Huawei,	not treated	2019-03-25 23:12:29	2019-03-30 02:17:12
R1-1903943	Sidelink physical layer structure for NR V2X	Huawei,	not treated	2019-03-25 23:12:29	2019-04-02 20:47:38
R1-1903944	Sidelink physical layer procedures for NR V2X	Huawei,	not treated	2019-03-25 23:12:29	2019-04-02 20:47:38
R1-1903945	Sidelink reference signal design for NR V2X	Huawei,	not treated	2019-03-25 23:12:29	2019-04-02 20:47:38
R1-1903946	Sidelink synchronization mechanisms for NR V2X	Huawei,	not treated	2019-03-25 23:12:29	2019-04-02 20:47:38
R1-1903947	Sidelink resource allocation mode 2 for NR V2X	Huawei,	not treated	2019-03-25 23:12:29	2019-04-02 20:47:38
R1-1903948	System level evaluations on sidelink for NR V2X	Huawei,	not treated	2019-03-25 23:12:29	2019-04-02 20:47:38
R1-1903949	Link level evaluations on sidelink for NR V2X	Huawei,	not treated	2019-03-25 23:12:29	2019-04-02 20:47:38
R1-1903950	Sidelink resource allocation mode 1	Huawei,	noted	2019-03-25 23:12:29	2019-04-02 20:47:38
R1-1903951	NR Uu control for LTE sidelink	Huawei, HiSilicon	not treated	2019-03-25 23:12:29	2019-04-02 20:47:38
R1-1903952	QoS management for NR sidelink	Huawei,	noted	2019-03-25 23:12:29	2019-04-02 20:47:38
R1-1903953	In-device coexistence between LTE and NR sidelinks	Huawei, HiSilicon	not treated	2019-03-25 23:12:30	2019-04-02 20:47:38
R1-1903954	PDCCH enhancements for URLLC	Huawei,	noted	2019-03-25 23:12:30	2019-04-02 20:21:50
R1-1903955	UCI enhancements for URLLC	Huawei,	not treated	2019-03-25 23:12:30	2019-04-02 20:21:50
R1-1903956	PUSCH enhancements for URLLC	Huawei,	not treated	2019-03-25 23:12:30	2019-04-02 20:21:50
R1-1903957	Enhancements to scheduling/HARQ	Huawei,	not treated	2019-03-25 23:12:30	2019-04-02 20:21:50
R1-1903958	UL inter-UE transmission prioritization and multiplexing	Huawei, HiSilicon	not treated	2019-03-25 23:12:30	2019-04-02 20:21:50
R1-1903959	Enhanced UL configured grant transmission	Huawei, HiSilicon	not treated	2019-03-25 23:12:30	2019-04-02 20:21:50
R1-1903960	Draft response to LS on Combinations of Uu QoS characteristics values for V2X services	Huawei, HiSilicon	revised	2019-03-25 23:12:30	2019-04-02 20:21:50
R1-1903961	Discussion on evaluation for Combinations of Uu QoS characteristics values for V2X services	Huawei, HiSilicon	not treated	2019-03-25 23:12:30	2019-04-02 20:21:50
R1-1903962	Evaluation results on Combinations of Uu QoS characteristics values for V2X services	Huawei, HiSilicon	not treated	2019-03-25 23:12:30	2019-04-02 20:21:50
R1-1903963	Considerations and evaluation results for IMT-2020 for eMBB spectral efficiency in NR	Huawei, HiSilicon	not treated	2019-03-25 23:12:30	2019-03-29 19:58:39
R1-1903964	Consideration on self evaluation of IMT-2020 for area traffic capacity in NR	Huawei, HiSilicon	not treated	2019-03-25 23:12:30	2019-03-29 19:58:39
R1-1903965	Consideration on LTE evaluation features and parameters for IMT-2020 self evaluation on eMBB	Huawei, HiSilicon	not treated	2019-03-25 23:12:30	2019-03-29 19:58:39

R1-1903966	Considerations and evaluation results for IMT-2020 for Indoor hotspot-eMBB spectral efficiency in	Huawei, HiSilicon	not treated	2019-03-25 23:12:30	2019-03-29 19:58:39
R1-1903967	Consideration on self evaluation of IMT-2020 for area traffic capacity in LTE	Huawei, HiSilicon	not treated	2019-03-25 23:12:30	2019-03-29 19:58:39
R1-1903968	Considerations and evaluation results for IMT-2020 for mMTC connection density	Huawei, HiSilicon	not treated	2019-03-25 23:12:30	2019-03-29 19:58:39
R1-1903969	Discussion on CSI enhancement	Huawei,	not treated	2019-03-25 23:12:30	2019-03-29 20:32:30
R1-1903970	Enhancements on multi-TRP/panel transmission	Huawei, HiSilicon	revised	2019-03-25 23:12:30	2019-03-29 20:32:30
R1-1903971	Enhancements on multi-beam operation	Huawei,	not treated	2019-03-25 23:12:30	2019-03-29 20:32:30
R1-1903972	Enhancements on UL MIMO with multiple PAs to allow full power transmission	Huawei, HiSilicon	noted	2019-03-25 23:12:30	2019-03-29 20:32:30
R1-1903973	Discussion on DMRS sequence design for low	Huawei,	not treated	2019-03-25 23:12:30	2019-03-30 03:53:53
R1-1903974	UL/DL BM for latency/overhead reduction	Huawei,	not treated	2019-03-25 23:12:30	2019-03-29 20:32:30
R1-1903975	Panel-based UL beam selection	Huawei,	not treated	2019-03-25 23:12:30	2019-03-29 20:32:30
R1-1903976	Beam measurement and reporting using L1-SINR	Huawei,	not treated	2019-03-25 23:12:30	2019-03-29 20:32:30
R1-1903977	Beam failure recovery for SCell	Huawei,	not treated	2019-03-25 23:12:30	2019-03-29 20:32:30
R1-1903978	Evaluation results of multi-beam operation	Huawei,	not treated	2019-03-25 23:12:30	2019-03-29 20:32:30
R1-1903979	Evaluation results of DFT-based compression	Huawei,	not treated	2019-03-25 23:12:30	2019-03-29 20:32:30
R1-1903980	Phase Randomization and Correction for CSI quantization in frequency domain	Huawei, HiSilicon	not treated	2019-03-25 23:12:31	2019-03-29 20:32:30
R1-1903981	Single PDCCH based multi-TRP/panel	Huawei,	not treated	2019-03-25 23:12:31	2019-03-29 20:32:30
R1-1903982	CSI measurement enhancement for multi-TRP/panel transmission	Huawei, HiSilicon	not treated	2019-03-25 23:12:31	2019-03-29 20:32:30
R1-1903983	Reliability/robustness enhancement with multi-	Huawei,	not treated	2019-03-25 23:12:31	2019-03-29 20:32:30
R1-1903984	Evaluation results of full power transmission for UL MIMO with multiple PAs	Huawei, HiSilicon	not treated	2019-03-25 23:12:31	2019-03-29 20:32:30
R1-1903985	Discussion on CW to layer mapping in single-DCI based multi-TRP transmission	Huawei, HiSilicon	not treated	2019-03-25 23:12:31	2019-03-29 20:32:30
R1-1903986	Evaluation methodology for multi-beam	Huawei,	not treated	2019-03-25 23:12:31	2019-03-29 20:32:30
R1-1903987	Procedure of cross-slot scheduling for UE power saving	Huawei, HiSilicon	not treated	2019-03-25 23:12:31	2019-04-02 22:25:42
R1-1903988	PDCCH-based power saving signal/channel	Huawei, HiSilicon	not treated	2019-03-25 23:12:31	2019-04-02 22:25:42
R1-1903989	Consideration on channel model for industrial factory environment	Huawei, HiSilicon	not treated	2019-03-25 23:12:31	2019-03-29 19:58:39
R1-1903990	Physical layer aspects for NR mobility enhancements	Huawei, HiSilicon	noted	2019-03-25 23:12:31	2019-03-29 19:58:39
R1-1903991	Remaining issues on cross-carrier scheduling with different numerologies	Huawei, HiSilicon	not treated	2019-03-25 23:12:31	2019-03-30 05:28:05
R1-1903992	Low latency of SCell activation	Huawei, HiSilicon	not treated	2019-03-25 23:12:31	2019-03-30 05:28:05
R1-1903993	UL power control for NR-NR dual connectivity	Huawei, HiSilicon	not treated	2019-03-25 23:12:31	2019-03-30 05:28:05
R1-1903994	Enhancements for single UL operation for EN-DC	Huawei, HiSilicon	noted	2019-03-25 23:12:31	2019-03-30 05:28:05
R1-1903995	Corrections for TR38.811 Chapter 6 Non-Terrestrial Networks channel models	Huawei, HiSilicon, Nokia, Nokia Shanghai Bell, Thales, Fraunhofer HHI, Fraunhofer IIS,	revised	2019-03-25 23:12:31	2019-03-29 20:57:49
R1-1903996	Overview of NTN	Huawei,	not treated	2019-03-25 23:12:31	2019-03-30 05:05:12
R1-1903997	Discussion on performance assessment for NTN	Huawei,	not treated	2019-03-25 23:12:31	2019-03-30 05:05:12
R1-1903998	Discussion on link budget for NTN	Huawei,	not treated	2019-03-25 23:12:32	2019-03-30 05:05:12
R1-1903999	Discussion on data transmission related	Huawei,	not treated	2019-03-25 23:12:32	2019-03-30 05:05:12
R1-1904000	Discussion on timing advance and RACH	Huawei,	noted	2019-03-25 23:12:32	2019-03-30 05:05:12
R1-1904001	Evaluation of DL synchronization and central frequency tracking for NTN	Huawei, HiSilicon	not treated	2019-03-25 23:12:32	2019-03-30 05:05:12
R1-1904002	Discussion on cell measurement for mobility management in NTN	Huawei, HiSilicon	not treated	2019-03-25 23:12:32	2019-03-30 05:05:12
R1-1904003	Discussion on HARQ for NTN	Huawei, HiSilicon	not treated	2019-03-25 23:12:32	2019-03-30 05:05:12

R1-1904004	DL and UL Reference Signals for NR Positioning	Huawei, HiSilicon	not treated	2019-03-25 23:12:32	2019-04-02 19:26:02
R1-1904005	NR positioning measurements	Huawei, HiSilicon	not treated	2019-03-25 23:12:32	2019-04-02 19:26:02
R1-1904006	Physical layer procedure for NR positioning	Huawei, HiSilicon	not treated	2019-03-25 23:12:32	2019-04-02 19:26:02
R1-1904007	Discussion on new numerologies for PMCH to support rooftop reception	Huawei, HiSilicon	noted	2019-03-26 01:20:09	2019-04-01 16:40:48
R1-1904008	On simulation assumptions for CAS evaluation	Huawei, HiSilicon	noted	2019-03-26 01:20:10	2019-04-01 16:40:48
R1-1904009	On the new numerology for PMCH to support mobility	Huawei, HiSilicon	noted	2019-03-26 01:20:10	2019-04-01 16:40:48
R1-1904010	Introduction of additional SRS symbols in normal	Huawei,	not treated	2019-03-26 01:20:10	2019-03-29 18:51:06
R1-1904011	Discussion on power control for additional SRS	Huawei,	not treated	2019-03-26 01:20:10	2019-03-29 18:51:06
R1-1904012	CSI Enhancement for MU-MIMO Support	ZTE	not treated	2019-03-26 02:13:01	2019-03-30 05:53:56
R1-1904013	Enhancements on Multi-TRP and Multi-panel Transmission	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 05:53:56
R1-1904014	Enhancements on Multi-beam Operation	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 05:53:56
R1-1904015	Full TX Power UL transmission	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 05:53:56
R1-1904016	Remaining issues on low PAPR RS	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 05:53:56
R1-1904017	Evaluation results on alternatives for higher rank Type II compression CSI	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 05:53:56
R1-1904018	On single PDCCH design for multi-TRP and multi-	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 05:59:36
R1-1904019	On multi-PDCCH design for multi-TRP	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 05:59:36
R1-1904020	Details and evaluation results on multi-TRP for	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 05:59:36
R1-1904021	Considerations on beam management for multi-	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 06:01:16
R1-1904022	Details of latency and overhead reduction for beam management	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 06:10:18
R1-1904023	Details and evaluation on UL simultaneous transmission for single TRP	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 06:10:18
R1-1904024	Details and evaluation on UL simultaneous transmission for multi-TRP	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 06:10:18
R1-1904025	Details and LLS evaluation on L1-SINR measurement and reporting	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 06:10:18
R1-1904026	Details and SLS evaluation on L1-SINR measurement and reporting	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 06:10:18
R1-1904027	Discussion on UL power control for multi-panel	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 06:22:30
R1-1904028	Enhancements on UL beam management	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 06:22:30
R1-1904029	Leftover issues on aperiodic CSI-RS	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 06:22:30
R1-1904030	PUSCH spatial relation and power control after	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 06:22:30
R1-1904031	Configuration of SRS and PUSCH in the same	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 06:22:30
R1-1904032	Enhancements on simultaneous Tx/Rx of	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 06:22:30
R1-1904033	Discussion on additional SRS symbols	ZTE	not treated	2019-03-26 02:13:02	2019-03-30 06:22:30
R1-1904034	Measurements for NR positioning	ZTE Corporation,Sa	not treated	2019-03-26 06:30:30	2019-04-03 01:39:44
R1-1904035	Enhancements on overhead reduction and rank extension for type II CSI feedback	OPPO	not treated	2019-03-26 07:06:49	2019-03-29 11:04:29
R1-1904036	Enhancements on multi-TRP and multi-panel transmission	OPPO	not treated	2019-03-26 07:06:49	2019-03-29 11:04:29
R1-1904037	Discussion on RS enhancement for PAPR	OPPO	not treated	2019-03-26 07:06:49	2019-03-29 11:04:29
R1-1904038	Discussion on Multi-beam Operation	OPPO	not treated	2019-03-26 07:06:49	2019-03-29 11:04:29
R1-1904039	Discussion on the Full TX power UL transmission	OPPO	not treated	2019-03-26 07:06:49	2019-03-29 11:04:29
R1-1904040	UL power control for NR-NR DC	OPPO	not treated	2019-03-26 07:06:49	2019-03-29 11:04:29
R1-1904041	On Cross-carrier Scheduling with Different Numerologies	OPPO	not treated	2019-03-26 07:06:49	2019-03-29 11:04:29
R1-1904042	PDCCH enhancements for URLLC	OPPO	not treated	2019-03-26 07:30:36	2019-04-02 03:22:27
R1-1904043	UCI enhancements for URLLC	OPPO	noted	2019-03-26 07:30:36	2019-04-02 03:22:27
R1-1904044	PUSCH enhancements for URLLC	OPPO	not treated	2019-03-26 07:30:36	2019-04-02 03:22:27
R1-1904045	Ehancements to scheduling and HARQ	OPPO	not treated	2019-03-26 07:30:36	2019-04-02 03:22:27
R1-1904046	Inter UE Tx prioritization and multiplexing	OPPO	not treated	2019-03-26 07:30:36	2019-04-02 03:22:27
R1-1904047	Configured grant enhancements for URLLC	OPPO	not treated	2019-03-26 07:30:36	2019-04-02 03:22:27

R1-1904048	Consideration on UL intra UE Tx prioritization and multiplexing	OPPO	not treated	2019-03-26 07:30:36	2019-04-02 03:22:27
R1-1904049	On eMBB and URLLC data differentiation	OPPO	not treated	2019-03-26 07:30:36	2019-04-02 03:22:27
R1-1904050	LS on UE feature list for NR	RAN4, NTT DOCOMO	noted	2019-03-26 10:30:54	2019-03-26 10:55:34
R1-1904051	LS on NR V2X spectrum allocation	5GAA WG4,	noted	2019-03-26 10:30:54	2019-03-26 10:55:34
R1-1904052	Reply LS to IEEE 802.11 working group in relation to certain channel combinations for LAA in 5GHz	RAN, Charter Communications	noted	2019-03-26 10:30:54	2019-03-26 10:55:34
R1-1904053	LS in reply to LS on Draft new Recommendation E.RQST – "KPI targets for mobile networks"	SA, Samsung	noted	2019-03-26 10:30:54	2019-03-26 10:55:34
R1-1904054	UE-group wake-up signal for eMTC	vivo	not treated	2019-03-26 15:09:00	2019-03-30 05:33:00
R1-1904055	UE-group wake-up signal for NB-IoT	vivo	not treated	2019-03-26 15:09:00	2019-03-30 05:33:00
R1-1904056	Remaining issues on additional SRS symbols	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904057	Draft 38.214 alignment CR	vivo	endorsed	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904058	Draft TS 38.213 CR on corrections for SFI	vivo	endorsed	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904059	Discussion on channel structure for 2-step RACH	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904060	Discussion on 2-step RACH procedure	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904061	Evaluation for 2-step RACH	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904062	Discussion on initial access signals and channles	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904063	Discussion on physical DL channel design in unlicensed spectrum	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904064	Discussion on physical UL channel design in unlicensed spectrum	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904065	Discussion on the channel access procedures	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904066	Discussion on initial access procedure for NR-U	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904067	Discussion on HARQ operation for NR-U	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904068	Discussion on the enhancements to configured	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904069	Discussion on wideband operation in NR-U	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904070	Discussion on extension of SSBs for inter-IAB-node discovery and measurements	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904071	Discussion on resource multiplexing among backhaul and access links	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904072	Physical layer structure for NR sidelink	vivo	not treated	2019-03-26 15:09:00	2019-04-02 15:07:31
R1-1904073	Discussion on mode 1 resource allocation	vivo	not treated	2019-03-26 15:09:00	2019-04-02 15:07:31
R1-1904074	Discussion on mode 2 resource allocation	vivo	noted	2019-03-26 15:09:00	2019-04-02 15:07:31
R1-1904075	Sidelink synchronization mechanism	vivo	not treated	2019-03-26 15:09:00	2019-04-02 15:07:31
R1-1904076	In-device coexistence between NR and LTE sidelinks	vivo	not treated	2019-03-26 15:09:00	2019-04-02 11:11:48
R1-1904077	Physical layer procedure for NR sidelink	vivo	not treated	2019-03-26 15:09:00	2019-04-03 05:03:52
R1-1904078	QoS management for sidelink	vivo	not treated	2019-03-26 15:09:00	2019-04-02 11:11:48
R1-1904079	Support of NR Uu controlling LTE sidelink	vivo	noted	2019-03-26 15:09:00	2019-04-03 05:03:52
R1-1904080	Discussion on RLM in NR sidelink	vivo	not treated	2019-03-26 15:09:00	2019-04-03 05:03:52
R1-1904081	PDCCH enhancements for URLLC	vivo	not treated	2019-03-26 15:09:00	2019-04-03 05:03:52
R1-1904082	UCI enhancements for URLLC	vivo	not treated	2019-03-26 15:09:00	2019-04-03 05:03:52
R1-1904083	PUSCH enhancements for URLLC	vivo	not treated	2019-03-26 15:09:00	2019-04-03 05:03:52
R1-1904084	Enhancement for Scheduling/HARQ	vivo	not treated	2019-03-26 15:09:00	2019-04-03 05:03:52
R1-1904085	UL inter UE Tx prioritization for URLLC	vivo	noted	2019-03-26 15:09:00	2019-04-03 05:03:52
R1-1904086	Enhanced UL configured grant transmissions for URLLC	vivo	not treated	2019-03-26 15:09:00	2019-04-03 05:03:52
R1-1904087	Intra UE multiplexing for UL configured grant	vivo	not treated	2019-03-26 15:09:00	2019-04-03 05:03:52
R1-1904088	DL SPS enhancements	vivo	not treated	2019-03-26 15:09:00	2019-04-03 05:03:52
R1-1904089	Power control enhancements for UL intra-UE	vivo	not treated	2019-03-26 15:09:00	2019-04-03 05:03:52
R1-1904090	Link budget evaluation for IMT-2020 self-evaluation	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904091	Evaluation on spectral efficiency in Dense Urban-eMBB for IMT-2020 self-evaluation	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904092	Evaluation on spectral efficiency in Indoor Hotspot-eMBB for IMT-2020 self-evaluation	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23

R1-1904093	Evaluation on mobility in Dense Urban-eMBB for IMT-2020 self-evaluation	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904094	Evaluation on mobility in Indoor Hotspot-eMBB for IMT-2020 self-evaluation	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904095	Further discussion on type II CSI compression and feedback for high rank extension	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904096	Further discussion on multi TRP transmission	vivo	revised	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904097	Further discussion on multi beam operation	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904098	Further discussion on full Tx power in UL	vivo	not treated	2019-03-26 15:09:00	2019-03-30 04:20:11
R1-1904099	Further discussion on low PAPR RS	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904100	Performance evaluation on type II CSI compression for high rank extension	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904101	Discussion on Multi-TRP based URLLC	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904102	Performance evaluation and observations for Multi-TRP transmission	vivo	not treated	2019-03-26 15:09:00	2019-03-30 03:23:23
R1-1904103	PDCCH-based power saving signal/channel design	vivo	not treated	2019-03-26 15:09:00	2019-04-02 15:07:31
R1-1904104	Procedure of cross-slot scheduling power saving techniques	vivo	not treated	2019-03-26 15:09:01	2019-04-02 15:07:31
R1-1904105	Discussion on UE adaptation in antenna domain	vivo	not treated	2019-03-26 15:09:01	2019-04-02 15:07:31
R1-1904106	Consideration on RAN1 recommendation for power saving study	vivo	not treated	2019-03-26 15:09:01	2019-04-03 05:03:52
R1-1904107	Discussion on DL and UL RS for NR positioning	vivo	not treated	2019-03-26 15:09:01	2019-04-02 11:11:48
R1-1904108	Discussion on UE and gNB measurements for NR positioning	vivo	not treated	2019-03-26 15:09:01	2019-04-02 11:11:48
R1-1904109	Discussion on physical-layer procedures for UE/gNB measurements	vivo	not treated	2019-03-26 15:09:01	2019-04-02 11:11:48
R1-1904110	Discussion on UE based positioning in idle/inactive	vivo	not treated	2019-03-26 15:09:01	2019-04-02 11:11:48
R1-1904111	Uplink power control for Supporting NR-NR DC	vivo	not treated	2019-03-26 15:09:01	2019-03-30 03:23:23
R1-1904112	Support of cross-carrier scheduling with mix numerologies	vivo	not treated	2019-03-26 15:09:01	2019-03-30 03:23:23
R1-1904113	Efficient Scell activation	vivo	not treated	2019-03-26 15:09:01	2019-03-30 03:23:23
R1-1904114	Channel characterization in industrial environment with high clutter density	CEA-LETI	revised	2019-03-26 16:59:26	2019-03-29 12:36:04
R1-1904115	Channel characterization in industrial environment with high clutter density	CEA-LETI	withdrawn	2019-03-26 16:59:27	
R1-1904116	Discussion on scenario for IIOT channel model	ZTE, Sanechips, BJTU, Tongji	not treated	2019-03-26 17:22:23	2019-03-29 20:27:55
R1-1904117	Correlation distance on LOS probability model in IIOT scenario	ZTE, Sanechips, BJTU, Tongji	not treated	2019-03-26 17:25:43	2019-03-29 20:27:55
R1-1904118	Absolute time of arrival model in IIOT scenario	ZTE, Sanechips, BJTU, Tongji	not treated	2019-03-26 17:27:56	2019-03-29 20:27:55

R1-1904119	On interpretation of FG 3-5b	Ericsson	not treated	2019-03-26 23:51:22	2019-03-29 21:35:34
R1-1904120	UE assistant information	vivo	not treated	2019-03-27 02:54:44	2019-04-03 05:03:52
R1-1904121	UE Power Consumption Reduction in RRM	vivo	not treated	2019-03-27 02:54:44	2019-04-03 05:03:52
R1-1904122	PDCCH Enhancements for NR URLLC	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904123	UCI Enhancements for NR URLLC	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904124	PUSCH Enhancements for NR URLLC	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904125	Scheduling/HARQ Enhancements for NR URLLC	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904126	Inter-UE Prioritization and Multiplexing of UL Transmissions	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904127	Enhancements to UL Configured Grant Transmission for NR URLLC	Ericsson	noted	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904128	Intra-UE Prioritization and Multiplexing of UL Data Transmissions	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904129	Intra-UE Prioritization and Multiplexing of DL	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904130	On Intra-UE Prioritization Enablers	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904131	Support for Multiple Active DL SPS Configurations	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904132	Support for Shorter DL SPS Periodicities	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904133	Support for TSC Message Periodicities with Non-integer Multiple of CG/SPS Periodicities	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904134	On Uu QoS Characteristics Values for V2X	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904135	PDCCH Monitoring Capability Enhancements for	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904136	Multiplexing of UCI with UL CG PUSCH	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904137	HARQ-ACK Handling for URLLC	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904138	Uplink Power Control Enhancement for NR	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904139	Configuration of Flexible TDD DL/UL Patterns	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904140	Initial Transmission Opportunity in UL Configured	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904141	Designs to Improve Reliability and Latency of UL Configured Grant	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904142	URLLC Use Cases and Deployments for Beyond	Ericsson	not treated	2019-03-27 06:09:16	2019-04-03 07:18:58
R1-1904143	On PDCCH enhancements for NR URLLC	ZTE	not treated	2019-03-27 06:21:34	2019-04-03 02:25:24
R1-1904144	UL control enhancements for NR URLLC	ZTE	noted	2019-03-27 06:21:36	2019-04-03 02:25:24
R1-1904145	PUSCH enhancements for NR URLLC	ZTE	not treated	2019-03-27 06:21:36	2019-04-03 02:25:24
R1-1904146	On scheduling/HARQ enhancements for NR	ZTE	not treated	2019-03-27 06:21:36	2019-04-03 02:25:24
R1-1904147	UL inter-UE multiplexing between eMBB and URLLC	ZTE	not treated	2019-03-27 06:21:36	2019-04-03 02:25:24
R1-1904148	Enhancements for UL grant-free transmissions	ZTE	not treated	2019-03-27 06:21:36	2019-04-03 02:25:24
R1-1904149	Discussion on prioritization and/or multiplexing between dynamic grant and configured grant	ZTE	not treated	2019-03-27 06:21:36	2019-04-03 02:25:24
R1-1904150	Enhancements for DL SPS configurations	ZTE	not treated	2019-03-27 06:21:36	2019-04-03 02:25:24
R1-1904151	Discussion on TSC message periodicity	ZTE	not treated	2019-03-27 06:21:36	2019-04-03 02:25:24
R1-1904152	Conflicts among multiple configured grant PUSCH	ZTE	not treated	2019-03-27 06:21:36	2019-04-03 02:25:24
R1-1904153	Discussion on uplink power control for NR DC	ZTE	not treated	2019-03-27 06:21:36	2019-03-30 04:39:06
R1-1904154	Discussion on cross-carrier scheduling with different numerologies	ZTE	not treated	2019-03-27 06:21:36	2019-03-30 04:39:06
R1-1904155	Discussion on single Tx switched uplink solution for EN-DC	ZTE	not treated	2019-03-27 06:21:36	2019-03-30 04:39:06
R1-1904156	Discussion on low latency Scell activation	ZTE	not treated	2019-03-27 06:21:36	2019-03-30 04:39:06
R1-1904157	Discussion on NR Mobility Enhancements in Physical Layer	ZTE	noted	2019-03-27 06:21:36	2019-03-30 04:39:06
R1-1904158	DL and UL Reference Signals for NR Positioning	BUPT, ZTE, CAICT	noted	2019-03-27 07:15:47	2019-04-03 01:50:58
R1-1904159	Coexistence of NB-IoT with NR	MediaTek Inc.	not treated	2019-03-27 07:20:55	2019-03-28 08:53:17
R1-1904160	UE-Group WUS in NB-IoT	MediaTek Inc.	not treated	2019-03-27 07:20:55	2019-03-28 08:53:17
R1-1904161	Early Transmission in Preconfigured UL resources in NB-IoT	MediaTek Inc.	not treated	2019-03-27 07:20:55	2019-03-28 08:53:17
R1-1904162	Quality report in Msg3 on non-anchor carrier in NB-IoT	MediaTek Inc.	not treated	2019-03-27 07:20:55	2019-03-28 08:53:17
R1-1904163	NRS presence on non-anchor carrier in NB-IoT	MediaTek Inc.	not treated	2019-03-27 07:20:55	2019-03-28 08:53:17
R1-1904164	Scheduling of multiple DL/UL transport blocks in NB-IoT	MediaTek Inc.	not treated	2019-03-27 07:20:55	2019-03-28 08:53:17
R1-1904165	Wideband operation in NR unlicensed	PANASONIC	not treated	2019-03-27 08:00:15	2019-03-29 10:24:37

R1-1904166	DL signals and channels for NR-U	PANASONIC	not treated	2019-03-27 08:04:42	2019-03-29 10:25:32
R1-1904167	UE-group wake-up signal for MTC	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 08:42:32	2019-03-29 17:25:19
R1-1904168	Transmission in preconfigured UL resources	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 08:43:42	2019-03-29 17:24:18
R1-1904169	Scheduling of multiple DL/UL transport blocks	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 08:44:44	2019-03-29 17:23:50
R1-1904170	Coexistence of eMTC with NR	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 08:45:41	2019-03-29 17:23:50
R1-1904171	Support of Quality report in Msg3	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 08:46:43	2019-03-29 17:24:18
R1-1904172	MPDCCH performance improvement	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 08:48:11	2019-03-29 17:23:50
R1-1904173	CE mode A and B improvements for non-BL UEs	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 08:49:07	2019-03-29 17:25:19
R1-1904174	Consideration on the usage of LTE control channel region	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 08:50:07	2019-03-29 17:25:06
R1-1904175	Use of RSS for measurement improvements	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 08:51:04	2019-03-29 17:24:18
R1-1904176	UE group wake-up signal for NB-IoT	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 08:52:19	2019-03-29 17:25:19
R1-1904177	Preconfigured Grant for Uplink transmission	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 08:53:18	2019-03-29 17:24:18
R1-1904178	Scheduling of multiple DL/UL transport blocks	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 08:54:15	2019-03-29 17:23:50
R1-1904179	Coexistence of NB-IoT with NR	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 08:55:16	2019-03-29 17:23:50
R1-1904180	Support of Quality report in Msg3 on non-anchor carrier	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 08:56:19	2019-03-29 17:21:56
R1-1904181	Presence of NRS on a non-anchor carrier for paging	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 08:57:40	2019-03-29 17:22:09
R1-1904182	LS on UL sharing applicability in different	RAN2, Nokia	treated	2019-03-27 09:46:38	2019-03-27 09:49:44
R1-1904183	HARQ scheduling and feedback for NR-U	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 10:40:32	2019-03-29 20:47:07
R1-1904184	NR-U uplink signals and channels	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 10:41:07	2019-03-29 20:47:07
R1-1904185	On support of UL transmission with configured grants in NR-U	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 10:42:01	2019-03-29 20:47:06
R1-1904186	Channel access and co-existence for NR-U operation	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 10:42:45	2019-03-29 20:47:07
R1-1904187	Feature Lead's Summary on Channel Access Procedures	Nokia, Nokia Shanghai Bell	noted	2019-03-27 10:47:27	2019-04-09 23:47:54
R1-1904188	On PUSCH enhancements for NR URLLC	Panasonic	not treated	2019-03-27 12:07:43	2019-04-02 11:32:43
R1-1904189	On inter UE Tx prioritization/multiplexing enhancements for NR URLLC	Panasonic	noted	2019-03-27 12:09:58	2019-04-02 11:32:43
R1-1904190	On multi-TRP enhancements for NR MIMO in Rel. 16	Panasonic	not treated	2019-03-27 12:11:03	2019-03-29 12:37:42
R1-1904191	On enhancements for multi-beam operations for NR MIMO in Rel. 16	Panasonic	not treated	2019-03-27 12:11:58	2019-03-29 12:38:27
R1-1904192	Initial Access Signals and Channels for NR-U	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 12:13:05	2019-03-29 17:59:56
R1-1904193	On DL signals and channels	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 12:13:06	2019-03-29 17:59:56
R1-1904194	On wideband operation in NR-U	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 12:13:06	2019-03-29 17:59:56
R1-1904195	Discussion on additional SRS symbols	LG Electronics	not treated	2019-03-27 13:23:53	2019-03-30 05:02:11
R1-1904196	Channel Structure for 2-Step RACH	LG Electronics	not treated	2019-03-27 13:23:53	2019-03-30 05:02:11
R1-1904197	Discussion on 2-Step RACH Procedure	LG Electronics	not treated	2019-03-27 13:23:53	2019-03-30 05:02:11
R1-1904198	Discussion on preamble selection for 2-Step	LG Electronics	not treated	2019-03-27 13:23:53	2019-03-30 05:02:11
R1-1904199	Discussion on RAR detection in 2step RACH	LG Electronics	not treated	2019-03-27 13:23:53	2019-03-30 05:02:11
R1-1904200	Discussion on DL and UL Reference Signals for NR Positioning	LG Electronics	not treated	2019-03-27 13:23:53	2019-04-03 06:37:56
R1-1904201	Discussion on UE and gNB measurements for NR Positioning	LG Electronics	not treated	2019-03-27 13:23:53	2019-04-03 06:37:56

R1-1904202	Discussion on necessity and details for physical-layer procedures to support UE/gNB measurements	LG Electronics	not treated	2019-03-27 13:23:53	2019-04-03 06:37:56
R1-1904203	Discussion on SSBs for inter-IAB-node discovery and measurements	LG Electronics	not treated	2019-03-27 13:23:53	2019-03-30 05:02:11
R1-1904204	Discussion on RACH occasions and periodicities for backhaul RACH resources	LG Electronics	not treated	2019-03-27 13:23:53	2019-03-30 05:02:11
R1-1904205	Discussions on resource multiplexing among backhaul and access links	LG Electronics	noted	2019-03-27 13:23:53	2019-03-30 05:02:11
R1-1904206	Discussion on scenario with same cell ID among	LG Electronics	not treated	2019-03-27 13:23:53	2019-03-30 05:02:11
R1-1904207	Discussion on overhead reduction for Type II	LG Electronics	not treated	2019-03-27 13:23:53	2019-03-30 05:02:11
R1-1904208	Enhancements on multi-TRP/panel transmission	LG Electronics	not treated	2019-03-27 13:23:53	2019-03-30 05:02:11
R1-1904209	Discussion on multi-beam based operations and enhancements	LG Electronics	not treated	2019-03-27 13:23:53	2019-03-30 05:02:11
R1-1904210	Discussion on full Tx power uplink transmission	LG Electronics	not treated	2019-03-27 13:23:54	2019-03-30 05:02:11
R1-1904211	Discussion on low PAPR RS	LG Electronics	not treated	2019-03-27 13:23:54	2019-03-30 05:02:11
R1-1904212	Evaluation and analysis on simultaneous multi-	LG Electronics	not treated	2019-03-27 13:23:54	2019-03-30 05:02:11
R1-1904213	Evaluation results on number of SD beams for Rel-16 Type II CSI	LG Electronics	not treated	2019-03-27 13:23:54	2019-03-30 05:02:11
R1-1904214	Discussion on DMRS port indication for NCJT	LG Electronics	not treated	2019-03-27 13:23:54	2019-03-30 05:02:11
R1-1904215	Comparison between multi-TRP schemes for improving reliability	LG Electronics	not treated	2019-03-27 13:23:54	2019-03-30 05:02:11
R1-1904216	Evaluation results on beam selection based on L1-SINR with dedicated IMR	LG Electronics	not treated	2019-03-27 13:23:54	2019-03-30 05:02:11
R1-1904217	Enhancements on UE multi-beam operation	Fraunhofer IIS/Fraunhofer	not treated	2019-03-27 13:46:27	2019-03-29 20:21:55
R1-1904218	Enhancements on Type-II CSI reporting	Fraunhofer IIS/Fraunhofer	not treated	2019-03-27 13:48:02	2019-03-29 21:29:20
R1-1904219	Enhancements on Type-II CSI: Doppler Approach	Fraunhofer IIS/Fraunhofer	not treated	2019-03-27 13:49:21	2019-03-29 20:21:55
R1-1904220	LS on full data rate support for UP IP	SA3,	noted	2019-03-27 13:50:18	2019-03-27 13:53:46
R1-1904221	Group Wake-Up Signal for NB-IoT	Fraunhofer IIS, Fraunhofer	not treated	2019-03-27 15:06:07	2019-03-29 13:00:51
R1-1904222	On Enhancements to Initial Access Procedures for NR-U	Nokia, Nokia Shanghai Bell	not treated	2019-03-27 15:06:28	2019-03-29 17:06:49
R1-1904223	UCI enhancements for NR URLLC	NEC	not treated	2019-03-27 15:13:29	2019-04-02 15:41:18
R1-1904224	Enhanced inter-UE Tx prioritisation and multiplexing	NEC	not treated	2019-03-27 15:13:31	2019-04-02 15:41:18
R1-1904225	Timing Advance Adjustments for Satellite Communications (NTN)	Fraunhofer IIS, Fraunhofer	not treated	2019-03-27 15:17:13	2019-03-29 15:53:18
R1-1904226	V2X antenna model and pathloss correction	Fraunhofer HHI, Fraunhofer IIS,	revised	2019-03-27 15:44:06	2019-03-29 21:00:15
R1-1904227	Pathloss model in IIOT scenario	ZTE, Sanechips, BJTU, Tongji	not treated	2019-03-27 16:54:30	2019-03-29 20:27:56
R1-1904228	UE group wake up signal for MTC	Sony	not treated	2019-03-27 17:06:48	2019-03-29 22:38:56
R1-1904229	UE group wake up signal for NB-IoT	Sony	not treated	2019-03-27 17:06:48	2019-03-29 22:38:56
R1-1904230	Considerations in using PUR	Sony	not treated	2019-03-27 17:06:48	2019-03-29 22:38:56
R1-1904231	On scheduling multiple DL / UL transport blocks	Sony	not treated	2019-03-27 17:06:48	2019-03-29 22:38:56
R1-1904232	Remaining issues in supporting quality report in Msg3	Sony	not treated	2019-03-27 17:06:49	2019-03-29 22:38:56
R1-1904233	On use of LTE control channel region for DL transmissions	Sony	not treated	2019-03-27 17:06:49	2019-03-29 22:38:56
R1-1904234	Overhead reduction in neighbour cell RSS signalling	Sony	not treated	2019-03-27 17:06:49	2019-03-29 22:38:56
R1-1904235	Multiple HARQ-ACK PUSCH transmissions in a	Sony	not treated	2019-03-27 17:06:49	2019-04-02 21:45:47
R1-1904236	Considerations in PUSCH enhancements for	Sony	not treated	2019-03-27 17:06:49	2019-04-02 21:45:47
R1-1904237	Intra-UE multiplexing/prioritisation under Out-of-Order Scheduling	Sony	not treated	2019-03-27 17:06:49	2019-04-02 21:45:47
R1-1904238	Inter-UE Uplink Tx Prioritisation & Multiplexing	Sony	not treated	2019-03-27 17:06:49	2019-04-02 21:45:47

R1-1904239	Consideration on enhanced UL grant-free transmissions	Sony	not treated	2019-03-27 17:06:49	2019-04-02 21:45:47
R1-1904240	Considerations on Multi-TRP/Panel Transmission	Sony	not treated	2019-03-27 17:06:49	2019-03-29 22:38:56
R1-1904241	Enhancements on multi-beam operation	Sony	not treated	2019-03-27 17:06:49	2019-03-29 22:38:56
R1-1904242	Consideration on delay-tolerant HARQ for NTN	Sony	not treated	2019-03-27 17:06:49	2019-03-29 22:38:56
R1-1904243	Discussion on physical layer control procedures	Sony	not treated	2019-03-27 17:06:49	2019-03-29 22:38:56
R1-1904244	Discussion on uplink timing advance and RACH	Sony	not treated	2019-03-27 17:06:49	2019-03-29 22:38:56
R1-1904245	Considerations on Doppler compensation for Non-GEO-based NTN	Sony	not treated	2019-03-27 17:06:49	2019-03-29 22:38:56
R1-1904246	Considerations on Channel Structure for Two-Step	Sony	not treated	2019-03-27 17:06:49	2019-03-29 22:38:56
R1-1904247	Discussion on Procedure for 2-step RACH	Sony	not treated	2019-03-27 17:06:49	2019-03-29 22:38:56
R1-1904248	Initial access signals and channels for NR-U	Sony	not treated	2019-03-27 17:06:50	2019-03-29 22:38:56
R1-1904249	DL Signals and Channels for NR-U	Sony	not treated	2019-03-27 17:06:50	2019-03-29 22:38:56
R1-1904250	Channel access for NR unlicensed operations	Sony	not treated	2019-03-27 17:06:50	2019-03-29 22:38:56
R1-1904251	Enhancements to initial access procedures for NR-	Sony	not treated	2019-03-27 17:06:50	2019-03-29 22:38:56
R1-1904252	HARQ enhancement for NR-U	Sony	not treated	2019-03-27 17:06:50	2019-03-29 22:38:56
R1-1904253	Enhancements to Configured Grants in NR-U	Sony	not treated	2019-03-27 17:06:50	2019-03-29 22:38:56
R1-1904254	Wideband operation for NR Unlicensed	Sony	not treated	2019-03-27 17:06:51	2019-03-29 22:38:56
R1-1904255	Discussion on physical layer structure for NR	Sony	not treated	2019-03-27 17:06:51	2019-04-02 21:45:47
R1-1904256	Discussion on NR V2X mode 2 resource allocation	Sony	not treated	2019-03-27 17:06:51	2019-04-02 21:45:47
R1-1904257	Discussion on HARQ feedback for NR V2X	Sony	not treated	2019-03-27 17:06:51	2019-04-02 21:45:47
R1-1904258	Considerations on DL and UL reference signals for NR positioning	Sony	not treated	2019-03-27 17:06:51	2019-04-02 21:45:47
R1-1904259	Considerations on UE and gNB measurements for NR Positioning	Sony	not treated	2019-03-27 17:06:51	2019-04-02 21:45:47
R1-1904260	On physical-layer procedures to support UE and gNB measurements	Sony	not treated	2019-03-27 17:06:51	2019-04-02 21:45:47
R1-1904261	[Draft] Reply LS on NR mobility enhancements	Intel	revised	2019-03-27 18:44:39	2019-03-30 07:38:13
R1-1904262	[Draft] Reply LS on clarification about CSI-RS	Intel	revised	2019-03-27 18:44:40	2019-03-30 07:20:39
R1-1904263	Introduction of SS-RSARP	Intel	not treated	2019-03-27 18:44:40	2019-03-30 07:20:39
R1-1904264	UE-group wake-up signal for eMTC	Intel	revised	2019-03-27 18:44:40	2019-03-30 07:20:39
R1-1904265	UL transmission in preconfigured resources for eMTC	Intel Corporation	not treated	2019-03-27 18:44:40	2019-03-30 07:20:39
R1-1904266	Scheduling of multiple DL/UL TBs for eMTC	Intel Corporation	not treated	2019-03-27 18:44:40	2019-03-30 07:20:39
R1-1904267	Quality report in Msg3 and connected mode for eMTC	Intel Corporation	not treated	2019-03-27 18:44:40	2019-03-30 07:20:39
R1-1904268	MPDCCH performance improvement	Intel	not treated	2019-03-27 18:44:40	2019-03-30 07:20:39
R1-1904269	CE mode A and B improvements for non-BL UEs	Intel Corporation	not treated	2019-03-27 18:44:40	2019-03-30 07:20:39
R1-1904270	UE-group wake-up signal for NB-IoT	Intel	revised	2019-03-27 18:44:41	2019-03-30 07:20:39
R1-1904271	UL transmission in preconfigured resources for NB-IoT	Intel Corporation	not treated	2019-03-27 18:44:41	2019-03-30 07:20:39
R1-1904272	Scheduling of multiple DL/UL TBs for NB-IoT	Intel Corporation	not treated	2019-03-27 18:44:41	2019-03-30 07:20:39
R1-1904273	Quality report in Msg3 for NB-IoT non-anchor access	Intel Corporation	not treated	2019-03-27 18:44:41	2019-03-30 07:20:39
R1-1904274	Additional SRS symbols	Intel	not treated	2019-03-27 18:44:41	2019-03-30 07:20:39
R1-1904275	Discussion on Rel-15 CSI-RS resource configuration for RRM	Intel Corporation	not treated	2019-03-27 18:44:41	2019-03-30 07:20:39
R1-1904276	Correction on simultaneous SRS transmission	Intel	not	2019-03-27 18:44:41	2019-03-30 07:20:39
R1-1904277	[Draft] CR on maximum modulation order configured for serving cell	Intel Corporation	revised	2019-03-27 18:44:41	2019-03-30 07:20:39
R1-1904278	[Draft] CR on inclusion of TC-RNTI for monitored RNTI for UL-SCH	Intel Corporation	revised	2019-03-27 18:44:41	2019-03-30 07:20:39
R1-1904279	Correction to simultaneous reception of DL Channels	Intel Corporation	revised	2019-03-27 18:44:41	2019-03-30 07:20:39
R1-1904280	Channel structure for 2-step RACH	Intel	not treated	2019-03-27 18:44:41	2019-03-30 07:20:39
R1-1904281	Procedure for 2-step RACH	Intel	not treated	2019-03-27 18:44:41	2019-03-30 07:20:39
R1-1904282	Initial access signals/channels for NR-unlicensed	Intel	not treated	2019-03-27 18:44:41	2019-03-30 07:20:40
R1-1904283	DL signals and channels for NR-unlicensed	Intel	not treated	2019-03-27 18:44:41	2019-03-30 07:20:40
R1-1904284	UL signals and channels for NR-unlicensed	Intel	not treated	2019-03-27 18:44:41	2019-03-30 07:20:40
R1-1904285	Channel access mechanism for NR-unlicensed	Intel	not treated	2019-03-27 18:44:41	2019-03-30 07:20:40

R1-1904286	Enhancements to initial access and mobility for NR-unlicensed	Intel Corporation	not treated	2019-03-27 18:44:41	2019-03-30 07:20:40
R1-1904287	Enhancements to HARQ for NR-unlicensed	Intel	not treated	2019-03-27 18:44:41	2019-03-30 07:20:40
R1-1904288	Enhancements to configured grants for NR-	Intel	not treated	2019-03-27 18:44:41	2019-03-30 07:20:40
R1-1904289	Wideband operation for NR-unlicensed	Intel	not treated	2019-03-27 18:44:41	2019-03-30 07:20:40
R1-1904290	SSBs for inter-IAB-node discovery and measurements	Intel Corporation	not treated	2019-03-27 18:44:42	2019-03-30 07:20:40
R1-1904291	RACH enhancements for NR IAB	Intel Corporation	not treated	2019-03-27 18:44:42	2019-03-30 07:20:40
R1-1904292	Mechanisms for resource multiplexing among backhaul and access links	Intel Corporation	not treated	2019-03-27 18:44:42	2019-03-30 07:20:40
R1-1904293	Mechanism to support the "case-1" OTA timing alignment	Intel Corporation	not treated	2019-03-27 18:44:42	2019-03-30 07:20:40
R1-1904294	Sidelink physical structure design for NR V2X	Intel	noted	2019-03-27 18:44:42	2019-04-03 06:20:58
R1-1904295	Network controlled sidelink resource allocation design for NR V2X communication	Intel Corporation	not treated	2019-03-27 18:44:42	2019-04-03 06:20:58
R1-1904296	Sidelink resource allocation design for NR V2X communication	Intel Corporation	not treated	2019-03-27 18:44:42	2019-04-03 06:20:58
R1-1904297	Sidelink synchronization design for NR V2X	Intel	not treated	2019-03-27 18:44:42	2019-04-03 06:20:58
R1-1904298	In-device coexistence for LTE V2X and NR V2X sidelink communication	Intel Corporation	not treated	2019-03-27 18:44:42	2019-04-03 06:20:58
R1-1904299	Design of physical layer procedures for NR V2X sidelink communication	Intel Corporation	noted	2019-03-27 18:44:42	2019-04-03 06:20:58
R1-1904300	QoS aware congestion control for NR V2X sidelink communication	Intel Corporation	not treated	2019-03-27 18:44:42	2019-04-03 06:20:58
R1-1904301	Design of NR Uu controlling LTE sidelink	Intel Corporation	not treated	2019-03-27 18:44:42	2019-04-03 06:20:58
R1-1904302	Considerations on performance evaluation for	Intel	not treated	2019-03-27 18:44:42	2019-03-30 07:20:40
R1-1904303	Discussion on control procedures for NTN	Intel	not treated	2019-03-27 18:44:43	2019-03-30 07:20:40
R1-1904304	Discussion on TA and RACH procedure for NTN	Intel	not treated	2019-03-27 18:44:43	2019-03-30 07:20:40
R1-1904305	PDCCH enhancements for URLLC	Intel	not treated	2019-03-27 18:44:43	2019-04-03 06:20:58
R1-1904306	UCI enhancements for URLLC	Intel	not treated	2019-03-27 18:44:43	2019-04-03 06:44:48
R1-1904307	PUSCH enhancements for URLLC	Intel	not treated	2019-03-27 18:44:43	2019-04-03 06:20:58
R1-1904308	Scheduling/HARQ enhancements for URLLC	Intel	noted	2019-03-27 18:44:43	2019-04-03 06:44:48
R1-1904309	Enhanced inter-UE multiplexing	Intel Corporation	not treated	2019-03-27 18:44:43	2019-04-03 06:20:58
R1-1904310	Enhanced UL CG PUSCH	Intel Corporation	not treated	2019-03-27 18:44:43	2019-04-03 06:20:58
R1-1904311	Considerations for IMT-2020 Self-Evaluations	Intel Corporation	not treated	2019-03-27 18:44:43	2019-03-30 07:20:39
R1-1904312	On CSI Enhancements for MU-MIMO	Intel	not treated	2019-03-27 18:44:43	2019-03-30 07:20:39
R1-1904313	On multi-TRP/multi-panel transmission	Intel Corporation	not treated	2019-03-27 18:44:43	2019-03-30 07:20:39
R1-1904314	On beam management enhancement	Intel	not treated	2019-03-27 18:44:43	2019-03-30 07:20:39
R1-1904315	On full power uplink transmission	Intel	not treated	2019-03-27 18:44:43	2019-03-30 07:20:39
R1-1904316	Low PAPR reference signals	Intel	not treated	2019-03-27 18:44:43	2019-03-30 07:20:39
R1-1904317	On PDCCH-based power saving signal	Intel Corporation	noted	2019-03-27 18:44:43	2019-04-03 06:20:58
R1-1904318	Support cross-slot scheduling for power saving	Intel Corporation	not treated	2019-03-27 18:44:44	2019-04-03 06:20:58
R1-1904319	Work plan for NR positioning work item	Intel	noted	2019-03-27 18:44:44	2019-04-03 06:20:58
R1-1904320	Downlink and uplink reference signal design for NR positioning	Intel Corporation	not treated	2019-03-27 18:44:44	2019-04-03 06:20:58
R1-1904321	UE and gNB measurements for NR positioning	Intel Corporation	not treated	2019-03-27 18:44:44	2019-04-03 06:20:58
R1-1904322	On radio-layer procedures for NR positioning	Intel Corporation	not treated	2019-03-27 18:44:44	2019-04-03 06:20:58
R1-1904323	Association of NR positioning techniques, reference signals and measurements	Intel Corporation	not treated	2019-03-27 18:44:44	2019-04-03 06:20:58
R1-1904324	Physical layer aspects of enhanced mobility	Intel Corporation	noted	2019-03-27 18:44:44	2019-03-30 09:46:23
R1-1904325	On uplink power control for NR-NR Dual Connectivity	Intel Corporation	not treated	2019-03-27 18:44:44	2019-03-30 07:20:39

R1-1904326	Cross-carrier Scheduling with Different Numerologies	Intel Corporation	not treated	2019-03-27 18:44:44	2019-03-30 07:20:39
R1-1904327	Remaining issues for single uplink operation enhancement for EN-DC	Intel Corporation	not treated	2019-03-27 18:44:44	2019-03-30 07:20:39
R1-1904328	Design of NR V2X Physical Layer Structures	Fraunhofer HHI,	not treated	2019-03-27 18:45:50	2019-04-02 14:03:00
R1-1904329	Resource Allocation for Mode 1 NR V2X	Fraunhofer HHI,	not treated	2019-03-27 18:47:39	2019-04-02 14:03:00
R1-1904330	Resource Allocation for Mode 2 NR V2X	Fraunhofer HHI,	not treated	2019-03-27 18:49:02	2019-04-02 14:03:00
R1-1904331	Physical Layer Procedures for NR V2X	Fraunhofer HHI,	not treated	2019-03-27 18:50:15	2019-04-02 14:03:00
R1-1904332	Initial access signals and channels	Ericsson	not treated	2019-03-27 19:13:36	2019-03-30 06:00:55
R1-1904333	DL signals and channels for NR-U	Ericsson	not treated	2019-03-27 19:13:36	2019-03-30 06:00:55
R1-1904334	UL signals and channels for NR-U	Ericsson	not treated	2019-03-27 19:13:36	2019-03-30 06:00:55
R1-1904335	Channel access mechanisms for NR-U	Ericsson	not treated	2019-03-27 19:13:36	2019-03-30 06:00:55
R1-1904336	Enhancements to initial access procedure	Ericsson	not treated	2019-03-27 19:13:36	2019-03-30 06:00:55
R1-1904337	HARQ and scheduling enhancements for NR-U	Ericsson	not treated	2019-03-27 19:13:36	2019-03-30 06:00:55
R1-1904338	Configured grant enhancement	Ericsson	not treated	2019-03-27 19:13:36	2019-03-30 06:00:55
R1-1904339	Wideband operation for NR-U	Ericsson	not treated	2019-03-27 19:13:36	2019-03-30 06:04:13
R1-1904340	Evaluation results for enhanced PRACH design	Ericsson	not treated	2019-03-27 19:13:37	2019-03-30 06:00:55
R1-1904341	Enhanced PUCCH design details	Ericsson	not treated	2019-03-27 19:13:38	2019-03-30 06:00:55
R1-1904342	Discussion on Wake-up signal for MTC	ZTE	not treated	2019-03-27 21:34:47	2019-03-30 03:15:24
R1-1904343	Support for transmission in preconfigured UL resources for MTC	ZTE	not treated	2019-03-27 21:34:48	2019-03-30 03:15:24
R1-1904344	Consideration on scheduling enhancement for MTC	ZTE	not treated	2019-03-27 21:34:48	2019-03-30 03:15:24
R1-1904345	Coexistence of LTE-MTC with NR	ZTE	not treated	2019-03-27 21:34:48	2019-03-30 03:15:24
R1-1904346	Support of quality report in Msg3 and Connected Mode for MTC	ZTE	not treated	2019-03-27 21:34:48	2019-03-30 03:15:24
R1-1904347	Discussion on MPDCCH performance	ZTE	not treated	2019-03-27 21:34:48	2019-03-30 03:15:24
R1-1904348	On CE mode A and B improvements for non-BL UE	ZTE	not treated	2019-03-27 21:34:48	2019-03-30 03:15:24
R1-1904349	Use of LTE control channel region for DL transmission	ZTE	not treated	2019-03-27 21:34:48	2019-03-30 03:15:24
R1-1904350	Use of RSS for measurement improvement	ZTE	not treated	2019-03-27 21:34:48	2019-03-30 03:15:24
R1-1904351	Discussion on Wake-up signal for NB-IoT	ZTE	not treated	2019-03-27 21:34:48	2019-03-30 03:15:24
R1-1904352	Support for transmission in preconfigured UL resources for NB-IoT	ZTE	not treated	2019-03-27 21:34:48	2019-03-30 03:15:24
R1-1904353	Consideration on scheduling enhancement for NB-IoT	ZTE	not treated	2019-03-27 21:34:48	2019-03-30 03:15:24
R1-1904354	Coexistence of NB-IoT with NR	ZTE	not treated	2019-03-27 21:34:48	2019-03-30 03:15:24
R1-1904355	Support of quality report in Msg3 and Connected Mode for NB-IoT	ZTE	not treated	2019-03-27 21:34:48	2019-03-30 03:15:24
R1-1904356	Presense of NRS on non-anchor PRB	ZTE	not treated	2019-03-27 21:34:48	2019-03-30 03:15:24
R1-1904357	Discussion on channel structure for 2-step RACH	Panasonic	not treated	2019-03-28 02:17:41	2019-03-29 08:30:18
R1-1904358	Discussion on 2-step RACH procedure	Panasonic	not treated	2019-03-28 02:18:27	2019-03-29 08:30:19
R1-1904359	TP for alignment CR to 38.213	NEC Corporation	noted	2019-03-28 02:18:52	2019-03-29 05:59:45
R1-1904360	Physical-layer procedure for NR PRS	ZTE Corporation,Sanechips	not treated	2019-03-28 02:24:29	2019-04-03 01:39:44
R1-1904361	Duplication due to Internet error	ZTE Corporation,Sa	withdrawn	2019-03-28 02:24:31	
R1-1904362	Duplication due to Internet error	ZTE Corporation,Sa	withdrawn	2019-03-28 02:24:34	
R1-1904363	Duplication due to Internet error	ZTE Corporation,Sa	withdrawn	2019-03-28 02:24:36	
R1-1904364	Internet error	ZTE Corporation,Sa	withdrawn	2019-03-28 02:24:39	
R1-1904365	Internet error	ZTE Corporation,Sa	withdrawn	2019-03-28 02:24:54	

R1-1904366	Internet error	ZTE Corporation,Sa	withdrawn	2019-03-28 02:25:12	
R1-1904367	internet error	ZTE	withdrawn	2019-03-28 02:25:14	
R1-1904368	Reserved due to internet connection error	ZTE Corporation,Sa	withdrawn	2019-03-28 02:25:16	
R1-1904369	Physical-layer procedure for NR PRS	ZTE Corporation,Sa	withdrawn	2019-03-28 02:25:18	
R1-1904370	Physical-layer procedure for NR PRS	ZTE Corporation,Sa	withdrawn	2019-03-28 02:25:20	
R1-1904371	[Draft] CR on Timing for secondary cell activation / deactivation	Intel Corporation	not pursued	2019-03-28 03:45:04	2019-03-30 07:20:39
R1-1904372	Draft CR on PDSCH RE mapping for semi-OL	Samsung	not	2019-03-28 04:22:02	2019-03-29 06:29:33
R1-1904373	Discussion on PDSCH RE mapping for semi-OL	Samsung	noted	2019-03-28 04:22:02	2019-03-29 06:29:33
R1-1904374	UE-group wake-up signal for eMTC	Samsung	not treated	2019-03-28 04:22:02	2019-03-29 10:17:44
R1-1904375	Discussion on transmission in preconfigured UL reosurces for MTC	Samsung	not treated	2019-03-28 04:22:02	2019-03-29 10:17:44
R1-1904376	Scheduling of multiple transport blocks for MTC	Samsung	not treated	2019-03-28 04:22:02	2019-03-29 10:17:44
R1-1904377	Discussion on quality report in Msg3 and connected mode	Samsung	not treated	2019-03-28 04:22:02	2019-03-29 10:17:44
R1-1904378	Discussion on MPDCCH performance	Samsung	not treated	2019-03-28 04:22:02	2019-03-29 10:17:44
R1-1904379	CE Mode A and Mode B improvements for non-BL UEs	Samsung	not treated	2019-03-28 04:22:02	2019-03-29 10:17:44
R1-1904380	Discussion on use of control channel region	Samsung	not treated	2019-03-28 04:22:02	2019-03-29 10:17:44
R1-1904381	UE-group wake-up signal for NB-IoT	Samsung	not treated	2019-03-28 04:22:02	2019-03-29 10:17:44
R1-1904382	Discussion on transmission in preconfigured UL reosurces for NB-IoT	Samsung	not treated	2019-03-28 04:22:02	2019-03-29 10:17:44
R1-1904383	Scheduling of multiple transport blocks for NB-IoT	Samsung	not treated	2019-03-28 04:22:02	2019-03-29 10:17:44
R1-1904384	Discussion on Msg3 report for non-anchor access	Samsung	not treated	2019-03-28 04:22:02	2019-03-29 10:17:44
R1-1904385	NRS presence on non-anchor carrier	Samsung	not treated	2019-03-28 04:22:02	2019-03-29 10:17:44
R1-1904386	Discussion on additional SRS symbols	Samsung	not treated	2019-03-28 04:22:03	2019-03-29 06:29:33
R1-1904387	Discussions on aperiodic CSI request	Samsung	not treated	2019-03-28 04:22:03	2019-03-29 06:29:33
R1-1904388	PDCCH Monitoring for NR-DC	Samsung	noted	2019-03-28 04:22:03	2019-03-29 21:40:58
R1-1904389	Draft CR on PDCCH Monitoring for NR-DC	Samsung, Nokia, Nokia	not pursued	2019-03-28 04:22:03	2019-03-29 21:40:58
R1-1904390	Draft CR on missing case for DCI format 1_1 with CS-RNTI	Samsung	revised	2019-03-28 04:22:03	2019-03-29 07:12:56
R1-1904391	Draft CR on misalignment issue for PDSCH/PUSCH dropping rule	Samsung	noted	2019-03-28 04:22:03	2019-03-29 07:12:56
R1-1904392	Channel Structure for Two-Step RACH	Samsung	noted	2019-03-28 04:22:03	2019-03-29 10:17:44
R1-1904393	Procedure for Two-step RACH	Samsung	not treated	2019-03-28 04:22:03	2019-03-29 10:17:44
R1-1904394	DL and UL Reference Signals Design for NR Positioning	Samsung	not treated	2019-03-28 04:22:03	2019-04-02 19:40:10
R1-1904395	Discussion on UE and gNB measurements for NR Positioning	Samsung	not treated	2019-03-28 04:22:03	2019-04-02 19:40:10
R1-1904396	Discussion on necessity and details for physical-layer procedures to support UE/gNB measurements	Samsung	not treated	2019-03-28 04:22:03	2019-04-02 19:40:10
R1-1904397	Physical Layer Aspects for Mobility Enhancements	Samsung	noted	2019-03-28 04:22:03	2019-03-29 10:09:08
R1-1904398	Power Control for NR-DC	Samsung	not treated	2019-03-28 04:22:03	2019-03-29 21:40:58
R1-1904399	Cross-carrier Scheduling with Different Numerologies	Samsung	not treated	2019-03-28 04:22:03	2019-03-29 05:11:05
R1-1904400	Enhancements to Single Tx Switched UL for EN-DC	Samsung	not treated	2019-03-28 04:22:03	2019-03-29 07:44:11
R1-1904401	On SCell Activation/Deactivation	Samsung	not treated	2019-03-28 04:22:04	2019-03-29 21:40:58
R1-1904402	Partitioning of UE Capabilities for NR-DC	Samsung	not treated	2019-03-28 04:22:04	2019-03-29 21:40:58
R1-1904403	Initial access signals and channels for NR-U	Samsung	not treated	2019-03-28 04:22:04	2019-03-29 20:01:42

R1-1904404	DL signals and channels for NR-U	Samsung	not treated	2019-03-28 04:22:04	2019-03-29 20:01:42
R1-1904405	UL signals and channels for NR-U	Samsung	not treated	2019-03-28 04:22:04	2019-03-29 10:17:44
R1-1904406	Channel access procedures for NR-U	Samsung	not treated	2019-03-28 04:22:04	2019-03-29 22:35:19
R1-1904407	Enhancements to initial access procedure for NR-	Samsung	not treated	2019-03-28 04:22:04	2019-03-29 22:35:19
R1-1904408	HARQ enhancement for NR-U	Samsung	not treated	2019-03-28 04:22:04	2019-03-29 10:17:44
R1-1904409	Configured grant enhancement for NR-U	Samsung	not treated	2019-03-28 04:22:04	2019-03-29 09:12:39
R1-1904410	Wide-band operation for NR-U	Samsung	not treated	2019-03-28 04:22:04	2019-03-29 20:01:42
R1-1904411	Evaluation results for directional LBT	Samsung	not treated	2019-03-28 04:22:04	2019-03-29 22:35:19
R1-1904412	Discussion on HARQ-ACK codebook design	Samsung	not treated	2019-03-28 04:22:04	2019-03-29 10:17:44
R1-1904413	Discussion on time/freq-domain enhancements for RACH resources	Samsung	not treated	2019-03-28 04:22:04	2019-03-29 10:17:44
R1-1904414	Discussion on multple msg.1 transmisson	Samsung	not treated	2019-03-28 04:22:04	2019-03-29 10:17:44
R1-1904415	Support of SSBs for IAB Node Discovery and Measurement	Samsung	noted	2019-03-28 04:22:05	2019-03-29 16:16:09
R1-1904416	Support of RACH Occasions and Periodicity for IAB RACH	Samsung	not treated	2019-03-28 04:22:05	2019-03-29 10:17:44
R1-1904417	Resource Multiplexing between Backhaul and Access Links	Samsung	not treated	2019-03-28 04:22:05	2019-03-29 07:44:11
R1-1904418	Support of Case 1 OTA Timing Alignment	Samsung	not treated	2019-03-28 04:22:05	2019-03-29 07:44:11
R1-1904419	On Physical Layer Structures for NR V2X	Samsung	not treated	2019-03-28 04:22:05	2019-04-03 05:17:27
R1-1904420	On Resource Allocation for NR V2X Mode 1	Samsung	not treated	2019-03-28 04:22:05	2019-04-03 02:16:30
R1-1904421	On Resource Allocation for NR V2X Mode 2	Samsung	not treated	2019-03-28 04:22:05	2019-04-03 04:09:26
R1-1904422	System Level Evaluations for NR V2X Sidelink Resource Allocation	Samsung	not treated	2019-03-28 04:22:05	2019-04-03 04:09:26
R1-1904423	Considerations on Channel Structures in Sensing Slots for NR V2X Sidelink	Samsung	not treated	2019-03-28 04:22:05	2019-04-03 04:09:26
R1-1904424	On Synchronization Mechanisms for NR V2X	Samsung	noted	2019-03-28 04:22:05	2019-04-03 04:56:35
R1-1904425	On Coexistence between LTE and NR PC5	Samsung	not treated	2019-03-28 04:22:06	2019-04-03 05:17:27
R1-1904426	On Physical Layer Procedures for NR V2X	Samsung	not treated	2019-03-28 04:22:06	2019-04-03 02:16:30
R1-1904427	On QoS Management for NR V2X	Samsung	not treated	2019-03-28 04:22:06	2019-04-03 05:17:27
R1-1904428	On NR Uu controlling LTE sidelink	Samsung	not treated	2019-03-28 04:22:06	2019-04-03 02:16:30
R1-1904429	On AGC settling issues with evaluation results for	Samsung	not treated	2019-03-28 04:22:06	2019-04-03 05:17:27
R1-1904430	On Sidelink RLM	Samsung	not treated	2019-03-28 04:22:06	2019-04-03 05:14:59
R1-1904431	On DMRS Design for NR V2X	Samsung	not treated	2019-03-28 04:22:07	2019-04-03 05:14:59
R1-1904432	On Sidelink Feedback Channel Format	Samsung	not treated	2019-03-28 04:22:07	2019-04-03 05:14:59
R1-1904433	On Sidelink HARQ Procedure	Samsung	not treated	2019-03-28 04:22:07	2019-04-03 02:16:30
R1-1904434	On Sidelink CSI Procedure	Samsung	not treated	2019-03-28 04:22:07	2019-04-03 02:16:30
R1-1904435	On Sidelink Power Control	Samsung	not treated	2019-03-28 04:22:07	2019-04-03 02:16:30
R1-1904436	Considerations on NTN system-level and link-level simulations	Samsung	not treated	2019-03-28 04:22:07	2019-03-29 20:40:58
R1-1904437	Physical layer control procedures in NTN	Samsung	not treated	2019-03-28 04:22:07	2019-03-29 20:40:58
R1-1904438	Uplink timing advance/RACH procedure and Synchronization for NTN	Samsung	not treated	2019-03-28 04:22:07	2019-03-29 20:40:58
R1-1904439	HARQ procedure in NTN	Samsung	noted	2019-03-28 04:22:07	2019-03-29 20:40:58
R1-1904440	DL Control for URLLC	Samsung	not treated	2019-03-28 04:22:07	2019-03-29 21:40:58
R1-1904441	UL Control for URLLC	Samsung	not treated	2019-03-28 04:22:07	2019-03-29 21:40:58
R1-1904442	PUSCH enhancement for eURLLC	Samsung	noted	2019-03-28 04:22:07	2019-04-03 04:01:50
R1-1904443	On enhancements to scheduling/HARQ for	Samsung	not treated	2019-03-28 04:22:07	2019-04-03 04:02:53
R1-1904444	Uplink inter UE multiplexing/prioritization for enhanced URLLC	Samsung	not treated	2019-03-28 04:22:08	2019-04-03 04:02:53
R1-1904445	Multiple active configured grant for URLLC	Samsung	not treated	2019-03-28 04:22:08	2019-04-03 04:01:50
R1-1904446	On scheduling/HARQ enhancements for IIoT	Samsung	not treated	2019-03-28 04:22:08	2019-04-03 04:02:53
R1-1904447	CSI enhancement for MU-MIMO	Samsung	revised	2019-03-28 04:22:08	2019-03-29 23:33:21
R1-1904448	Feature lead summary for MU-MIMO CSI	Samsung	not treated	2019-03-28 04:22:09	2019-04-08 09:03:39
R1-1904449	Enhancements on multi-TRP/panel transmission	Samsung	revised	2019-03-28 04:22:09	2019-03-29 06:29:33
R1-1904450	Enhancements on multi-beam operation	Samsung	not treated	2019-03-28 04:22:09	2019-03-29 21:53:36
R1-1904451	View on full power UL transmission	Samsung	not treated	2019-03-28 04:22:09	2019-03-29 23:33:21
R1-1904452	View on Low PAPR RS	Samsung	not treated	2019-03-28 04:22:09	2019-03-29 06:29:33
R1-1904453	LLS evaluation on Multi-TRP/panel transmission	Samsung	not treated	2019-03-28 04:22:10	2019-03-29 06:36:39

R1-1904454	SLS evaluation on MU-MIMO CSI: N3 value	Samsung	not treated	2019-03-28 04:22:10	2019-03-29 23:33:21
R1-1904455	SLS evaluation on MU-MIMO CSI: Rank 3-4 parameter setting and subset selection	Samsung	not treated	2019-03-28 04:22:10	2019-03-29 23:33:21
R1-1904456	SLS evaluation on MU-MIMO CSI: support for L=6	Samsung	revised	2019-03-28 04:22:10	2019-03-29 23:33:21
R1-1904457	On UCI design for DFT-based compression	Samsung	not treated	2019-03-28 04:22:10	2019-03-29 23:33:21
R1-1904458	On CBSR for DFT-based compression	Samsung	not treated	2019-03-28 04:22:10	2019-03-29 23:33:21
R1-1904459	Evaluation on SINR metrics for beam selection	Samsung	not treated	2019-03-28 04:22:10	2019-03-29 23:33:21
R1-1904460	Discussion on IMR for L1-SINR measurement	Samsung	not treated	2019-03-28 04:22:10	2019-03-29 21:53:36
R1-1904461	On PDCCH-based power saving signal/channel	Samsung	not treated	2019-03-28 04:22:11	2019-04-03 05:36:32
R1-1904462	On corss-slot scheduling power saving techniques	Samsung	not treated	2019-03-28 04:22:11	2019-04-03 05:36:32
R1-1904463	On UE assistance information	Samsung	not treated	2019-03-28 04:22:11	2019-04-03 05:36:32
R1-1904464	Evaluation results for power saving schemes	Samsung	not treated	2019-03-28 04:22:11	2019-04-03 05:36:32
R1-1904465	Discussion on evaluation methodology for Dense Urban eMBB scenario	Samsung	not treated	2019-03-28 04:22:11	2019-03-29 08:19:08
R1-1904466	Clarification on SSB based L1-RSRP reporting	MediaTek Inc.	not	2019-03-28 04:59:51	2019-03-30 06:05:43
R1-1904467	Draft CR on the determination of TBS of a PUSCH scheduled by a DCI format 0_0 with CRC	MediaTek Inc.	not pursued	2019-03-28 04:59:51	2019-03-30 06:05:43
R1-1904468	Clarification on PDCCH candidate monitoring	MediaTek Inc.	noted	2019-03-28 04:59:51	2019-03-30 06:05:43
R1-1904469	Draft CR on rate matching for PDSCH scheduled by DCI format 1_0	MediaTek Inc., Nokia, Nokia	revised	2019-03-28 04:59:51	2019-03-30 06:05:43
R1-1904470	Draft CR on collision handling of PUCCH, PUSCH, and SRS	MediaTek Inc.	not pursued	2019-03-28 04:59:51	2019-03-30 06:05:43
R1-1904471	Draft CR on the determination of the minimum number of PRBs for PUCCH transmission	MediaTek Inc.	noted	2019-03-28 04:59:51	2019-03-30 06:05:43
R1-1904472	Remaining Issues in R-15 UE Features	MediaTek Inc.	not treated	2019-03-28 04:59:51	2019-03-30 06:05:43
R1-1904473	Corrections on non-codebook based UL transmission to TS38.214	MediaTek Inc.	revised	2019-03-28 04:59:51	2019-03-30 06:05:43
R1-1904474	CSI Enhancement for MU-MIMO Support	MediaTek Inc.	not treated	2019-03-28 04:59:51	2019-03-30 06:05:43
R1-1904475	Enhancements on Multi-TRP/Panel Transmission	MediaTek Inc.	not treated	2019-03-28 04:59:51	2019-03-30 06:05:43
R1-1904476	Enhancements on Multi-beam Operation	MediaTek Inc.	not treated	2019-03-28 04:59:51	2019-03-30 06:05:43
R1-1904477	Full TX Power UL transmission	MediaTek Inc.	not treated	2019-03-28 04:59:51	2019-03-30 06:05:43
R1-1904478	Low PAPR RS	MediaTek Inc.	not treated	2019-03-28 04:59:51	2019-03-30 06:05:43
R1-1904479	On Initial Access Signals and Channels for NR-U	MediaTek Inc.	not treated	2019-03-28 04:59:51	2019-03-30 06:05:43
R1-1904480	DL Signals and Channels for NR-U operation	MediaTek Inc.	not treated	2019-03-28 04:59:51	2019-03-30 06:05:43
R1-1904481	UL Signals and Channels for NR-U operation	MediaTek Inc.	not treated	2019-03-28 04:59:51	2019-03-30 06:05:43
R1-1904482	On channel access procedure	MediaTek Inc.	not treated	2019-03-28 04:59:52	2019-03-30 06:05:43
R1-1904483	Enhancements to initial access procedure	MediaTek Inc.	not treated	2019-03-28 04:59:52	2019-03-30 06:05:43
R1-1904484	Enhancements to HARQ for NR-U operation	MediaTek Inc.	not treated	2019-03-28 04:59:52	2019-03-30 06:05:43
R1-1904485	Discussion on NR-U configured grant	MediaTek Inc.	not treated	2019-03-28 04:59:52	2019-03-30 06:05:43
R1-1904486	Wideband operation for NR-U	MediaTek Inc.	not treated	2019-03-28 04:59:52	2019-03-30 06:05:43
R1-1904487	Design of PDCCH-based power saving signal/channel for NR	MediaTek Inc.	not treated	2019-03-28 04:59:52	2019-04-03 05:49:53
R1-1904488	Enabling cross-slot scheduling for NR	MediaTek Inc.	noted	2019-03-28 04:59:52	2019-04-03 05:49:53
R1-1904489	Recommendations on UE adaptation	MediaTek Inc.	not treated	2019-03-28 04:59:52	2019-04-03 05:53:55
R1-1904490	Physical Layer Considerations for RACH-less and DC-based Handover	MediaTek Inc.	noted	2019-03-28 04:59:52	2019-03-30 06:05:43
R1-1904491	Efficient and low latency serving cell access switching	MediaTek Inc.	not treated	2019-03-28 04:59:52	2019-03-30 06:05:43
R1-1904492	On sidelink physical layer structure	MediaTek Inc.	not treated	2019-03-28 04:59:52	2019-04-03 05:57:20
R1-1904493	On NR SL mode-1 resource allocation	MediaTek Inc.	not treated	2019-03-28 04:59:52	2019-04-03 05:49:53
R1-1904494	On sidelink resource allocation mechanism	MediaTek Inc.	not treated	2019-03-28 04:59:52	2019-04-03 05:49:53
R1-1904495	Discussion on sidelink based synchronization	MediaTek Inc.	not treated	2019-03-28 04:59:52	2019-04-03 05:49:53
R1-1904496	In-device coexistence of NR V2X and LTE V2X	MediaTek Inc.	noted	2019-03-28 04:59:52	2019-04-03 05:49:53
R1-1904497	Discussion on V2X Physical layer procedure	MediaTek Inc.	not treated	2019-03-28 04:59:52	2019-04-03 05:49:53
R1-1904498	Discussion on NR Uu configuring LTE sidelink	MediaTek Inc.	not treated	2019-03-28 04:59:52	2019-04-03 05:49:53
R1-1904499	Enhancements to UE assistance information	MediaTek Inc.	not treated	2019-03-28 04:59:53	2019-04-03 05:49:53
R1-1904500	Reference signal design for NR positioning	MediaTek Inc.	not treated	2019-03-28 04:59:53	2019-04-03 05:49:53

R1-1904501	On measurement aspect for NR positioning	MediaTek Inc.	not treated	2019-03-28 04:59:53	2019-04-03 05:49:53
R1-1904502	On procedure aspect for NR positioning	MediaTek Inc.	not treated	2019-03-28 04:59:53	2019-04-03 05:49:53
R1-1904503	PDCCH enhancements for NR URLLC	MediaTek Inc.	not treated	2019-03-28 04:59:53	2019-04-03 05:49:53
R1-1904504	Multiple HARQ procedures and intra-UE UCI	MediaTek Inc.	not treated	2019-03-28 04:59:53	2019-04-03 05:49:53
R1-1904505	On repetition schemes for NR PUSCH	MediaTek Inc.	not treated	2019-03-28 04:59:53	2019-04-03 05:49:53
R1-1904506	Enhancements for URLLC scheduling/HARQ	MediaTek Inc.	not treated	2019-03-28 04:59:53	2019-04-03 05:49:53
R1-1904507	On uplink inter-UE transmission prioritization and multiplexing	MediaTek Inc.	not treated	2019-03-28 04:59:53	2019-04-03 05:49:53
R1-1904508	Enhancements for NR configured-grant	MediaTek Inc.	not treated	2019-03-28 04:59:53	2019-04-03 05:49:53
R1-1904509	Signaling of FD-MIMO capabilities	Qualcomm Incorporated	revised	2019-03-28 05:01:37	2019-03-30 03:12:17
R1-1904510	Correction for overlapping MPDCCH search spaces	Qualcomm Incorporated,	revised	2019-03-28 05:01:37	2019-03-30 03:12:17
R1-1904511	Antenna switching for 6 SRS symbol in UpPTS	Qualcomm Incorporated	noted	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904512	Support of scheduling enhancements for SRS carrier switching	Qualcomm Incorporated	noted	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904513	Dropping rule for PUSCH in UpPTS + aperiodic SRS + periodic SRS	Qualcomm Incorporated	revised	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904514	EPRE for WUS	Qualcomm Incorporated	noted	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904515	Handling of invalid PRB for frequency hopping of BL/CE UEs with PUSCH CE Mode A and flexible	Qualcomm Incorporated,	revised	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904516	Corrections related to CSI feedback with 64-QAM	Qualcomm Incorporated	revised	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904517	UE-group wake-up signal	Qualcomm Incorporated	not treated	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904518	Support for transmission in preconfigured UL resources	Qualcomm Incorporated	not treated	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904519	Scheduling of multiple DL/UL transport blocks	Qualcomm Incorporated	not treated	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904520	Coexistence of LTE-MTC with NR	Qualcomm Incorporated	not treated	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904521	Support of Quality report in msg3 and connected mode	Qualcomm Incorporated	not treated	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904522	Usage of CRS for MPDCCH	Qualcomm Incorporated	not treated	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904523	CE Mode A and B improvements for non-BL Ues	Qualcomm Incorporated	not treated	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904524	Use of control region for eMTC UEs	Qualcomm Incorporated	not treated	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904525	Measurements based on RSS	Qualcomm Incorporated	not treated	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904526	UE-group wake-up signal	Qualcomm Incorporated	not treated	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904527	Support for transmission in preconfigured UL resources	Qualcomm Incorporated	not treated	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904528	Scheduling of multiple DL/UL transport blocks	Qualcomm Incorporated	not treated	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904529	Coexistence of NB-IoT with NR	Qualcomm Incorporated	not treated	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904530	Support of quality report in msg3 and connected mode	Qualcomm Incorporated	not treated	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904531	Presence of NRS on a non-anchor carrier for paging	Qualcomm Incorporated	not treated	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904532	Additional SRS symbols	Qualcomm Incorporated	not treated	2019-03-28 05:01:38	2019-03-30 03:12:17
R1-1904533	Work plan for LTE-based 5G terrestrial broadcast	Qualcomm Incorporated	noted	2019-03-28 05:01:38	2019-04-02 23:36:54
R1-1904534	Support of longer numerologies for rooftop reception	Qualcomm Incorporated	noted	2019-03-28 05:01:39	2019-04-02 23:36:54

R1-1904535	Analysis of CAS reception	Qualcomm Incorporated	noted	2019-03-28 05:01:39	2019-04-02 23:36:54
R1-1904536	Numerology with 100us CP	Qualcomm Incorporated	noted	2019-03-28 05:01:39	2019-04-02 23:36:54
R1-1904537	Correction on reference CRC for multi-CSI resource selection	CATT, Sharp	noted	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904538	Correction on PUSCH selection for overlapping of PUCCH and PUSCH	CATT	noted	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904539	Correction on HARQ-ACK codebook determination	CATT	noted	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904540	Correction on CBG based transmission for UL	CATT	endorsed	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904541	Correction on higher layer parameter for CBGTI in DCI format 1_1	CATT	endorsed	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904542	Discussion on channel structure for 2-step RACH	CATT	not treated	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904543	NLOS channel modeling	CATT	not treated	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904544	UL Power control for NR-DC	CATT	not treated	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904545	Discussion on cross-carrier scheduling with different numerologies	CATT	not treated	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904546	Discussion of NR-U Initial access	CATT	not treated	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904547	Discussion of NR-U initial access procedure	CATT	not treated	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904548	Simulation assumption for NTN evaluation	CATT	not treated	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904549	Physical layer procedure enhancement for NTN	CATT	not treated	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904550	PRACH design and UL timing advance	CATT	not treated	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904551	HARQ consideration for NTN	CATT	not treated	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904552	Discussions on calculation of shadow fading margin for link budget in LOS cases	CATT	not treated	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904553	Self-evaluation on LTE Spectrum Efficiency in Indoor Hptspot-eMBB	CATT	not treated	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904554	Self-evaluation on Spectrum Efficiency in Dense Urban-eMBB for LTE and NR	CATT	not treated	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904555	Self-evaluation on LTE Area Traffic Capacity in Indoor Hptspot-eMBB	CATT	not treated	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904556	Self-evaluation on User Experienced Data Rate in Dense Urban-eMBB for LTE and NR	CATT	not treated	2019-03-28 05:08:25	2019-03-30 05:05:04
R1-1904557	Self-evaluation on Mobility for LTE	CATT	not treated	2019-03-28 05:08:26	2019-03-30 05:05:04
R1-1904558	Further Self-Evaluation on Link Budget for NR	CATT	not treated	2019-03-28 05:08:26	2019-03-30 05:05:04
R1-1904559	Further Self-Evaluation on Link Budget for LTE	CATT	not treated	2019-03-28 05:08:26	2019-03-30 05:05:04
R1-1904560	Discussions on Type II CSI enhancement	CATT	not treated	2019-03-28 05:08:26	2019-03-30 05:05:04
R1-1904561	Consideration on multi-TRP/panel transmission	CATT	not treated	2019-03-28 05:08:26	2019-03-30 05:05:05
R1-1904562	Consideration on multi-beam operation	CATT	not treated	2019-03-28 05:08:26	2019-03-30 05:05:05
R1-1904563	Considerations on UL full Tx power	CATT	not treated	2019-03-28 05:08:26	2019-03-30 05:05:05
R1-1904564	Evaluation results of multi-TRP/panel	CATT	not treated	2019-03-28 05:08:26	2019-03-30 05:05:05
R1-1904565	UE-group wake-up signal for Rel-16 MTC	Lenovo, Motorola	not treated	2019-03-28 05:21:55	2019-03-29 11:53:30
R1-1904566	UL transmission in preconfigured resources for eMTC	Lenovo, Motorola	not treated	2019-03-28 05:22:00	2019-03-29 11:53:30
R1-1904567	Design of scheduling of multiple DL/UL transport blocks for MTC	Lenovo, Motorola	not treated	2019-03-28 05:22:00	2019-03-29 11:53:30
R1-1904568	UE-group wake-up signal for Rel-16 NB-IoT	Lenovo, Motorola	not treated	2019-03-28 05:22:00	2019-03-29 11:53:31
R1-1904569	UL transmission in preconfigured resources for NBIoT	Lenovo, Motorola	not treated	2019-03-28 05:22:00	2019-03-29 11:53:31
R1-1904570	Design of scheduling of multiple DL/UL transport blocks for NBIoT	Lenovo, Motorola	not treated	2019-03-28 05:22:01	2019-03-29 11:53:31
R1-1904571	Discussion of additional SRS symbols	Lenovo, Motorola	not treated	2019-03-28 05:22:01	2019-03-29 11:53:31
R1-1904572	Discussion of multi-panel/TRP transmission	Lenovo, Motorola	not treated	2019-03-28 05:22:01	2019-03-29 11:53:31
R1-1904573	Discussion of multi-beam operation	Lenovo, Motorola	not treated	2019-03-28 05:22:01	2019-03-29 11:53:31

R1-1904574	Discussion on UL multi-panel transmission	Lenovo, Motorola	not treated	2019-03-28 05:22:01	2019-03-29 11:53:31
R1-1904575	Discussion on physical layer structure for NR sidelink	Lenovo, Motorola	not treated	2019-03-28 05:22:01	2019-04-03 02:38:17
R1-1904576	Discussion on resource allocation for NR sidelink Mode 1	Lenovo, Motorola	not treated	2019-03-28 05:22:01	2019-04-03 02:38:17
R1-1904577	Discussion on resource allocation for NR sidelink Mode 2	Lenovo, Motorola	not treated	2019-03-28 05:22:01	2019-04-03 02:38:17
R1-1904578	In-device coexistence between LTE and NR sidelinks	Lenovo, Motorola	not treated	2019-03-28 05:22:01	2019-04-03 02:38:17
R1-1904579	Discussion on physical layer procedures for NR sidelink	Lenovo, Motorola	not treated	2019-03-28 05:22:01	2019-04-03 02:38:17
R1-1904580	Discussion on support of NR Uu controlling LTE sidelink	Lenovo, Motorola	noted	2019-03-28 05:22:01	2019-04-03 02:38:17
R1-1904581	UL signals and channels for NR-U	Lenovo, Motorola	not treated	2019-03-28 05:22:02	2019-03-29 11:53:31
R1-1904582	HARQ enhancement for NR-U	Lenovo, Motorola	not treated	2019-03-28 05:22:02	2019-03-29 11:53:31
R1-1904583	Wide-band operation for NR-U	Lenovo, Motorola	not treated	2019-03-28 05:22:02	2019-03-29 11:53:31
R1-1904584	Discussion on channel structure for Two-Step RACH	Fujitsu	not treated	2019-03-28 05:53:25	2019-03-30 04:18:45
R1-1904585	Consideration on PRACH in NR-U	Fujitsu	not treated	2019-03-28 05:53:25	2019-03-30 04:18:45
R1-1904586	On DL signals and channels for NR-U	Fujitsu	not treated	2019-03-28 05:53:25	2019-03-30 04:18:45
R1-1904587	Discussion on channel access for wideband operation and COT sharing	Fujitsu	not treated	2019-03-28 05:53:25	2019-03-30 04:18:45
R1-1904588	Enhancements to initial access procedure and scheduling request procedure for NR-U	Fujitsu	not treated	2019-03-28 05:53:25	2019-03-30 04:19:40
R1-1904589	Scheduling/HARQ enhancements for NR-U	Fujitsu	not treated	2019-03-28 05:53:25	2019-03-30 04:18:45
R1-1904590	On wideband operation for NR-U	Fujitsu	not treated	2019-03-28 05:53:25	2019-03-30 04:18:45
R1-1904591	Issues on Timing Advance and RACH for NTN	Panasonic	not treated	2019-03-28 06:00:20	2019-03-29 08:25:55
R1-1904592	Views on HARQ Issues for NTN	Panasonic	not treated	2019-03-28 06:03:37	2019-03-29 08:25:55
R1-1904593	NR-U PRACH design	Panasonic	not treated	2019-03-28 06:04:07	2019-03-29 08:29:08
R1-1904594	NR-U UL signals and channels	Panasonic	not treated	2019-03-28 06:04:58	2019-03-29 08:29:08
R1-1904595	NR-U PRACH resource enhancement	Panasonic	not treated	2019-03-28 06:05:38	2019-03-29 08:45:38
R1-1904596	Channel access procedures for NR-U	Panasonic	not treated	2019-03-28 06:15:22	2019-03-29 08:39:01
R1-1904597	Enhancements on multi-TRP transmission	Fujitsu	not treated	2019-03-28 06:16:51	2019-03-29 22:53:29
R1-1904598	Enhancements on multi-beam operation	Fujitsu	not treated	2019-03-28 06:16:51	2019-03-29 22:53:29
R1-1904599	HARQ enhancement for NR-U	Panasonic	not treated	2019-03-28 06:17:07	2019-03-29 08:39:01
R1-1904600	Views on reference signal designs for NR positioning	Mitsubishi Electric Corp	not treated	2019-03-28 06:17:25	2019-03-29 22:56:24
R1-1904601	Discussion on introduction of additional SRS symbols	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 06:20:55	2019-03-30 05:40:50
R1-1904602	Discussion on NR-U DRS design	ETRI	not treated	2019-03-28 06:47:45	2019-03-29 16:43:48
R1-1904603	DL signals and channels for NR-U	ETRI	not treated	2019-03-28 06:47:45	2019-03-29 16:43:49
R1-1904604	Wideband operation for NR-U	ETRI	not treated	2019-03-28 06:47:45	2019-03-29 16:43:49
R1-1904605	Discussion on UE-grouping wake up signal in	LG Electronics	not treated	2019-03-28 07:26:01	2019-03-30 05:41:14
R1-1904606	Discussion on preconfigured UL resources in MTC	LG Electronics	not treated	2019-03-28 07:26:01	2019-03-30 05:41:14
R1-1904607	Discussion on multiple transport blocks scheduling in MTC	LG Electronics	not treated	2019-03-28 07:26:01	2019-03-30 05:41:14
R1-1904608	Discussion on coexistence of LTE-MTC with NR	LG Electronics	not treated	2019-03-28 07:26:02	2019-03-30 05:41:14
R1-1904609	Downlink channel quality report during random access procedure	LG Electronics	not treated	2019-03-28 07:26:02	2019-03-30 05:41:14
R1-1904610	Discussion on MPDCCH performance	LG Electronics	not treated	2019-03-28 07:26:02	2019-03-30 05:41:14
R1-1904611	CE mode improvements for non-BL UEs	LG Electronics	not treated	2019-03-28 07:26:02	2019-03-30 05:41:14
R1-1904612	On the use of LTE control channel region for LTE-MTC DL transmission	LG Electronics	not treated	2019-03-28 07:26:02	2019-03-30 05:41:14

R1-1904613	Discussion on the use of RSS for measurement improvement	LG Electronics	not treated	2019-03-28 07:26:02	2019-03-30 05:41:14
R1-1904614	Discussion on UE-grouping wake up signal in NB-	LG Electronics	not treated	2019-03-28 07:26:02	2019-03-30 05:41:14
R1-1904615	Discussion on preconfigured UL resources in NB-IoT	LG Electronics	not treated	2019-03-28 07:26:02	2019-03-30 05:41:14
R1-1904616	Discussion on multiple transport blocks scheduling in NB-IoT	LG Electronics	not treated	2019-03-28 07:26:02	2019-03-30 05:41:14
R1-1904617	Downlink channel quality report during random access procedure on a non-anchor carrier	LG Electronics	not treated	2019-03-28 07:26:03	2019-03-30 05:41:14
R1-1904618	Discussion on NRS on a non-anchor carrier	LG Electronics	not treated	2019-03-28 07:26:03	2019-03-30 05:41:14
R1-1904619	Physical layer design of initial access signals and channels for NR-U	LG Electronics	not treated	2019-03-28 07:26:03	2019-03-30 05:41:14
R1-1904620	Physical layer design of DL signals and channels	LG Electronics	not treated	2019-03-28 07:26:03	2019-03-30 05:41:14
R1-1904621	Physical layer design of UL signals and channels	LG Electronics	not treated	2019-03-28 07:26:03	2019-03-30 05:41:14
R1-1904622	Channel access procedure for NR-U	LG Electronics	not treated	2019-03-28 07:26:03	2019-03-30 05:41:14
R1-1904623	Initial access and mobility for NR-U	LG Electronics	not treated	2019-03-28 07:26:03	2019-03-30 05:41:14
R1-1904624	HARQ procedure for NR-U	LG Electronics	not treated	2019-03-28 07:26:03	2019-03-30 05:41:14
R1-1904625	Discussion on configured grant for NR-U	LG Electronics	not treated	2019-03-28 07:26:03	2019-03-30 05:41:14
R1-1904626	Wide-band operation for NR-U	LG Electronics	not treated	2019-03-28 07:26:03	2019-03-30 05:41:14
R1-1904627	PDCCH enhancements for NR URLLC	LG Electronics	noted	2019-03-28 07:26:03	2019-04-03 06:36:40
R1-1904628	UCI enhancements for NR URLLC	LG Electronics	not treated	2019-03-28 07:26:03	2019-04-03 06:36:40
R1-1904629	PUSCH enhancements for NR URLLC	LG Electronics	not treated	2019-03-28 07:26:03	2019-04-03 06:36:40
R1-1904630	Enhancements to scheduling/HARQ for NR	LG Electronics	revised	2019-03-28 07:26:03	2019-04-03 06:36:40
R1-1904631	Discussion on UL inter UE Tx prioritization	LG Electronics	not treated	2019-03-28 07:26:03	2019-04-03 06:36:40
R1-1904632	Enhanced UL configured grant transmission for NR URLLC	LG Electronics	not treated	2019-03-28 07:26:03	2019-04-03 06:36:40
R1-1904633	Discussion on resource conflict between PUSCHs	LG Electronics	not treated	2019-03-28 07:26:03	2019-04-03 06:36:40
R1-1904634	Discussion on enhanced DL semi-persistent	LG Electronics	not treated	2019-03-28 07:26:04	2019-04-03 06:36:40
R1-1904635	Discussion on PDCCH-based power saving signal/channel	LG Electronics	not treated	2019-03-28 07:26:04	2019-04-03 06:36:40
R1-1904636	Discussion on cross-slot scheduling for power saving	LG Electronics	not treated	2019-03-28 07:26:04	2019-04-03 06:36:40
R1-1904637	Discussion on power saving schemes	LG Electronics	withdrawn	2019-03-28 07:26:04	
R1-1904638	HARQ related issues on single TX-switched UL operation for EN-DC	LG Electronics	not treated	2019-03-28 07:26:04	2019-03-30 05:41:14
R1-1904639	Additional UE capability for SRS carrier switching	SoftBank Corp.	noted	2019-03-28 07:48:02	2019-03-29 03:43:39
R1-1904640	SSB TX/RX for IAB inter-node measurements	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 08:16:49	2019-03-29 20:01:42
R1-1904641	Enhancements on RACH for IAB	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 08:16:49	2019-03-29 20:01:42
R1-1904642	Mechanisms for resource multiplexing among backhaul and access links	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 08:16:49	2019-03-29 20:01:43
R1-1904643	Open items with IAB Case #1 timing	Nokia, Nokia Shanghai Bell	noted	2019-03-28 08:16:49	2019-03-29 20:01:43
R1-1904644	Doppler compensation in initial access procedure	MediaTek Inc.	not treated	2019-03-28 08:46:08	2019-03-29 07:03:12
R1-1904645	Timing Advance and RACH in NR-NTN	MediaTek Inc.	not treated	2019-03-28 08:46:08	2019-03-29 07:03:12
R1-1904646	Delay-tolerant re-transmission mechanisms	MediaTek Inc.	noted	2019-03-28 08:46:08	2019-03-29 07:03:12
R1-1904647	Introduction of remote interference management	Ericsson	endorsed	2019-03-28 09:01:29	2019-03-28 09:03:51
R1-1904648	Scenarios, Requirements and Simulation Assumptions in NTN	Nokia, Nokia Shanghai Bell	noted	2019-03-28 09:03:45	2019-03-30 04:44:55
R1-1904649	Uplink Power Control and CSI Feedback in NTN	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 09:06:10	2019-03-30 04:44:55
R1-1904650	Doppler Compensation, Uplink Timing Advance, Random Access and UE Location in NTN	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 09:08:45	2019-03-30 04:44:55
R1-1904651	Consideration on HARQ in NTN	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 09:11:25	2019-03-30 04:44:55
R1-1904652	Physical layer structure for NR sidelink	NEC	not treated	2019-03-28 09:13:45	2019-04-03 01:33:19
R1-1904653	Mode 1 resource allocation mechanism for NR	NEC	not treated	2019-03-28 09:13:48	2019-04-03 01:33:19
R1-1904654	Mode 2 resource allocation mechanism for NR	NEC	not treated	2019-03-28 09:13:48	2019-04-03 01:33:19
R1-1904655	Synchronization mechanism for NR sidelink	NEC	not treated	2019-03-28 09:13:48	2019-04-03 01:33:19
R1-1904656	Physical layer procedures for NR sidelink	NEC	not treated	2019-03-28 09:13:48	2019-04-03 01:33:19

R1-1904657	Discussion the prioritization between NR and LTE sidelinks	NEC	not treated	2019-03-28 09:13:48	2019-04-03 01:33:19
R1-1904658	Discussion on initial access in NR-U	NEC	not treated	2019-03-28 09:13:48	2019-03-29 09:14:46
R1-1904659	Discussion on UL Signals and Channels in NR-U	NEC	not treated	2019-03-28 09:13:48	2019-03-29 09:14:47
R1-1904660	Discussion on configured grant enhancement in	NEC	not treated	2019-03-28 09:13:48	2019-03-29 09:14:47
R1-1904661	Discussion on IAB	NEC	not treated	2019-03-28 09:13:48	2019-03-29 09:14:47
R1-1904662	Discussion on CSI Reporting	NEC	revised	2019-03-28 09:13:48	2019-03-29 09:14:47
R1-1904663	Discussion on multi-TRP operation	NEC	not treated	2019-03-28 09:13:48	2019-03-29 09:14:47
R1-1904664	Discussion on multi-beam operation	NEC	not treated	2019-03-28 09:13:48	2019-03-29 09:14:47
R1-1904665	UE Positioning in NTN	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 09:14:08	2019-03-30 04:44:55
R1-1904666	Discussion on NR V2X Sidelink Retransmission	ETRI	not treated	2019-03-28 09:14:37	2019-04-01 15:46:56
R1-1904667	Discussion on NR V2X sidelink synchronization	ETRI	not treated	2019-03-28 09:14:38	2019-04-02 04:18:36
R1-1904668	Considerations on HARQ evaluation for Non-Terrestrial Networks	ETRI	not treated	2019-03-28 09:14:38	2019-03-29 16:43:49
R1-1904669	Considerations on propagation delay for Non-Terrestrial Networks	ETRI	not treated	2019-03-28 09:14:38	2019-03-29 16:43:49
R1-1904670	UCI enhancements	ETRI	not treated	2019-03-28 09:14:38	2019-04-02 04:18:36
R1-1904671	Enhanced inter UE Tx prioritization/multiplexing	ETRI	not treated	2019-03-28 09:14:38	2019-04-02 04:18:36
R1-1904672	Correction of SSB subcarrier spacing parameter name	Ericsson	endorsed	2019-03-28 09:17:53	2019-03-29 22:53:13
R1-1904673	Draft CR on resource mapping related to BWP	ZTE	noted	2019-03-28 09:18:46	2019-03-30 04:39:06
R1-1904674	Draft CR on PDSCH rate-matching	ZTE	revised	2019-03-28 09:18:50	2019-03-30 04:39:06
R1-1904675	Draft CR on UE procedure for PDSCH and PUSCH	ZTE	noted	2019-03-28 09:18:50	2019-03-30 04:39:06
R1-1904676	Draft CR on PUCCH format 1	ZTE	revised	2019-03-28 09:18:50	2019-03-30 04:39:06
R1-1904677	Draft CR on Type-1 HARQ-ACK codebook determination	ZTE	revised	2019-03-28 09:18:50	2019-03-30 04:39:06
R1-1904678	Draft reply to LS on clarification about CSI-RS	ZTE	not treated	2019-03-28 09:18:50	2019-03-30 04:39:06
R1-1904679	Discussion on Mode 1 Resource Allocation	ASUSTEK COMPUTER (SHANGHAI)	not treated	2019-03-28 09:35:47	2019-03-29 09:07:16
R1-1904680	Discussion on sidelink physical layer procedure on NR V2X	ASUSTEK COMPUTER (SHANGHAI)	not treated	2019-03-28 09:37:41	2019-03-29 09:07:16
R1-1904681	Discussion on BWP switching and LBT	Google Inc.	not treated	2019-03-28 09:45:49	2019-03-29 07:54:52
R1-1904682	UE and gNB measurements for NR Positioning	BUPT	not treated	2019-03-28 10:04:00	2019-04-03 01:50:46
R1-1904683	Configured grant enhancements for NR-U	Panasonic	not treated	2019-03-28 10:23:23	2019-03-29 08:00:55
R1-1904684	Preliminary results for 2-step RACH evaluations	Huawei,	not treated	2019-03-28 11:29:40	2019-03-30 03:59:57
R1-1904685	Other issues for 2-step RACH	Huawei,	not treated	2019-03-28 11:29:41	2019-03-29 20:18:15
R1-1904686	Discussion on the LS reply to IEEE	Huawei,	not treated	2019-03-28 11:29:42	2019-03-30 04:06:54
R1-1904687	Frame and slot structure for sidelink	Huawei,	not treated	2019-03-28 11:29:44	2019-04-02 20:47:38
R1-1904688	Sidelink CSI	Huawei,	not treated	2019-03-28 11:29:45	2019-04-02 20:47:38
R1-1904689	Design and contents of PSCCH and PSFCH	Huawei,	not treated	2019-03-28 11:29:45	2019-04-02 20:47:38
R1-1904690	BWP operation for V2X sidelink	Huawei,	not treated	2019-03-28 11:29:47	2019-04-02 20:47:38
R1-1904691	Power control and power sharing for V2X sidelink	Huawei,	not treated	2019-03-28 11:29:48	2019-04-02 20:47:38
R1-1904692	Sidelink measurements	Huawei,	not treated	2019-03-28 11:29:50	2019-04-02 20:47:38
R1-1904693	DCI design for URLLC	Huawei,	not treated	2019-03-28 11:29:51	2019-04-02 20:21:50
R1-1904694	Discussion on resource conflicts between uplink	Huawei,	not treated	2019-03-28 11:29:54	2019-04-02 20:21:50
R1-1904695	Discussion on differentiation of eMBB and URLLC	Huawei,	not treated	2019-03-28 11:29:55	2019-04-02 20:21:50
R1-1904696	Discussion on rate matching in URLLC due to the ambiguity between PDCCH AL8 and AL16	Huawei, HiSilicon	not treated	2019-03-28 11:29:58	2019-04-02 20:21:50
R1-1904697	Extended CRC for URLLC	Huawei,	not treated	2019-03-28 11:30:00	2019-04-02 20:21:50
R1-1904698	Considerations and evaluation results for IMT-2020 for Dense urban-eMBB spectral efficiency in	Huawei, HiSilicon	not treated	2019-03-28 11:30:02	2019-03-29 19:58:39

R1-1904699	Consideration on self evaluation of IMT-2020 for user experiences data in LTE	Huawei, HiSilicon	not treated	2019-03-28 11:30:04	2019-03-29 19:58:39
R1-1904700	Evaluation results for multi-TRP/panel	Huawei,	not treated	2019-03-28 11:30:09	2019-03-29 20:32:30
R1-1904701	Evaluation results of sequence design for Pi/2-BPSK DFT-S-OFDM	Huawei, HiSilicon	not treated	2019-03-28 11:30:12	2019-03-29 20:32:30
R1-1904702	UE dynamic adaptation to the maximum number of receive antennas	Huawei, HiSilicon	not treated	2019-03-28 11:30:13	2019-04-02 22:25:42
R1-1904703	Survey of frequency band of interest for Industrial IOT	Huawei, HiSilicon	not treated	2019-03-28 11:30:17	2019-03-29 19:58:39
R1-1904704	Investigation of characteristics of industrial factory environment	Huawei, HiSilicon	not treated	2019-03-28 11:30:19	2019-03-29 20:57:49
R1-1904705	Existing literature and measurement review for industrial factory environment	Huawei, HiSilicon	not treated	2019-03-28 11:30:24	2019-03-29 19:58:39
R1-1904706	Preliminary channel measurement on large-scale propagation loss for indoor factory environment	Huawei, HiSilicon	not treated	2019-03-28 11:30:26	2019-03-29 19:58:39
R1-1904707	Preliminary channel measurement on fast fading parameters for indoor factory environment	Huawei, HiSilicon	not treated	2019-03-28 11:30:26	2019-03-29 20:57:49
R1-1904708	Summary of IIOT path loss results	Huawei,HiSilicon, CEA-LETI	not treated	2019-03-28 11:30:26	2019-03-29 19:58:39
R1-1904709	Beam-based NR mobility enhancements	Huawei,	not treated	2019-03-28 11:30:28	2019-03-29 19:58:39
R1-1904710	Draft Reply LS on feasibility of simultaneous connectivity for NR	Huawei, HiSilicon	not treated	2019-03-28 11:30:29	2019-03-30 05:57:27
R1-1904711	Evaluations for contiguous data transmission with cross-carrier scheduling	Huawei, HiSilicon	not treated	2019-03-28 11:30:30	2019-03-30 05:28:05
R1-1904712	Discussion on PAPR in NTN	Huawei,	not treated	2019-03-28 11:30:32	2019-03-30 05:05:12
R1-1904713	Discussion on DL SPS enhancement	Huawei,	not treated	2019-03-28 11:30:32	2019-04-02 20:21:50
R1-1904714	Discussion on message periodicities with non-integer multiple of NR supported CG/SPS	Huawei, HiSilicon	not treated	2019-03-28 11:30:32	2019-04-02 20:21:50
R1-1904715	On 2-step RACH Channel Structure	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 11:52:21	2019-03-29 22:02:07
R1-1904716	On 2-step RACH Procedure	Nokia, Nokia Shanghai Bell	noted	2019-03-28 11:52:22	2019-03-29 22:02:07
R1-1904717	2-step RACH latency and resource reservation	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 11:52:22	2019-03-29 22:02:07
R1-1904718	Frequency allocation of Msg3 retransmissions	Nokia, Nokia Shanghai Bell	not pursued	2019-03-28 11:52:22	2019-03-29 22:02:07
R1-1904719	Uplink PC for NR-NR Dual Connectivity	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 12:02:09	2019-03-29 21:30:50
R1-1904720	On cross-carrier scheduling with mixed numerologies	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 12:02:10	2019-03-29 21:30:50
R1-1904721	Discussion on single uplink operation enhancement for EN-DC	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 12:02:11	2019-03-29 21:30:50
R1-1904722	Efficient CA design	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 12:02:12	2019-03-29 21:30:50
R1-1904723	Draft TS 38.214 CR on SRS dropping rule	CMCC	revised	2019-03-28 12:21:48	2019-03-30 02:10:52
R1-1904724	Discussion on channel structure for two-step	CMCC	not treated	2019-03-28 12:21:48	2019-03-30 02:10:52
R1-1904725	Discussion on procedure for two-step RACH	CMCC	not treated	2019-03-28 12:21:48	2019-03-30 02:10:52
R1-1904726	Discussion on extensions of SSBs for inter-IAB-node discovery and measurements	CMCC	not treated	2019-03-28 12:21:48	2019-03-30 02:10:52
R1-1904727	Discussion on PRACH enhancements to support NR Backhaul links	CMCC	not treated	2019-03-28 12:21:48	2019-03-30 02:10:52
R1-1904728	Discussion on resource multiplexing among backhaul and access links	CMCC	not treated	2019-03-28 12:21:48	2019-03-30 02:10:52
R1-1904729	Discussion on sidelink resource allocation	CMCC	not treated	2019-03-28 12:21:48	2019-04-02 03:23:59
R1-1904730	Discussion on HARQ feedback for NR V2X	CMCC	not treated	2019-03-28 12:21:48	2019-04-02 03:23:59
R1-1904731	Discussion on support of NR Uu controlling LTE sidelink	CMCC	noted	2019-03-28 12:21:48	2019-04-02 03:23:59
R1-1904732	Considerations on Timing Advance for Non-Terrestrial Networks	CMCC	not treated	2019-03-28 12:21:48	2019-03-30 02:10:52
R1-1904733	Discussion on UL inter UE Tx prioritization/multiplexing	CMCC	not treated	2019-03-28 12:21:48	2019-04-02 03:23:59
R1-1904734	Discussion on enhancements on scheduling and	CMCC	not treated	2019-03-28 12:21:48	2019-04-02 03:23:59
R1-1904735	Discussion on multi-TRP/panel transmission	CMCC	not treated	2019-03-28 12:21:48	2019-03-30 02:10:52
R1-1904736	Enhancements on multi-beam operation	CMCC	not treated	2019-03-28 12:21:48	2019-03-30 02:10:52

R1-1904737	Full Tx power UL transmission	CMCC	not treated	2019-03-28 12:21:48	2019-03-30 02:10:52
R1-1904738	Discussion on power saving signal triggering UE adaptation	CMCC	noted	2019-03-28 12:21:48	2019-04-02 03:23:59
R1-1904739	Discussion on dynamic adaption of power saving	CMCC	not treated	2019-03-28 12:21:48	2019-04-02 03:23:59
R1-1904740	Discussion on reference signal design for NR positioning	CMCC	not treated	2019-03-28 12:21:48	2019-03-30 02:10:52
R1-1904741	Discussion on necessity of physical-layer procedure to support UE/gNB measurements	CMCC	not treated	2019-03-28 12:21:48	2019-03-30 02:10:52
R1-1904742	New measurements and modelling on pathloss in IIOT scenarios	CMCC, BUPT	not treated	2019-03-28 12:21:48	2019-03-30 02:10:52
R1-1904743	New measurements and modelling on fast fading in IIOT scenarios	CMCC, BUPT	not treated	2019-03-28 12:21:48	2019-03-30 02:10:52
R1-1904744	New measurements and modelling on additional components in IIOT scenarios	CMCC, BUPT	not treated	2019-03-28 12:21:48	2019-03-30 02:10:52
R1-1904745	Discussion on cross-carrier scheduling with different numerologies	CMCC	not treated	2019-03-28 12:21:48	2019-03-30 02:10:52
R1-1904746	Discussion on fast activation and deactivation of scell	CMCC	not treated	2019-03-28 12:21:48	2019-03-30 02:10:52
R1-1904747	Consideration for preconfigured uplink resources (PUR)	Sequans Communicatio	not treated	2019-03-28 12:37:45	2019-03-28 23:07:41
R1-1904748	Consideration for preconfigured uplink resources (PUR)	Sequans Communicatio	not treated	2019-03-28 12:39:25	2019-03-28 23:07:41
R1-1904749	Scheduling of Multiple UL/DL TBS Considerations	Sequans Communicatio	not treated	2019-03-28 12:41:24	2019-03-30 05:46:42
R1-1904750	On multi-TRP and multi-panel	Ericsson	revised	2019-03-28 13:22:14	2019-03-29 21:10:20
R1-1904751	Remaining details on low PAPR RS	Ericsson	not treated	2019-03-28 13:23:26	2019-03-29 14:59:12
R1-1904752	Handling of Rel-15 NR MIMO leftover issues	ZTE	noted	2019-03-28 13:23:45	2019-03-30 05:53:56
R1-1904753	Discussion on SRS for configured grant PUSCH	ZTE	noted	2019-03-28 13:23:45	2019-03-30 05:53:56
R1-1904754	Draft CR on time domain behavior of SRS for configured grant PUSCH	ZTE	not pursued	2019-03-28 13:23:45	2019-03-30 05:53:56
R1-1904755	Draft CR on alignment of a parameter on PTRS configuration	ZTE	noted	2019-03-28 13:23:45	2019-03-30 05:53:56
R1-1904756	Draft CR on corrections of UL-SCH indicator description in DCI 0_1	ZTE	endorsed	2019-03-28 13:23:45	2019-03-30 05:53:56
R1-1904757	Draft CR on QCL indication for PDSCH with slot	ZTE	not	2019-03-28 13:23:45	2019-03-30 05:53:56
R1-1904758	Draft CR on AP-CSI-RS with a large latency of beam switching	ZTE	revised	2019-03-28 13:23:45	2019-03-30 05:53:56
R1-1904759	Draft CR on alignment of a notation related to SRS in TS38.211	ZTE	endorsed	2019-03-28 13:23:45	2019-03-30 05:53:56
R1-1904760	Discussion on prioritization for transmission power scaling for DC	ZTE	noted	2019-03-28 13:23:45	2019-03-30 05:53:56
R1-1904761	Draft CR on alignment of a PL parameter	ZTE	endorsed	2019-03-28 13:23:45	2019-03-30 05:53:56
R1-1904762	Draft CR on addressing SRS closed loop power	ZTE	revised	2019-03-28 13:23:45	2019-03-30 05:53:56
R1-1904763	Further observations on length-6 CGS for low	Ericsson	not treated	2019-03-28 13:25:17	2019-03-29 14:59:12
R1-1904764	Further observations on port multiplexing of low	Ericsson	not treated	2019-03-28 13:27:06	2019-03-29 14:59:12
R1-1904765	Considerations on the simulation assumption and methodology for NTN	ZTE	not treated	2019-03-28 13:55:14	2019-03-30 01:34:23
R1-1904766	Discussion on the physical control procedure for	ZTE	not treated	2019-03-28 13:55:14	2019-03-30 01:34:23
R1-1904767	Discussion on the TA and PRACH for the NTN	ZTE	noted	2019-03-28 13:55:14	2019-03-30 01:34:23
R1-1904768	Discussion on the HARQ procedure for NTN	ZTE	not treated	2019-03-28 13:55:14	2019-03-30 01:34:23
R1-1904769	Discussion on the issues for UL scheduling in	ZTE	not treated	2019-03-28 13:55:14	2019-03-30 01:34:23
R1-1904770	Performance evaluation on the DL synchronization	ZTE	not treated	2019-03-28 13:55:14	2019-03-30 01:34:23
R1-1904771	Preliminary simulation results for NTN	ZTE	not treated	2019-03-28 13:55:14	2019-03-30 01:34:23
R1-1904772	Preliminary consideration on the link budget for	ZTE	not treated	2019-03-28 13:55:14	2019-03-30 01:34:23
R1-1904773	Correcton on BWP configurations	Ericsson	noted	2019-03-28 14:26:24	2019-03-29 21:35:34
R1-1904774	Discussion on UL signals and channels in NR-U	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-03-29 14:09:39
R1-1904775	Discussion on PDCCH enhancements for URLLC	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-04-02 14:49:40

R1-1904776	Discussion on UCI enhancements for URLLC	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-04-02 14:49:40
R1-1904777	Discussion on cross-carrier scheduling with different numerologies	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-03-29 14:09:39
R1-1904778	Considerations on the channel structure on 2-step RACH	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-03-29 14:09:39
R1-1904779	Considerations on the random access procedure on 2-step RACH	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-03-29 14:09:39
R1-1904780	Discussion on Type II CSI overhead reduction	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-03-29 14:09:39
R1-1904781	Discussion on multi-beam operation	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-03-29 14:09:39
R1-1904782	Discussion on CSI enhancement for multiple TRP/Panel transmission	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-03-29 14:09:39
R1-1904783	Discussion on power imbalance for DMRS	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-03-29 14:09:39
R1-1904784	Discussion on Multi-TRP transmission	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-03-29 14:09:39
R1-1904785	Discussion on wideband operation in NR-U	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-03-29 14:09:39
R1-1904786	Discussion on HARQ enhancements for NR-U	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-03-29 14:09:39
R1-1904787	Discussion on UL grant-free transmission enhancements for URLLC	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-04-02 14:49:40
R1-1904788	Discussion on PUSCH enhancements for URLLC	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-04-02 14:49:40
R1-1904789	Discussion on enhancements to scheduling and HARQ for URLLC	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-04-02 14:49:40
R1-1904790	Discussion on DL reference signals for NR positioning	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-04-02 14:49:40
R1-1904791	Considerations on sidelink QoS management	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-04-02 14:49:40
R1-1904792	Discussion on synchronization mechanism for NR V2X	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-04-02 14:49:40
R1-1904793	Discussion on physical layer structure for sidelink	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-04-02 14:49:40
R1-1904794	Discussion on physical layer procedures for sidelink	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-04-02 14:49:40
R1-1904795	Discussion on NR sidelink mode 1 resource allocation	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-04-02 14:49:40
R1-1904796	Discussion on NR sidelink mode 2 resource allocation	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-04-02 14:49:40
R1-1904797	Discussion on full TX power for UL transmission	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-03-29 14:09:39
R1-1904798	Consideration on NR RRM for UE power saving	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-04-02 14:49:40
R1-1904799	Discussion on PDCCH-based power saving signal	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-04-02 14:49:40
R1-1904800	Discussion on DRS in NR-U	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-03-29 14:09:39
R1-1904801	Discussion on initial access and mobility in NR-U	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-03-29 14:09:39
R1-1904802	Correction on definition of resource block bundles for interleaved VRB-to-PRB mapping	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-03-29 14:09:39
R1-1904803	Discussion on cross-slot scheduling for UE power saving	Spreadtrum Communicatio	not treated	2019-03-28 14:52:54	2019-04-02 14:49:40
R1-1904804	Discussion on LOS probability model in IIOT scenario	ZTE, Sanechips, BJTU, Tongji	not treated	2019-03-28 15:14:54	2019-03-29 20:27:57
R1-1904805	Physical layer structure for sidelink	TCL Communicatio	not treated	2019-03-28 15:31:05	2019-04-02 16:03:34
R1-1904806	Resource allocation for NR sidelink Mode 1	TCL Communicatio	not treated	2019-03-28 15:31:05	2019-04-02 16:03:34
R1-1904807	Resource allocation for NR sidelink Mode 2	TCL Communicatio	not treated	2019-03-28 15:31:05	2019-04-02 16:03:34

R1-1904808	Sidelink synchronization mechanism	TCL Communicatio	not treated	2019-03-28 15:31:05	2019-04-02 16:03:34
R1-1904809	Physical layer procedures for sidelink	TCL Communicatio	not treated	2019-03-28 15:31:05	2019-04-02 16:03:34
R1-1904810	Discussion on configurations for SSB Tx and Rx	ZTE, Sanechips	not treated	2019-03-28 15:59:32	2019-03-30 02:10:54
R1-1904811	Discussion on backhaul RACH enhancement	ZTE, Sanechips	not treated	2019-03-28 16:02:51	2019-03-30 02:10:54
R1-1904812	Resource multiplexing between backhaul and access link	ZTE, Sanechips	not treated	2019-03-28 16:06:03	2019-03-30 02:10:54
R1-1904813	Discussion on OTA timing mechanism	ZTE, Sanechips	noted	2019-03-28 16:10:17	2019-03-30 02:10:54
R1-1904814	NR sidelink physical layer structure	ZTE,	not treated	2019-03-28 16:15:48	2019-04-02 14:27:02
R1-1904815	Discussion on PHY procedures for sidelink	ZTE,	noted	2019-03-28 16:17:50	2019-04-02 14:27:02
R1-1904816	Discussion on synchronization mechanism in NR	ZTE,	not treated	2019-03-28 16:19:52	2019-04-02 14:27:02
R1-1904817	Discussion on QoS management	ZTE,	not treated	2019-03-28 16:22:18	2019-04-02 14:27:02
R1-1904818	Discussion on UE reporting	ZTE,	not treated	2019-03-28 16:27:48	2019-04-02 14:27:02
R1-1904819	Channel Structure for Two-Step RACH	Sierra	not treated	2019-03-28 17:05:35	2019-03-29 22:56:17
R1-1904820	Procedure for Two-step RACH Considerations	Sierra	not treated	2019-03-28 17:07:16	2019-03-29 22:56:17
R1-1904821	Resource Allocation Mode 2 Mechanism	Kyocera	not treated	2019-03-28 17:13:19	2019-03-29 17:22:33
R1-1904822	Physical Layer Procedures for CSI Acquisition in	Kyocera	not treated	2019-03-28 17:15:17	2019-03-29 17:22:33
R1-1904823	Classification of indoor industrial scenarios	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 19:39:09	2019-03-29 19:28:03
R1-1904824	Modeling of clutter densities and antenna configurations in industrial scenarios	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 19:39:10	2019-03-29 19:28:03
R1-1904825	Preliminary results of cross-polarization ratio based on measurements from two operational	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 19:39:10	2019-03-29 19:28:03
R1-1904826	Considerations on RSS for measurement improvements	Huawei Technologies	not treated	2019-03-28 20:04:19	2019-03-30 04:31:20
R1-1904827	On PDCCH enhancements for NR URLLC	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 22:18:36	2019-04-03 01:39:30
R1-1904828	On UCI Enhancements for NR URLLC	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 22:18:36	2019-04-03 01:39:30
R1-1904829	Discussion on enhancements to scheduling/HARQ for NR URLLC	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 22:18:36	2019-04-03 01:39:30
R1-1904830	On resource conflicts between UL grants	Nokia, Nokia Shanghai Bell	not treated	2019-03-28 22:18:36	2019-04-03 01:39:30
R1-1904831	Work Plan for NR Industrial IoT WI	Nokia	noted	2019-03-28 22:18:36	2019-04-03 01:39:30
R1-1904832	SSB-based IAB node discovery and measurements	Ericsson	not treated	2019-03-28 22:44:14	2019-03-29 23:08:55
R1-1904833	IAB RACH extensions	Ericsson	revised	2019-03-28 22:46:09	2019-03-29 23:08:55
R1-1904834	IAB resource configuration and coordination	Ericsson	not treated	2019-03-28 22:47:38	2019-03-29 23:08:55
R1-1904835	IAB OTA Timing Alignment	Ericsson	not treated	2019-03-28 22:49:35	2019-03-29 23:08:55
R1-1904836	Resource for IAB up-stream (MT) transmission	Ericsson	not treated	2019-03-28 22:51:55	2019-03-29 23:08:55
R1-1904837	Additional RACH Opportunities for NR-U	Convida	not treated	2019-03-28 23:27:21	2019-03-29 23:13:03
R1-1904838	Flexible starting point for PUSCH due to LBT	Convida	not treated	2019-03-28 23:28:19	2019-03-29 23:13:03
R1-1904839	Wideband operation for NR-U	Convida	not treated	2019-03-28 23:29:00	2019-03-29 23:13:03
R1-1904840	On Beam Failure Recovery for SCell	Convida	not treated	2019-03-28 23:29:50	2019-03-29 23:13:03
R1-1904841	Use Cases and Scenarios for 2-Step RACH	Ericsson	not treated	2019-03-29 00:20:22	2019-03-30 02:32:22
R1-1904842	Channel Structure for Two-step RACH	Ericsson	not treated	2019-03-29 00:20:22	2019-03-30 02:32:22
R1-1904843	Procedure for Two-step RACH	Ericsson	noted	2019-03-29 00:20:22	2019-03-30 02:32:22
R1-1904844	Evaluation methodology and metrics for Two-Step	Ericsson	not treated	2019-03-29 00:20:22	2019-03-30 02:32:22
R1-1904845	Initial results on coverage and msgA configurations	Ericsson	revised	2019-03-29 00:20:22	2019-03-30 02:32:22
R1-1904846	Discussion on Rel-15 SRS Power Scaling	Ericsson	not treated	2019-03-29 00:20:22	2019-03-30 02:37:06
R1-1904847	On full power UL transmission	Ericsson	not treated	2019-03-29 00:20:22	2019-03-30 04:14:21
R1-1904848	On PUSCH Transmission in msgA	InterDigital, Inc.	not treated	2019-03-29 00:35:38	2019-03-30 00:02:51
R1-1904849	Correction on one port PUSCH power scaling	Ericsson	revised	2019-03-29 00:36:46	2019-03-30 02:37:06
R1-1904850	Discussion on Procedures for Two-Step RACH	InterDigital, Inc.	not treated	2019-03-29 00:37:04	2019-03-30 00:02:51

R1-1904851	DL signals and channels for gNB initiated COT	InterDigital, Inc.	not treated	2019-03-29 00:39:05	2019-03-30 00:02:51
R1-1904852	Correction on SRS Power Scaling	Ericsson	not	2019-03-29 00:39:52	2019-03-30 02:37:06
R1-1904853	Channel access in NR-U	InterDigital, Inc.	not treated	2019-03-29 00:40:22	2019-03-30 00:02:51
R1-1904854	Initial access and mobility procedures in NR-U	InterDigital, Inc.	not treated	2019-03-29 00:41:24	2019-03-30 00:02:51
R1-1904855	Enhanced HARQ procedures for NR-U	InterDigital, Inc.	not treated	2019-03-29 00:42:32	2019-03-30 00:03:09
R1-1904856	Discussion on configured grant enhancements for NR-U	InterDigital, Inc.	not treated	2019-03-29 00:43:40	2019-03-30 00:03:09
R1-1904857	NR-U Wideband operation	InterDigital, Inc.	not treated	2019-03-29 00:44:34	2019-03-30 00:03:09
R1-1904858	On initial access and RACH procedures for NTN	InterDigital, Inc.	not treated	2019-03-29 00:45:36	2019-03-30 00:03:09
R1-1904859	Discussion on HARQ for NTN	InterDigital, Inc.	not treated	2019-03-29 00:46:45	2019-03-30 00:03:09
R1-1904860	Link-level Evaluation of Multi-TRP Schemes	InterDigital, Inc.	not treated	2019-03-29 00:47:33	2019-03-30 00:03:25
R1-1904861	MPUE and Panel Specific Uplink Transmission	InterDigital, Inc.	not treated	2019-03-29 00:48:18	2019-03-30 00:03:25
R1-1904862	Correction on UE procedure for transmitting PSCCH in mode 3	Sharp	postponed	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904863	Correction on UE procedure for determining subframes for transmitting PSSCH	Sharp	postponed	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904864	Consideration on UE-group wake-up signal for Rel-16 MTC	Sharp	not treated	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904865	Consideration on UE-group wake-up signal for Rel-16 NB-IoT	Sharp	not treated	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904866	Correction on configured scheduling PUSCH repetition with dynamic SFI	Sharp	noted	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904867	Correction on CBG based transmission for uplink	Sharp	noted	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904868	Correction on frequency offset for DCI format 0_0 with CRC scrambled by TC-RNTI	Sharp	endorsed	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904869	Clarification of PDSCH processing capability 1	Sharp	noted	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904870	Initial access signals/channels for NR-U	Sharp	not treated	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904871	Downlink structure and procedure for NR-U operation	Sharp	not treated	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904872	UL signals and channels for NR-U	Sharp	not treated	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904873	Channel access procedure for NR-U	Sharp	not treated	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904874	Initial access procedure for NR-U	Sharp	not treated	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904875	HARQ enhancement for NR unlicensed operation	Sharp	not treated	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904876	Wideband operation and UL/DL indication for NR-U	Sharp	not treated	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904877	DL control search spaces for resource management for IAB	Sharp	not treated	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904878	Evaluation results of spectral efficiency in Indoor Hotspot – eMBB in FR1 for IMT-2020 self-	Sharp	not treated	2019-03-29 00:48:30	2019-03-30 00:48:04
R1-1904879	Discussion on multi-TRP/panel techniques for URLLC	Sharp	not treated	2019-03-29 00:48:31	2019-03-30 00:48:04
R1-1904880	Capability Signaling for Full TX Power UL	InterDigital, Inc.	not treated	2019-03-29 00:49:17	2019-03-30 00:03:25
R1-1904881	Remaining Details on Low PAPR RS	InterDigital, Inc.	not treated	2019-03-29 00:50:01	2019-03-30 00:03:25
R1-1904882	On DCI enhancements for URLLC	InterDigital, Inc.	not treated	2019-03-29 00:52:34	2019-04-03 03:58:25
R1-1904883	On UCI enhancements for URLLC	InterDigital, Inc.	not treated	2019-03-29 00:53:26	2019-04-03 03:58:25

R1-1904884	On PUSCH enhancements for URLLC	InterDigital, Inc.	not treated	2019-03-29 00:54:53	2019-04-03 03:58:25
R1-1904885	On enhancements for overlapping PUSCHs	InterDigital, Inc.	not treated	2019-03-29 00:56:38	2019-04-03 03:58:25
R1-1904886	On enhanced inter UE Tx prioritization/multiplexing	InterDigital, Inc.	not treated	2019-03-29 00:59:28	2019-04-03 03:58:25
R1-1904887	On Rel-15 NR UE feature list	Intel	not treated	2019-03-29 00:59:51	2019-03-30 07:20:39
R1-1904888	[DRAFT] Reply LS on Capability signalling of single/dual PA architecture, phase discontinuity, and UL timing alignment aspects	Intel Corporation	revised	2019-03-29 00:59:51	2019-04-08 09:03:40
R1-1904889	[Draft] CR on CSI-RS resource configuration for RRM measurements	Intel Corporation	endorsed	2019-03-29 00:59:51	2019-03-30 07:20:39
R1-1904890	PHR in Dual-Connectivity	MediaTek	not treated	2019-03-29 01:08:31	2019-03-30 06:05:43
R1-1904891	Initial access signals/channels for NR-U	OPPO	not treated	2019-03-29 01:10:47	2019-03-30 04:54:44
R1-1904892	DL signals and channels for NR-U	OPPO	not treated	2019-03-29 01:10:47	2019-03-30 04:25:20
R1-1904893	UL signals and channels for NR-U	OPPO	not treated	2019-03-29 01:10:47	2019-03-30 04:25:20
R1-1904894	Channel access procedures for NR-U	OPPO	not treated	2019-03-29 01:10:47	2019-03-30 04:25:20
R1-1904895	Enhancements to initial access procedure for NR-	OPPO	not treated	2019-03-29 01:10:48	2019-03-30 04:25:20
R1-1904896	HARQ enhancements for NR-U	OPPO	not treated	2019-03-29 01:10:48	2019-03-30 04:25:20
R1-1904897	On configured grant for NR-U	OPPO	not treated	2019-03-29 01:10:48	2019-03-30 04:25:20
R1-1904898	Wideband operation for NR-U	OPPO	not treated	2019-03-29 01:10:48	2019-03-30 04:25:20
R1-1904899	Correction on Time-Domain Resource Allocation Assumptions for Co-scheduled UEs	MediaTek Beijing Inc.	not pursued	2019-03-29 01:12:59	2019-03-30 06:05:43
R1-1904900	Correction on PSSCH power control in SL mode-3	NEC Corporation	postponed	2019-03-29 01:13:55	2019-03-29 09:14:47
R1-1904901	Discussion on P0_Nominal for virtual PHR	ZTE	withdrawn	2019-03-29 01:44:46	
R1-1904902	PDCCH-based power saving signal/channel for UE adaptation	ASUSTEK COMPUTER (SHANGHAI)	not treated	2019-03-29 01:51:15	2019-03-29 09:27:14
R1-1904903	Cross-slot scheduling for UE power saving	ASUSTEK COMPUTER (SHANGHAI)	not treated	2019-03-29 01:55:31	2019-03-29 09:27:28
R1-1904904	SCell fast activation and deactivation	ASUSTEK COMPUTER (SHANGHAI)	not treated	2019-03-29 01:57:00	2019-03-29 09:27:41
R1-1904905	Discussion on LTE-M PUR resource configuration in respect to radio condition	ASUSTEK COMPUTER (SHANGHAI)	not treated	2019-03-29 02:01:10	2019-03-29 09:27:59
R1-1904906	On Physical Layer Structure for NR sidelink	China Telecommunic	not treated	2019-03-29 02:01:21	2019-04-01 08:05:32
R1-1904907	UCI enhancements for URLLC	China Telecommunic	not treated	2019-03-29 02:01:21	2019-03-29 02:23:57
R1-1904908	PUSCH enhancements for URLLC	China Telecommunic	not treated	2019-03-29 02:01:21	2019-03-29 02:23:57
R1-1904909	UL inter-UE multiplexing between eMBB and URLLC	China Telecommunic	not treated	2019-03-29 02:01:21	2019-03-29 02:23:57
R1-1904910	Update results of Dense Urban-eMBB for IMT-2020 self-evaluation	China Telecommunic	not treated	2019-03-29 02:01:21	2019-03-29 02:23:57
R1-1904911	Updated results on spectral efficiency and area traffic capacity of Indoor Hotspot-eMBB	China Telecommunic	not treated	2019-03-29 02:01:21	2019-03-29 02:23:57
R1-1904912	Updated results of rural-eMBB for NR and LTE in TDD	China Telecommunic	not treated	2019-03-29 02:01:21	2019-03-29 02:23:57
R1-1904913	Updated results on FDD eMBB spectrum efficiency for IMT-2020 self-evaluation	China Telecommunic	not treated	2019-03-29 02:01:21	2019-03-29 02:23:57
R1-1904914	Discussion on Multi-TRP/Panel Transmission enhancements	China Telecommunic	not treated	2019-03-29 02:01:21	2019-03-29 02:23:57
R1-1904915	Enhancements on multi-beam operation	China Telecommunic	not treated	2019-03-29 02:01:21	2019-03-29 02:23:57
R1-1904916	Discussion on NB-IoT PUR resource configuration in respect to radio condition	ASUSTEK COMPUTER (SHANGHAI)	not treated	2019-03-29 02:02:53	2019-03-29 09:28:05
R1-1904917	Physical layer structure for NR-V2X	OPPO	not treated	2019-03-29 03:27:03	2019-04-02 14:19:56

R1-1904918	Mode 1 resource allocation for NR SL	OPPO	not treated	2019-03-29 03:27:03	2019-04-02 14:19:56
R1-1904919	Discussion of synchronization mechanism for NR-	OPPO	not treated	2019-03-29 03:27:03	2019-04-02 14:19:56
R1-1904920	Physical layer procedure for NR-V2X sidelink	OPPO	not treated	2019-03-29 03:27:03	2019-04-02 14:19:56
R1-1904921	Discussion of RLM for Unicast	OPPO	not treated	2019-03-29 03:27:03	2019-04-02 14:19:56
R1-1904922	Support of mode 2a resource allocation for NR-	OPPO	not treated	2019-03-29 03:27:03	2019-04-02 14:19:56
R1-1904923	Discussions on NR and LTE V2X in-device coexistence	OPPO	not treated	2019-03-29 03:27:03	2019-04-02 14:19:56
R1-1904924	Considerations on congestion control for NR-V2X	OPPO	noted	2019-03-29 03:27:03	2019-04-02 14:19:56
R1-1904925	On support of NR Uu controlling LTE sidelink	OPPO	not treated	2019-03-29 03:27:03	2019-04-02 14:19:56
R1-1904926	Draft CR on PHR determination and transmission	Motorola Mobility,	revised	2019-03-29 03:45:45	2019-03-30 07:52:04
R1-1904927	Draft CR on PC setting for virtual PHR	Motorola Mobility,	revised	2019-03-29 03:45:45	2019-03-30 06:28:46
R1-1904928	2-step RACH procedure	Motorola Mobility,	not treated	2019-03-29 03:45:45	2019-03-30 06:04:49
R1-1904929	PDCCH enhancements for URLLC	Motorola Mobility,	not treated	2019-03-29 03:45:45	2019-04-03 05:39:36
R1-1904930	UCI enhancement for URLLC	Motorola Mobility,	not treated	2019-03-29 03:45:45	2019-04-03 06:46:41
R1-1904931	PUSCH enhancement for URLLC	Motorola Mobility,	not treated	2019-03-29 03:45:45	2019-04-03 05:59:39
R1-1904932	Enhanced inter UE Tx prioritization/multiplexing for URLLC	Motorola Mobility,	not treated	2019-03-29 03:45:45	2019-04-03 05:39:36
R1-1904933	Enhanced UL configured grant transmission for URLLC	Motorola Mobility,	withdrawn	2019-03-29 03:45:45	
R1-1904934	MU-MIMO CSI Enhancement	Motorola Mobility,	revised	2019-03-29 03:45:45	2019-03-30 05:10:14
R1-1904935	Interrupted transmission indication for Multi-TRP Transmission	Motorola Mobility,	not treated	2019-03-29 03:45:45	2019-03-30 05:10:14
R1-1904936	Power control for multi-panel uplink transmission	Motorola Mobility,	not treated	2019-03-29 03:45:45	2019-03-30 07:32:04
R1-1904937	NR mobility enhancement	Motorola Mobility, Lenovo	noted	2019-03-29 03:45:45	2019-03-30 05:10:14
R1-1904938	Uplink power control for NR-NR dual-connectivity	Motorola Mobility,	not treated	2019-03-29 03:45:45	2019-03-30 06:28:46
R1-1904939	Discussion on UE-group wake up signal in MTC	NTT	not treated	2019-03-29 03:50:24	2019-03-30 01:36:52
R1-1904940	Discussion on preconfigured UL resources in MTC	NTT DOCOMO,	not treated	2019-03-29 03:50:24	2019-03-30 02:17:02
R1-1904941	Discussion on the use of LTE control channel region for DL transmission	NTT DOCOMO,	not treated	2019-03-29 03:50:24	2019-03-30 01:54:26
R1-1904942	Discussion on UE-group wake up signal in NB-IoT	NTT	not treated	2019-03-29 03:50:24	2019-03-30 01:36:52
R1-1904943	Discussion on preconfigured UL resources in NB-IoT	NTT DOCOMO,	not treated	2019-03-29 03:50:24	2019-03-30 02:17:02
R1-1904944	Discussion on Channel Structure for Two-Step	NTT	not treated	2019-03-29 03:50:24	2019-03-29 10:49:01
R1-1904945	Discussion on Procedure for Two-step RACH	NTT	not treated	2019-03-29 03:50:24	2019-03-29 10:49:01
R1-1904946	Initial access signals and channels for NR-U	NTT	not treated	2019-03-29 03:50:24	2019-03-30 03:58:34
R1-1904947	DL signals and channels for NR-U	NTT	not treated	2019-03-29 03:50:24	2019-03-30 03:58:34
R1-1904948	UL signals and channels for NR-U	NTT	not treated	2019-03-29 03:50:24	2019-03-30 03:58:34
R1-1904949	Channel access procedures for NR-U	NTT	not treated	2019-03-29 03:50:24	2019-03-30 03:58:34
R1-1904950	Enhancements to initial access procedure for NR-	NTT	not treated	2019-03-29 03:50:24	2019-03-30 03:58:34
R1-1904951	HARQ enhancement for NR-U	NTT	not treated	2019-03-29 03:50:24	2019-03-30 03:58:34
R1-1904952	Wide-band operation for NR-U	NTT	not treated	2019-03-29 03:50:24	2019-03-30 03:58:34
R1-1904953	Extensions of SSBs for inter-IAB-node discovery and measurements	NTT DOCOMO,	not treated	2019-03-29 03:50:24	2019-03-29 11:01:22
R1-1904954	Extension of RACH occasions and periodicities for backhaul RACH resources	NTT DOCOMO, INC.	noted	2019-03-29 03:50:25	2019-03-29 11:01:22
R1-1904955	Mechanisms for resource multiplexing among backhaul and access links	NTT DOCOMO,	not treated	2019-03-29 03:50:25	2019-03-29 11:01:22
R1-1904956	Mechanism to support the “case-1” OTA timing alignment	NTT DOCOMO,	not treated	2019-03-29 03:50:25	2019-03-29 11:01:22
R1-1904957	PDCCH enhancements for URLLC	NTT	not treated	2019-03-29 03:50:25	2019-04-03 05:17:39
R1-1904958	UCI enhancements for URLLC	NTT	not treated	2019-03-29 03:50:25	2019-04-03 05:17:39
R1-1904959	PUSCH enhancements for URLLC	NTT	not treated	2019-03-29 03:50:25	2019-04-03 05:17:39

R1-1904960	Enhancements to scheduling/HARQ for URLLC	NTT	not treated	2019-03-29 03:50:25	2019-04-03 05:17:39
R1-1904961	UL inter-UE transmission prioritization/multiplexing	NTT DOCOMO,	not treated	2019-03-29 03:50:25	2019-04-03 05:17:39
R1-1904962	Enhanced UL transmission with configured grant for URLLC	NTT DOCOMO,	noted	2019-03-29 03:50:25	2019-04-03 05:17:39
R1-1904963	some general aspects for URLLC enhancements	NTT	not treated	2019-03-29 03:50:25	2019-04-03 05:17:39
R1-1904964	UL intra-UE transmission prioritization/multiplexing and physical layer	NTT DOCOMO,	not treated	2019-03-29 03:50:25	2019-04-03 05:17:39
R1-1904965	Type II CSI Enhancement for MU-MIMO Support	NTT	not treated	2019-03-29 03:50:25	2019-03-30 00:18:05
R1-1904966	Enhancements on multi-TRP/panel transmission	NTT DOCOMO,	not treated	2019-03-29 03:50:25	2019-03-29 11:55:50
R1-1904967	Discussion on multi-beam enhancement	NTT	not treated	2019-03-29 03:50:25	2019-03-29 11:56:07
R1-1904968	Full Tx Power UL transmission	NTT	not treated	2019-03-29 03:50:25	2019-03-30 00:18:05
R1-1904969	Discussion on description of indoor industrial	NTT	revised	2019-03-29 03:50:25	2019-03-29 11:35:36
R1-1904970	Discussion on path loss model for indoor industrial scenarios	NTT DOCOMO.	revised	2019-03-29 03:50:25	2019-03-29 12:52:20
R1-1904971	Discussion on fast fading model for indoor industrial scenarios	NTT DOCOMO. INC.and	revised	2019-03-29 03:50:25	2019-03-29 12:52:20
R1-1904972	Proposal for additional delay for absolute time of arrival modeling in NLOS environment	NTT DOCOMO,	revised	2019-03-29 03:50:25	2019-03-29 11:35:53
R1-1904973	Cross-carrier scheduling with different numerologies	NTT DOCOMO,	not treated	2019-03-29 03:50:25	2019-03-29 08:17:14
R1-1904974	On COT detection and structure indication for NR-	Apple Inc.	not treated	2019-03-29 04:15:57	2019-03-30 00:23:35
R1-1904975	Considerations on NR V2X mode 2 resource allocation mechanism	Apple Inc.	not treated	2019-03-29 04:15:57	2019-03-30 00:23:35
R1-1904976	Considerations on NR V2X synchronization	Apple Inc.	not treated	2019-03-29 04:15:57	2019-03-30 00:23:35
R1-1904977	Considerations on NR V2X physical layer	Apple Inc.	not treated	2019-03-29 04:15:57	2019-03-30 00:23:35
R1-1904978	Considerations on NR V2X scheduling mechanism	Apple Inc.	not treated	2019-03-29 04:15:57	2019-03-30 00:23:35
R1-1904979	Considerations on URLLC UL Inter UE Tx prioritization/multiplexing	Apple Inc.	not treated	2019-03-29 04:15:57	2019-03-30 00:23:35
R1-1904980	NR URLLC enhancement for cell edge UE	Apple Inc.	not treated	2019-03-29 04:15:57	2019-03-30 00:23:35
R1-1904981	Considerations on CSI enhancement for MU-MIMO	Apple Inc.	not treated	2019-03-29 04:15:57	2019-03-30 00:23:35
R1-1904982	Considerations on PDCCH design for NCJT	Apple Inc.	not treated	2019-03-29 04:15:57	2019-03-30 00:23:35
R1-1904983	Considerations on multi-panel and MPE in FR2	Apple Inc.	not treated	2019-03-29 04:15:57	2019-03-30 00:23:35
R1-1904984	Further considerations on beam management	Apple Inc.	not treated	2019-03-29 04:15:57	2019-03-30 00:23:35
R1-1904985	Design of PDCCH-based power saving signal and channel	Apple Inc.	not treated	2019-03-29 04:15:57	2019-04-03 00:17:25
R1-1904986	Cross-slot scheduling for UE power saving	Apple Inc.	noted	2019-03-29 04:15:57	2019-04-03 00:17:25
R1-1904987	Remaining issues for single Tx switched uplink for EN-DC with TDD PCell	Apple Inc.	not treated	2019-03-29 04:15:57	2019-03-30 00:23:35
R1-1904988	Clarification of Pc ratio	Qualcomm Incorporated	noted	2019-03-29 05:33:47	2019-03-30 04:01:35
R1-1904989	Clarification on PHR in EN-DC	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 03:38:46
R1-1904990	NR Features and Capabilities	Qualcomm Incorporated	withdrawn	2019-03-29 05:33:47	
R1-1904991	UE capabilities for NR-NR dual connectivity	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 04:54:05
R1-1904992	Channel Structure for Two-Step RACH	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 03:55:16
R1-1904993	Procedures for Two-step RACH	Qualcomm Incorporated	noted	2019-03-29 05:33:47	2019-03-30 03:55:16
R1-1904994	Other Considerations for Two-Step RACH	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 03:55:16
R1-1904995	Draft Response LS on short control signaling in NR-U	Qualcomm Incorporated	revised	2019-03-29 05:33:47	2019-03-30 02:52:04
R1-1904996	Initial access signals and channels for NR-U	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 02:52:04
R1-1904997	DL signals and channels for NR-U	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 02:52:04
R1-1904998	UL signals and channels for NR-U	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 02:52:05

R1-1904999	Channel access procedures for NR unlicensed	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 02:52:05
R1-1905000	Initial access and mobility procedures for NR-U	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 02:52:05
R1-1905001	Enhancements to Scheduling and HARQ Operation for NR-U	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 02:52:05
R1-1905002	Enhancements to configured grants for NR-U	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 02:52:05
R1-1905003	Wideband operation for NR-U operation	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 02:52:05
R1-1905004	Updated proposal for SSB extensions for IAB	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 03:48:43
R1-1905005	Updated proposal for RACH extension for IAB	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 03:48:43
R1-1905006	Updated IAB resource management framework	Qualcomm Incorporated	noted	2019-03-29 05:33:47	2019-03-30 03:48:43
R1-1905007	Updated IAB node synchronization framework	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 03:48:43
R1-1905008	Considerations on Physical Layer aspects of NR V2X	Qualcomm Incorporated	revised	2019-03-29 05:33:47	2019-03-30 02:39:05
R1-1905009	Sidelink Resource Allocation Mechanism for NR V2X	Qualcomm Incorporated	noted	2019-03-29 05:33:47	2019-03-30 02:39:05
R1-1905010	Synchronization design for NR V2X	Qualcomm Incorporated	noted	2019-03-29 05:33:47	2019-03-30 02:39:05
R1-1905011	Co-existence aspects for NR-V2X and LTE-V2X	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 02:39:05
R1-1905012	Physical layer procedures for sidelibk	Qualcomm Incorporated	noted	2019-03-29 05:33:47	2019-03-30 02:39:05
R1-1905013	QoS management and congestion control for sidelink	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 02:39:05
R1-1905014	NR Uu control of LTE sidelibk	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 02:39:05
R1-1905015	Physical Layer Procedures for NTN	Qualcomm Incorporated	noted	2019-03-29 05:33:47	2019-03-30 03:36:56
R1-1905016	RACH Procedure and UL Timing Control for NTN	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 03:36:56
R1-1905017	Delay-tolerant Retransmission Mechanisms for NTN	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 03:36:56
R1-1905018	On NTN Initial Search and Handover	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 03:36:56
R1-1905019	PDCCH Enhancements for eURLLC	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-04-03 03:19:47
R1-1905020	UCI Enhancements for eURLLC	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-04-03 03:19:47
R1-1905021	PUSCH enhancements for eURLLC	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-04-03 03:19:47
R1-1905022	Enhancements to Scheduling and HARQ for eURLLC	Qualcomm Incorporated	noted	2019-03-29 05:33:47	2019-04-03 03:19:47
R1-1905023	Uplink Inter-UE Tx Multiplexing and Prioritization	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-04-03 03:19:47
R1-1905024	Enhanced Grant-Free Transmissions for eURLLC	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-04-03 03:19:47
R1-1905025	CSI enhancement for MU-MIMO support	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 04:01:35
R1-1905026	Multi-TRP Enhancements	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 02:57:39
R1-1905027	Enhancements on Multi-beam Operation	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 02:41:11
R1-1905028	Full Tx power for UL transmissions	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 03:58:34
R1-1905029	Lower PAPR reference signals	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 03:58:34
R1-1905030	Comparison between SFN and other multi-TRP schemes for PDSCH Reliability	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 02:57:39

R1-1905031	PDCCH-based power saving channel design	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-04-03 05:25:07
R1-1905032	Cross-slot scheduling power saving techniques	Qualcomm Incorporated	noted	2019-03-29 05:33:47	2019-04-03 05:25:07
R1-1905033	DL & UL Reference Signals for NR Positioning	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-04-03 03:10:57
R1-1905034	UE & gNB measurements for NR Positioning	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-04-03 03:10:57
R1-1905035	Considerations on Phy-layer procedures for NR Positioning	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-04-03 03:10:57
R1-1905036	Discussion on Description of Indoor Industrial Scenarios	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 04:27:39
R1-1905037	Blockage Modeling and Spatial-Consistency Aspects for Indoor Industrial Scenarios	Qualcomm Incorporated	not treated	2019-03-29 05:33:47	2019-03-30 04:27:39
R1-1905038	On mobility enhancements	Qualcomm Incorporated	noted	2019-03-29 05:33:47	2019-03-30 03:15:20
R1-1905039	Draft TS 38.213 CR on conflict between serving cell SSB transmission and dynamic SFI	vivo	noted	2019-03-29 05:45:29	2019-03-30 03:23:23
R1-1905040	RACH resources in time domain enhancements	ITRI	not treated	2019-03-29 05:47:07	2019-03-29 09:01:31
R1-1905041	HARQ enhancements for NR-U	ITRI	not treated	2019-03-29 05:47:11	2019-03-29 09:01:31
R1-1905042	Discussion on enhancements on multi-beam	ITRI	not treated	2019-03-29 05:47:11	2019-03-29 09:01:31
R1-1905043	Discussion on channel structure for 2-Step RACH	ITRI, NTPU	not treated	2019-03-29 05:47:11	2019-03-29 09:01:31
R1-1905044	Discussion on procedure for 2-Step RACH	ITRI, NTPU	not treated	2019-03-29 05:47:11	2019-03-29 09:01:31
R1-1905045	Discussion on PDCCH-based power saving signal	ZTE Corporation	not treated	2019-03-29 06:01:00	2019-04-03 02:18:54
R1-1905046	Procedure of cross-slot scheduling power saving technique	ZTE Corporation	not treated	2019-03-29 06:02:54	2019-04-03 02:18:54
R1-1905047	Discussion on potential techniques for UE power	ZTE	not treated	2019-03-29 06:04:24	2019-04-03 02:18:54
R1-1905048	Extension of RACH configuration for backhaul link	OPPO	not treated	2019-03-29 06:15:37	2019-03-30 01:45:09
R1-1905049	Cross-slot Scheduling Procedure for Power Saving	OPPO	not treated	2019-03-29 06:15:37	2019-04-02 09:58:33
R1-1905050	Discussion on PDCCH-based power saving signal/channel	OPPO	not treated	2019-03-29 06:15:37	2019-04-02 09:58:33
R1-1905051	On Channel Structure for 2-step RACH	OPPO	not treated	2019-03-29 06:15:37	2019-03-30 01:45:09
R1-1905052	On Procedure for 2-step RACH	OPPO	not treated	2019-03-29 06:15:37	2019-03-30 01:45:09
R1-1905053	Views on NR multi-beam operations	Mitsubishi Electric Corp	not treated	2019-03-29 06:26:15	2019-03-29 22:56:24
R1-1905054	Views on UL cancellation schemes	Mitsubishi Electric Corp	not treated	2019-03-29 06:29:45	2019-03-29 22:56:24
R1-1905055	Physical layer control procedures for NTN	Asia Pacific Telecom co.	not treated	2019-03-29 06:32:59	2019-03-29 11:48:09
R1-1905056	Enhancements on Multi-TRP/panel transmission	KDDI Corporation	not treated	2019-03-29 06:34:27	2019-03-29 08:15:21
R1-1905057	Enhancements on Multi-TRP/Panel Transmission	Asia Pacific Telecom co.	not treated	2019-03-29 06:36:16	2019-03-29 11:48:09
R1-1905058	Enhancement on multi-beam operation	KDDI	not treated	2019-03-29 06:36:18	2019-03-29 08:15:21
R1-1905059	Discussion on the DL signals and channels for NR-U	Beijing Xiaomi Mobile	not treated	2019-03-29 06:37:50	2019-03-29 16:27:27
R1-1905060	Discussion on the HARQ enhancement for NR-U	Beijing Xiaomi Mobile	not treated	2019-03-29 06:38:39	2019-03-29 16:27:27
R1-1905061	PDCCH enhancements for NR URLLC	Asia Pacific Telecom co.	not treated	2019-03-29 06:39:05	2019-03-29 11:48:09
R1-1905062	Discussion on the wideband operation for NR-U	Beijing Xiaomi Mobile	not treated	2019-03-29 06:39:25	2019-03-29 16:27:27
R1-1905063	Enhanced Type II codebook for CSI feedback	Nokia, Nokia Shanghai Bell	not treated	2019-03-29 06:43:20	2019-03-30 05:21:14
R1-1905064	Enhancements on Multi-TRP/Panel Transmission	Nokia, Nokia Shanghai Bell	not treated	2019-03-29 06:43:20	2019-03-29 19:51:41
R1-1905065	Enhancements on Multi-beam Operation	Nokia, Nokia Shanghai Bell	not treated	2019-03-29 06:43:20	2019-03-29 19:51:41
R1-1905066	On the Full TX Power UL transmission	Nokia, Nokia Shanghai Bell	not treated	2019-03-29 06:43:20	2019-03-29 19:51:41

R1-1905067	Discussion on Low PAPR RS	Nokia, Nokia Shanghai Bell	not treated	2019-03-29 06:43:20	2019-03-29 19:51:41
R1-1905068	On the number of repetitions for DCI format 3/3A for BL/CE UEs	Intel Corporation	noted	2019-03-29 06:44:31	2019-03-30 07:20:39
R1-1905069	On set of candidates for different ALs for	Intel	revised	2019-03-29 06:44:31	2019-03-30 07:20:39
R1-1905070	On transmit power level assumptions for WUS in	Intel	withdrawn	2019-03-29 06:44:31	
R1-1905071	On initial access signals/channels	Beijing Xiaomi Mobile	not treated	2019-03-29 06:45:48	2019-03-29 09:40:04
R1-1905072	Discussion on sidelink resource allocation	Asia Pacific Telecom co.	not treated	2019-03-29 06:45:55	2019-03-29 11:48:09
R1-1905073	Enhancements on Multi-beam Operations	Asia Pacific Telecom co.	not treated	2019-03-29 06:54:46	2019-03-29 11:48:09
R1-1905074	NR-U initial access procedure enhancements	Xiaomi	not treated	2019-03-29 06:59:44	2019-03-29 09:40:04
R1-1905075	Enhancements on beam management	Beijing Xiaomi Electronics	not treated	2019-03-29 07:03:58	2019-03-29 08:50:43
R1-1905076	NR Sidelink Resource Allocations using Mode 1	ITRI	not treated	2019-03-29 07:26:31	2019-04-01 08:10:11
R1-1905077	Discussion on NR Sidelink Resource Allocation	ITRI	not treated	2019-03-29 07:27:26	2019-04-01 08:10:11
R1-1905078	On Sidelink Synchronization Issues and Mechanisms for NR V2X	ITRI	noted	2019-03-29 07:28:25	2019-04-01 08:10:11
R1-1905079	Discussion on NR V2X Sidelink Physical	ITRI	not treated	2019-03-29 07:29:21	2019-04-01 08:10:11
R1-1905080	Discussion on QoS management for sidelink	ITRI	not treated	2019-03-29 07:30:08	2019-04-01 08:10:11
R1-1905081	The discussions on NR-Uu assisted LTE sidelink in V2X communications	ITRI	not treated	2019-03-29 07:30:59	2019-04-01 08:10:11
R1-1905082	Discussion on Potential Techniques for NR Positioning	ITRI	not treated	2019-03-29 07:32:10	2019-04-01 08:10:11
R1-1905083	On support of slot aggregation when scheduled using fallback DCI formats	Intel Corporation	noted	2019-03-29 07:40:18	2019-03-30 07:20:39
R1-1905084	Discussion on Mode 2 resource allocation in NR V2X	ASUSTEK COMPUTER (SHANGHAI)	not treated	2019-03-29 07:45:44	2019-03-29 09:02:39
R1-1905085	Discussion on preemption indication enhancement	ASUSTEK COMPUTER (SHANGHAI)	not treated	2019-03-29 07:48:22	2019-03-29 09:02:39
R1-1905086	Discussion on DL signals and channels in NR	Google Inc.	not treated	2019-03-29 07:49:44	2019-03-30 04:35:45
R1-1905087	DL signals and channels for NR-U	ASUSTEK COMPUTER (SHANGHAI)	not treated	2019-03-29 07:50:29	2019-03-29 09:02:39
R1-1905088	Discussion on sidelink structure in NR V2X	ASUSTEK COMPUTER (SHANGHAI)	not treated	2019-03-29 07:51:44	2019-03-29 09:02:39
R1-1905089	Discussion on channel access procedure	Google Inc.	not treated	2019-03-29 07:51:46	2019-03-30 04:35:45
R1-1905090	On adapting random access procedures for NTN	Ericsson	not treated	2019-03-29 07:51:53	2019-03-30 02:54:49
R1-1905091	PDCCH enhancements for NR URLLC	Panasonic	not treated	2019-03-29 07:52:31	2019-04-02 08:39:30
R1-1905092	Discussion on UCI enhancement for URLLC	Panasonic	not treated	2019-03-29 07:53:08	2019-04-02 08:39:30
R1-1905093	On adapting HARQ procedures for NTN	Ericsson	not treated	2019-03-29 07:53:30	2019-03-30 02:54:49
R1-1905094	Discussion on scheduling/HARQ enhancement for	Panasonic	not treated	2019-03-29 07:54:48	2019-04-02 08:39:30
R1-1905095	On physical layer control procedures for NTN	Ericsson	noted	2019-03-29 07:55:23	2019-03-30 02:59:25
R1-1905096	Discussion on URLLC enhancements for grant-free transmission	Panasonic Corporation	not treated	2019-03-29 07:55:37	2019-04-02 08:39:30
R1-1905097	On NTN link level and system level evaluations	Ericsson	not treated	2019-03-29 07:57:37	2019-03-30 02:59:25
R1-1905098	PAPR reduction for NTN	Ericsson	not treated	2019-03-29 07:59:58	2019-03-30 03:06:04
R1-1905099	Physical layer structure for NR V2X	ITL	not treated	2019-03-29 08:01:21	2019-03-30 01:55:44
R1-1905100	NTN Overview	Ericsson	not treated	2019-03-29 08:02:19	2019-03-30 03:06:04
R1-1905101	Physical layer procedure for NR V2X	ITL	not treated	2019-03-29 08:03:08	2019-03-30 01:55:44
R1-1905102	On Measurement Metrics for NTN	Ericsson	not treated	2019-03-29 08:04:54	2019-03-30 03:06:04
R1-1905103	On Rel-16 LTE SRS enhancements	Ericsson	not treated	2019-03-29 08:13:39	2019-03-30 03:17:55
R1-1905104	Draft CR on DMRS transmission	CATT	endorsed	2019-03-29 08:13:56	2019-03-30 05:05:05
R1-1905105	Enhancements to HARQ for eURLLC	III	not treated	2019-03-29 08:21:16	2019-04-02 05:55:51
R1-1905106	Discussion on TSC traffic patterns	III	not treated	2019-03-29 08:23:46	2019-04-02 05:55:51
R1-1905107	Draft CR on correction to RI determination	Ericsson	not	2019-03-29 08:24:12	2019-03-29 22:41:01

R1-1905108	Draft CR on correction to bitwidth of NNZC	Ericsson	revised	2019-03-29 08:24:14	2019-03-29 22:41:01
R1-1905109	Draft CR on Clarification of Activation and Selection commands in 38.214	Ericsson	endorsed	2019-03-29 08:24:14	2019-03-29 22:41:01
R1-1905110	On CSI enhancements for MU-MIMO support	Ericsson	revised	2019-03-29 08:24:14	2019-03-29 22:41:01
R1-1905111	On CBSR for Type II CSI enhancements	Ericsson	not treated	2019-03-29 08:24:14	2019-03-29 22:41:01
R1-1905112	On UCI design for Type II CSI enhancements	Ericsson	not treated	2019-03-29 08:24:14	2019-03-29 22:41:01
R1-1905113	Evaluation results on the value of N3 for Type II CSI enhancements	Ericsson	not treated	2019-03-29 08:24:14	2019-03-29 22:41:01
R1-1905114	Evaluation results for different parameter settings for Type II CSI enhancements	Ericsson	revised	2019-03-29 08:24:14	2019-03-29 22:41:01
R1-1905115	On the necessity of feeding back oversampling index for Type II CSI enhancements	Ericsson	not treated	2019-03-29 08:24:14	2019-03-29 22:41:01
R1-1905116	Correction on physical downlink control channel	ASUSTeK	not pursued	2019-03-29 08:33:43	2019-03-29 08:37:21
R1-1905117	Discussion on PUSCH enhancements	Potevio	not treated	2019-03-29 08:42:28	2019-04-02 06:15:54
R1-1905118	Discussion on Enhancements to Initial Access Procedure for NR-U	Potevio	not treated	2019-03-29 08:42:28	2019-03-29 10:39:24
R1-1905119	Discussion on transmission in preconfigured UL resources	III	not treated	2019-03-29 08:46:08	2019-03-30 05:46:56
R1-1905120	Link Budget Analysis in NTN	Nokia, Nokia Shanghai Bell	not treated	2019-03-29 08:50:21	2019-03-30 04:44:55
R1-1905121	PDCCH enhancements for URLLC	Sequans Communicatio	not treated	2019-03-29 08:56:23	2019-04-01 13:11:33
R1-1905122	Considerations on UL inter-UE multiplexing for URLLC	Sequans Communicatio	not treated	2019-03-29 08:59:59	2019-04-01 13:11:33
R1-1905123	Views on physical layer design for NR V2X sidelink	Mitsubishi Electric RCE	not treated	2019-03-29 09:22:08	2019-04-02 17:12:44
R1-1905124	Discussion on sidelink synchronization mechanism for NR V2X	ITL	not treated	2019-03-29 09:26:22	2019-03-30 08:07:47
R1-1905125	Considerations on Channel Structure for Two-step	CAICT	not treated	2019-03-29 09:35:32	2019-03-29 09:53:29
R1-1905126	Considerations on Procedure for Two-step RACH	CAICT	not treated	2019-03-29 09:35:32	2019-03-29 09:53:29
R1-1905127	Discussions on DL signals and channels design in	CAICT	not treated	2019-03-29 09:35:32	2019-03-29 09:53:29
R1-1905128	Discussions on UL signals and channels design in	CAICT	not treated	2019-03-29 09:35:32	2019-03-29 09:53:29
R1-1905129	Discussions on HARQ enhancements in NR-U	CAICT	not treated	2019-03-29 09:35:32	2019-03-29 09:53:29
R1-1905130	Discussion on RACH occassions and periodicities for backhaul RACH resources	CAICT	not treated	2019-03-29 09:35:32	2019-03-29 09:53:29
R1-1905131	Discussion on mechanisms for resource multiplexing among backhaul and access links	CAICT	not treated	2019-03-29 09:35:32	2019-03-29 09:53:29
R1-1905132	UCI enhancements for URLLC	CAICT	not treated	2019-03-29 09:35:32	2019-04-02 08:57:49
R1-1905133	Discussion on RAN2 LS on clarification about CSI-RS measurement	ZTE	not treated	2019-03-29 09:37:44	2019-03-30 04:39:06
R1-1905134	TDD Timing on FDD Bands for Dual Uplink	VODAFONE Group Plc	revised	2019-03-29 10:17:39	2019-03-29 14:46:28
R1-1905135	Draft reply to RAN4 LS on NR-LTE Co-existence	Ericsson	not treated	2019-03-29 10:20:25	2019-03-30 05:37:03
R1-1905136	Draft CR to 38.213 on Clarification of ACK or NACK for TB-based HARQ-ACK codebook	Ericsson	noted	2019-03-29 10:20:25	2019-03-30 05:37:03
R1-1905137	Draft CR to 38.214 clarifying calculation of DataRate and DataRateCC	Ericsson	revised	2019-03-29 10:20:25	2019-03-30 05:37:03
R1-1905138	Calculation of DataRate and DataRateCC in 38.214	Ericsson	noted	2019-03-29 10:20:25	2019-03-30 05:37:03
R1-1905139	PDCCH Blind decoding capability for late drop	Ericsson	not treated	2019-03-29 10:20:25	2019-03-30 05:37:03
R1-1905140	Handling of LTE-DC and EN-DC in LTE specs	Ericsson	noted	2019-03-29 10:20:25	2019-03-30 05:37:03
R1-1905141	Power Control for NR-NR DC	Ericsson	not treated	2019-03-29 10:20:25	2019-03-30 05:37:03
R1-1905142	Cross-carrier scheduling with different numerologies	Ericsson	not treated	2019-03-29 10:20:25	2019-03-30 05:37:03
R1-1905143	Enhancements to single-tx operation for EN-DC	Ericsson	not treated	2019-03-29 10:20:25	2019-03-30 05:37:03
R1-1905144	Reduced latency Scell management for NR-NR CA	Ericsson	noted	2019-03-29 10:20:25	2019-03-30 05:37:03
R1-1905145	On PUSCH enhancements for NR URLLC	Nokia, Nokia Shanghai Bell	noted	2019-03-29 10:27:42	2019-04-02 13:56:01
R1-1905146	UL inter-UE eMBB and URLLC multiplexing enhancements	Nokia, Nokia Shanghai Bell	not treated	2019-03-29 10:27:48	2019-04-02 13:56:01

R1-1905147	On Enhanced UL Configured Grant Transmission for NR URLLC	Nokia, Nokia Shanghai Bell	not treated	2019-03-29 10:27:48	2019-04-02 13:56:01
R1-1905148	Initial access signals and channels for NR-	WILUS Inc.	not treated	2019-03-29 10:41:59	2019-03-30 05:07:07
R1-1905149	UL channels for NR-unlicensed	WILUS Inc.	not treated	2019-03-29 10:41:59	2019-03-30 05:07:07
R1-1905150	Channel access procedure for NR-unlicensed	WILUS Inc.	not treated	2019-03-29 10:41:59	2019-03-30 05:07:07
R1-1905151	Enhancement to initial access procedure for NR-	WILUS Inc.	not treated	2019-03-29 10:41:59	2019-03-30 05:07:07
R1-1905152	Wideband operation for NR-unlicensed	WILUS Inc.	not treated	2019-03-29 10:41:59	2019-03-30 05:07:07
R1-1905153	Enhancements on multiple TRP or panel transmission	ASUSTEK COMPUTER (SHANGHAI)	not treated	2019-03-29 10:56:48	2019-03-29 11:09:34
R1-1905154	Cross-carrier scheduling with different numerologies	ASUSTEK COMPUTER (SHANGHAI)	not treated	2019-03-29 10:57:59	2019-03-29 11:09:54
R1-1905155	Consideration on Mode 2 resource allocation for	KT Corp.	not treated	2019-03-29 11:39:01	2019-03-29 11:41:18
R1-1905156	Enhancements to multi-beam operation	Ericsson	not treated	2019-03-29 11:56:33	2019-03-29 19:53:00
R1-1905157	On event-driven reporting for beam management	Ericsson	not treated	2019-03-29 11:56:33	2019-03-29 19:53:00
R1-1905158	Further simulation results for UL multi-panel	Ericsson	not treated	2019-03-29 11:56:33	2019-03-29 19:53:00
R1-1905159	Latency analysis of SCell BFR solutions	Ericsson	not treated	2019-03-29 11:56:33	2019-03-29 19:53:00
R1-1905160	Performance of beam selection based on L1-SINR	Ericsson	not treated	2019-03-29 11:56:33	2019-03-29 19:53:00
R1-1905161	Physical Layer Aspects for Mobility Enhancements	Ericsson	noted	2019-03-29 11:56:54	2019-03-29 19:53:00
R1-1905162	Details on lower-layer mobility enhancements	Ericsson	not treated	2019-03-29 11:56:54	2019-03-29 19:53:00
R1-1905163	Additional system-level results on NC-JT with different codeword to layer mappings	Ericsson	not treated	2019-03-29 12:05:13	2019-03-29 15:18:51
R1-1905164	Link-level results on the codeword-to-layer mapping for single-PDCCH NC-JT	Ericsson	not treated	2019-03-29 12:05:13	2019-03-29 15:05:13
R1-1905165	Performance comparison of different RV combinations for SDM and FDM based schemes	Ericsson	not treated	2019-03-29 12:05:13	2019-03-29 15:18:51
R1-1905166	NC-JT performance with layer restriction between	Ericsson	not treated	2019-03-29 12:05:13	2019-03-29 15:22:43
R1-1905167	On the number of TRPs for high reliability at 4	Ericsson	not treated	2019-03-29 12:05:13	2019-03-29 15:22:43
R1-1905168	Performance evaluation of NC-JT with different clustering approaches	Ericsson	not treated	2019-03-29 12:05:13	2019-03-29 15:18:51
R1-1905169	On MAC-CE signaling impact of Rel-16 TCI indication framework	Ericsson	not treated	2019-03-29 12:05:13	2019-03-29 15:29:28
R1-1905170	Views on CSI framework for multi-TRP	Ericsson	not treated	2019-03-29 12:05:13	2019-03-29 15:27:34
R1-1905171	Sequence design for Alt.1 length-6 CGS for low	Ericsson	not treated	2019-03-29 12:05:13	2019-03-29 14:59:12
R1-1905172	Draft CR on the validity region of an antenna port for PDCCH and PBCH	Ericsson	endorsed	2019-03-29 12:09:09	2019-03-29 13:53:36
R1-1905173	On inconsistent CG and DL-SPS description in 38.214 with 38.321	Ericsson	not treated	2019-03-29 12:10:00	2019-03-30 04:00:30
R1-1905174	Clarification on Type2 configured grant	Ericsson	not pursued	2019-03-29 12:10:00	2019-03-30 04:00:30
R1-1905175	Clarification on resource allocation of Type 1 configured grant	Ericsson	not pursued	2019-03-29 12:10:00	2019-03-30 04:00:30
R1-1905176	Clarification on CG transmission opportunities	Ericsson	noted	2019-03-29 12:10:00	2019-03-30 04:00:30
R1-1905177	Clarification on DL-SPS transmission	Ericsson	not pursued	2019-03-29 12:10:00	2019-03-30 04:00:30
R1-1905178	Clarification regarding non-full-duplex UE communication	Ericsson	revised	2019-03-29 12:10:00	2019-03-30 02:05:08
R1-1905179	Additional evaluation results on different multi-trp schemes for reliable PDSCH transmission in	Ericsson	revised	2019-03-29 12:34:40	2019-03-29 21:17:45
R1-1905180	On Timing Advance in NTN	THALES	not treated	2019-03-29 12:35:53	2019-03-29 12:40:27
R1-1905181	DL Frame Structure and COT Aspects for NR-U	Motorola Mobility,	not treated	2019-03-29 12:40:21	2019-03-29 23:11:24
R1-1905182	TDD Timing on FDD Bands for Dual Uplink	Vodafone España SA	withdrawn	2019-03-29 12:40:44	
R1-1905183	Extensions for Channel Access Procedures	Motorola Mobility,	not treated	2019-03-29 12:41:54	2019-03-29 23:11:24
R1-1905184	Initial access procedure for NR-U	Motorola Mobility,	revised	2019-03-29 12:42:56	2019-03-29 23:54:49
R1-1905185	Discussion on PDCCH-based power saving signal/channel triggering adaptation	Panasonic	not treated	2019-03-29 12:45:29	2019-03-29 16:04:10

R1-1905186	Discussion on procedure of cross-slot scheduling power saving techniques	Panasonic	not treated	2019-03-29 12:51:44	2019-03-29 16:04:10
R1-1905187	IMT-2020 self-evaluation - mMTC coverage, data rate, latency & battery life	Ericsson	not treated	2019-03-29 12:52:36	2019-03-29 22:13:16
R1-1905188	IMT-2020 self-evaluation - mMTC non-full buffer connection density for LTE-MTC and NB-IoT	Ericsson	not treated	2019-03-29 12:52:36	2019-03-29 22:13:16
R1-1905189	IMT-2020 self-evaluation - CP latency	Ericsson	not treated	2019-03-29 12:52:36	2019-03-29 22:13:16
R1-1905190	IMT-2020 self-evaluation - NR URLLC Reliability	Ericsson	not treated	2019-03-29 12:52:36	2019-03-29 22:13:16
R1-1905191	IMT-2020 self-evaluation - NR URLLC user plane	Ericsson	not treated	2019-03-29 12:52:36	2019-03-29 22:13:16
R1-1905192	Summary of email discussion on measurements	Ericsson	not treated	2019-03-29 12:52:36	2019-03-29 22:48:18
R1-1905193	Summary of email discussion on scenario description	Ericsson	not treated	2019-03-29 12:52:36	2019-03-29 22:48:18
R1-1905194	Summary of email discussion on path loss	Ericsson	not treated	2019-03-29 12:52:36	2019-03-29 22:48:18
R1-1905195	Summary of email discussion on LOS probability	Ericsson	not treated	2019-03-29 12:52:36	2019-03-29 22:48:18
R1-1905196	Summary of email discussion on fast fading modeling and parameters	Ericsson	not treated	2019-03-29 12:52:36	2019-03-29 22:48:18
R1-1905197	Summary of email discussion on additional modeling components	Ericsson	not treated	2019-03-29 12:52:36	2019-03-29 22:48:18
R1-1905198	List of agreements from email discussions	Ericsson	not treated	2019-03-29 12:52:36	2019-03-29 22:48:18
R1-1905199	Addition of indoor industrial channel model	Ericsson	not treated	2019-03-29 12:52:36	2019-03-29 22:48:18
R1-1905200	Views on the scenario description	Ericsson	not treated	2019-03-29 12:52:36	2019-03-29 22:48:18
R1-1905201	Views on the LOS probability modeling	Ericsson	not treated	2019-03-29 12:52:36	2019-03-29 22:48:18
R1-1905202	A review on Delay Spread results in industrial	Ericsson, CEA-	not treated	2019-03-29 12:52:36	2019-03-29 22:48:18
R1-1905203	Views on additional modeling components	Ericsson	not treated	2019-03-29 12:52:36	2019-03-29 22:48:18
R1-1905204	Skeleton proposal for TR 38.821 chapter related to RAN1	THALES, Nokia, Nokia	noted	2019-03-29 12:53:26	2019-03-29 12:57:59
R1-1905205	Discussion on channel structure for two-step	KDDI	not treated	2019-03-29 13:02:13	2019-03-29 14:56:05
R1-1905206	Doppler shift compensation in NTN	THALES	noted	2019-03-29 13:03:43	2019-03-29 13:06:50
R1-1905207	Discussion on procedure for two-step RACH	KDDI	not treated	2019-03-29 13:04:32	2019-03-29 14:56:05
R1-1905208	Discussion on 6 SRS symbols antenna switching	Huawei,	noted	2019-03-29 13:05:23	2019-03-29 18:51:06
R1-1905209	Channel characterization in industrial environment with high clutter density	CEA-LETI	not treated	2019-03-29 13:17:20	2019-03-29 13:18:56
R1-1905210	Discussions on resource multiplexing among backhaul and access links	CEWiT	not treated	2019-03-29 13:19:03	2019-03-30 04:57:32
R1-1905211	CBS PUR for NB-IoT	Fraunhofer IIS, Fraunhofer	not treated	2019-03-29 13:21:41	2019-03-29 14:02:34
R1-1905212	Draft LS response on clarification about CSI-RS	Ericsson	not treated	2019-03-29 13:33:25	2019-03-29 19:53:00
R1-1905213	Initial access enhancement for NR-U	KT Corp.	not treated	2019-03-29 13:34:27	2019-03-29 13:40:33
R1-1905214	Considerations on Enhanced inter UE Tx prioritization/multiplexing	KT Corp.	not treated	2019-03-29 13:37:34	2019-03-29 13:40:33
R1-1905215	On Timing Advance for NTN	Dish Network	not treated	2019-03-29 13:53:58	2019-03-29 19:41:57
R1-1905216	Key satellite parameters and simulation	ESA	not treated	2019-03-29 13:57:17	2019-03-29 19:55:50
R1-1905217	Comparison of MAC CE signalling options for spatial relation update of aperiodic SRS	Ericsson	not treated	2019-03-29 13:57:35	2019-03-29 19:53:00
R1-1905218	L1-SINR estimation using ZP and NZP IMR	Ericsson	not treated	2019-03-29 13:57:35	2019-03-29 19:53:00
R1-1905219	Make-Before-Break, DC-based HO and the relation to multi-TRP	Ericsson	not treated	2019-03-29 13:58:10	2019-03-29 19:53:00
R1-1905220	Physical layer aspects of RACH-less HO	Ericsson	not treated	2019-03-29 13:58:10	2019-03-29 19:53:00
R1-1905221	Early CSI reporting in HO	Ericsson	not treated	2019-03-29 13:58:10	2019-03-29 19:53:00
R1-1905222	[Draft] Reply LS on on clarification about CSI-RS measurement	Nokia, Nokia Shanghai Bell	not treated	2019-03-29 14:17:18	2019-03-29 15:21:04

R1-1905223	On CSI-RS mobility measurements	Nokia, Nokia Shanghai Bell	not treated	2019-03-29 14:17:18	2019-03-29 15:21:04
R1-1905224	On simultaneous connectivity	Nokia, Nokia Shanghai Bell	not treated	2019-03-29 14:17:18	2019-03-29 15:21:04
R1-1905225	On 2-step rancom access for NTN	Ericsson	not treated	2019-03-29 14:21:09	2019-03-30 03:11:17
R1-1905226	PHY aspects of a moving RAN in non-terrestrial	Ericsson	not treated	2019-03-29 14:24:46	2019-03-30 03:11:17
R1-1905227	DRAFT response LS on UL sharing applicability in different scenarios	Nokia, Nokia Shanghai Bell	revised	2019-03-29 14:25:17	2019-03-29 21:30:50
R1-1905228	On RAN4 UE feature list for NR: Introduction of Maximum UL duty cycle UE capability	Nokia, Nokia Shanghai Bell	not treated	2019-03-29 14:25:17	2019-03-29 21:30:50
R1-1905229	On FR2 RF Exposure mitigation methods	Nokia, Nokia Shanghai Bell	noted	2019-03-29 14:25:17	2019-03-29 21:30:50
R1-1905230	On Sync and PBCH reading in NTN	Ericsson	not treated	2019-03-29 14:25:43	2019-03-30 03:11:17
R1-1905231	Channel model requirements for positioning	Fraunhofer IIS, Fraunhofer	not treated	2019-03-29 14:27:36	2019-03-29 20:19:49
R1-1905232	On aperiodic reference signals for NR-U	Ericsson	not treated	2019-03-29 14:33:44	2019-03-30 06:00:55
R1-1905233	On the duration of the DRS transmission window	Ericsson	not treated	2019-03-29 14:33:44	2019-03-30 06:00:55
R1-1905234	Draft LS to RAN4 on SS/PBCH Block SCS and time domain pattern for 5 and 6 GHz bands	Ericsson	not treated	2019-03-29 14:33:44	2019-03-30 06:00:55
R1-1905235	Evaluation assumptions for PUCCH design	Ericsson	not treated	2019-03-29 14:33:44	2019-03-30 06:00:55
R1-1905236	Correction on NB-IoT SPS power control	Huawei,	revised	2019-03-29 14:57:05	2019-03-29 17:00:22
R1-1905237	On DELTA_PREAMBLE value for NPRACH format 2 power control	Huawei, HiSilicon	revised	2019-03-29 14:57:05	2019-03-29 17:00:22
R1-1905238	Correction on NPRACH baseband signal	Huawei,	revised	2019-03-29 14:57:05	2019-03-29 17:00:22
R1-1905239	Time and frequency synchronization (initial access)	Mitsubishi Electric RCE	not treated	2019-03-29 14:59:06	2019-03-29 15:39:21
R1-1905240	Consideration on IMT-2020 evaluation towards final submission in June 2019	Huawei, HiSilicon	not treated	2019-03-29 15:24:35	2019-03-29 19:58:39
R1-1905241	Discussion on PDCCH monitoring for NN-DC in Rel-15 late drop	Huawei, HiSilicon	not treated	2019-03-29 15:24:36	2019-03-30 06:16:51
R1-1905242	Discussion on PHR in ENDC	Huawei,	not treated	2019-03-29 15:24:36	2019-03-30 06:22:46
R1-1905243	Clarifications on Rel-15 UE features	Huawei,	revised	2019-03-29 15:24:36	2019-03-30 06:14:32
R1-1905244	Correction on UE DM-RS transmission procedure for SP-CSI-RNTI	Huawei, HiSilicon	noted	2019-03-29 15:24:36	2019-03-30 06:11:28
R1-1905245	Correction on rate matching indication	Huawei, HiSilicon	noted	2019-03-29 15:24:36	2019-03-30 06:11:28
R1-1905246	(Late drop) Correction on UL HARQ for NE-DC with SUO Case 1	Huawei, HiSilicon	revised	2019-03-29 15:24:36	2019-03-30 06:11:28
R1-1905247	Correction on UL/SUL indicator in DCI format 0_0 with CRC scrambled by C-RNTI in TS 38.212	Huawei, HiSilicon	revised	2019-03-29 15:24:36	2019-03-30 06:11:28
R1-1905248	Correction on DCI size alignment in TS 38.212	Huawei, HiSilicon	revised	2019-03-29 15:24:36	2019-03-30 06:11:28
R1-1905249	Correction on PHR in EN-DC	Huawei,	not	2019-03-29 15:24:36	2019-03-30 06:11:28
R1-1905250	Correction on PDCCH monitoring	Huawei, HiSilicon	revised	2019-03-29 15:24:36	2019-03-30 06:11:28
R1-1905251	Correction on DCI format ambiguity	Huawei, HiSilicon	not pursued	2019-03-29 15:24:36	2019-03-30 06:11:28
R1-1905252	Correction on the timeline condition of multiplexing two HARQ-ACK information in one slot	Huawei, HiSilicon	revised	2019-03-29 15:24:36	2019-03-30 06:11:28
R1-1905253	Correction on redundancy version for configured grant	Huawei, HiSilicon	endorsed	2019-03-29 15:24:36	2019-03-30 06:11:28
R1-1905254	Correction on reference name of UE capability of additional DMRS for co-existence with LTE CRS	Huawei, HiSilicon	revised	2019-03-29 15:24:36	2019-03-30 06:11:28
R1-1905255	Correction on mapping from virtual to physical resource blocks	Huawei, HiSilicon	revised	2019-03-29 15:28:21	2019-03-30 06:11:28
R1-1905256	Draft LS response to RAN2 LS on UL sharing applicability in different scenarios	Huawei, HiSilicon	not treated	2019-03-29 15:28:21	2019-03-30 09:54:24
R1-1905257	On synchronization procedures for NR V2X sidelink	Mitsubishi Electric RCE	not treated	2019-03-29 15:33:07	2019-04-02 17:12:44
R1-1905258	NR-U Configured Grant Enhancements	Charter Communicatio	not treated	2019-03-29 15:35:34	2019-03-30 02:54:56
R1-1905259	On HARQ Enhancements and UL Scheduling	Charter Communicatio	not treated	2019-03-29 15:35:34	2019-03-30 02:54:56
R1-1905260	Wideband Operation for NR-U	Charter Communicatio	not treated	2019-03-29 15:35:34	2019-03-30 02:54:56
R1-1905261	Draft Reply LS on CSI-RS for mobility	Huawei,	not treated	2019-03-29 15:40:55	2019-03-30 07:39:33

R1-1905262	Views on DL and UL reference signals for NR Positioning	Nokia, Nokia Shanghai Bell	not treated	2019-03-29 16:06:59	2019-04-02 16:15:46
R1-1905263	Measurements for NR Positioning	Nokia, Nokia Shanghai Bell	not treated	2019-03-29 16:06:59	2019-04-02 16:15:46
R1-1905264	Views on physical layer procedures for NR Positioning	Nokia, Nokia Shanghai Bell	not treated	2019-03-29 16:06:59	2019-04-02 16:15:46
R1-1905265	Measurements for PRS on-demand	Nokia, Nokia Shanghai Bell	not treated	2019-03-29 16:06:59	2019-04-02 16:15:46
R1-1905266	Evaluation results of DFT-based compression codebook for rank 3 and 4	Huawei, HiSilicon	not treated	2019-03-29 16:27:41	2019-03-29 20:32:30
R1-1905267	Performance evaluation for sequence reordering	Huawei,	not treated	2019-03-29 16:27:41	2019-03-30 03:53:53
R1-1905268	Discussion of rate matching methods for PDSCH reliability enhancement schemes with multi-TRP	Huawei, HiSilicon	not treated	2019-03-29 16:27:41	2019-03-29 20:32:30
R1-1905269	Reliability enhancement on PDCCH with multi-TRP panel in consideration of low blind detection	Huawei, HiSilicon	not treated	2019-03-29 16:27:41	2019-03-29 20:32:30
R1-1905270	Reliability enhancement on PUCCH&PUSCH with multi-TRP panel	Huawei, HiSilicon	not treated	2019-03-29 16:27:41	2019-03-29 20:32:30
R1-1905271	Discussion on the supporting cases for full power transmission	Huawei, HiSilicon	not treated	2019-03-29 16:27:41	2019-03-29 20:32:30
R1-1905272	Link level Evaluation results for reliability/robustness based multi-TRP	Huawei, HiSilicon	not treated	2019-03-29 16:27:41	2019-03-29 20:32:30
R1-1905273	System level Evaluation results for reliability/robustness based multi-TRP	Huawei, HiSilicon	not treated	2019-03-29 16:27:41	2019-03-29 20:32:30
R1-1905274	Assumptions for multi-panel UEs and simultaneous multi-UE-panel transmission	Huawei, HiSilicon	not treated	2019-03-29 16:27:41	2019-03-29 20:32:30
R1-1905275	Spectrum utilization in 20MHz channel bandwidth for 60 kHz SCS	Huawei, HiSilicon	not treated	2019-03-29 16:27:41	2019-03-30 04:06:54
R1-1905276	System evaluation of DRS transmission window	Huawei,	not treated	2019-03-29 16:27:41	2019-03-30 04:06:54
R1-1905277	Preliminary Evaluation Results for Uu QoS Characteristics Values for V2X Services	Ericsson Inc.	not treated	2019-03-29 22:48:52	2019-04-03 07:18:58
R1-1905278	Uplink Power Control Solutions for NR-NR Dual Connectivity	Qualcomm Incorporated	not treated	2019-03-30 01:15:03	2019-03-30 04:23:35
R1-1905279	Cross-Carrier Scheduling with Different Numerologies	Qualcomm Incorporated	not treated	2019-03-30 01:15:03	2019-03-30 04:23:35
R1-1905280	Enhancements for EN-DC Single-Tx TDM Operation	Qualcomm Incorporated	noted	2019-03-30 01:15:03	2019-03-30 05:00:17
R1-1905281	Fast SCG and Scell activiation	Qualcomm Incorporated	not treated	2019-03-30 01:15:04	2019-03-30 04:33:47
R1-1905282	Channel Structure for Two-Step RACH	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:04	
R1-1905283	Procedures for Two-step RACH	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:04	
R1-1905284	Other Considerations for Two-Step RACH	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:04	
R1-1905285	Draft Response LS on short control signaling in NR-U	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:04	
R1-1905286	Initial access signals and channels for NR-U	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:04	
R1-1905287	DL signals and channels for NR-U	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:04	
R1-1905288	UL signals and channels for NR-U	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:04	
R1-1905289	Channel access procedures for NR unlicensed	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:04	
R1-1905290	Initial access and mobility procedures for NR-U	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:04	
R1-1905291	Enhancements to Scheduling and HARQ Operation for NR-U	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:04	
R1-1905292	Enhancements to configured grants for NR-U	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:04	
R1-1905293	Wideband operation for NR-U operation	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:04	
R1-1905294	Upayed proposal for SSB extensions for IAB	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:04	

R1-1905295	Updated proposal for RACH extension for IAB	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:04	
R1-1905296	Updated IAB resource management framework	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:05	
R1-1905297	Updated IAB node synchronization framework	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:05	
R1-1905298	Considerations on Physical Layer aspects of NR V2X	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:05	
R1-1905299	Sidelink Resource Allocation Mechanism for NR V2X	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:05	
R1-1905300	Synchronization design for NR V2X	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:05	
R1-1905301	Co-existence aspects for NR-V2X and LTE-V2X	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:05	
R1-1905302	Physical layer procedures for sidelibk	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:05	
R1-1905303	QoS management and congestion control for sidelink	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:05	
R1-1905304	NR Uu control of LTE sidelibk	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:05	
R1-1905305	Physical Layer Procedures for NTN	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:05	
R1-1905306	RACH Procedure and UL Timing Control for NTN	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:06	
R1-1905307	Delay-tolerant Retransmission Mechanisms for NTN	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:06	
R1-1905308	On NTN Initial Search and Handover	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:06	
R1-1905309	PDCCH Enhancements for eURLLC	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:06	
R1-1905310	UCI Enhancements for eURLLC	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:06	
R1-1905311	PUSCH enhancements for eURLLC	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:06	
R1-1905312	Enhancements to Scheduling and HARQ for eURLLC	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:06	
R1-1905313	Uplink Inter-UE Tx Multiplexing and Prioritization	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:06	
R1-1905314	Enhanced Grant-Free Transmissions for eURLLC	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:06	
R1-1905315	CSI enhancement for MU-MIMO support	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:06	
R1-1905316	Multi-TRP Enhancements	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:06	
R1-1905317	Enhancements on Multi-beam Operation	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:07	
R1-1905318	Full Tx power for UL transmissions	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:07	
R1-1905319	Lower PAPR reference signals	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:07	
R1-1905320	Comparison between SFN and other multi-TRP schemes for PDSCH Reliability	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:07	
R1-1905321	PDCCH-based power saving channel design	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:07	
R1-1905322	Cross-slot scheduling power saving techniques	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:07	
R1-1905323	DL & UL Reference Signals for NR Positioning	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:07	
R1-1905324	UE & gNB measurements for NR Positioning	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:07	
R1-1905325	Considerations on Phy-layer procedures for NR Positioning	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:07	
R1-1905326	Discussion on Description of Indoor Industrial Scenarios	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:07	

R1-1905327	Blockage Modeling and Spatial-Consistency Aspects for Indoor Industrial Scenarios	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:07	
R1-1905328	On mobility enhancements	Qualcomm Incorporated	withdrawn	2019-03-30 01:15:07	
R1-1905329	Discussion on AS level link management for	ZTE,	not treated	2019-03-30 17:05:37	2019-04-02 14:27:02
R1-1905330	Network Simulations Regarding the Performance of the CAS	EBU	noted	2019-03-31 13:10:57	2019-04-02 17:22:32
R1-1905331	Information For Time Variation Models	EBU	noted	2019-03-31 13:16:31	2019-04-02 17:22:32
R1-1905332	Discussion of physical layer structure for sidelink	Nokia, Nokia Shanghai Bell	not treated	2019-03-31 22:44:21	2019-04-03 04:40:01
R1-1905333	Discussion of Resource allocation for sidelink - Mode 1	Nokia, Nokia Shanghai Bell	not treated	2019-03-31 22:44:21	2019-04-03 04:40:01
R1-1905334	Discussion of Resource allocation for sidelink - Mode 2	Nokia, Nokia Shanghai Bell	not treated	2019-03-31 22:44:21	2019-04-03 04:40:01
R1-1905335	Discussion of Sidelink synchronization mechanism	Nokia, Nokia Shanghai Bell	not treated	2019-03-31 22:44:21	2019-04-03 04:40:01
R1-1905336	Discussion of In-device coexistence between LTE and NR sidelinks	Nokia, Nokia Shanghai Bell	noted	2019-03-31 22:44:21	2019-04-03 04:40:01
R1-1905337	Discussion of Physical layer procedures for sidelink	Nokia, Nokia Shanghai Bell	not treated	2019-03-31 22:44:21	2019-04-03 04:40:01
R1-1905338	Discussion of QoS management for sidelink	Nokia, Nokia Shanghai Bell	not treated	2019-03-31 22:44:21	2019-04-03 04:40:01
R1-1905339	Discussion of Support of NR Uu configuring LTE sidelink	Nokia, Nokia Shanghai Bell	not treated	2019-03-31 22:44:21	2019-04-03 04:40:01
R1-1905340	Discussion on Sidelink groupcast HARQ	Nokia, Nokia Shanghai Bell	not treated	2019-03-31 22:44:21	2019-04-03 04:40:01
R1-1905341	Mode 1 resource allocation schemes on sidelink	ZTE,	not treated	2019-03-31 22:54:34	2019-04-02 18:08:02
R1-1905342	Mode 2 Resource allocation schemes on sidelink	ZTE,	noted	2019-03-31 22:54:38	2019-04-02 18:08:02
R1-1905343	Simulation of mode 2 Resource allocation	ZTE,	not treated	2019-03-31 22:54:38	2019-04-02 18:08:02
R1-1905344	In-device coexistence between NR V2X and LTE V2X	ZTE, Sanechips	not treated	2019-03-31 22:54:38	2019-04-02 18:08:02
R1-1905345	Discussion on NR Uu controlling LTE sidelink	ZTE, Sanechips	not treated	2019-03-31 22:54:38	2019-04-02 18:08:02
R1-1905346	DL and UL Reference Signals for NR Positioning	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905347	UL Reference Signals for NR Positioning	CATT	withdrawn	2019-04-01 01:42:24	
R1-1905348	UE and gNB measurements for NR Positioning	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905349	Physical-layer procedures to support UE/gNB measurements	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905350	Network synchronization based on RAT-dependent	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905351	Discussion on physical layer structure in NR V2X	CATT	noted	2019-04-01 01:42:24	2019-04-03 05:49:07
R1-1905352	Discussion on resource allocation mechanism for sidelink Mode 1 in NR V2X	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905353	Discussion on resource allocation mechanism for sidelink Mode 2 in NR V2X	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905354	On design and evaluation of S-SSB for NR V2X	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905355	Discussion on in-device coexistence of LTE and NR sidelink in NR V2X	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905356	Discussion on physical layer procedures for sidelink in NR V2X	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905357	Discussion on QoS management for sidelink in	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905358	Discussion on support of NR Uu controlling LTE sidelink in NR V2X	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905359	PDCCH enhancements for URLLC	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905360	UL control enhancements for URLLC	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905361	PUSCH enhancements for URLLC	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905362	Discussion on out-of-order scheduling/HARQ	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905363	Discussion on inter-UE UL multiplexing	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905364	Discussion on enhanced UL configured grant transmission	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:51:16

R1-1905365	Discussion on PUSCH resource collision	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905366	Discussion on DL SPS transmission	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905367	Work plan of UE power saving in NR	CATT	noted	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905368	PDCCH based power saving signal/channel design	CATT	noted	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905369	Power saving scheme with cross-slot scheduling	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905370	Power saving schemes for UE adaptation to the BWP/SCell operation	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905371	PDCCH skipping and switching of PDCCH monitoring periodicity	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905372	Power saving scheme with UE adaptation to maximum MIMO layer	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905373	UE assistance information	CATT	not treated	2019-04-01 01:42:24	2019-04-03 05:22:24
R1-1905374	Discussion on physical layer structure for NR sidelink	Fujitsu	not treated	2019-04-01 06:58:21	2019-04-03 03:07:26
R1-1905375	Geographic Information based Dynamic TFRP Resource Selection Procedure in NR-V2X	Fujitsu	noted	2019-04-01 06:58:21	2019-04-03 03:07:26
R1-1905376	Discussion on Reservation and Sensing based Resource Selection Methods for NR-V2X Sidelink	Fujitsu	not treated	2019-04-01 06:58:21	2019-04-03 03:07:26
R1-1905377	Dynamic Sidelink Bi-mode Transmission under gNB Configuration	Fujitsu	not treated	2019-04-01 06:58:21	2019-04-03 03:07:26
R1-1905378	Further Study on TX-RX Distance based HARQ Feedback	Fujitsu	not treated	2019-04-01 06:58:21	2019-04-03 03:07:26
R1-1905379	Other aspects on physical layer procedures for NR-V2X	Fujitsu	not treated	2019-04-01 06:58:21	2019-04-03 03:07:26
R1-1905380	Discussion on physical layer structure for sidelink	Panasonic	not treated	2019-04-01 06:59:43	2019-04-02 04:31:52
R1-1905381	Discussion on resource allocation mechanism of mode 2 in NR V2X	Panasonic	not treated	2019-04-01 06:59:43	2019-04-02 04:31:52
R1-1905382	Discussion on physical layer procedures for sidelink in NR V2X	Panasonic	not treated	2019-04-01 06:59:43	2019-04-02 04:31:52
R1-1905383	Design of UE-group wake-up signal for MTC	BUPT	withdrawn	2019-04-01 07:16:11	
R1-1905384	PDCCH-based power saving signal/channel	Nokia, Nokia Shanghai Bell	noted	2019-04-01 11:52:31	2019-04-02 13:21:30
R1-1905385	Procedure of cross-slot scheduling power saving techniques	Nokia, Nokia Shanghai Bell	not treated	2019-04-01 11:52:31	2019-04-02 13:21:30
R1-1905386	Increasing Number of Repetitions to Ensure	Ericsson Inc.	not treated	2019-04-01 15:41:55	2019-04-03 07:18:58
R1-1905387	Sidelink synchronization mechanism for NR V2X	Sequans Communicatio	not treated	2019-04-01 16:28:05	2019-04-03 00:10:34
R1-1905388	On HARQ procedure for NR sidelink	Sequans Communicatio	not treated	2019-04-01 16:38:16	2019-04-03 00:10:34
R1-1905389	On TR 37.985, “Overall description of Radio Access Network (RAN) aspects for Vehicle-to-everything (V2X) based on LTE and NR”	Huawei	noted	2019-04-01 17:44:49	2019-04-02 18:03:00
R1-1905390	Draft Agenda of RAN1#96bis meeting	RAN1 Chair	approved	2019-04-01 17:57:31	2019-04-01 18:03:16
R1-1905391	Physical layer structure for NR sidelink	Sharp	not treated	2019-04-02 00:00:34	2019-04-03 02:40:43
R1-1905392	Resource allocation mode 1 for NR sidelink	Sharp	not treated	2019-04-02 00:00:34	2019-04-03 02:40:43
R1-1905393	Resource allocation mode 2 for NR sidelink	Sharp	not treated	2019-04-02 00:00:34	2019-04-03 02:40:43
R1-1905394	Synchronization mechanism for NR sidelink	Sharp	not treated	2019-04-02 00:00:34	2019-04-03 02:40:43
R1-1905395	Physical layer procedures for NR sidelink	Sharp	not treated	2019-04-02 00:00:34	2019-04-03 02:40:43
R1-1905396	UCI enhancements for URLLC	Sharp	not treated	2019-04-02 00:00:34	2019-04-03 02:40:43
R1-1905397	Views on enhancements to PUSCH for eURLLC	Sharp	not treated	2019-04-02 00:00:34	2019-04-03 02:40:43
R1-1905398	Discussion on enhancements to scheduling/HARQ	Sharp	not treated	2019-04-02 00:00:34	2019-04-03 02:40:43
R1-1905399	Discussion on Intra-UE prioritization and multiplexing	Sharp	not treated	2019-04-02 00:00:34	2019-04-03 02:40:43
R1-1905400	On Physical Layer Structure for NR V2X Sidelink	InterDigital, Inc.	not treated	2019-04-02 01:03:52	2019-04-03 03:58:59

R1-1905401	NR Sidelink Resource Allocation for Mode 1	InterDigital, Inc.	not treated	2019-04-02 01:05:14	2019-04-03 03:58:59
R1-1905402	NR Sidelink Resource Allocation Mechanism for Mode 2	InterDigital, Inc.	not treated	2019-04-02 01:06:16	2019-04-03 03:58:59
R1-1905403	Synchronization Signals Evaluations and Procedures for NR V2X Sidelink	InterDigital, Inc.	not treated	2019-04-02 01:07:36	2019-04-03 03:58:59
R1-1905404	In-device Coexistence of LTE and NR V2X Sidelinks	InterDigital, Inc.	not treated	2019-04-02 01:09:42	2019-04-03 03:58:59
R1-1905405	On Physical Layer Procedures for NR V2X Sidelink	InterDigital, Inc.	noted	2019-04-02 01:11:57	2019-04-03 03:59:31
R1-1905406	Congestion control and QoS Management for NR-V2X	InterDigital, Inc.	not treated	2019-04-02 01:13:31	2019-04-03 03:59:31
R1-1905407	Discussion on NR Uu Controlling LTE Sidelink	InterDigital, Inc.	not treated	2019-04-02 01:14:54	2019-04-03 03:59:31
R1-1905408	Sidelink RLM/RLF for NR V2X	InterDigital, Inc.	not treated	2019-04-02 01:15:58	2019-04-03 03:59:31
R1-1905409	PDCCH-based Power Saving Signal Design Considerations	InterDigital, Inc.	not treated	2019-04-02 01:17:25	2019-04-03 03:59:31
R1-1905410	On Cross-slot Scheduling for UE Power Saving	InterDigital, Inc.	not treated	2019-04-02 01:18:22	2019-04-03 03:59:31
R1-1905411	Considerations on PDCCH-based power saving signal/channel	NEC Corporation	not treated	2019-04-02 01:52:05	2019-04-03 04:33:06
R1-1905412	Discussion on physical layer structure for 5G V2X	Xiaomi Communicatio	noted	2019-04-02 02:20:34	2019-04-02 09:41:58
R1-1905413	On Mode 2 resource allocation of V2x communications	Xiaomi Communicatio	not treated	2019-04-02 02:20:34	2019-04-02 09:41:58
R1-1905414	On Synchronization for 5G V2X	Xiaomi Communicatio	not treated	2019-04-02 02:20:34	2019-04-02 09:41:58
R1-1905415	On HARQ operation for 5G V2x communications	Xiaomi Communicatio	not treated	2019-04-02 02:20:34	2019-04-02 09:41:58
R1-1905416	System-level evaluation about HARQ feedback in NR V2X groupcast	ZTE, Sanechips	not treated	2019-04-02 02:55:10	2019-04-02 14:27:02
R1-1905417	PDCCH-based power saving channel	Motorola Mobility,	not treated	2019-04-02 03:06:25	2019-04-03 07:55:28
R1-1905418	PUSCH enhancements for URLLC	CAICT	not treated	2019-04-02 03:16:20	2019-04-02 08:57:49
R1-1905419	Design of UE-group wake-up signal for MTC	BUPT	withdrawn	2019-04-02 03:45:11	
R1-1905420	Considerations on transmission type and HARQ feedback timing for multiple SL grants	CAICT	not treated	2019-04-02 08:06:54	2019-04-02 08:57:49
R1-1905421	NR Sidelink Physical Layer Structure	NTT	not treated	2019-04-02 08:25:32	2019-04-03 04:23:17
R1-1905422	NR Sidelink Resource Allocation Mechanism	NTT	noted	2019-04-02 08:25:32	2019-04-03 04:23:17
R1-1905423	NR Sidelink Resource Allocation Mechanism	NTT	not treated	2019-04-02 08:25:32	2019-04-03 04:23:17
R1-1905424	NR Sidelink Synchronization Mechanism	NTT	not treated	2019-04-02 08:25:32	2019-04-03 04:23:17
R1-1905425	NR Sidelink Physical Layer Procedure	NTT	not treated	2019-04-02 08:25:32	2019-04-03 04:23:17
R1-1905426	Congestion Control for NR Sidelink	NTT	not treated	2019-04-02 08:25:32	2019-04-03 04:23:17
R1-1905427	Support of NR Uu Controlling LTE Sidelink	NTT DOCOMO,	not treated	2019-04-02 08:25:32	2019-04-03 04:23:17
R1-1905428	Discussion on PDCCH-based power saving signal/channel	NTT DOCOMO,	not treated	2019-04-02 08:25:32	2019-04-03 03:44:38
R1-1905429	Discussion on procedure of cross-slot scheduling power saving techniques	NTT DOCOMO,	not treated	2019-04-02 08:25:32	2019-04-03 03:44:38
R1-1905430	On DCI enhancement for NR URLLC	WILUS Inc.	not treated	2019-04-02 10:38:05	2019-04-03 04:54:10
R1-1905431	On UCI enhancement for NR URLLC	WILUS Inc.	not treated	2019-04-02 10:38:05	2019-04-03 04:54:10
R1-1905432	On PUSCH enhancement for NR URLLC	WILUS Inc.	not treated	2019-04-02 10:38:05	2019-04-03 04:54:10
R1-1905433	On UL cancellation scheme for NR URLLC	WILUS Inc.	not treated	2019-04-02 10:38:05	2019-04-03 04:54:10
R1-1905434	On shorter SPS PDSCH periodicity for NR	WILUS Inc.	not treated	2019-04-02 10:38:05	2019-04-03 04:54:10
R1-1905435	Support of NR Uu controlling LTE sidelink	Panasonic Corporation	not treated	2019-04-02 11:11:22	2019-04-03 03:25:54
R1-1905436	Work plan for WI on 5G V2X with NR sidelink	LG Electronics, Huawei	noted	2019-04-02 11:40:27	2019-04-03 05:49:51
R1-1905437	Discussion on physical layer structure for NR	LG Electronics	not treated	2019-04-02 11:40:27	2019-04-03 05:49:51
R1-1905438	Discussion on resource allocation for NR sidelink	LG Electronics	not treated	2019-04-02 11:40:27	2019-04-03 05:49:51
R1-1905439	Discussion on resource allocation for NR sidelink	LG Electronics	not treated	2019-04-02 11:40:27	2019-04-03 05:49:51
R1-1905440	Discussion on simultaneous configuration of Mode 1 and Mode 2 for a UE	LG Electronics	not treated	2019-04-02 11:40:27	2019-04-03 05:49:51
R1-1905441	Discussion on NR sidelink synchronization	LG Electronics	not treated	2019-04-02 11:40:27	2019-04-03 05:49:51

R1-1905442	Discussion on in-device coexistence between LTE and NR sidelinks	LG Electronics, General Motors,	noted	2019-04-02 11:40:27	2019-04-03 05:49:51
R1-1905443	Discussion on physical layer procedure for NR	LG Electronics	noted	2019-04-02 11:40:27	2019-04-03 05:49:51
R1-1905444	Discussion on QoS management for NR sidelink	LG Electronics	not treated	2019-04-02 11:40:27	2019-04-03 05:49:51
R1-1905445	Discussion on NR Uu controlling LTE sidelink	LG Electronics	not treated	2019-04-02 11:40:27	2019-04-03 05:49:51
R1-1905446	Discussion on AS level link management for	LG Electronics	not treated	2019-04-02 11:40:27	2019-04-03 05:49:51
R1-1905447	Simulation profile update for including 2 RX antenna and high congestion scenario	LG Electronics, General Motors, Volkswagen	revised	2019-04-02 11:40:27	2019-04-03 05:49:51
R1-1905448	Draft Reply LS on SL RLM / RLF in NR V2X for	LG Electronics	not treated	2019-04-02 11:40:27	2019-04-03 05:49:51
R1-1905449	On Intra-UE prioritization	Convida	not treated	2019-04-02 11:44:45	2019-04-03 04:39:58
R1-1905450	Details of LTE Uu configuration of NR sidelink	Huawei,	not treated	2019-04-02 12:27:38	2019-04-02 20:47:38
R1-1905451	TPC based enhancements for inter-UE	Huawei,	not treated	2019-04-02 12:27:38	2019-04-02 20:21:50
R1-1905452	DL intra-UE transmission prioritization and	Huawei,	not treated	2019-04-02 12:27:38	2019-04-02 20:21:50
R1-1905453	Reduction of PDCCH monitoring for UE power	Huawei,	not treated	2019-04-02 12:27:38	2019-04-02 22:25:42
R1-1905454	On the reduction of SSB measurements	Huawei,	not treated	2019-04-02 12:27:38	2019-04-02 22:25:42
R1-1905455	Work plan for Rel-16 WI on physical layer enhancements for URLLC	Huawei, HiSilicon	noted	2019-04-02 12:27:38	2019-04-02 20:21:50
R1-1905456	UL intra-UE multiplexing between control channels	Huawei,	not treated	2019-04-02 12:27:38	2019-04-02 20:21:50
R1-1905457	UL intra-UE multiplexing between control channel and data channel	Huawei, HiSilicon	not treated	2019-04-02 12:27:38	2019-04-02 20:21:50
R1-1905458	Evaluation for hybrid RAT-dependent techniques	Huawei,	not treated	2019-04-02 12:27:38	2019-04-03 04:18:10
R1-1905459	Summary of the use of RSS for measurement improvements	Sony	noted	2019-04-02 13:01:41	2019-04-11 01:31:18
R1-1905460	Discussion on enhanced UL configured grant transmission	KDDI Corporation	not treated	2019-04-02 13:42:07	2019-04-02 13:47:13
R1-1905461	DL and UL Reference Signals for NR Positioning	Ericsson	not treated	2019-04-02 13:49:06	2019-04-02 20:27:31
R1-1905462	UE and gNB measurements for NR positioning	Ericsson	not treated	2019-04-02 13:49:06	2019-04-02 20:27:31
R1-1905463	On the necessity and details for physical-layer procedures to support UE/gNB measurements	Ericsson	not treated	2019-04-02 13:49:06	2019-04-02 20:27:31
R1-1905464	On reusing the TRS for positioning purposes	Ericsson	not treated	2019-04-02 13:49:06	2019-04-02 20:27:31
R1-1905465	Design parameters for downlink positioning	Ericsson	not treated	2019-04-02 13:49:06	2019-04-02 20:27:31
R1-1905466	Design of PDCCH-based power saving signal/channel	Ericsson	not treated	2019-04-02 13:51:03	2019-04-03 04:48:17
R1-1905467	Procedure for cross-slot scheduling technique	Ericsson	not treated	2019-04-02 13:51:03	2019-04-03 04:48:17
R1-1905468	PS considerations from high-level modeling	Ericsson	not treated	2019-04-02 13:51:03	2019-04-03 04:48:17
R1-1905469	RRM measurement aspects of NR UE power	Ericsson	not treated	2019-04-02 13:51:03	2019-04-03 04:48:17
R1-1905470	PDCCH monitoring related aspects of power	Ericsson	not treated	2019-04-02 13:51:03	2019-04-03 04:48:17
R1-1905471	Discussion on MIMO layers	Ericsson	not treated	2019-04-02 13:51:03	2019-04-03 04:48:17
R1-1905472	Discussion on UE assistance	Ericsson	not treated	2019-04-02 13:51:03	2019-04-03 04:48:17
R1-1905473	Cross-slot scheduling for group paging	Ericsson	not treated	2019-04-02 13:51:03	2019-04-03 04:48:17
R1-1905474	Triggering UE adaptation using a PDCCH-based power saving channel	Sony	not treated	2019-04-02 14:14:11	2019-04-02 21:45:47
R1-1905475	PHY layer structure for NR sidelink	Ericsson	not treated	2019-04-02 14:15:02	2019-04-02 18:59:50
R1-1905476	Uu-based sidelink resource allocation	Ericsson	noted	2019-04-02 14:15:06	2019-04-02 18:59:50
R1-1905477	Resource allocation for Mode-2 transmissions	Ericsson	noted	2019-04-02 14:15:06	2019-04-02 18:59:50
R1-1905478	On Synchronization procedures for V2X	Ericsson	not treated	2019-04-02 14:15:06	2019-04-02 18:59:50
R1-1905479	In-device coexistence between LTE and NR sidelinks	Ericsson	not treated	2019-04-02 14:15:06	2019-04-02 18:59:50
R1-1905480	Physical layer procedures for sidelink	Ericsson	not treated	2019-04-02 14:15:06	2019-04-02 18:59:50
R1-1905481	On congestion control for NR SL	Ericsson	not treated	2019-04-02 14:15:06	2019-04-02 18:59:50
R1-1905482	NR Uu controlling LTE sidelink transmissions	Ericsson	not treated	2019-04-02 14:15:06	2019-04-02 18:59:50
R1-1905483	UL Inter UE Tx multiplexing	III	not treated	2019-04-02 14:15:10	2019-04-02 14:41:26
R1-1905484	SRS Enhancements for NR positioning	Fraunhofer IIS, Fraunhofer	not treated	2019-04-02 14:35:42	2019-04-02 16:47:37
R1-1905485	Enhancement of timing-based NR positioning with carrier phase measurements	Fraunhofer IIS, Fraunhofer	not treated	2019-04-02 14:36:20	2019-04-02 16:47:37

R1-1905486	Procedures to support UE/gNB measurements	Fraunhofer IIS, Fraunhofer HHI	not treated	2019-04-02 14:36:59	2019-04-02 16:47:37
R1-1905487	UCI enhancements for URLLC	Fujitsu	not treated	2019-04-02 14:41:40	2019-04-03 03:28:23
R1-1905488	Discussion on UL preemption indication	Fujitsu	not treated	2019-04-02 14:41:40	2019-04-03 03:28:23
R1-1905489	Considerations on handling resource conflicts between dynamic grant and configured grant	Fujitsu	not treated	2019-04-02 14:41:40	2019-04-03 03:28:23
R1-1905490	On SCI and SFCI formats	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905491	Pre-emption in resource allocation	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905492	On Mode-1 HARQ indication to gNB	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905493	Link level evaluations of NR PSCCH	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905494	Link level evaluations of NR PSSCH	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905495	On data–DMRS collision for SL	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905496	On L1 measurements for NR sidelink	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905497	On NR sidelink resources and short-slot format	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905498	On link adaptation for sidelink groupcast	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905499	Detailed system-level evaluation results	Ericsson	withdrawn	2019-04-02 14:54:52	
R1-1905500	Simultaneous operation of Mode 1 and Mode 2	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905501	On Layer 1 IDs	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905502	UE reports for NR V2X	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905503	On Details of S-SSB design	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905504	[Draft] LS on inter-RAT mapping of QoS parameters for in-device coexistence	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905505	[Draft] Reply LS on SL RLM / RLF in NR V2X for	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905506	On SL RLM / RLF in NR V2X for unicast	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905507	Updated simulation assumptions	Ericsson	not treated	2019-04-02 14:54:52	2019-04-02 18:59:50
R1-1905508	Discussion on description of indoor industrial scenario	NTT DOCOMO, INC.,	not treated	2019-04-02 15:35:49	2019-04-03 12:50:28
R1-1905509	Discussion on path loss model for indoor industrial scenarios	NTT DOCOMO, INC.,	not treated	2019-04-02 15:36:37	2019-04-03 12:50:28
R1-1905510	Discussion on fast fading model for indoor industrial scenarios	NTT DOCOMO, INC.,	not treated	2019-04-02 15:37:34	2019-04-03 12:50:28
R1-1905511	Proposal for additional delay for absolute time of arrival modeling in NLOS environment	NTT DOCOMO, INC.,	not treated	2019-04-02 15:38:48	2019-04-03 12:50:28
R1-1905512	Discussion on CSI Reporting	NEC	not treated	2019-04-02 15:40:01	2019-04-08 10:24:04
R1-1905513	On multi-TRP and multi-panel	Ericsson	not treated	2019-04-02 15:41:35	2019-04-03 20:07:39
R1-1905514	Additional evaluation results on different multi-trp schemes for reliable PDSCH transmission in	Ericsson	not treated	2019-04-02 15:42:15	2019-04-03 20:07:39
R1-1905515	Initial results on coverage and msgA configurations	Ericsson	not treated	2019-04-02 15:42:58	2019-04-08 09:03:42
R1-1905516	Clarification regarding non-full-duplex UE communication	Ericsson	noted	2019-04-02 15:43:59	2019-04-05 10:32:15
R1-1905517	Summary of Rel15 SRS maintenance	Sony	noted	2019-04-02 15:45:49	2019-04-08 23:37:54
R1-1905518	Clarifications on Rel-15 UE features	Huawei,	not treated	2019-04-03 11:23:05	2019-04-08 09:03:42
R1-1905519	On CSI enhancements for MU-MIMO support	Ericsson	not treated	2019-04-03 11:26:39	2019-04-08 10:24:04
R1-1905520	Evaluation results for different parameter settings for Type II CSI enhancements	Ericsson	not treated	2019-04-03 11:27:12	2019-04-08 10:24:04
R1-1905521	Summary of Maintenance for CSI reporting	Ericsson	revised	2019-04-03 11:28:40	2019-04-08 10:24:04
R1-1905522	Summary on UCI enhancements for URLLC	OPPO	revised	2019-04-03 11:32:47	2019-04-08 23:37:54
R1-1905523	Enhancements on multi-TRP/panel transmission	Huawei, HiSilicon	not treated	2019-04-03 11:33:31	2019-04-03 20:07:39
R1-1905524	Summary of draft CRs on DCI content	Ericsson	noted	2019-04-03 12:56:55	2019-04-08 09:03:42
R1-1905525	Summary of draft CRs on resource allocation	Ericsson	noted	2019-04-03 12:58:37	2019-04-08 09:03:42
R1-1905526	Summary of Draft CRs on CA and HARQ-ACK Codebook for Rel-15 NR	Samsung	noted	2019-04-03 13:24:06	2019-04-08 09:03:42
R1-1905527	DCI formats for alternative TBS in 1024QAM	Qualcomm	agreed	2019-04-03 14:04:39	2019-04-05 10:32:15
R1-1905528	UE-group wake-up signal for eMTC	Intel	not treated	2019-04-03 14:04:39	2019-04-08 09:03:42
R1-1905529	UE-group wake-up signal for NB-IoT	Intel	not treated	2019-04-03 14:04:39	2019-04-08 09:03:42

R1-1905530	Summary of 6.2.1.1 UE group MWUS	Qualcomm Incorporated	noted	2019-04-03 14:04:39	2019-04-09 23:47:54
R1-1905531	Presence of NRS on a non-anchor for paging (feature lead summary)	nnQualcomm Incorporated	noted	2019-04-03 14:04:39	2019-04-11 15:57:32
R1-1905532	LTE-M Pre-configured UL Resources Design Considerations	Sierra Wireless, S.A.	not treated	2019-04-03 14:04:39	2019-04-08 09:03:42
R1-1905533	Summary of Use of LTE Control Channel Region for DL Transmission	Nokia, Nokia Shanghai Bell	noted	2019-04-03 14:04:39	2019-04-11 01:31:19
R1-1905534	Feature lead summary for Scheduling of multiple DL/UL transport blocks for LTE-MTC	Ericsson	noted	2019-04-03 14:04:39	2019-04-09 23:47:54
R1-1905535	Feature lead summary for Coexistence of LTE-	Ericsson	noted	2019-04-03 14:04:39	2019-04-09 23:47:54
R1-1905536	Feature lead summary of UE-group wake-up	Ericsson	noted	2019-04-03 14:04:39	2019-04-09 23:47:54
R1-1905537	Feature lead summary of MPDCCH performance improvement	Huawei	noted	2019-04-03 14:04:39	2019-04-11 01:31:19
R1-1905538	Feature lead summary of Support for transmission in preconfigured UL resources	Huawei	noted	2019-04-03 14:04:39	2019-04-09 23:47:54
R1-1905539	Feature lead summary of Coexistence of NB-IoT	Huawei	noted	2019-04-03 14:04:39	2019-04-11 01:31:19
R1-1905540	Feature lead summary of quality report in Msg3 and connected mode	Huawei	noted	2019-04-03 14:04:39	2019-04-11 01:31:19
R1-1905541	(Late drop) Correction on UL HARQ for NE-DC with SUO Case 1	Huawei, HiSilicon	agreed	2019-04-03 14:04:39	2019-04-08 23:37:54
R1-1905542	Correction for overlapping MPDCCH search spaces	Qualcomm Incorporated,	revised	2019-04-03 14:04:39	2019-04-09 05:43:03
R1-1905543	UE capabilities for SRS carrier switching	Qualcomm	revised	2019-04-03 14:04:39	2019-04-09 05:43:03
R1-1905544	Dropping rule for PUSCH in UpPTS + aperiodic SRS + periodic SRS	Qualcomm Incorporated	agreed	2019-04-03 14:04:40	2019-04-12 10:18:17
R1-1905545	Dropping rule for PUSCH in UpPTS + aperiodic SRS + periodic SRS	Qualcomm Incorporated	agreed	2019-04-03 14:04:40	2019-04-12 10:18:17
R1-1905546	Corrections related to CSI feedback with 64-QAM	Qualcomm Incorporated	agreed	2019-04-03 14:04:40	2019-04-09 05:43:03
R1-1905547	Correction on NB-IoT SPS power control	Huawei,	agreed	2019-04-03 14:04:40	2019-04-11 01:31:19
R1-1905548	Correction on NPRACH baseband signal	Huawei,	agreed	2019-04-03 14:04:40	2019-04-11 01:31:19
R1-1905549	On DELTA_PREAMBLE value for NPRACH format 2 power control	Huawei, HiSilicon	noted	2019-04-03 14:04:40	2019-04-09 05:43:03
R1-1905550	Correction for overlapping MPDCCH search spaces	Qualcomm Incorporated,	agreed	2019-04-03 14:04:40	2019-04-12 10:18:17
R1-1905551	Correction for overlapping MPDCCH search spaces	Qualcomm Incorporated,	agreed	2019-04-03 14:04:40	2019-04-12 10:18:17
R1-1905552	Correction for overlapping MPDCCH search spaces	Qualcomm Incorporated,	agreed	2019-04-03 14:04:40	2019-04-12 10:18:17
R1-1905553	UE capabilities for SRS carrier switching	RAN1,	approved	2019-04-03 14:04:40	2019-04-12 10:18:17
R1-1905554	On set of candidates for different ALs for	Intel	agreed	2019-04-03 14:04:40	2019-04-11 01:31:19
R1-1905555	On set of candidates for different ALs for	Intel	agreed	2019-04-03 14:04:40	2019-04-11 01:31:19
R1-1905556	On set of candidates for different ALs for	Intel	agreed	2019-04-03 14:04:40	2019-04-11 01:31:19
R1-1905557	[Draft] LS on EPRE for WUS	Qualcomm	revised	2019-04-03 14:04:40	2019-04-10 04:16:25
R1-1905558	Handling of invalid PRB for frequency hopping of BL/CE UEs with PUSCH CE Mode A and flexible	Qualcomm Incorporated,	revised	2019-04-03 14:04:40	2019-04-10 04:16:25
R1-1905559	[Draft] LS on DELTA_PREAMBLE value for NPRACH format 2 power control	Huawei, HiSilicon	revised	2019-04-03 14:04:40	2019-04-10 05:27:05
R1-1905560	Summary on Multiple TB scheduling enhancement for NB-IoT	ZTE	revised	2019-04-03 14:04:40	2019-04-09 23:47:54
R1-1905561	Summary of CE mode A and B improvements for non-BL Ues	LG Electronics	noted	2019-04-03 14:04:40	2019-04-11 01:31:19
R1-1905562	Signaling of FD-MIMO capabilities	Qualcomm Incorporated	noted	2019-04-03 14:04:40	2019-04-10 05:27:05
R1-1905563	[DRAFT] LS on PUR Working Assumptions for NB-IoT and LTE-M	Sierra Wireless, S.A.	revised	2019-04-03 14:04:40	2019-04-11 01:31:19
R1-1905564	Chairman's notes of AI 6.1.1 Maintenance of E-UTRA Release 8 – 14	Ad-hoc Chair (Ericsson)	endorsed	2019-04-03 14:04:40	2019-04-11 17:25:56
R1-1905565	Chairman's notes of AI 6.1.2 Maintenance of E-UTRA Release 15	Ad-hoc Chair (Ericsson)	endorsed	2019-04-03 14:04:40	2019-04-11 17:25:56
R1-1905566	Chairman's notes of 6.2.1 Additional MTC Enhancements	Ad-hoc Chair (Samsung)	endorsed	2019-04-03 14:04:40	2019-04-12 09:58:19
R1-1905567	Chairman's notes of 6.2.2 Additional Enhancements for NB-IoT	Ad-hoc Chair (Samsung)	endorsed	2019-04-03 14:04:40	2019-04-12 09:58:19

R1-1905568	Chairman's notes of 6.2.3 DL MIMO efficiency enhancements for LTE	Ad-hoc Chair (Samsung)	endorsed	2019-04-03 14:04:40	2019-04-12 08:26:41
R1-1905569	Chairman's notes of AI 6.2.4 LTE-based 5G Terrestrial Broadcast	Ad-hoc Chair (Ericsson)	endorsed	2019-04-03 14:04:40	2019-04-11 17:25:56
R1-1905570	LS on PUR Working Assumptions for NB-IoT and LTE-M	RAN1, Sierra Wireless	approved	2019-04-03 14:04:40	2019-04-11 01:31:19
R1-1905571	Updated summary on LTE DL MIMO efficiency	Huawei,	noted	2019-04-03 14:04:40	2019-04-10 04:16:25
R1-1905572	Proposals for online discussion related to CAS	Qualcomm	noted	2019-04-03 14:04:40	2019-04-11 01:31:19
R1-1905573	Summary on Multiple TB scheduling enhancement for NB-IoT	ZTE	noted	2019-04-03 14:04:40	2019-04-11 01:31:19
R1-1905574	Draft LS on transient period for antenna switching or frequency hopping	Qualcomm	revised	2019-04-03 14:04:40	2019-04-11 09:44:42
R1-1905575	LS on transient period for antenna switching or frequency hopping	RAN1, Qualcomm	approved	2019-04-03 14:04:40	2019-04-11 15:19:15
R1-1905576	[Draft] LS on FD-MIMO signalling capabilities	Qualcomm	revised	2019-04-03 14:04:40	2019-04-11 01:31:19
R1-1905577	LS on FD-MIMO signalling capabilities	RAN1,	approved	2019-04-03 14:04:40	2019-04-12 10:18:18
R1-1905578	LS on EPRE for WUS	RAN1,	approved	2019-04-03 14:04:40	2019-04-11 01:31:19
R1-1905579	Handling of invalid PRB for frequency hopping of BL/CE UEs with PUSCH CE Mode A and flexible	Qualcomm Incorporated,	agreed	2019-04-03 14:04:40	2019-04-11 01:31:19
R1-1905580	LS on DELTA_PREAMBLE value for NPRACH format 2 power control	RAN1, Huawei	approved	2019-04-03 14:04:40	2019-04-11 01:31:19
R1-1905581	Feature summary of DL quality report in MTC	Samsung	noted	2019-04-03 14:04:40	2019-04-11 01:31:19
R1-1905582	LTE-M Preconfigured UL Resources Summary #2 RAN1 #96Bis	Sierra Wireless	noted	2019-04-03 14:04:40	2019-04-11 14:34:56
R1-1905583	Further topics for UE-group wake-up signal in NB-	Ericsson	noted	2019-04-03 14:04:40	2019-04-11 16:30:17
R1-1905584	Follow up summary of the use of RSS for measurement improvements	Sony	noted	2019-04-03 14:04:40	2019-04-11 14:24:13
R1-1905585	Updated Feature lead summary of Support for transmission in preconfigured UL resources	Huawei	noted	2019-04-03 14:04:40	2019-04-11 17:25:56
R1-1905586	Updated Feature lead summary of Coexistence of NB-IoT with NR	Huawei	noted	2019-04-03 14:04:40	2019-04-11 17:25:56
R1-1905587	Updated Feature lead summary of Support of Quality report in Msg3 for non-anchor access and	Huawei	noted	2019-04-03 14:04:40	2019-04-11 17:25:56
R1-1905588	Remaining issues of 6.2.1.1 UE group MWUS	Qualcomm Incorporated	noted	2019-04-03 14:04:40	2019-04-11 14:24:13
R1-1905589	Remaining issues on DL quality report in MTC	Samsung	noted	2019-04-03 14:04:40	2019-04-11 15:19:15
R1-1905590	Draft LS on WUS weighting function for NB-IoT	Ericsson	not treated	2019-04-03 14:04:40	2019-04-12 09:58:19
R1-1905591	Void	Void	withdrawn	2019-04-03 14:04:40	
R1-1905592	[DRAFT] Draft LS on channel quality report in Msg3 for NB-IoT and LTE-M	Huawei	revised	2019-04-03 14:04:40	2019-04-11 18:05:03
R1-1905593	LS on channel quality report in Msg3 for NB-IoT and LTE-M	RAN1, Huawei	approved	2019-04-03 14:04:40	2019-04-11 18:21:14
R1-1905594	Feature summary on LTE DL MIMO efficiency enhancement	Huawei, HiSilicon	noted	2019-04-03 14:04:41	2019-04-09 05:43:03
R1-1905595	IAB RACH extensions	Ericsson	noted	2019-04-03 15:58:50	2019-04-08 09:03:42
R1-1905596	Clarifications on IAB ITA Timing Alignment	Ericsson	not treated	2019-04-03 16:01:30	2019-04-08 09:03:42
R1-1905597	Initial access signal and channels in NR	Huawei,	not treated	2019-04-03 16:03:05	2019-04-04 06:38:47
R1-1905598	Summary of UL inter UE Tx prioritization/multiplexing	vivo	noted	2019-04-03 16:09:36	2019-04-11 01:31:19
R1-1905599	Summary on CRs related to rate-matching in NR	Nokia, Nokia Shanghai Bell	noted	2019-04-03 16:11:56	2019-04-08 09:03:42
R1-1905600	Enhancements to scheduling/HARQ for NR	LG Electronics	revised	2019-04-04 06:17:38	2019-04-04 10:37:34
R1-1905601	Summary of UE and gNB measurements for NR Positioning	CATT	revised	2019-04-04 06:20:15	2019-04-09 23:47:54
R1-1905602	Introduction of UE behaviour for SRS	Nokia	endorsed	2019-04-04 06:42:47	2019-04-04 10:39:26
R1-1905603	Introduction of cross layer interference	Intel	endorsed	2019-04-04 06:45:34	2019-04-05 10:32:15
R1-1905604	Joint Proposal on Deterministic Sequence Hopping for pi/2 BPSK CGS Sequences	Intel Corporation,	not treated	2019-04-04 07:04:58	2019-04-05 10:32:15

R1-1905605	Joint Proposal on Length-6 CGS Design for pi/2 BPSK DMRS	Intel Corporation, ZTE, Sanechips,	not treated	2019-04-04 07:05:01	2019-04-05 10:32:15
R1-1905606	Clarification on NR Frequency Range Definition in TR 37.910	Intel Corporation	not treated	2019-04-04 07:05:01	2019-04-05 10:32:15
R1-1905607	Summary for PDCCH structure and search space	NTT DOCOMO	noted	2019-04-04 10:47:05	2019-04-08 09:03:42
R1-1905608	Summary for Rel-15 UL transmission procedure	NTT DOCOMO	noted	2019-04-04 10:47:05	2019-04-08 09:03:42
R1-1905609	Summary of 7.2.6.6 Enhanced UL configured grant transmission	NTT DOCOMO	noted	2019-04-04 10:47:05	2019-04-11 01:31:19
R1-1905610	Further discussion on multi TRP transmission	vivo	revised	2019-04-04 15:15:13	2019-04-05 10:32:15
R1-1905611	SLS evaluation on MU-MIMO CSI: support for L=6	Samsung	not treated	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905612	Summary for Rel-15 CRs on DL/UL data scheduling and HARQ procedure	Qualcomm	noted	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905613	Summary of CRs on UCI multiplexing on PUSCH	Qualcomm	revised	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905614	Enhancements on multi-TRP/panel transmission	Samsung	not treated	2019-04-08 23:33:33	2019-04-09 05:43:03
R1-1905615	Alignment of TBS and LDPC BG for URLLC NC-	Samsung	not treated	2019-04-08 23:33:33	2019-04-09 05:43:03
R1-1905616	Draft CR on AP-CSI-RS with a large latency of beam switching	ZTE	not pursued	2019-04-08 23:33:33	2019-04-08 23:37:54
R1-1905617	Rel-15 CR summary on long format PUCCH	Huawei	noted	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905618	CSI enhancement for MU-MIMO	Samsung	not treated	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905619	Summary of draft CRs on UL Control	Ericsson	noted	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905620	Feature Lead Summary for NR-V2X AI - 7.2.4.8	InterDigital	revised	2019-04-08 23:33:35	2019-04-09 23:47:54
R1-1905621	MU-MIMO CSI Enhancement	Motorola Mobility,	revised	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905622	Feature Lead Summary for 7.2.4.6 QoS	Nokia	noted	2019-04-08 23:33:35	2019-04-12 02:35:50
R1-1905623	Feature lead summary on AI 7.2.4.3 Sidelink synchronization mechanism	CATT	noted	2019-04-08 23:33:36	2019-04-09 23:47:54
R1-1905624	Feature lead summary for agenda item 7.2.4.5 Physical layer procedures for sidelink	LG Electronics	revised	2019-04-08 23:33:36	2019-04-11 01:31:19
R1-1905625	Summary of 7.2.6.7 Other	LG Electronics	revised	2019-04-08 23:33:36	2019-04-09 23:47:54
R1-1905626	Summary on Rel-15 NR CRs for CBG retransmission	LG Electronics	noted	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905627	Feature lead summary of Enhancements on Multi-beam Operations	LG Electronics	noted	2019-04-08 23:33:37	2019-04-09 05:43:03
R1-1905628	Maintenance of DM-RS	Qualcomm	noted	2019-04-08 10:24:04	2019-04-08 10:24:04
R1-1905629	Feature lead summary for MU-MIMO CSI: revision on selected issues	Samsung	noted	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905630	Summary on wide-band operation for NR-U	LG Electronics	revised	2019-04-08 23:33:38	2019-04-08 23:37:54
R1-1905631	Summary of contributions on PUSCH enhancements for NR eURLLC	Nokia, Nokia Shanghai Bell	not treated	2019-04-08 23:33:38	2019-04-08 23:37:54
R1-1905632	Feature lead summary for 7.2.4.1 Physical layer structure for side link	Samsung	revised	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905633	Summary of CRs for SFI for Rel.15	Qualcomm	noted	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905634	FL summary for NR-U initial access signals and	Qualcomm	noted	2019-04-08 23:33:39	2019-04-08 23:37:54
R1-1905635	FL summary for NR-U initial access procedures	Qualcomm	noted	2019-04-08 23:33:39	2019-04-08 23:37:54
R1-1905636	Summary of draft CRs for beam management and	Ericsson	noted	2019-04-08 23:33:40	2019-04-08 23:37:54
R1-1905637	Feature lead summary on Full TX Power UL	vivo	noted	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905638	Summary on SCell BFR and L1-SINR	Intel	noted	2019-04-08 23:33:40	2019-04-10 04:16:26
R1-1905639	Summary on Maintenance for UL Codebook based transmission	Intel Corporation	noted	2019-04-08 23:33:41	2019-04-08 23:37:54
R1-1905640	Draft CR on addressing SRS closed loop power control issues	ZTE	endorsed	2019-04-08 23:33:41	2019-04-08 23:37:54
R1-1905641	Summary for AI 7.1.5 Maintenance for UL power	ZTE	noted	2019-04-08 23:33:41	2019-04-08 23:37:54
R1-1905642	Draft CR on prioritization for transmission power scaling	ZTE	endorsed	2019-04-08 23:33:42	2019-04-11 01:31:19
R1-1905643	Maintenance of PT-RS	Ericsson	noted	2019-04-08 23:33:42	2019-04-08 23:37:54
R1-1905644	Feature lead summary of low PAPR RS	Ericsson	withdrawn	2019-04-08 09:03:42	2019-04-08 09:03:42

R1-1905645	Summary of Maintenance for CSI reporting	Ericsson	noted	2019-04-08 10:24:04	2019-04-08 10:24:04
R1-1905646	Summary of bandwidth part related draft CRs	MediaTek	noted	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905647	Summary of CRs on UL non-codebook based transmission	Nokia, Nokia Shanghai Bell	noted	2019-04-08 23:33:43	2019-04-08 23:37:54
R1-1905648	HARQ enhancement in NR unlicensed	Huawei,	not treated	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905649	Feature lead summary of HARQ enhancements	Huawei,	noted	2019-04-08 23:33:44	2019-04-11 01:31:19
R1-1905650	Feature lead summary on Resource allocation for NR sidelink. Mode 1	Ericsson	revised	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905651	Summary for AI 7.2.10.1 – DL Reference Signals for NR Positioning	Intel Corporation	noted	2019-04-08 23:33:45	2019-04-09 23:47:54
R1-1905652	Summary for AI 7.2.4.2.2 Mode-2 Resource	Intel	revised	2019-04-08 23:33:45	2019-04-08 23:37:54
R1-1905653	Summary for Rel-15 CRs on DL/UL data scheduling and HARQ procedure	Qualcomm	revised	2019-04-08 23:33:45	2019-04-11 03:29:10
R1-1905654	CR on PUCCH format 1	ZTE	agreed	2019-04-08 23:33:46	2019-04-09 23:47:54
R1-1905655	Summary of Maintenance for CSI Measurement	ZTE	noted	2019-04-08 23:33:47	2019-04-08 23:37:54
R1-1905656	Summary of 7.2.6.1 Potential enhancements to	Huawei	noted	2019-04-08 23:33:48	2019-04-09 23:47:54
R1-1905657	[Draft] Reply LS on SFTD measurement for NR-DC in Rel-15	ZTE	not treated	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905658	Summary of 7.2.10.3: PHY procedures for positioning measurements	Qualcomm	revised	2019-04-08 23:33:48	2019-04-09 23:47:54
R1-1905659	Feature lead summary for AI 7.2.4.7: NR control for LTE sidelink	Huawei	revised	2019-04-08 09:03:42	2019-04-08 09:03:42
R1-1905660	Summary of Enhancements to Scheduling/HARQ	Qualcomm	noted	2019-04-08 23:33:49	2019-04-10 05:27:05
R1-1905661	Draft CR on clarification of Pc ratio	Ericsson	endorsed	2019-04-08 10:24:04	2019-04-08 10:24:04
R1-1905662	Draft CR on clarification of aperiodic CSI triggering of inactive BWP	Ericsson	not pursued	2019-04-08 10:24:04	2019-04-08 10:24:04
R1-1905663	Draft CR on correction to bitwidth of NNZC	Ericsson	revised	2019-04-08 10:24:04	2019-04-08 10:24:04
R1-1905664	Summary of CRs for SFI for Rel.15	Qualcomm	revised	2019-04-08 23:33:50	2019-04-09 05:43:03
R1-1905665	Feature lead summary for 7.2.4.1 Physical layer structure for side link	Samsung	noted	2019-04-08 23:33:51	2019-04-09 23:47:54
R1-1905666	Correction on reference name of UE capability of additional DMRS for co-existence with LTE CRS	Huawei, HiSilicon	agreed	2019-04-08 23:33:51	2019-04-08 23:37:54
R1-1905667	Summary of channel Structure for two-step RACH	ZTE	revised	2019-04-08 23:33:52	2019-04-09 05:43:03
R1-1905668	Feature lead summary of low PAPR RS	Ericsson	noted	2019-04-08 10:24:04	2019-04-08 10:24:04
R1-1905669	Reply LS on Capability signalling of phase discontinuity	RAN1, Intel Corporation	approved	2019-04-08 23:33:53	2019-04-08 23:37:54
R1-1905670	Feature lead summary on procedure for Two-step	Nokia	not treated	2019-04-08 23:33:54	2019-04-08 23:37:54
R1-1905671	Feature lead summary for UL Signals and	Ericsson	noted	2019-04-08 23:33:54	2019-04-08 23:37:54
R1-1905672	Corrections on non-codebook based UL transmission to TS38.214	MediaTek Inc.	agreed	2019-04-08 23:33:54	2019-04-09 23:47:54
R1-1905673	Enhancements to scheduling/HARQ for NR	LG Electronics	not treated	2019-04-08 23:33:56	2019-04-08 23:37:54
R1-1905674	Summary#2 of draft CRs on DCI content	Ericsson	noted	2019-04-08 23:33:56	2019-04-09 05:43:03
R1-1905675	Summary#2 of draft CRs on resource allocation	Ericsson	noted	2019-04-08 23:33:56	2019-04-09 05:43:03
R1-1905676	Summary of offline discussion on PDCCH-based power saving signal/channel	CATT	noted	2019-04-08 23:33:57	2019-04-09 23:47:54
R1-1905677	TDD Timing on FDD Bands for Dual Uplink	VODAFONE Group Plc	not treated	2019-04-08 23:33:57	2019-04-08 23:37:54
R1-1905678	Feature lead summary on Configured grant	vvo	not treated	2019-04-08 23:33:57	2019-04-09 05:43:03
R1-1905679	Summary on UE feature related discussion in 7.1.7	NTT	noted	2019-04-08 23:33:58	2019-04-09 05:43:03
R1-1905680	CR on correction to bitwidth of NNZC indicator	Ericsson	agreed	2019-04-08 23:33:58	2019-04-09 05:43:03
R1-1905681	MU-MIMO CSI Enhancement	Motorola Mobility,	not treated	2019-04-08 23:33:59	2019-04-09 05:43:03
R1-1905682	Correction on mapping from virtual to physical resource blocks	Huawei, HiSilicon, ZTE, Spreadtrum	agreed	2019-04-08 23:34:00	2019-04-09 05:43:03
R1-1905683	Offline notes for Multi-TRP/Panel for Monday	Huawei	noted	2019-04-09 05:43:03	2019-04-09 05:43:03

R1-1905684	Summary of AI: 7.2.8.2 Enhancements on Multi-TRP/Panel Transmission of Offline Discussion	Huawei	noted	2019-04-09 05:43:03	2019-04-09 05:43:03
R1-1905685	Initial access procedure for NR-U	Motorola Mobility,	not treated	2019-04-09 05:43:03	2019-04-09 05:43:03
R1-1905686	Correction on PDCCH monitoring	Huawei, HiSilicon	revised	2019-04-09 23:38:45	2019-04-11 03:29:10
R1-1905687	[Draft] CR on maximum modulation order configured for serving cell	Intel Corporation	revised	2019-04-09 23:38:45	2019-04-11 10:11:03
R1-1905688	Summary of Rel-15 CRs for NR Mobility	Intel Corporation	noted	2019-04-09 23:38:46	2019-04-12 03:27:13
R1-1905689	LS on PDCCH monitoring for NR-DC	RAN1, NTT DOCOMO	approved	2019-04-09 23:38:46	2019-04-26 06:54:57
R1-1905690	Feature lead summary on Cross-carrier Scheduling with Different Numerologies	Nokia, Nokia Shanghai Bell	noted	2019-04-09 05:43:03	2019-04-09 05:43:03
R1-1905691	Draft CR on PDSCH rate-matching	ZTE, Huawei, Nokia	endorsed	2019-04-09 05:43:03	2019-04-09 05:43:03
R1-1905692	Summary for Rel-15 UL configured grant transmision	NTT DOCOMO	noted	2019-04-09 05:43:03	2019-04-09 05:43:03
R1-1905693	Outcome of offline discussion on Full TX Power	vivo	noted	2019-04-09 23:38:47	2019-04-09 23:47:54
R1-1905694	Draft response to LS on Combinations of Uu QoS characteristics values for V2X services	Huawei	revised	2019-04-09 23:38:47	2019-04-09 23:47:54
R1-1905695	Revised list of agreements from email discussions after offline	Ericsson	noted	2019-04-09 23:38:48	2019-04-10 04:16:26
R1-1905696	Additional proposals from offline discussions	Ericsson	noted	2019-04-09 23:38:48	2019-04-10 04:16:26
R1-1905697	Draft CR on PHR determination and transmission	Motorola Mobility,	revised	2019-04-09 23:38:48	2019-04-09 23:47:54
R1-1905698	Summary of efficient and low latency serving cell configuration/activation/setup	Ericsson	revised	2019-04-09 23:38:49	2019-04-11 01:31:19
R1-1905699	NTN channel model clarifications for link-level and system-level evaluation of NTN	Thales, Nokia, Huawei,	not treated	2019-04-09 23:38:49	2019-04-16 00:00:00
R1-1905700	NTN evaluation assumptions summary	Thales	noted	2019-04-09 23:38:49	2019-04-10 05:27:05
R1-1905701	Correction on UL/SUL indicator in DCI format 0_0 with CRC scrambled by C-RNTI in TS 38.212	Huawei, HiSilicon	revised	2019-04-09 23:38:50	2019-04-09 23:47:54
R1-1905702	Summary of Tuesday offline discussion on PUSCH enhancements for NR eURLLC	Nokia, Nokia Shanghai Bell	noted	2019-04-09 23:38:50	2019-04-09 23:47:54
R1-1905703	Summary for NR Positioning AI - 7.2.10.1 DL and UL Reference Signals for NR Positioning (UL	Ericsson	noted	2019-04-09 23:38:50	2019-04-09 23:47:54
R1-1905704	Corrections for TR38.811 Chapter 6 Non-Terrestrial Networks channel models	Huawei, HiSilicon, Nokia, Nokia Shanghai Bell, Thales, Fraunhofer HHI, Fraunhofer IIS,	not treated	2019-04-09 23:38:51	2019-04-10 04:16:26
R1-1905705	Summary of bandwidth part related draft CRs	MediaTek	noted	2019-04-09 23:38:51	2019-04-10 04:16:26
R1-1905706	Reply LS on collision of RRM measurement with UL transmission	RAN4, Intel	treated	2019-04-09 23:38:51	2019-04-09 23:47:54
R1-1905707	Summary of Cross-Slot Scheduling	MediaTek	noted	2019-04-09 23:38:52	2019-04-09 23:47:54
R1-1905708	Summary of CRs for SFI for Rel.15	Qualcomm	noted	2019-04-09 23:38:52	2019-04-09 23:47:54
R1-1905709	Draft Response LS on short control signaling in NR-U	Qualcomm Incorporated	revised	2019-04-09 23:38:53	2019-04-09 23:47:54
R1-1905710	Feature lead summary for NR-U DL Signals and Channels	Motorola Mobility,	noted	2019-04-09 23:38:53	2019-04-09 23:47:54
R1-1905711	Considerations on Physical Layer aspects of NR V2X	Qualcomm Incorporated	not treated	2019-04-09 23:38:53	2019-04-12 09:08:11
R1-1905712	Updated summary after Tuesday offline session on MultiBeam(MB1)	LG Electronics	noted	2019-04-09 23:38:54	2019-04-10 05:27:05
R1-1905713	Summary#2 of offline discussion on PDCCH-based power saving signal/channel	CATT	noted	2019-04-09 23:38:54	2019-04-10 05:27:05
R1-1905714	Low PAPR DMRS sequence for Pi/2-BPSK for	Huawei,	noted	2019-04-09 23:38:54	2019-04-09 23:47:54

R1-1905715	Updated list of measurements	Ericsson	not treated	2019-04-09 23:38:55	2019-04-10 04:16:26
R1-1905716	Summary on UCI enhancements for URLLC	OPPO	revised	2019-04-09 23:38:55	2019-04-09 23:47:54
R1-1905717	Summary for AI 7.2.4.2.2 Mode-2 Resource	Intel	noted	2019-04-09 23:38:55	2019-04-09 23:47:54
R1-1905718	Summary of draft CRs on UL Control	Ericsson	noted	2019-04-09 23:38:56	2019-04-10 04:16:26
R1-1905719	Outcome of offline discussion on Configured grant enhancement	vivo	revised	2019-04-09 23:38:56	2019-04-09 23:47:54
R1-1905720	Draft TS 38.214 CR on SRS dropping rule	CMCC	revised	2019-04-09 23:38:56	2019-04-09 23:47:54
R1-1905721	Correction on UL/SUL indicator in DCI format 0_0 with CRC scrambled by C-RNTI in TS 38.212	Huawei, HiSilicon	revised	2019-04-09 23:38:57	2019-04-11 01:31:19
R1-1905722	Summary of Coexistence Aspects in NR-V2X	Qualcomm	noted	2019-04-09 23:38:57	2019-04-12 02:35:50
R1-1905723	Evaluation on number of SSID	Huawei	noted	2019-04-09 23:38:57	2019-04-09 23:47:54
R1-1905724	Feature lead summary for MU-MIMO CSI Tuesday offline session	Samsung	noted	2019-04-09 23:38:58	2019-04-11 10:11:03
R1-1905725	Feature lead summary#2 for 7.2.4.1 Physical layer structure for side link	Samsung	revised	2019-04-09 23:38:58	2019-04-12 02:35:50
R1-1905726	Draft TS 38.214 CR on SRS dropping rule	CMCC	endorsed	2019-04-09 23:38:58	2019-04-09 23:47:54
R1-1905727	Offline Summary for Draft CRs on CA and HARQ-ACK Codebook	Samsung	noted	2019-04-09 23:38:59	2019-04-10 04:16:26
R1-1905728	Feature lead summary on physical layer control procedures for NTN	Ericsson	revised	2019-04-10 04:16:26	2019-04-10 04:16:26
R1-1905729	Summary of offline on Cross-Slot Scheduling	MediaTek	revised	2019-04-10 05:27:05	2019-04-10 05:27:05
R1-1905730	Summary#4 of draft CRs on resource allocation	Ericsson	noted	2019-04-10 23:47:04	2019-04-11 03:29:10
R1-1905731	Summary#3 of draft CRs on resource allocation	Ericsson	noted	2019-04-10 04:16:26	2019-04-10 04:16:26
R1-1905732	Summary of 7.2.5.3 on UL timing and PRACH	ZTE	not treated	2019-04-10 04:16:26	2019-04-10 04:16:26
R1-1905733	Summary Delay-tolerant re-transmission mechanisms in NR-NTN	MediaTek	noted	2019-04-10 05:27:05	2019-04-10 05:27:05
R1-1905734	Modelling of absolute delay for positioning in industrial IOT environments	Huawei, HiSilicon	not treated	2019-04-10 04:16:26	2019-04-10 04:16:26
R1-1905735	Scenario specific path loss models for IIOT	Huawei, HiSilicon, NTT DOCOMO, CMCC,	not treated	2019-04-10 23:47:06	2019-04-13 07:00:52
R1-1905736	Draft CR on UE procedure for PDSCH and PUSCH	ZTE	revised	2019-04-10 04:16:26	2019-04-10 04:16:26
R1-1905737	Correction on configured scheduling PUSCH repetition with dynamic SFI	Qualcomm	revised	2019-04-10 04:16:26	2019-04-10 04:16:26
R1-1905738	Summary of section 7.2.3.2 – Extension of RACH occasions and periodicities for backhaul RACH resources	Qualcomm	noted	2019-04-10 23:47:07	2019-04-12 02:35:50
R1-1905739	Summary of section 7.2.3.3 – Mechanisms for resource multiplexing among backhaul and access	Qualcomm	noted	2019-04-10 23:47:07	2019-04-12 02:35:50
R1-1905740	Summary of 7.2.6.1 Potential enhancements to	Huawei	noted	2019-04-10 23:47:07	2019-04-12 02:35:50
R1-1905741	Feature lead summary for MU-MIMO CSI offline email discussion on N3	Samsung	noted	2019-04-10 23:47:08	2019-04-11 10:11:03
R1-1905742	CR on UE procedure for PDSCH and PUSCH	ZTE	agreed	2019-04-10 23:47:10	2019-04-12 02:35:50
R1-1905743	Correction on configured scheduling PUSCH repetition with dynamic SFI	Qualcomm	agreed	2019-04-10 04:16:26	2019-04-10 04:16:26
R1-1905744	Correction on DCI size alignment in TS 38.212	Huawei, HiSilicon	agreed	2019-04-10 04:16:26	2019-04-10 04:16:26
R1-1905745	Feature lead summary 2 of low PAPR RS	Ericsson	noted	2019-04-10 23:47:20	2019-04-11 01:31:19
R1-1905746	CR on the determination of the minimum number of PRBs for PUCCH transmission	MediaTek	revised	2019-04-10 23:47:21	2019-04-11 01:31:19
R1-1905747	Draft CR to 38.211 on determined number of PRBs for PUCCH format 3	Ericsson	endorsed	2019-04-10 23:47:23	2019-04-11 03:29:10
R1-1905748	Draft Response LS on short control signaling in NR-U	Qualcomm Incorporated	revised	2019-04-10 23:47:24	2019-04-11 01:31:19

R1-1905749	Clarification on CG transmission opportunities	Ericsson	revised	2019-04-10 23:47:24	2019-04-11 03:29:10
R1-1905750	CR on missing case for DCI format 1_1 with CS-RNTI	Samsung	agreed	2019-04-10 05:27:05	2019-04-10 05:27:05
R1-1905751	Offline session1 notes for NR Positioning AI - 7.2.10.1 DL and UL Reference Signals for NR	Ericsson	noted	2019-04-10 23:47:27	2019-04-11 01:31:19
R1-1905752	Draft CR on rate matching for PDSCH scheduled by DCI format 1_0	Nokia, Nokia Shanghai Bell,	revised	2019-04-10 23:47:28	2019-04-11 10:11:03
R1-1905753	[Draft] Reply LS on collision of RRM measurement with UL transmission	Huawei	revised	2019-04-10 23:47:28	2019-04-11 10:11:03
R1-1905754	Simulation profile update for including 2 RX antenna and high congestion scenario	LG Electronics, General Motors, Volkswagen AG, Hyundai Motors,	not treated	2019-04-10 05:27:05	2019-04-10 05:27:05
R1-1905755	Summary of offline on Cross-Slot Scheduling	MediaTek	noted	2019-04-10 23:47:29	2019-04-11 01:31:19
R1-1905756	Feature lead summary#2 on Cross-carrier Scheduling with Different Numerologies	Nokia, Nokia Shanghai Bell	noted	2019-04-10 23:47:29	2019-04-12 02:35:50
R1-1905757	[Draft] Reply LS on NR mobility enhancements	Intel	revised	2019-04-10 23:47:29	2019-04-11 01:31:19
R1-1905758	[Draft] CR on inclusion of TC-RNTI for monitored RNTI for UL-SCH and inclusion of monitoring PDCCH ordering PRACH on Scell	Intel Corporation, Qualcomm	revised	2019-04-10 23:47:30	2019-04-16 15:17:55
R1-1905759	Summary of discussions on physical layer aspects of enhanced mobility	Intel Corporation	noted	2019-04-10 23:47:30	2019-04-11 01:31:19
R1-1905760	Summary#2 of UE and gNB measurements for NR Positioning	CATT	noted	2019-04-10 23:47:30	2019-04-11 01:31:19
R1-1905761	System-level evaluations on sidelink for NR V2X with 2Rx and 4Rx	Huawei, HiSilicon	not treated	2019-04-10 23:47:31	2019-04-11 01:31:19
R1-1905762	Feature lead summary for AI 7.2.4.7: NR control for LTE sidelink	Huawei	noted	2019-04-10 23:47:31	2019-04-11 01:31:19
R1-1905763	Feature Lead Summary#2 for NR-V2X AI - 7.2.4.8	InterDigital	noted	2019-04-10 23:47:32	2019-04-11 01:31:19
R1-1905764	Feature lead summary#2 2-step RACH procedure	Nokia, Nokia Shanghai Bell	revised	2019-04-10 23:47:32	2019-04-11 03:29:10
R1-1905765	Views on RACH-less HO in NR	Huawei,	not treated	2019-04-10 23:47:32	2019-04-11 01:31:19
R1-1905766	Feature Lead's Summary #2 on Channel Access Procedures	Nokia, Nokia Shanghai Bell	noted	2019-04-10 23:47:33	2019-04-11 10:11:03
R1-1905767	Feature lead summary#2 for UL Signals and	Ericsson	noted	2019-04-10 23:47:33	2019-04-12 02:35:50
R1-1905768	RAN1 agreements for Rel-16 Additional MTC Enhancements for LTE	Ericsson	not treated	2019-04-10 23:47:33	2019-04-22 19:58:28
R1-1905769	Draft LS on WUS gap configurability for NB-IoT	Ericsson	noted	2019-04-10 23:47:34	2019-04-12 09:00:44
R1-1905770	Void	Void	withdrawn	2019-04-10 23:47:34	
R1-1905771	RAN1 agreements for Rel-16 Additional Enhancements for NB-IoT	Huawei	not treated	2019-04-10 23:47:34	2019-04-24 05:47:31
R1-1905772	Void	ETSI MCC	withdrawn	2019-04-10 23:47:35	
R1-1905773	Void	ETSI MCC	withdrawn	2019-04-10 23:47:35	
R1-1905774	Void	ETSI MCC	withdrawn	2019-04-10 23:47:35	
R1-1905775	Void	ETSI MCC	withdrawn	2019-04-10 23:47:36	
R1-1905776	Void	ETSI MCC	withdrawn	2019-04-10 23:47:36	
R1-1905777	Void	ETSI MCC	withdrawn	2019-04-10 23:47:36	
R1-1905778	Mechanism to support the "case-1" OTA timing alignment	ZTE	noted	2019-04-10 23:47:37	2019-04-11 10:11:03
R1-1905779	Summary#2 on wide-band operation for NR-U	LG Electronics	noted	2019-04-10 23:47:37	2019-04-11 01:31:19
R1-1905780	Reply LS on NR mobility enhancements	RAN1, Intel Corporation	approved	2019-04-10 23:47:38	2019-04-11 01:31:19
R1-1905781	Feature lead summary of remaining issues on potential enhancements to single Tx switched	Apple Inc.	noted	2019-04-10 23:47:38	2019-04-12 02:35:50
R1-1905782	Correction on one port PUSCH power scaling	Ericsson, Verizon, T-Mobile USA, Sprint, NTT DOCOMO, Orange, Nokia,	revised	2019-04-10 23:47:38	2019-04-11 01:31:19
R1-1905783	CR on PHR determination and transmission	Motorola Mobility,	agreed	2019-04-10 23:47:39	2019-04-11 01:31:19

R1-1905784	Updated feature lead summary of Enhancements on Multi-beam Operations	LG Electronics	noted	2019-04-10 23:47:42	2019-04-11 10:11:03
R1-1905785	FL summary#2 for NR-U initial access signals	Qualcomm	noted	2019-04-10 23:47:42	2019-04-12 02:35:50
R1-1905786	FL summary#2 for NR-U initial access	Qualcomm	noted	2019-04-10 23:47:42	2019-04-12 02:35:50
R1-1905787	Correction on UL/SUL indicator in DCI format 0_0	Huawei,	agreed	2019-04-10 23:47:43	2019-04-12 02:35:50
R1-1905788	[Draft] Reply LS on SL RLM / RLF in NR V2X for	InterDigital	revised	2019-04-10 23:47:48	2019-04-12 02:35:50
R1-1905789	Summary#2 for AI 7.1.5 Maintenance for UL power	ZTE	noted	2019-04-10 23:47:48	2019-04-11 01:31:19
R1-1905790	[Draft] LS on sidelink HARQ feedback for	LG Electronics	revised	2019-04-10 23:47:49	2019-04-12 09:08:12
R1-1905791	Summary#3 of offline discussion on PDCCH-based power saving signal/channel	CATT	noted	2019-04-10 23:47:49	2019-04-11 10:11:03
R1-1905792	Outcome of offline discussion on Configured grant enhancement	vivo	noted	2019-04-10 23:47:49	2019-04-11 10:11:03
R1-1905793	Updated summary of channel Structure for two-	ZTE	noted	2019-04-10 23:47:50	2019-04-11 03:29:10
R1-1905794	NTN evaluation assumptions summary	Thales	noted	2019-04-10 23:47:50	2019-04-11 03:29:10
R1-1905795	Correction to simultaneous reception of DL Channels	Intel Corporation	revised	2019-04-10 23:47:51	2019-04-11 01:31:19
R1-1905796	CR on the determination of the minimum number of PRBs for PUCCH transmission	MediaTek, Ericsson	agreed	2019-04-10 23:47:51	2019-04-11 03:29:10
R1-1905797	Chairman's notes of AI 7.1.2 Maintenance for MIMO	Ad-Hoc Chair (Samsung)	endorsed	2019-04-10 23:47:53	2019-04-12 02:35:50
R1-1905798	Chairman's notes of AI 7.1.4 Maintenance for NR-LTE co-existence	Ad-Hoc Chair (Ericsson)	endorsed	2019-04-10 23:47:53	2019-04-12 03:27:13
R1-1905799	Chairman's notes of AI 7.1.5 Maintenance for UL power control	Ad-Hoc Chair (Samsung)	endorsed	2019-04-10 23:47:54	2019-04-12 02:35:50
R1-1905800	Chairman's notes of AI 7.1.7 UE features list	Ad-Hoc Chair (NTT	endorsed	2019-04-10 23:47:54	2019-04-12 09:08:12
R1-1905801	Chairman's notes of AI 7.2.2 Study on NR-based Access to Unlicensed Spectrum	Ad-Hoc Chair (Ericsson)	endorsed	2019-04-10 23:47:54	2019-04-12 03:27:13
R1-1905802	Chairman's notes of AI 7.2.5 Study on solutions for NR to support Non Terrestrial Network (NTN)	Ad-Hoc Chair (Ericsson)	endorsed	2019-04-10 23:47:55	2019-04-12 09:08:12
R1-1905803	Chairman's notes of AI 7.2.8 Enhancements on MIMO for NR	Ad-Hoc Chair (Samsung)	endorsed	2019-04-10 23:47:55	2019-04-12 02:35:50
R1-1905804	Chairman's notes of AI 7.2.10 Study on NR positioning support	Ad-Hoc Chair (Ericsson)	endorsed	2019-04-10 23:47:56	2019-04-12 03:27:13
R1-1905805	Offline Discussion for Multi-TRP/Panel Transmission on Wednesday	Huawei	noted	2019-04-10 23:47:56	2019-04-11 10:11:03
R1-1905806	Summary of evaluation results for reliability robustness based multi-TRP transmission	Huawei	not treated	2019-04-10 23:47:57	2019-04-11 10:11:03
R1-1905807	Feature lead summary#2 on physical layer control procedures for NTN	Ericsson	revised	2019-04-10 23:47:57	2019-04-11 03:29:10
R1-1905808	Summary#3 of UE and gNB measurements for NR Positioning	CATT	noted	2019-04-10 23:47:57	2019-04-12 02:35:50
R1-1905809	Options for Type-1 HARQ-ACK Codebook Pseudo-code Update	Samsung	noted	2019-04-11 03:40:39	2019-04-11 03:40:39
R1-1905810	Correction on CRC assumption for multi-CSI resource selection and CSI report(s) selection	CATT	revised	2019-04-11 03:29:10	2019-04-11 03:29:10
R1-1905811	Summary#2 of 7.2.10.3: PHY procedures for positioning measurements	Qualcomm	noted	2019-04-11 10:11:03	2019-04-11 10:11:03
R1-1905812	Updated summary of 7.2.5.3 on UL timing and	ZTE	noted	2019-04-11 10:11:03	2019-04-11 10:11:03
R1-1905813	Summary#2 of 7.2.6.7 Other	LG Electronics	noted	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905814	Summary#2 on SCell BFR and L1-SINR	Intel	revised	2019-04-11 03:29:10	2019-04-11 03:29:10
R1-1905815	Summary of Thursday offline discussion on PUSCH enhancements for NR eURLLC	Nokia, Nokia Shanghai Bell	noted	2019-04-11 10:11:03	2019-04-11 10:11:03
R1-1905816	Summary#2 of CRs on UCI multiplexing on PUSCH	Qualcomm	revised	2019-04-11 03:29:10	2019-04-11 03:29:10
R1-1905817	Further discussion on multi TRP transmission	vivo	not treated	2019-04-11 10:11:03	2019-04-11 10:11:03
R1-1905818	Feature lead summary#3 on physical layer control procedures for NTN	Ericsson	noted	2019-04-11 10:11:03	2019-04-11 10:11:03
R1-1905819	Summary of offline on Cross-Slot Scheduling	MediaTek	revised	2019-04-11 10:11:03	2019-04-11 10:11:03
R1-1905820	Draft CR on SFTD measurements for NE-DC	Ericsson	revised	2019-04-11 10:11:03	2019-04-11 10:11:03
R1-1905821	Summary#2 on SCell BFR and L1-SINR	Intel	noted	2019-04-11 10:11:03	2019-04-11 10:11:03
R1-1905822	Clarification on CG transmission opportunities	Ericsson	revised	2019-04-11 10:11:03	2019-04-11 10:11:03

R1-1905823	Correction to simultaneous reception of DL Channels	Intel Corporation	agreed	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905824	On Synchronization Mechanisms for NR V2X	Samsung	not treated	2019-04-11 10:11:03	2019-04-11 10:11:03
R1-1905825	Draft CR on Type-1 HARQ-ACK codebook determination	ZTE	revised	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905826	CR on rate matching for PDSCH scheduled by DCI format 1_0	Nokia	agreed	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905827	Clarification on CG transmission opportunities	Ericsson	agreed	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905828	Efficient Bit Map Signaling for MU-MIMO CSI Enhancement	Motorola Mobility,	not treated	2019-04-11 10:11:03	2019-04-11 10:11:03
R1-1905829	Summary#2 on UCI enhancements for URLLC	OPPO	noted	2019-04-11 10:11:03	2019-04-11 10:11:03
R1-1905830	[Draft] Reply LS on clarification about CSI-RS measurement	Intel Corporation	revised	2019-04-12 03:27:14	2019-04-12 03:27:14
R1-1905831	On UCI reporting of SCI and FD basis	Nokia, Nokia Shanghai Bell	not treated	2019-04-11 10:11:03	2019-04-11 10:11:03
R1-1905832	Summary of 7.2.3.1 Extensions of SSBs for inter-IAB-node discovery and measurements	Huawei	noted	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905833	Summary#2 of Enhancements to	Qualcomm	revised	2019-04-11 10:11:03	2019-04-11 10:11:03
R1-1905834	Feature lead summary#2 on Resource allocation for NR sidelink. Mode 1	Ericsson	noted	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905835	Summary of efficient and low latency serving cell configuration/activation/setup	Ericsson	noted	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905836	Draft LS on maximum allowed SCell activation delay for Rel16 CA	Ericsson	revised	2019-04-11 10:11:03	2019-04-11 10:11:03
R1-1905837	Report of RAN1#96 meeting	ETSI MCC	approved	2019-04-11 10:11:03	2019-04-11 10:11:03
R1-1905838	Updated feature lead summary of MB1 after Thursday offline session	LG Electronics	noted	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905839	Feature Lead summary on uplink power control for supporting NR-NR Dual-Connectivity	Intel Corporation	noted	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905840	Summary#2 Delay-tolerant re-transmission mechanisms in NR-NTN	MediaTek	not treated	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905841	[draft] LS on clarification of OTA timing alignment for IAB	Huawei	revised	2019-04-11 10:11:03	2019-04-11 10:11:03
R1-1905842	LS on clarification of OTA timing alignment for IAB	RAN1, Huawei	approved	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905843	Draft response to LS on Combinations of Uu QoS characteristics values for V2X services	Huawei	revised	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905844	Summary#3 on SCell BFR and L1-SINR	Intel	noted	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905845	LS on MsgA content size	RAN2, Nokia	treated	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905846	Aspects to address in the design of PDCCH-based power saving signal/channel	CATT	noted	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905847	Offline Discussion Outcome on DL Reference Signals for NR Positioning	Intel Corporation	noted	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905848	Outcome of offline discussion on Full TX Power	vivo	noted	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905849	Offline Discussion for Multi-TRP/Panel Transmission on Thursday	Huawei, HiSilicon	noted	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905850	Correction on the timeline condition of multiplexing two HARQ-ACK information in one slot	Huawei, HiSilicon,	revised	2019-04-12 03:27:14	2019-04-12 03:27:14
R1-1905851	Proposal for additionnal agreement on HARQ feedback in groupcast	LG Electronics	withdrawn	2019-04-15 18:17:11	
R1-1905852	Draft TS 38.214 CR on SRS dropping rule	CMCC	noted	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905853	L1 source and destination IDs for V2X	Huawei,	not treated	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905854	On RLM and RLF in V2X	Huawei,	not treated	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905855	Correction on one port PUSCH power scaling	Ericsson, Verizon, T-Mobile USA, Sprint, NTT DOCOMO, Orange, Nokia,	revised	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905856	[Draft] Reply LS on collision of RRM measurement and UL transmission	Huawei	revised	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905857	[Draft] LS on UL wideband operation for NR-U	LG Electronics	revised	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905858	[Draft] LS on UL wideband operation for NR-U	LG Electronics	revised	2019-04-12 09:08:12	2019-04-12 09:08:12

R1-1905859	Summary#2 of CRs on UCI multiplexing on PUSCH	Qualcomm	noted	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905860	Response LS on short control signaling in NR-U	RAN1, Qualcomm	approved	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905861	Feature lead summary#4 on physical layer control procedures for NTN	Ericsson	not treated	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905862	Summary of offline discussions on remaining issues on potential enhancements to single Tx switched uplink for EN-DC	Apple Inc.	noted	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905863	Reply LS on SL RLM / RLF in NR V2X for unicast	RAN1,	approved	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905864	Corrections to 38.211 including alignment of terminology across specifications	Ericsson	revised	2019-04-12 03:27:14	2019-04-12 03:27:14
R1-1905865	Corrections to 38.213 including alignment of terminology across specifications	Samsung	revised	2019-04-12 03:27:14	2019-04-12 03:27:14
R1-1905866	Corrections to 38.214 including alignment of terminology across specifications	Nokia	revised	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905867	RAN1 NR UE features	NTT	revised	2019-04-13 07:00:53	2019-04-13 07:00:53
R1-1905868	Draft LS on RAN1 NR UE features update	NTT	revised	2019-04-13 07:00:53	2019-04-13 07:00:53
R1-1905869	Summary#2 of offline on Cross-Slot Scheduling	MediaTek	noted	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905870	Corrections to 38.212 including alignment of terminology across specifications	Huawei	endorsed	2019-04-12 03:27:14	2019-04-12 03:27:14
R1-1905871	Correction on one port PUSCH power scaling	Ericsson, Verizon, T-Mobile USA, Sprint, NTT DOCOMO, Orange, Nokia,	agreed	2019-04-12 03:27:14	2019-04-12 03:27:14
R1-1905872	Updated summary for Rel-15 CRs on DL/UL data scheduling and HARQ procedure	Qualcomm	noted	2019-04-12 03:27:14	2019-04-12 03:27:14
R1-1905873	[Draft] Clarification of reference to PDSCH processing capability 1 in TS 38.213	Sharp	revised	2019-04-12 03:27:14	2019-04-12 03:27:14
R1-1905874	Feature lead summary#3 2-step RACH procedure	Nokia, Nokia Shanghai Bell	noted	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905875	Draft CR on Type-1 HARQ-ACK codebook determination	ZTE, Samsung	revised	2019-04-12 02:35:50	2019-04-12 02:35:50
R1-1905876	Summary of Thursday offline discussion on PDCCH enhancements for NR eURLLC	Huawei	noted	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905877	Feature lead summary#3 for 7.2.4.1 Physical layer structure for side link	Samsung	noted	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905878	Proposal on the additional LLS assumptions for Two-step RACH	ZTE	noted	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905879	Corrections to 38.214 including alignment of terminology across specifications	Nokia	revised	2019-04-13 07:00:53	2019-04-13 07:00:53
R1-1905880	Reply LS on collision of RRM measurement and UL transmission	RAN1, Huawei	approved	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905881	Corrections to 38.213 including alignment of terminology across specifications	Samsung	endorsed	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905882	[Draft] Reply LS on clarification about CSI-RS measurement	Intel Corporation	revised	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905883	Correction on PDCCH monitoring	Huawei, HiSilicon	agreed	2019-04-13 07:00:53	2019-04-13 07:00:53
R1-1905884	Summary#2 of UL inter UE Tx prioritization/multiplexing	vivo	noted	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905885	Summary of offline discussion on PUSCH enhancements for NR eURLLC	Nokia, Nokia Shanghai Bell	noted	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905886	Correction on CRC assumption for multi-CSI resource selection and CSI report(s) selection	CATT	agreed	2019-04-13 07:00:53	2019-04-13 07:00:53
R1-1905887	CR to 38.214 clarifying calculation of DataRate and DataRateCC	Ericsson	agreed	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905888	CR on inclusion of TC-RNTI for monitored RNTI for UL-SCH and inclusion of monitoring PDCCH	Intel Corporation,	agreed	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905889	Clarification of reference to PDSCH processing capability 1 in TS 38.213	Sharp	agreed	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905890	Correction on the timeline condition of multiplexing two HARQ-ACK information in one slot	Huawei, HiSilicon,	agreed	2019-04-12 09:08:12	2019-04-12 09:08:12

R1-1905891	CR on Type-1 HARQ-ACK codebook determination	ZTE, Samsung	agreed	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905892	Feature lead summary#2 for agenda item 7.2.4.5 Physical layer procedures for sidelink	LG Electronics	noted	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905893	Offline discussion on 7.2.6.6 Enhanced UL configured grant transmission	NTT DOCOMO	noted	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905894	CR on SFTD measurements for NE-DC	Ericsson	agreed	2019-04-13 07:00:53	2019-04-13 07:00:53
R1-1905895	LS on UL wideband operation for NR-U	RAN1, LG	approved	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905896	[Draft] CR on maximum modulation order configured for serving cell	Intel Corporation	revised	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905897	On antenna management for NR V2X	Huawei,	not treated	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905898	Simultaneous Mode 1 and Mode 2 operation for	Huawei,	not treated	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905899	PSFCH formats for NR V2X	Huawei,	not treated	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905900	Summary#2 of efficient and low latency serving cell configuration/activation/setup	Ericsson	noted	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905901	Draft LS on maximum allowed SCell activation delay for Rel16 CA	Ericsson	revised	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905902	Summary#3 of Enhancements to	Qualcomm	noted	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905903	DRAFT response LS on UL sharing applicability in different scenarios	Nokia, Nokia Shanghai Bell	not treated	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905904	Response to LS on Combinations of Uu QoS characteristics values for V2X services	RAN1, Huawei	approved	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905905	Corrections to 38.211 including alignment of terminology across specifications	Ericsson	endorsed	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905906	LS on sidelink HARQ feedback for groupcast	RAN1, LG	approved	2019-04-12 09:08:12	2019-04-12 09:08:12
R1-1905907	Corrections to 38.214 including alignment of terminology across specifications	Nokia	endorsed	2019-04-13 07:00:53	2019-04-13 07:00:53
R1-1905908	[Draft] CR on maximum modulation order configured for serving cell	Intel Corporation	revised	2019-04-13 07:00:53	2019-04-13 07:00:53
R1-1905909	Reply LS on clarification about CSI-RS measurement	RAN1, Intel Corporation	approved	2019-04-13 07:00:53	2019-04-13 07:00:53
R1-1905910	CR on maximum modulation order configured for serving cell	Intel Corporation	agreed	2019-04-13 07:00:53	2019-04-13 07:00:53
R1-1905911	Summary of "[96b-NR-07] clarification on alternative UL full power Tx solutions"	vivo	noted	2019-04-18 10:01:27	2019-04-24 15:59:41
R1-1905912	LS on maximum allowed SCell activation delay for Rel16 CA	RAN1, Ericsson	approved	2019-04-23 07:10:51	2019-04-24 06:36:28
R1-1905913	V2X antenna model and pathloss correction	Fraunhofer HHI, Fraunhofer IIS,	agreed	2019-04-24 12:06:26	2019-04-24 14:00:03
R1-1905914	Summary of email discussion [96b-NR-01] PDCCH blind decoding for Rel.15 NR-DC	NTT DOCOMO	noted	2019-04-24 15:53:40	2019-04-26 06:54:57
R1-1905915	Summary of email discussion [96b-NR-11]	Ericsson	noted	2019-04-24 16:22:25	2019-04-26 06:54:57
R1-1905916	RAN1 NR UE features	NTT	agreed	2019-04-26 07:57:01	2019-04-26 08:26:53
R1-1905917	LS on RAN1 NR UE features update	RAN1, NTT DOCOMO	approved	2019-04-26 07:59:18	2019-04-26 08:26:53

APPENDIX G

3GPP TSG RAN meeting #84 **RP-191479**
Newport Beach, USA, June 3 – 6, 2019

Third Generation Partnership Project (3GPP™)

Meeting Report
for
TSG RAN
meeting: 83

Shenzhen, China, 18/03/2019 to 21/03/2019

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Meeting Organisation

Meeting:	3GPP TSG RAN #83		
Meeting location:	Shenzhen, China		
	InterContinental Shenzhen hotel, room Espana 1 (ground floor)		
Scheduled:	Monday 18.03.2019 (9am) - Thursday 21.03.2019 (6pm)		
Host:	Huawei Technologies Co., Ltd.		
TSG RAN Chairman:	Balázs Bertényi (Nokia Corporation, ETSI)	email:	balazs.bertenyi@nokia.com
TSG RAN Vice chairman:	Xiaodong Xu (China Mobile Com. Corporation, CCSA)	email:	xuxiaodong@chinamobile.com
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Email reflector:	3GPP_TSG_RAN@LIST.ETSI.ORG		
Technical documents:	ftp://ftp.3gpp.org/tsg_ran/TSGR_83/Docs		

next meetings:	TSG RAN #84	03.06. - 06.06.2019	Newport Beach, USA	host: NAF3
	TSG RAN #85	16.09. - 19.09.2019	Newport Beach, USA	host: NAF3
	TSG RAN #86	09.12. - 12.12.2019	Sitges, Spain	host: EF3

Executive Summary

3GPP TSG RAN meeting #83 was held in Shenzhen, China, March 18-21, 2019, hosted by Huawei Technologies Co., Ltd. The meeting had 280 participants (see Annex A) and 773 Technical Documents (see Annex B).

Main topics/decisions:

- **block approval**: RAN #83 continued to use "block approval process" for agreed CR packages from WGs and WI/SI status reports, i.e. these contributions were only discussed on request (flag) otherwise the CRs were considered approved and the status reports are noted.
- **time budget analysis**: RAN #83 assessed the modified time budget requests in WI/SI status reports for already approved WIs/SIs relative to the time budget status endorsed by RAN #82 in RP-182904; the RAN WG chairmen provided their estimates of remaining time budgets in their WGs (see e.g. WG status reports); new WIs/SIs provided their time budget requests in the WI/SI descriptions; the resulting time budget allocations for all approved WIs/SIs after RAN #83 were endorsed by email in **RP-190641** (1 time unit (TU) ~ 2h). RAN5 WIs/SIs are excluded from this time budget handling.
- **elections**: RAN chairman Balazs Bertenyi, Nokia Corporation (ETSI) and RAN vice-chairmen Xiaodong Xu, China Mobile Communications Corporation (CCSA), Satoshi Nagata, NTT DoCoMo Inc. (ARIB) and Stephen Hayes, Ericsson Inc. (ATIS) were elected by acclamation for 2 more years.
- **REL-14** (was frozen in March 17, ASN.1 was frozen in June 17): Status after RAN #83: No open REL-14 Core and no open REL-14 Perf. part WIs. But after RAN #83, there are still 3 open REL-13 and 5 open REL-14 testing WIs ongoing.
- **REL-15:**

- **REL-15 freeze**: REL-15 stage 3 was frozen by RAN #80 in June 18. Only one REL-15 Core part WI (NR_newRAT-Core) is still open after RAN #83 and a 4th 3 months exception was granted by RAN #83 in RP-190771 so that this WI can still be completed in REL-15 (instead of shifting them to REL-16).
- **REL-15 late drop for NR**: The stage 3 of the REL-15 late drop for NR (architecture options 4 & 7 and NR-NR Dual Connectivity) was frozen at RAN #83. Its ASN.1 freeze is planned for RAN #84 in June 2019.

- **RAN4 UE feature list for REL-15 NR**: was endorsed in RP-190704 (but 2-9 UE power class still needs further discussion)

- RAN #83 approved a set of 3 company CRs on "Correction to **aperiodic CSI-RS triggering** with different numerology between PDCCH and CSI-RS" (see also RP-190631) with a **working agreement** (#29):
  38.214 REL-15 CR (RP-190632), 38.331 REL-15 (RP-190633), 38.306 REL-15 CR (RP-190634)
  Note: This means the CRs are implemented after RAN #83. If the working agreement is challenged before May 27, 2019 (6pm CET), then RAN #84 will have a voting to confirm the working agreement (71% or more are needed for this) otherwise the working agreement is automatically confirmed.

- **PC3 MPR changes to accommodate FR2 occupied bandwidth (OBW)**: compare RP-190367; finally a REL-15 CR to TS 38.101-2 was approved in RP-190747.

- **Gapless FR2 measurement in LTE standalone operation**: compare RP-190626; no consensus reached to approve company CRs.

- **NG-RAN network sharing** LSout RP-190730 was approved tasking RAN3 to specify the "Per PLMN interface" and the "common interface" in REL-15 by RAN #84.

- **REL-16** (stage 3 freeze in RAN1 is planned for RAN #86 in Dec.19, stage 3 freeze for RAN2/3/4 is planned for March 20, ASN.1 freeze is planned for June 2020):

  - Several SIs were completed and corresponding WIs were started (see below).

  - A way forward on how **NR RF requirements** work will continue in REL-16 was endorsed in RP-190741.
    Note: This resulted in 3 separate REL-16 WIs: RF requirements for NR frequency range 1 (FR1): RP-190759, Add support of NR DL 256QAM for frequency range 2 (FR2): RP-190760, NR RF requirement enhancements for frequency range 2 (FR2): RP-190761.

  - **RAN4 RRM/demodulation for NR in REL-16** (see RP-190659): RAN4 email discussion until RAN #84 (main focus on Demod) to come up at RAN #84 with a stable summary for Demod/RRM/high speed train.

  - **EPS Additional RRM Policy Index**: RAN replied to SA2 LSin RP-190572 in LSout RP-190762 tasking RAN3 to prepare REL-16 CR(s) corresponding to the SA2 agreed TS 23.401 CR (but also clarified that cross-TSG TEI CRs should be avoided).

- **REL-17**: RP-190563 was endorsed: One day of RAN #84 will be reserved for initial REL-17 presentations, email discussions about work areas will take place between RAN #84 and #85, RAN #85 will review the work areas, approval of SIs (WIs) for RAN1/2/3 is planned for RAN #86, approval of RAN4 SIs (WIs) is planned for RAN #87.

- **ITU-R/ITU-T** (see AI 8)**:**

  - **Strategies and policies for the deployment of broadband in developing countries**: RP-190004 was agreed by email before RAN #83 (based on an input from the 3GPP ITU-R ad hoc) in reply to LSin RP-182215 from ITU-D SG1 (received at RAN #82). This LS passed SA review and PCG approval before RAN #83.
  - **IMT-2020**: multiple LSs received from ITU-R WP5D (RP-190109, RP-190110, RP-190111, RP-190112); only LSin RP-190112 was answered in LSout RP-190739 suggesting to shift the ITU-R IMT-2020 evaluation workshop to Fri 13.12.2019 to avoid collision with RAN #86.
    A work plan towards final submission of IMT-2020 was endorsed in RP-190344 (RAN WGs will provide the updated and additional evaluation results towards IMT-2020 final submission; email discussions on 3GPP ITU-R ad hoc email reflector to provide the final version of the compliance template and description template, respectively, for the final submission of IMT-2020).
  - **ITU-R M.1457** (IMT-2000): LSin RP-190113 was received from ITU-R WP5D clarifying that the update of Recommendation ITU-R M.1457 is supended until the request for updating Recommendation from GCS Proponent will be received or new IMT-2000 Radio Interface Technology proposal submitted.
  - **Over-the-air TRP measurements**: LSin RP-190114 from ITU-R WP1A will be reviewed by RAN4 and RAN5 to see whether a reply needs to be sent from RAN #84.

  - **ITU-R M.2084-0**: RP-190764 was agreed as reply to LSin RP-182236 (of RAN #82) from ITU-R WP5A on Radio interface standards of vehicle-to-vehicle and vehicle-to-infrastructure communications for Intelligent Transport System applications; the LSout indicates that RAN has completed a SI on NR V2X, RAN is starting a corresponding REL-16 WI and will contribute to M.2084-0 when the WI is completed;
  - **ITU-T Q.731.3** on new functionalities to the calling line identification presentation: LSin RP-190041 was just noted.
  - **ITU-T E.RQST** on KPI targets for mobile networks: LSin RP-1900042 was received from ITU-T SG12 and an answer was drafted by RAN in RP-190673 that was provided to SA so that SA will send out the final LS.
  - **IoT**: LSin RP-190044 on "Request to update the IoT and SC&C Standards Roadmap and the list of contact points" from ITU-T JCA-IoT and SC&C was just noted.

- A **joint RAN-SA session** was held on Wed evening of TSG #83 treating 3 Tdocs (RP-190716, RP-190718, RP-190736): endorsed to have a 15 months/5 quarter **REL-17** (in Sep.19 we will check whether this is possible; by Dec.19 the REL-17 schedule will be fixed), i.e. with REL-17 stage 3 freeze in June 2021.

- **Liaison statements**/Letters to ITU: incoming: 62, outgoing 10 (see Annex C)

- **WI summary**: At RAN #83, a WI summary (descriptive summary of the features actually included in the specs) was presented for the following 1 WI:
  - REL-16 WI Iuant_transfer-Core RP-190144

  Note: The rapporteur has to provide a WI summary to the RAN meeting at which a Core part WI is declared to be 100% complete; this WI summary has to be reviewed by the leading WG of the WI beforehand to check the technical correctness. Spectrum related Core part WI are excluded from this activity.

- 10 <u>closed work items</u> (WI) (1 Core, 4 Perf., 5 Testing):

  - 1 RAN3 REL-16 Core part WI (note: WI without Perf. part) for:
    - Transfer of Iuant interface specifications from 25-series to 37-series (820171, Iuant_transfer-Core)
  - 4 RAN4 REL-15 Perf. part WIs (**: Core part WI was completed in Sep.18) for:
    - Shortened TTI and processing time for LTE (720291, LTE_sTTIandPT-Perf)**
      Further NB-IoT enhancements (750266, NB_IOTenh2-Perf)**
      Enhancing LTE CA Utilization (750271, LTE_euCA-Perf)**
      UE requirements for LTE DL 8Rx antenna ports (780272, LTE_8Rx_AP_DL-Perf); note: LTE_8Rx_AP_DL-Core was completed in June 18
  - 5 RAN5 WIs that were completed: UE Conformance Test Aspects for:
    - REL-13, WLAN/3GPP Radio Level Integration and Interworking Enhancements (710070, LTE_WLAN_radio-UEConTest)
    - REL-13, Interference Mitigation for Downlink Control Channels of LTE (750051, LTE_IM_DLCCH-UEConTest)
    - REL-14, 4 Rx antenna ports with CA for LTE DL (750058, LTE_4Rx_AP_DL_CA-UEConTest)
    - REL-14, Uplink capacity enhancements for LTE (780063, LTE_UL_CAP_enh-UEConTest)
    - REL-15, UL Data Compression in LTE (800080, LTE_UDC-UEConTest)

- 6 <u>closed REL-16 study items</u> (SI):

  - RAN1, Study on LTE-based 5G terrestrial broadcast (800091, FS_LTE_terr_bcast)
  - RAN1, Study on NR positioning support (800092, FS_NR_pos)
  - RAN1, Study on physical layer enhancements for NR ultra-reliable and low latency communication (URLLC) (800095, FS_NR_L1enh_URLLC)
  - RAN1, Study on NR Vehicle-to-Everything (V2X) (800096, FS_NR_V2X)
  - RAN2, Study on optimisations on UE radio capability signalling – NR/E-UTRA Aspects (800097, FS_RACS_RAN)
  - RAN2, Study on on NR Industrial Internet of Things (IoT) (800098, FS_NR_IIOT)

- 42 <u>new approved work items</u> (WI) (21 Core, 18 Perf., 3 Testing):
  *: without Perf. part WI

  - 5 RAN1 REL-16 Core part WIs for:
    - Physical Layer Enhancements for NR Ultra-Reliable and Low Latency Communication (URLLC) (830174, NR_L1enh_URLLC-Core) RP-190726
    - UE Power Saving in NR (830175, NR_UE_pow_sav-Core) RP-190727
    - LTE-based 5G terrestrial broadcast (830176, LTE_terr_bcast-Core) RP-190732
    - NR positioning support (830177, NR_pos-Core) RP-190752
    - 5G V2X with NR sidelink (830178, 5G_V2X_NRSL-Core) RP-190766

- 2 RAN2 REL-16 Core part WIs for:
  - Optimisations on UE radio capability signalling – NR/E-UTRA Aspects (830179, RACS-RAN-Core) RP-190657*
  - Support of NR Industrial Internet of Things (IoT) (830180, NR_IIOT-Core) RP-190728*
- 2 RAN3 REL-16 Core part WIs for:
  - Private Network Support for NG-RAN (830181, NG_RAN_PRN-Core) RP-190729*
  - NG interface usage for WWC (Wireless Wireline Convergence) (830182 5WWC-NG_interface-Core) RP-190772*
- 2 RAN4 REL-16 Perf. part WIs (adding to existing Core part WIs):
  - Single Radio Voice Call Continuity from 5G to 3G (830270, SRVCC_NR_to_UMTS-Perf) RP-190713
    Note: SRVCC_NR_to_UMTS-Core was started in Dec.18.
  - Introduction of NR band n48 (830271, NR_n48-Perf) RP-190140
    Note: NR_n48-Core was started in Dec.18.
- 5 RAN4 REL-16 Perf. part WIs (with Core part WIs led by other WGs) for:
  - Physical Layer Enhancements for NR Ultra-Reliable and Low Latency Communication (URLLC) (830274, NR_L1enh_URLLC-Perf) RP-190726
  - UE Power Saving in NR (830275, NR_UE_pow_sav-Perf) RP-190727
  - LTE-based 5G terrestrial broadcast (830276, LTE_terr_bcast-Perf) RP-190732
  - NR positioning support (830277, NR_pos-Perf) RP-190752
  - 5G V2X with NR sidelink (830278, 5G_V2X_NRSL-Perf) RP-190766
- 11 RAN4 REL-16 features with Core and Perf. part WIs for:
  - Introduction of GSM, UTRA, E-UTRA and NR capability set(s) (CS(s)) to the multi-standard radio (MSR) specifications (830X86, MSR_GSM_UTRA_LTE_NR) RP-190642
  - RF requirements for NR frequency range 1 (FR1) (830X87, NR_RF_FR1) RP-190759
  - Add support of NR DL 256QAM for frequency range 2 (FR2) (830X88, NR_DL256QAM_FR2) RP-190760
  - Introduction of NR band n14 (830X90, NR_n14) RP-190165
  - Introduction of NR band n30 (830X91, NR_n30) RP-190166
  - Introduction of NR band n259 (830197, NR_n259) RP-190765
  - Addition of wider channel bandwidth in NR band n38 (830X93, NR_n38_BW) RP-190392
  - Introduction of an NR SUL (supplemental uplink) band with same uplink frequency range as NR band n5 (830X92, NR_SUL_UL_n5) RP-190390
  - Power class 2 UE for LTE bands 31 and 72 (830X94, LTE_PC2_B31_B72) RP-190665
  - Rel-16 NR inter-band Carrier Aggregation for 3 bands DL with 1 band UL (830X95, NR_CA_R16_3BDL_1BUL) RP-190692
  - Rel-16 NR Inter-band Carrier Aggregation/Dual Connectivity for 3 bands DL with 2 bands UL (830X96, NR_CADC_R16_3BDL_2BUL) RP-190693
- 1 RAN4 REL-16 feature with Core (but no Perf. part WI) for:
  - NR RF requirement enhancements for frequency range 2 (FR2) (830189, NR_RF_FR2_req_enh-Core) RP-190761*
- 3 RAN5 UE Conformance Test Aspects WIs for:
  - REL-14, Enhancements on Full-Dimension (FD) MIMO for LTE (830085, LTE_eFDMIMO-UEConTest) RP-190650
  - REL-15, Extended-Band12 new E-UTRA Band (Band 85) (830084, Ext_B12_LTE-UEConTest) RP-190510
  - REL-16, Rel-16 NR CA and DC; and NR and LTE DC Configurations (830083, NR_CADC_NR_LTE_DC_R16-UEConTest) RP-190321

- 2 <u>new approved REL-16 study items</u> (SI):
  - RAN3, Study on enhancement for disaggregated gNB architecture (830072 FS_enh_disagg_gNB) RP-190702
  - RAN3, Study on local NR positioning in NG-RAN (830073, FS_NR_local_pos) RP-190754
- 1741 **<u>CRs</u>** (incl. cat.A CRs and 56 company CRs) were handled and 1709 CRs were approved (see Annex D and attached Tdoc list).
- approved/noted/agreed **<u>TRs/TSs</u>** (see Annex E):
  - 1 noted specification which was provided for information (REL-16: TR 38.840)
  - 40 approved specifications which are now under CR control (
    REL-8: TS 37.460, TS 37.461, TS 37.462, TS 37.466;

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REL-9: TS 37.460, TS 37.461, TS 37.462, TS 37.466;
REL-10: TS 37.460, TS 37.461, TS 37.462, TS 37.466;
REL-11: TS 37.460, TS 37.461, TS 37.462, TS 37.466;
REL-12: TS 37.460, TS 37.461, TS 37.462, TS 37.466;
REL-13: TS 37.460, TS 37.461, TS 37.462, TS 37.466;
REL-14: TS 37.460, TS 37.461, TS 37.462, TS 37.466;
REL-15: TS 37.460, TS 37.461, TS 37.462, TS 37.466, TS 38.521-4, TS 38.533;
REL-16: TR 36.776, TR 37.873, TR 38.825, TR 38.824, TR 38.855, TR 38.885)

- 1 agreed specification under RAN leadership (REL-16: TR 38.807 v0.1.0)

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0 Opening of the meeting

TSG RAN chairman Mr. Balazs Bertenyi (Nokia) opened the meeting 3GPP TSG RAN #83 on Monday March 18th, 2019 at 9am.

On behalf of the host, Huawei Technologies Co., Ltd., Mr. David Mazzarese (Huawei) welcomed the participants to Shenzhen, China and explained organisational aspects of the meeting.

NOTE: The TSG meetings #83 is carried out in a 1 week TSG set up (see RP-131328, RAN/CT at the beginning and SA at the end of the week).

1 Reminders for usage of IT resources, IPR declaration and antitrust compliance

The TSG RAN chairman made the following three announcements to remind the delegates of this meeting:

RAN chair's reminder regarding responsible behaviour regarding IT resources of the meeting:

Delegates are reminded that they share the meeting IT resources with their fellow delegates. You should not abuse the service by using bandwidth-hogging applications such as movie downloads, streaming video, web-based gaming, etc during the meeting. Use the internet service in your hotel rooms for this!

Delegates must respect the law of the hosting country, and should not visit prohibited internet sites.

In cases of persistent abuse of the internet bandwidth, MCC may restrict individual’s use of the service.

In particular, the PCG has laid down the following network usage conditions:

1. Users shall not use the network to engage in illegal activities. This includes activities such as copyright violation, hacking, espionage or any other activity that may be prohibited by local laws.

2. Users shall not engage in non-work related activities that are consume excessive bandwidth or cause significant degradation of the performance of the network.

Since the network is a shared resource, users should exercise some basic etiquette when using the 3GPP network at a meeting. It is understood that high bandwidth applications such as downloading large files or video streaming might be required for business purposes, but delegates should be strongly discouraged in performing these activities for personal use. Downloading a movie or doing something in an interactive environment for personal use essentially wastes bandwidth that others need to make the meeting effective. The meeting chairman should remind end users that the network is a shared resource; the more one user grabs, the less there is for another. Email and its attachments already take up significant bandwidth (certain email programs are not very bandwidth efficient). In case of need the chair can ask the delegates to restrict IT usage to things that are essential for the meeting itself.

1. DON’T place your WiFi device in ad-hoc mode
2. DON’T set up a personal hotspot in the meeting room
3. DO try 802.11a if your WiFi device supports it
4. DON’T manually allocate an IP address
5. DON’T be a bandwidth hog by streaming video, playing online games, or downloading huge files
6. DON’T use packet probing software which clogs the local network (e.g., packet sniffers or port scanners)

Based on the report of the PCG ad hoc group on IT improvements:

http://www.3gpp.org/ftp/PCG/PCG_27/DOCS/PCG27_13r1.zip

see also http://www.3gpp.org/specifications-groups/delegates-corner

RAN chairman's reminder regarding IPRs:

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

The delegates are asked to take note that they are thereby invited:

- to investigate whether their organization or any other organization owns IPRs which were, or were likely to become Essential in respect of the work of 3GPP.

- to notify their respective Organizational Partners of all potential IPRs, e.g., for ETSI, by means of the IPR Information Statement and the Licensing declaration forms

Based on http://www.3gpp.org/3gpp-calendar/89-call-for-ipr-meetings

RAN chair's reminder regarding antitrust and competition law:

The attention of the delegates to the meeting is drawn to the fact that 3GPP activities are subject to all applicable antitrust and competition laws and that compliance with said laws is therefore required by any participant of the meeting, including the Chairman and Vice-Chairmen and are invited to seek any clarification needed with their legal counsel. The leadership would conduct the present meeting with impartiality and in the interests of 3GPP. Delegates are reminded that timely submission of work items in advance of TSG/WG meetings is important to allow for full and fair consideration of such matters.

Based on http://www.3gpp.org/about-3gpp/legal-matters/21-3gpp-calendar/1616-statement-of-antitrust-compliance

2 Elections of TSG-RAN officials

Candidate for RAN chairman:

- Mr. Balazs Bertenyi, Nokia Corporation (ETSI)

Mr. Stephen Hayes (RAN vice-chairman) checked whether there is any other candidate. There was none.

Mr. Balazs Bertenyi was elected by acclamation (for 2 more years).

Candidates for RAN-vice chairman:

- Dr. Xiaodong Xu, China Mobile Communications Corporation (CCSA)

- Mr. Satoshi Nagata, NTT DoCoMo Inc. (ARIB)

- Mr. Stephen Hayes, Ericsson Inc. (ATIS)

Mr. Balazs Bertenyi (RAN chair) checked whether there is any other RAN vice-chairman candidate. There was none.

The 3 vice-chairman candidates, Mr. Xiaodong Xu, Mr. Satoshi Nagata, Mr. Stephen Hayes, were elected by acclamation (for 2 more years).

3 Approval of the agenda

NOTE: Agreed CR packages of RAN WGs (if not flagged for discussion) will be approved without presentation. WI/SI status reports (if not flagged for discussion) will be noted without presentation.

RP-190001 Agenda for RAN #83 held in Shenzhen, China, 18.03.-21.03.2019

Type: agenda For: Approval
Source: RAN chairman (Nokia)

Discussion:

MCC: revised to correct a few mistakes, contents did not change

Decision: The document was **revised to RP-190623**.

RP-190623 Agenda for RAN #83 held in Shenzhen, China, 18.03.-21.03.2019

Type: agenda For: Approval
Source: RAN chairman (Nokia)

(Replaces RP-190001)

Decision: The document was **approved**.

A tentative initial meeting schedule was distributed by the RAN chairman on 17.03.2019 via the RAN reflector:

	Monday	Tuesday	Wednesday	Thursday
		Offline drafting	Offline drafting	Offline drafting
09.00 **10.30**	**09.00** **Opening, Elections, RAN Report (1,2,3,4)** **Early Items – Rel-16** NR-V2X: 227, 486, 037, 226 NR-positioning: 195, 194 eURLLC: 346 UE power saving: 299 IIOT&NPN: 191,192, 190, 250,252 UE capability signalling: 358 RAN4 Rel-16 package: 011 NR-U co-existence: 240, 612, 613, 639, 199, 508, 040, 185 **Early items – Rel-15** CSI-RS aperiodic tr: 504,505,506,507 OBW: 367, 426 Gapless measurement: 537, 626 Network sharing: 204,205,525, 203 UE capability handling: 273	**08:00** **ITU-R ad-hoc (including IMT2020 docs, AI 8 and 9.3.2)** **10.00** **Early items contd'**	**1st sweep of all other items**	**Management issues (6.3, 15-16)** **Revisions**
10.30 **11.00**	Offline drafting	Offline drafting	Offline drafting	Offline drafting
11.00 **12.30**	**Early items contd'**	**Early items contd'**	**1st sweep of all other items**	
12.30 **14.00**	Offline drafting	Offline drafting	Offline drafting	**Revisions**
14.00 **16.00**	**Early Items contd'**	**1st sweep of all other items**	**1st sweep of all other items**	
16.00 **16.30**	Offline drafting	Offline drafting	Offline drafting	
16.30 **18.30**	**Early Items contd'**	**1st sweep of all other items**	**1st sweep of all other items** **19:00:** **Joint session with SA on Rel-17 timeline**	**Revisions** **18.00 Close of the meeting**
19.00 **20.00**	Offline drafting	Offline drafting	Offline drafting	

NOTE: Times shown are only estimates and the schedule may change during the meeting.

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4 Approval of the meeting report of TSG-RAN #82

RP-190002 Draft report of RAN #82 held in Sorrento, Italia, 10.12.-13.12.2018

Type: report For: Approval
Source: ETSI MCC

Decision: The document was **revised to RP-190643**.

RP-190643 Report of RAN #82 held in Sorrento, Italia, 10.12.-13.12.2018

Type: report For: Approval
Source: ETSI MCC

(Replaces RP-190002)

Decision: The document was **approved**.

5 RAN WG reports

5.1 TSG RAN WG1

RP-190005 Status Report RAN WG1

Type: report For: (not specified)
Source: RAN1 chairman (Qualcomm)

Discussion:

Huawei: requests to avoid that a person is leading multiple features as this may slow down RAN1

LG: has the same concern as Huawei

RAN chair: we should not indicate to power saving folks to already indicate that there have twice the time, we can still decide this later

conclusion: The additional TUs will yet be allocated but reconsidered at RAN #84.

Decision: The document was **noted**.

RP-190006 List of CRs from RAN WG1

Type: discussion For: Information
Source: ETSI MCC

Decision: The document was **noted**.

RP-190691 Handling of Cat. B TEI in RAN for NR & LTE

Type: discussion For: -
Source: RAN chairman (Nokia), RAN WG1/2/3/4/5/6 chairmen

Discussion:

May be considered in June 19.

Decision: The document was **withdrawn**.

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5.2 TSG RAN WG2

RP-190007 Status Report RAN WG2

Type: report For: (not specified)
Source: RAN2 chairman (Intel)

Discussion:

Nokia: V2X discussion was overshooting the planned TUs by far, this should be avoided in the future

RAN2 chair: agrees that we need to avoid of additional offline discussions

Decision: The document was **noted**.

RP-190008 List of CRs from RAN WG2

Type: discussion For: Information
Source: ETSI MCC

Decision: The document was **noted**.

RP-190314 Operator view on 5G NR

Type: discussion For: (not specified)
Source: SK Telecom

Decision: The document was **revised to RP-190636**.

RP-190636 Operator view on 5G NR

Type: discussion For: -
Source: SK telecom, KT, LGUplus, Verizon

(Replaces RP-190314)

Discussion:

proposals:

1. The compatibility of devices and networks used for the first deployments should not be impacted by later version of Release 15 specifications.

2. Operators and vendors preparing early 5G commercialization should check the interoperability issues carefully in each CRs. It requires very tight interworking between standardization experts and development experts.

3. To ensure interoperability between previous version of Release 15 specifications, the CRs with the “backward compatibility issues” shall not be agreed.

RAN chair: thinks that has been followed to a large extend already

RAN2 chair: CRs with the “backward compatibility issues” would need some more clarification, when you have a non-backward comp. CR for feature A, you do not want impacts on features B, C and D

RAN chair: agrees that this is a case by case decision

Decision: The document was **noted**.

RP-190737 RAN2 TU allocation at RAN#83

Type: discussion For: -
Source: RAN2 chairman (Intel)

Discussion:

RAN chairman: everything from RAN #83 is included?

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RAN2 chairman: yes

Qualcomm: shares RAN2 chairman's concern about workload and quality and now there is a proposal to add even more (UDC)

Ericsson: agrees with Qualcomm

RAN chairman: what do you want to do to solve it?

Ericsson: limit additional work

RAN chairman: so removing the red parts?

LG: RAN2 has to take care of 27 items now so we cannot add new topics at every meeting so we need to be careful with REL-17

RAN chairman: yes, we say this all the time but if we do not agree some actions nothing will change

RAN chairman: UDC and IDC are the real new WIs where there is not work done already in other WGs, so for these 2 there is some flexibility; would someone have problems to add UDC and IDC to RAN2?

Qualcomm: we raised our concerns already

ZTE: we would also not be happy but can we at least agree that we will not anything more in the future?

RAN chairman: I was greying out this agenda item for 6 months but companies are still adding new items

Nokia: agrees and wondering how companies can add new things if already ongoing topics are already in danger to complete

Deutsche Telekom: also concerned about this situation

Qualcomm: we are also not consistent: now we want to reduce number of new proposals due to overload but at next meeting we discuss a lot of new REL-17 topics

RAN chairman: so suggests that we do not approve UDC and IDC

Qualcomm: we cannot treat UDC and IDC alike, UDC is really new

Huawei: UDC is little work that could be handled under TEI16 and it was requested to phrase it in a WI so it is not new

vivo: IDC was already proposed in REL-15 and got shifted to REL-16

CMCC: why not removing all new WIs?

RAN chairman: I explained the logic for this

CMCC: does not accept this logic

RAN chairman: we will minute this

Telecom Italia: we need to put limits also to RAN1 as their work has impact on RAN2/RAN3

conclusion: IDC and UDC will be taken off the list

Decision: The document was **revised to RP-190750**.

RP-190750 RAN2 TU allocation at RAN#83

Type: discussion *For: -*
Source: RAN2 chairman (Intel)

(Replaces RP-190737)

Decision: The document was **endorsed**.

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5.3 TSG RAN WG3

RP-190009 Status Report RAN WG3

Type: report For: (not specified)
Source: RAN3 chairman (Ericsson)

Discussion:

RAN3 chairman: plans to reduce the co-location with other WGs as it simplifies things a lot

Decision: The document was **noted**.

RP-190010 List of CRs from RAN WG3

Type: discussion For: Information
Source: ETSI MCC

Decision: The document was **noted**.

RP-190319 Observation of RAN3 workload and proposals

Type: discussion For: Discussion
Source: CMCC

Discussion:

proposal: Some ways could be considered to cope with current situation:

- To set up parallel sessions, e.g., the agenda items to be chaired by Vice Chairs can be handled at parallel sessions.

- Assign official email discussions or offline discussions

RAN3 chair: corrections have higher priority than WIs and SIs have lower priority than WIs so the limited time for SIs is not the chairman's spirit but this is driven by the contributions

Huawei: RAN3 is a smaller group, if we would split this group (which would not be easy) it would have impacts on the corresponding expertise and quality of the work

CMCC: RAN3 is not different from other WGs, so this problem should be addressed

RAN3 chairman: one problem is that RAN centric is accumulating 6 SIs in one

RAN chair: asks RAN3 leadership to look into options to improve the situation

Decision: The document was **noted**.

RP-190684 RAN3 time unit planning

Type: discussion For: -
Source: RAN3 chairman (Ericsson)

Discussion:

RAN3 chair: green parts are for endorsement

Nokia: LMF topic should be able to continue in a WI phase

RAN3 chairman: LMF part is included in positioning SI

Huawei: there is only one SI where there is consensus already that there will be a follow-up WI, for others there is no consensus so far

RAN chairman: any need to change the table?

Nokia: what is missing is that we will consider follow-up WIs of SIs in the future

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RAN3 chairman: this is not precluded here, this is business as usual

CMCC: requests to remove WWC from the list

Huawei: this is actually to complete the SA2 work in RAN and CMCC is supporting company of the SA2 work

RAN3 chairman: indicates that the slide 5 is the worst case scenario i.e. if all proposals are approved

RAN chair: which WIs are RAN3 led?

RAN3 chair: the WIs with the *

RAN chair: so understands that this table is doable for RAN3, anyone objecting to this document? noone

Decision: The document was **endorsed**.

5.4 TSG RAN WG4

RP-190011 Status Report RAN WG4

Type: report *For: (not specified)*
Source: RAN4 chairman (Samsung)

Discussion:

RAN4 chair: page 22 summarizes the new RAN4 proposals

RAN chair: page 23 says:

"Rel-16 RF related items including spectrum related items can be started in Q2 2019

Rel-16 RD (RRM and Demod/CSI) related items shall start no earlier than June 2019"

which seems to indicate that we should focus on RF items at RAN #83

Mediatek: a bit surprising that RAN4 is looking at REL-16 while there are still important REL-15 topics need to be completed

RAN4 chair: in Q2/2019 we will still focus on REL-15 exception sheet, this is why we plan to look at baseband aspects after June 2019

Mediatek: would still like to talk about baseband aspect at RAN #83

RAN chair: we need to give time to RAN4 to catch up as they are hit by all the acceleration otherwise this problem will hit us in the following releases

CMCC: for the REL-15 leftovers there is no consensus in RAN4 what to take over in REL-16

RAN chair: we have to distinguish real left-overs from new topics

RAN4 chair: we need to still look at spectrum related WIs

RAN chair: what we mean by "spectrum related" is "band/band-combination specific"

BT: we talk about new WIs for REL-16?

RAN chair: yes

Qualcomm: agrees with RAN chair that RAN4 needs to catch up, RRM demod should not start in this quarter, also collecting rapporteurships is not a useful approach

Ericsson: multiRAT may not be a REL-15 left-over but it is important for refarming for operators

T-Mobile: It would be useful if RAN4 chair could indicate for each topic in slide 22 the corresponding RAN WID Tdoc number

RAN chair: we will collect the scopes for RF REL-16 in RP-190658 and for RRM/Demod REL-16 in RP-190659; intention is to approve WID(s) for RF this week and to approve RRM/Demod related WID(s) in June 19

RAN4 chair: wants to revise RP-190011 to correct a bullet

Decision: The document was **revised to RP-190683**.

RP-190683 Status Report RAN WG4

Type: report For: -
Source: RAN4 chairman (Samsung)

(Replaces RP-190011)

Decision: The document was **noted**.

RP-190012 List of CRs from RAN WG4

Type: discussion For: Information
Source: ETSI MCC

Decision: The document was **noted**.

RP-190428 RAN4 NR work prioritization

Type: discussion For: Discussion
Source: Qualcomm Incorporated

Discussion:

proposal: that guidance should be given to RAN4 to prioritize the work as follows:

- Core part of NSA & SA

- Performance part for NSA & SA

RAN4 chair: such a prioritization is already followed in general

BT: NSA includes also late drop and SA includes also option 5 so we should better talk about the 3 different drops

RAN chair: yes, NSA stands for option 3

Telecom Italia: late drop is important for operators

Decision: The document was **noted**.

RP-190658 Way forward for NR RF requirement work continuation in Rel-16

Type: discussion For: -
Source: Nokia

Decision: The document was **revised to RP-190740**.

RP-190740 Way forward for NR RF requirement work continuation in Rel-16

Type: discussion For: -
Source: Nokia

(Replaces RP-190658)

Discussion:

RAN chairman: FR1 slide 3 agreeable?

RAN4 vice-chairman (Huawei): suggests to remove 2nd bullet

Nokia: does not agree to this proposal

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Apple: no strong view but if it is contentious

RAN chair: so we remove this RAN4 work (2nd bullet) because of not consensus (but not because of a RAN1 note)

LG: last bullet of slide 4 is for PC3?

Nokia: yes

?: does not agree to 2nd main bullet on slide 4 as related to ongoing duty cycle discussion

Nokia: maybe we remove it here and clarify that we will come back in June

Verizon: wants to keep "from Rel-16 onwards" subbullet for slide 4

conclusion: 2nd bullet slide 3 will be removed (no consensus), slide 4: subbullet "These requirements are only valid form Rel-16" will be removed and we will see in June 19 how to address corresponding aspects that are not completed, adding PC3 for spherical coverage

Decision: The document was **revised to RP-190741**.

RP-190741 Way forward for NR RF requirement work continuation in Rel-16

Type: discussion *For: -*
Source: Nokia

(Replaces RP-190740)

Discussion:

RAN4 chairman: large amount of items, if we split the topic it will be easier to manage this

Ericsson, China Telecom: better to split in FR1, FR2 and 256QAM for FR2

RAN chairman: so then we allocate 3 WI proposals:

- RF req. for FR1 RP-190742

- 256QAM for FR2 in RP-190743

- RF req. for FR2 in RP-190744

and we will come back to them

Decision: The document was **endorsed**.

RP-190742 New WID: RF requirement for FR1

Type: WID new *For: Approval*
Source: Huawei

Discussion:

vivo: Intra-band contiguous/non-contiguous UL CA for FR1 only for PC3

Apple: "Study if UE intra-band EN-DC MPR/A-MPR requirements" can be improved can be enormous so scope will need more clarification

RAN4 vice-chairman (NTT DOCOMO): sees potential other overlap with Sprint WI

RAN chairman: we can clean up the WID further at RAN #84

Decision: The document was **revised to RP-190759**.

RP-190759 New WID: RF requirement for NR frequency range 1 (FR1)

Type: WID new *For: Approval*
Source: Huawei

(Replaces RP-190742)

Abstract:

new WI for NR; leading WG: RAN4

Decision: The document was **approved**.

RP-190743 New WID: 256QAM for FR2

Type: WID new *For: Approval*
Source: China Telecom

Discussion:

NTT DOCOMO: bullet 3) of phase 2 unclear

RAN chair: exists already? then bullet can be removed

Decision: The document was **revised to RP-190760**.

RP-190760 New WID: Add support of NR DL 256QAM for frequency range 2 (FR2)

Type: WID new *For: Approval*
Source: China Telecom

(Replaces RP-190743)

Decision: The document was **approved**.

RP-190744 New WID: RF requirments for FR2

Type: WID new *For: Approval*
Source: Nokia

Discussion:

Apple: "Finalize FR2 UE power classes 3 and related UE requirements" is redundant; would like to avoid the impression that LTE MIMO work is not stopped

ZTE: dependency to other WI?

conclusion: remove last bullet from objectives, WI dependencies may be checked

Decision: The document was **revised to RP-190761**.

RP-190761 New WID: RF requirements for FR2

Type: WID new *For: Approval*
Source: Nokia

(Replaces RP-190744)

Decision: The document was **approved**.

RP-190659 Scope for RAN4 RRM/Demodulation work in REL-16

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Type: discussion For: -
Source: Intel

Discussion:

RAN chairman: used colour coding not clear

RAN chair: no intention to approve WIDs for this here, we will consider WIs for this in June

Ericsson: Demod was not really discussed and there is no way forward on Demod from RAN4 so recommends that Demod scope is discussed in RAN4 again and we will come back in June

Nokia: tends to agree with Ericsson on Demod part, RRM is a bit more stable than Demod

RAN chairman: suggest further discussion and to bring a similar Tdoc to RAN #84 (instead of having a number of separate WIs in June 19) with clear guidance

Intel: as RAN4 has no TU allocated for this, suggests to have email discussion on Demod part, RRM and high speed train part is already very stable

Ericsson: suggests 350km/h instead of 500km/h

RAN chair: so this aspect can still be discussed in the email discussion

Intel: can we agree on slide 11

Ericsson: would not agree on this now

conclusion: Intel will lead a RAN4 email discussion until RAN #84 (main focus on Demod) to come up at RAN #84 with a stable summary for Demod/RRM/high speed train (no WIDs so far), TU wise the 3 aspects will be considered as one package when it comes to WI(s) (to be defined at RAN #84)

Decision: The document was **noted**.

RP-190751 RAN4 TU allocation

Type: discussion For: -
Source: RAN4 chairman

Discussion:

RAN chairman: not used TUs (because of not considered SIs/WIs) may be reallocated at RAN #84 (depending on workload)

Decision: The document was **endorsed**.

5.5 TSG RAN WG5

RP-190013 Status Report RAN WG5

Type: report For: (not specified)
Source: RAN5 chairman (Motorola Mobility)

Discussion:

BT: thanks for the clear text on slide 18

Decision: The document was **noted**.

RP-190014 List of CRs from RAN WG5

Type: discussion For: Information
Source: ETSI MCC

Decision: The document was **noted**.

RP-190015 Status Report MCC TF160 (for approval)

Type: report For: Approval
Source: ETSI MCC TF160 Leader

Decision: The document was **approved**.

5.6 TSG RAN WG6

RP-190016 Status Report RAN WG6

Type: report For: (not specified)
Source: RAN6 chairman (Nokia)

Discussion:

presented by Matthew Baker (Nokia) on behalf of RAN6 chairman Juergen Hofmann (Nokia)

Decision: The document was **noted**.

RP-190017 List of CRs from RAN WG6

Type: discussion For: Information
Source: ETSI MCC

Decision: The document was **noted**.

6 Other Reports

6.1 Report on TSG SA activities

RP-190018 TSG SA Report to TSG RAN - Questions for Advice and Requests

Type: report For: (not specified)
Source: SA chairman (Samsung)

Discussion:

RAN chair: there will be a joint SA-RAN session starting on Wed 19:00 in RAN room on the REL-17 schedule and slide 15 in general

SA chairman: encourages more feedback from RAN and alignment across TSGs in general

Decision: The document was **noted**.

NOTE: The following 3 Tdocs RP-190716, RP-190718 an RP-190736 were handled in a joint RAN-SA session on Wed 20.03.2019 at 19:00.

RP-190716 Time schedule for Release 17

Type: discussion For: -
Source: SA chairman (Samsung)

Abstract:

input for joint RAN-SA session on Wed (starting at 19:00)

Discussion:

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Tdoc is equal to SP-190245

Agreement in TSG-SA#82:

- Stage 1 target date December 2019 (all normative work results to be at or more than 80 % completion by Sept 2019)

- The target dates for Release 17 will be reviewed in TSG#86 (=Dec.19) taking the outcome of the 3GPP wide coordination at TSG#86 in December

Proposed initial target date in TSG-SA:

- Target date for stage 2 freeze is September 2020

- This date will be reviewed in TSG-SA based on agreement of Rel-17 contents and time schedule agreed jointly by SA/RAN

SA chairman: this means targeting a 5 quarter REL-17

Ericsson: is correct

Huawei: what interests RAN people is the REL-17 stage 3 freeze

Qualcomm: so CT1 and RAN2 stage 3 freeze would be June 2021 and RAN1 stage 3 would be March 2021

Mediatek: so agrees with Qualcomm, ASN.1 freeze would then be Sep.2021

Huawei: why were these dates chosen?

SA chairman: if we start with 5 quarters, we may end up with 6 quarters but if you start with 6 quarters, we can never reach 5 quarters

RAN chairman: could we take 5 quarters for REL-17 as a basis?

CMCC: when would this be revisited?

SA chairman: by Dec.19 we need to be crystal clear what the target dates are, SA1 is already working on REL-17

CMCC: we do not want to repeat multiple drops that we had in REL-15, this was a mistake

RAN chairman: we will revisit if there is a strong need but we will not revisit just in order to revisit

RAN3 chairman: what will the REL-size mean in terms of WG workload?

SA chairman: we will fill the available time whatever the length of the REL is, a shorter REL will mean less content, that's all

OPPO: is expecting a number of verticals will need 3GPP support and therefore 18 months may be better

RAN chairman: let's look then at RP-190718

Decision: The document was **noted**.

RP-190718 Decision on Rel-17 schedule

Type: discussion *For: -*
Source: RAN chairman (Nokia), SA chairman (Samsung)

Abstract:

input for joint RAN-SA session on Wed (starting at 19:00)

Discussion:

proposal:

- Majority of company proposals fluctuate between 15 and 18 month long Release-17

- The SA-RAN joint session to identify if there is a decisive reason one way or another (15 vs 18)

- If such a decisive reasons does not exist, it is proposed to conduct a show of hands between 15 and 18, and adopt majority view

Huawei: we would prefer to plan with an 18 months REL without delay which gives some more time for SIs

Qualcomm: a longer REL has the danger that some industry comes and claims there feature is so urgent that it needs to be addressed asap and we end up with drops again, this is one argument for a 15 months REL

Ericsson: would prefer to avoid a show of hands decision but plan with a 15 months REL and we can revisit in Dec.19

RAN chairman: would not like to keep the decision open until Dec.19 as we have then 2 variables (length of the REL and contents of the REL)

LG: if the amount of work for 15 months and for 18 months, then we prefer 18 months, so it is important that TSGs plan the workload properly

CMCC: we would prefer to fix a time line and to stick to it to avoid a bad impression to the outside

ZTE: proper TU planning is important

SA chairman: if we cannot make it in 15 months, we could still consider 18 months

RAN chairman: we would only revisit if we have new arguments

RAN chairman: any objection to endorse to plan for a 15 months release? none

conclusion: endorsed to have a 15 months/5 quarter REL-17;

in Sep.19 we will check whether this is possible; by Dec.19 the REL-17 schedule will be fixed

Decision: The document was **noted**.

RP-190736 Update of procedures relating to work items (TEI)

Type: discussion *For: -*
Source: ETSI MCC, Nokia, Samsung, BT, Intel

Abstract:

input for joint RAN-SA session on Wed (starting at 19:00)

Discussion:

Tdoc is equal to SP-190239 (a TR 21.900 CR that is under discussion in SA)

Specs Manager: the document is actually work in progress

SA chairman: TEI CRs can not be tracked in the workplan that's why it is better to have a WI description for this sort of topics

ZTE: we still see a benefit of TEI CRs

Vodafone: in CT/SA WGs most of the SA TEI CRs have also then CT TEI CRs which makes tracking difficult

Mediatek: does not see TEI CRs as critical in RAN WGs

Huawei: surprised to see the TEI topic was brought up in the joint session because in RAN it was said that the TEI topic will not be considered here

SA chairman: was brought up by SA as SA is in charge of 21.900

Decision: The document was **noted**.

6.2 Report from PCG

There was no PCG meeting since RAN #82.

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6.3 Report from MCC

RP-190019 3GPP Support Team Report

Type: report For: (not specified)
Source: ETSI MCC

Decision: The document was **noted**.

RP-190183 Compendium of SA documents relating to working methods

Type: discussion For: Information
Source: MCC

Abstract:

MCC is presenting a number of TDocs to TSG SA#83 for approval. However, these documents are of relevance to the other TSGs, so the present TDoc offers a compendium of them for information and, if need be, discussion at CT and RAN.

Decision: The document was **not treated**.

RP-190021 3GPP Work Plan review at Plenary #83

Type: Work Plan For: Information
Source: ETSI MCC

Decision: The document was **noted**.

RP-190640 TR 21.915 v1.0.0 on Rel-15 description

Type: other For: Information
Source: ETSI MCC

Decision: The document was **noted**.

RP-190651 Clarifying the use of acronyms for new Work Items

Type: discussion For: discussion
Source: ETSI MCC

Decision: The document was **noted**.

6.4 Reports from other groups/activities

Nothing to report

7 Liaison activities of TSG RAN

NOTE: This agenda item will only handle LSs not handled elsewhere.

RP-190031 Reply LS to RP-182843 on PARLOS RAN impacts (S2-1901077; to: RAN, RAN2, RAN3, CT1; cc: SA; contact: Lenovo)

Type: LS in For: (not specified)
Original outgoing LS: S2-1901077, to RAN, RAN2, RAN3, CT1, cc SA, RAN, RAN3, CT1, CT4
Source: SA2

Abstract:

FS_PARLOS_SA2 = Study on Stage 2 for PARLOS (Provision of Access to Restricted Local Operator Services by Unauthenticated UEs); no explicit RAN action requested

Discussion:

RAN chair: correspondence ongoing between with RAN2

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190058 Reply LS to S2-1901077 = RP-190031 on PARLOS RAN impacts (C1-191726; to: SA2; cc: RAN, RAN2, RAN3, SA; contact: Motorola)

Type: LS in For: (not specified)
Original outgoing LS: C1-191726, to SA2, cc RAN, RAN2, RAN3, SA
Source: CT1

Abstract:

FS_PARLOS_SA2 = Study on Stage 2 for PARLOS (Provision of Access to Restricted Local Operator Services by Unauthenticated UEs); no RAN action requested

Discussion:

RAN chair: correspondence ongoing between with RAN2

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190032 Reply LS to ETSI LI(18)R45019r1 on Reporting All Cell IDs in 5G (S3i190043; to: ETSI TC LI, RAN, RAN3, SA2, CT; cc: CT1, CT3; contact: PIDS)

Type: LS in For: (not specified)
Original outgoing LS: S3i190043, to ETSI TC LI, RAN, RAN3, SA2, CT, cc CT1, CT3
Source: SA3 LI

Abstract:

RAN action requested

Discussion:

corresponding replies from CT1 in RP-190057 and from RAN3 in RP-190118

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190057 Reply LS to S3i190043 = RP-190032 on reporting all Cell IDs in 5G (C1-191388; to: SA3-LI; cc: ETSI TC LI, RAN, RAN3, SA2, CT, CT3; contact: Qualcomm)

Type: LS in For: (not specified)
Original outgoing LS: C1-191388, to SA3-LI, cc ETSI TC LI, RAN, RAN3, SA2, CT, CT3
Source: CT1

Abstract:

no RAN action requested

Discussion:

RAN chair: CT1 indicates that it does not impact them

conclusion: no LS answer from RAN

Decision: The document was **noted**.

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RP-190118 Response LS to S3i190043 = RP-190032 on reporting all cell IDs in 5G (R3-191111; to: SA3-LI; cc: SA, SA2, SA3, RAN, CT, CT1, CT3, ETSI TC LI; contact: Nokia)

Type: LS in For: (not specified)
Original outgoing LS: R3-191111, to SA3-LI, cc SA, SA2, SA3, RAN, CT, CT1, CT3, ETSI TC LI
Source: RAN3

Abstract:

no RAN action requested

Discussion:

moved from AI 9.2.1 to AI 7

Huawei: there are company CRs related to this in RP-190201 and RP-190202 to address the request

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190033 Reply LS to S2-1813384 = RP-182697 on Collection of Slice Related Data Analytics from UEs (S4-190195; to: SA2; cc: SA, RAN, RAN2, RAN3, SA5, CT1; contact: Ericsson)

Type: LS in For: (not specified)
Original outgoing LS: S4-190195, to SA2, cc SA, RAN, RAN2, RAN3, SA5, CT1
Source: SA4

Abstract:

FS_eNA = REL-16 SA2 SI Study of enablers for Network Automation for 5G; no RAN action requested

Discussion:

RAN chair: only for information for RAN

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190034 Reply LS to S2-1813384 = RP-182697 on Collection of Slice Related Data Analytics from UEs (S5-191340; to: SA2; cc: SA, SA4, RAN, RAN3, RAN2; contact: Ericsson)

Type: LS in For: (not specified)
Original outgoing LS: S5-191340, to SA2, cc SA, SA4, RAN, RAN3, RAN2
Source: SA5

Abstract:

FS_eNA = REL-16 SA2 SI Study of enablers for Network Automation for 5G; no RAN action requested

Discussion:

RAN chair: only for information for RAN

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190035 Reply LS to S2-1813404 = RP-182701 on Slice related Data Analytics (S5-191342; to: SA2; cc: SA, RAN, RAN3, RAN2; contact: Ericsson)

Type: LS in For: (not specified)
Original outgoing LS: S5-191342, to SA2, cc SA, RAN, RAN3, RAN2
Source: SA5

Abstract:

FS_eNA = REL-16 SA2 SI Study of enablers for Network Automation for 5G; no RAN action requested

Discussion:

RAN chair: only for information for RAN

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190045 Reply LS to RP-182897 and S2-1813378 = RP-182729 on RAN related parameters collected from UE (R2-1902335; to: RAN, SA2; cc: RAN3; contact: Huawei)

Type: LS in For: (not specified)
Original outgoing LS: R2-1902335, to RAN, SA2, cc RAN3
Source: RAN2

Abstract:

eNA: REL-16 SA2 WI on Enablers for Network Automation for 5G; RAN #82 replied to S2-1813378 = RP-182729 in RP-182897; no explicit RAN action requested

Discussion:

RAN chair: No action to RAN, discussion ongoing with RAN2

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190108 LS on OTA testing of IoT devices (GSMA_TSGIoT15_003; to: CTIA, RAN4, RAN; cc: -; contact: CMCC)

Type: LS in For: (not specified)
Original outgoing LS: GSMA_TSGIoT15_003, to CTIA, RAN4, RAN, cc -
Source: GSMA

Abstract:

RAN action requested

Discussion:

RAN chair: LS is also going to RAN4 and RAN4 can respond from their next meeting (if they want)

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190123 LS on EPS Additional RRM Policy Index (S2-1902908; to: RAN, RAN3, RAN2, CT , CT4; cc: SA; contact: Vodafone)

Type: LS in For: (not specified)
Original outgoing LS: S2-1902908, to RAN, RAN3, RAN2, CT , CT4, cc SA
Source: SA2

Abstract:

RAN action requested

Discussion:

see RP-190572 instead because RP-190123 had a wrong attachment (S2-1902870 instead of S2-1901970)

Decision: The document was **withdrawn**.

RP-190572 LS on EPS Additional RRM Policy Index (S2-1902908; to: RAN, RAN3, RAN2, CT , CT4; cc: SA; contact: Vodafone)

Type: LS in *For: -*
Original outgoing LS: S2-1902908, to RAN, RAN3, RAN2, CT , CT4, cc SA
Source: SA2

Abstract:

RAN action requested

Discussion:

conclusion: an LS answer was drafted in RP-190685

Decision: The document was **replied to in RP-190685**.

RP-190274 Discussion on LS on EPS Additional RRM Policy Index

Type: discussion *For: Decision*
Source: Nokia, Nokia Shanghai Bell

Abstract:

related to S2-1902908 = RP-190572

Discussion:

Proposal: As described in the discussion part of this document there are various points which should be discussed and agreed in RAN WGs. As there is still ample time to complete release 16, it is proposed that TSG RAN liaise to TSG SA to hold approval of SA2 CR S2-1902896 [3] until RAN2 and RAN3 have had an opportunity to analyse the feature proposal in detail and recommend a suitable solution that takes into account all aspects.

Vodafone: why do we need to reopen this? if we take the SA2 approach, it will be a simple CR from RAN2/RAN3;

Mediatek: surprised about the Tdoc

RAN chair: which WI is this about?

Mediatek: TEI16

RAN chair: this explains where the problem is coming from (we should not have TEI CRs spanning multiple TSGs)

RAN2 chair: is there any RAN2 impact

RAN chair: it seems main impact is on RAN3;

Huawei: we can endorse a corresponding CR in RAN3 and just bring it to RAN for approval once RAN3 wants to introduce REL-16 specs

RAN chair: we will put this in an LS

Decision: The document was **noted**.

RP-190685 Draft Reply LS to S2-1902908 = RP-190572 on EPS Additional RRM Policy Index (to: RAN3, SA2, SA; cc: RAN2, CT, CT4; contact: RAN3 chairman (Ericsson))

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Type: LS out For: Approval
to RAN3, SA2, SA, cc RAN2, CT, CT4
Source: RAN3 chairman (Ericsson)

Discussion:

Nokia: remove SA from cc (is under to)

RAN chair: all RAN WGs are overloaded

Decision: The document was **revised to RP-190762**.

RP-190762 Reply LS to S2-1902908 = RP-190572 on EPS Additional RRM Policy Index (to: RAN3, SA2, SA; cc: RAN2, CT, CT4; contact: Vodafone)

Type: LS out For: Approval
to RAN3, SA2, SA, cc RAN2, CT, CT4
Source: RAN

(Replaces RP-190685)

Decision: The document was **approved**.

RP-190720 LS on NR V2X spectrum allocation (5GAA_S-1900056; to: RAN; cc: RAN1, RAN2, RAN4; contact: Huawei)

Type: LS in For: -
Original outgoing LS: 5GAA_S-1900056, to RAN, cc RAN1, RAN2, RAN4
Source: 5GAA WG4

Decision: The document was **not treated**.

8 ITU-R ad hoc

8.1 Status report

RP-190020 Status Report ITU-R Ad hoc

Type: report For: (not specified)
Source: 3GPP ITU-R Ad hoc Contact (Telecom Italia)

Decision: The document was **noted**.

8.2 Documents related to IMT-2020

RP-190109 LS on Confirmation of receipt of updated information related to proposals for the terrestrial components of the radio interface(s) for IMT-2020 (ITU-R WP5D/TEMP/0710(Rev.1); to: RAN, Korea, China, ETSI, DECT Forum, TSDSI; cc: -; contact: Counsellor ITU-R SG5)

Type: LS in For: (not specified)
Original outgoing LS: ITU-R WP5D/TEMP/0710(Rev.1), to RAN, Korea, China, ETSI, DECT Forum, TSDSI, cc -
Source: ITU-R WP5D

Abstract:

no explicit RAN action requested

Discussion:

ITU-R AH convener: LS provides information on the updated submission by TSDSI and a reminder of the deadline for final submission

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190110 LS on Information of evaluation report for the terrestrial components of the radio interface(s) for IMT-2020 (ITU-R WP5D/TEMP/0690; to: ATIS WTSC, 5G Infrastructure Association, ChEG Chinese Evaluation Group, Canadian Evaluation Group, Wireless World Research Forum, TCOE India, 5GMF, TTA SPG33, Trans Pacific Evaluation Group, ETSI Evaluation Group, Egyptian Evaluation Group, 5G India Forum; cc: RAN, Korea, China, ETSI, DECT Forum, TSDSI; contact: Counsellor ITU-R SG5)

Type: LS in For: (not specified)
Original outgoing LS: ITU-R WP5D/TEMP/0690, to ATIS WTSC, 5G Infrastructure Association, ChEG Chinese Evaluation Group, Canadian Evaluation Group, Wireless World Research Forum, TCOE India, 5GMF, TTA SPG33, Trans Pacific Evaluation Group, ETSI Evaluation Group, Egyptian Evaluation Group, 5G India, cc RAN, Korea, China, ETSI, DECT Forum, TSDSI
Source: ITU-R WP5D

Abstract:

no RAN action requested

Discussion:

ITU-R AH convener: for info for 3GPP but action for Independent Evaluation Groups

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190111 LS on availability of updated information related to proposals for the terrestrial components of the radio interface(s) for IMT-2020 (ITU-R WP5D/TEMP/0707(Rev.1); to: ATIS WTSC, 5G Infrastructure Association, ChEG Chinese Evaluation Group, Canadian Evaluation Group, Wireless World Research Forum, TCOE India, 5GMF, 5G India Forum, TTA SPG33, Trans-Pacific Evaluation Group, ETSI Evaluation Group, Egyptian Evaluation Group; cc: RAN, Korea, China, ETSI, DECT Forum, TSDSI; contact: Counsellor ITU-R SG5)

Type: LS in For: (not specified)
Original outgoing LS: ITU-R WP5D/TEMP/0707(Rev.1), to ATIS WTSC, 5G Infrastructure Association, ChEG Chinese Evaluation Group, Canadian Evaluation Group, Wireless World Research Forum, TCOE India, 5GMF, 5G India Forum, TTA SPG33, Trans-Pacific Evaluation Group, ETSI Evaluation Group, Egyptian Evaluation, cc RAN, Korea, China, ETSI, DECT Forum, TSDSI
Source: ITU-R WP5D

Abstract:

no RAN action requested

Discussion:

ITU-R AH convener: same as RP-190109 but to IEGs, with 3GPP in cc

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190112 LS on Further Information on ITU-R Working Party 5D Workshop on IMT-2020 Terrestrial Radio Interfaces Evaluation (ITU-R WP5D/TEMP/0706(Rev.1); to:

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ATIS WTSC, 5G Infrastructure Association, ChEG Chinese Evaluation Group, Canadian Evaluation Group, Wireless World Research Forum, TCOE India, 5GMF, TTA SPG33, Trans-Pacific Evaluation Group, ETSI Evaluation Group, Egyptian Evaluation Group, 5G India Forum, RAN, Korea, China, ETSI, DECT Forum, TSDSI; cc: -; contact: Counsellor ITU-R SG5)

Type: LS in For: (not specified)
Original outgoing LS: ITU-R WP5D/TEMP/0706(Rev.1), to ATIS WTSC, 5G Infrastructure Association, ChEG Chinese Evaluation Group, Canadian Evaluation Group, Wireless World Research Forum, TCOE India, 5GMF, TTA SPG33, Trans-Pacific Evaluation Group, ETSI Evaluation Group, Egyptian Evaluation Group, 5G Indi, cc -
Source: ITU-R WP5D

Abstract:

no explicit RAN action requested

Discussion:

ITU-R AH convener: WP5D decided to have a workshop on IMT-2020 Terrestrial Radio Interfaces Evaluation in conjunction with the 33rd WP 5D meeting in Dec. 2019 (9-17) in Geneva, instead of the 32nd meeting.

The WP5D meeting is in overlap with RAN #86, is it worth to ask ITU-R WP5D to move the workshop to Friday so that we could participate.

ZTE: suggests we should answer the LS

Broadcom: also prefers to send an LS answer

ITU-R AH convener: we should inform SA and SA will decide (we will check whether PCG should be included in this LS exchange)

Decision: The document was **replied to in RP-190668**.

RP-190668 Draft reply LS to ITU-R WP5D/TEMP/0706(Rev.1) = RP-190112 on Further Information on ITU-R Working Party 5D Workshop on IMT-2020 Terrestrial Radio Interfaces Evaluation (to: ITU-R WP5D; cc: SA; contact: ZTE)

Type: LS out For: approval
to ITU-R WP5D, cc SA
Source: ZTE

Discussion:

Huawei: says it provides "RAN4 view", should say "RAN view", there are other editorials

SA chairman: SA delegates would have to skip the Fri of SA to be able to attend the workshop

Decision: The document was **revised to RP-190686**.

RP-190686 Reply LS to ITU-R WP5D/TEMP/0706(Rev.1) = RP-190112 on Further Information on ITU-R Working Party 5D Workshop on IMT-2020 Terrestrial Radio Interfaces Evaluation (to: ITU-R WP5D; cc: SA; contact: ZTE)

Type: LS out For: approval
to ITU-R WP5D, cc SA
Source: RAN

(Replaces RP-190668)

Discussion:

MCC: revised to remove "Draft LTI"

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Decision: The document was **revised to RP-190739**.

RP-190739 Reply LS to ITU-R WP5D/TEMP/0706(Rev.1) = RP-190112 on Further Information on ITU-R Working Party 5D Workshop on IMT-2020 Terrestrial Radio Interfaces Evaluation (to: ITU-R WP5D; cc: SA; contact: ZTE)

Type: LS out For: approval
to ITU-R WP5D, cc SA
Source: RAN

(Replaces RP-190686)

Discussion:

LS will be sent out directly to ITU-R WP5D by 3GPP LS coordinator as this is a radio topic (which will not affect any ITU Recommendation). But SA is on cc to be informed.

LS was provided to SA on Thu evening of RAN #83.

Decision: The document was **approved**.

8.3 Other documents from/to ITU-R WP5D

RP-190113 LS on the schedule for updating Recommendation ITU-R M.1457 to revision 15 (ITU-R WP5D/TEMP/0698; to: RAN, SA, 3GPP2, ARIB, ATIS, CCSA, ETSI, IEEE, TIA, TSDSI, TTA, TTC; cc: -; contact: Counsellor ITU-R SG5)

Type: LS in For: (not specified)
Original outgoing LS: ITU-R WP5D/TEMP/0698, to RAN, SA, 3GPP2, ARIB, ATIS, CCSA, ETSI, IEEE, TIA, TSDSI, TTA, TTC, cc -
Source: ITU-R WP5D

Abstract:

no explicit RAN action requested

Discussion:

ITU-R AH convener: indicates that M.1457 (IMT-2000) will be updated only if inputs are received, in line with PCG discussion to stop updating the Recommendation from 3GPP side

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190114 LS for test methods over-the-air TRP measurements of IMT radio equipment utilizing active antennas (ITU-R WP5D/TEMP/0673(Rev.1); to: ITU-R WP1A, ITU-R WP1C; cc: RAN4, RAN5, RAN; contact: Counsellor ITU-R SG5)

Type: LS in For: (not specified)
Original outgoing LS: ITU-R WP5D/TEMP/0673(Rev.1), to ITU-R WP1A, ITU-R WP1C, cc RAN4, RAN5, RAN
Source: ITU-R WP5D

Abstract:

no RAN action requested; note: RAN was added on cc as this LS is related to LSout RP-182784 sent from RAN #82

Discussion:

ITU-R AH convener: 3GPP RAN4 and RAN5 are copied for information. No action needed, but suggests to ask RAN4 and RAN5 (will inform RAN4 & RAN5 chairmen) if they believe any action is needed and report back in June

conclusion: no LS answer so far

Decision: The document was **noted**.

8.4 Other documents from/to ITU-R WP5A

RP-190210 Draft LTI reply to ITU_R_WP5A_TEMP_349rev1 = RP-182236 on the revision of Recommendation ITU-R M.2084-0 (to: SA; cc: -; contact: ZTE)

Type: LS out *For: Approval*
to ITU-R WP5A
Source: ZTE, Sanechips

Abstract:

MCC: no SA/PCG review needed?

Discussion:

NEC: at last meeting we decided to have a short LS answer to have a link to the SI TR and the new WID

Huawei: SI TR 38.885 is for approval at RAN #83

NEC: is an internal TR

ITU-R AH convener: does not see a problem to have a link to it

Huawei: WI will target March 2020 and not Dec.19

Decision: The document was **revised to RP-190669**.

RP-190669 Draft LTI reply to ITU_R_WP5A_TEMP_349rev1 = RP-182236 on the revision of Recommendation ITU-R M.2084-0 (to: SA; cc: -; contact: ZTE)

Type: LS out *For: Approval*
to SA
Source: ZTE, Sanechips

(Replaces RP-190210)

Discussion:

will come back to this in the main session; after approval it will go to SA and PCG for review

ZTE: link to approved SID TR to be added

RAN chair: and link to the approved WID RP-190763

Decision: The document was **revised to RP-190764**.

RP-190764 Draft LTI reply to ITU_R_WP5A_TEMP_349rev1 = RP-182236 on the revision of Recommendation ITU-R M.2084-0 (to: SA; cc: -; contact: ZTE)

Type: LS out *For: Approval*
to SA
Source: ZTE, Sanechips

(Replaces RP-190669)

Discussion:

LTI will be provided to SA and PCG for review.

LTI was provided to SA on Thu evening of RAN #83.

Decision: The document was **agreed**.

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8.5 Documents from/to other ITU groups

RP-190003 Draft LTI in reply to LS ITU_D_SG1_Q1_1_LS_SG1RGQ_104-E = RP-182215 on Strategies and policies for the deployment of broadband in developing countries (RT-190002; to: RAN; cc: -; contact: Samsung)

Type: LS out *For: (not specified)*
to RAN
Source: 3GPP ITU-R ad hoc

Abstract:

RAN action requested; LS was treated in RAN by email, provided on 10.02.2019; it was used as basis for LSout RP-190004

Decision: The document was **noted**.

RP-190004 Draft LTI in reply to LS ITU_D_SG1_Q1_1_LS_SG1RGQ_104-E = RP-182215 on Strategies and policies for the deployment of broadband in developing countries (to: SA; cc: -; contact: Samsung)

Type: LS out *For: Approval*
to SA
Source: RAN

Abstract:

was approved by email before RAN #83 and then sent to SA (will be provided from there to PCG for approval)

Decision: The document was **agreed**.

RP-190041 LS on Amendment for ITU-T Q.731.3 on new functionalities to the calling line identification presentation (ITU_T_SG11-LS73; to: RAN, CT, SA, ITU-T SG2, ETSI TC NTECH; cc: -; contact: CAICT)

Type: LS in *For: (not specified)*
Original outgoing LS: ITU_T_SG11-LS73, to RAN, CT, SA, ITU-T SG2, ETSI TC NTECH, cc -
Source: ITU-T SG11

Abstract:

no explicit RAN action requested

Discussion:

ITU-R AH convener: no action needed from RAN

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190042 LS on Draft new Recommendation E.RQST – "KPI targets for mobile networks" (ITU_T_SG12-LS68; to: RAN1, SA5, RAN6, RAN, SA; cc: -; contact: RURA Rwanda)

Type: LS in *For: (not specified)*
Original outgoing LS: ITU_T_SG12-LS68, to RAN1, SA5, RAN6, RAN, SA, cc -
Source: ITU-T SG12

Abstract:

As the LS attachment is addressing also GSM and UMTS, RAN6 was involved. RAN6 recommended to involve RAN and SA; RAN action requested

Discussion:

ITU-R AH convener: draft recommendation is focusing on proposing thresholds that could be used to enforce compliance to KPIs; suggesting to give mandate to ITU-R AH to deal with it (informing relevant WGs)

Decision: The document was **replied to in RP-190629**.

RP-190629 Draft reply LS to ITU_T_SG12-LS68 = RP-190042 on Draft new Recommendation E.RQST – "KPI targets for mobile networks" (to: ITU-T SG12, SA; cc: RAN1, SA5, RAN6; contact: Nokia)

Type: LS out For: Approval
to ITU-T SG12, cc RAN1, SA5, RAN6
Source: Nokia

Discussion:

Nokia: supports that ITU-R AH takes responsibility to reply and to have some coordination with SA/SA5, so this here is a first proposal for a reply

ITU-R AH convener: "not supported"?

Nokia: outside of the scope of 3GPP, we could rephrase it

ITU-R AH convener: we should inform RAN1, RAN6, SA5 that the ITU-R will provide an answer

Nokia: RAN1 & RAN6 would certainly be happy to leave the answer to the ITU-R AH so we need to check whether SA5 would like to answer something

ITU-R AH: there will be no SA5 meeting before the deadline 16.04. (and solving this at TSG #84 would be too late) so we should send an LS to SA, cc: RAN1, RAN6, SA5 to check whether they would be fine with the answer like in RP-190629

Decision: The document was **revised to RP-190670**.

RP-190670 Draft reply LS to ITU_T_SG12-LS68 = RP-190042 on Draft new Recommendation E.RQST – "KPI targets for mobile networks" (to: SA; cc: RAN1, SA5, RAN6; contact: Nokia)

Type: LS out For: Approval
to ITU-T SG12, cc RAN1, SA5, RAN6
Source: Nokia

(Replaces RP-190629)

Discussion:

ITU-R AH convener: "TSG RAN ITU-R ad hoc" should be "RAN"; we can leave it up to SA to decide whether they want to inform PCG as well

MCC: the attachment can be already formulated as a Tdoc from SA;

Decision: The document was **revised to RP-190673**.

RP-190673 Reply LS to ITU_T_SG12-LS68 = RP-190042 on Draft new Recommendation E.RQST – "KPI targets for mobile networks" (to: SA; cc: RAN1, SA5, RAN6; contact: Nokia)

Type: LS out For: Approval
to SA, cc RAN1, SA5, RAN6
Source: RAN

(Replaces RP-190670)

Discussion:

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LS was provided on Tue afternoon of RAN #83 to SA (note: This LS includes as attachment an LS proposal to be sent from SA).

Decision: The document was **approved**.

RP-190044 LS on "Request to update the IoT and SC&C Standards Roadmap and the list of contact points" (ITU_T_JCA-IoT_SC_C-LS38; to: RAN, SA, all ITU-T Study Groups, ITU-T TSAG, ITU-R WP1A, WP1B and WP5A, ITU-T FG-AI4H, ITU-T FG-VM, ITU-T FG NET-2030, ITU-T FG-ML5G, ITU-T FG DLT, ITU-T FG DFC, ITU-T FG-DPM, ITU-D SG2, AR Standards, CEN, ECMA, ETSI, European Commission/IERC, AOITI WG3, GISFI, GS1 / EPC Global, GSC MSTF, IEEE-SA, IETF, IMTC UC IoT Activity Group, ISO/IEC JTC 1/SC 29/WG 11, ISO/IEC JTC 1, ISO/IEC JTC1 SC 31, ISO/IEC JTC1 SC 41, ISO/IEC JTC1 SC 6, ISO TC 122, ISO/TC184/SC5, ISO/TC 204, Mandat International, OGC, OMA, oneM2M, TIA, W3C, YRP Ubiquitous Networking Laboratory, AFNOR, AHCIET, ANEC, ANSI, BSI, CCSA, CDP, CEDARE, CEN-CENELEC-ETSI Smart Sustainable Cities & Communities (CEN/CENELEC/ETSI SSCC CG), CIC, CITEL, CPS, The Climate Group; Digital Europe, DIN, DKE (DIN/VDE), ECLAC, ETNO, ETSI TC EE, ETSI TC Smart M2M, European Commission (DG Connect), GeSI, GSMA, ICLEI, IDB, IEC SEG 1, IEC TC 100, IEC TC 111, IEEE FDC, IEEE SA, IEEE IC-CSHBA ISO/IECJTC 1/SG Smart Cities, MOHURD, SAC, StEP, UNCDF, UNDP, UNECE, UN Environment, UNESCO, UNFCCC, UN-Habitat, UNIDO, WBCSD for YRPGHG Protocol, WHO, WMO; cc: -; contact: ETRI)

Type: LS in For: (not specified)
Original outgoing LS: ITU_T_JCA-IoT_SC_C-LS38, to RAN, SA, all ITU-T Study Groups, ITU-T TSAG, ITU-R WP1A, WP1B and WP5A, ITU-T FG-AI4H, ITU-T FG-VM, ITU-T FG NET-2030, ITU-T FG-ML5G, ITU-T FG DLT, ITU-T FG DFC, ITU-T FG-DPM, ITU-D SG2, AR Standards, CEN, ECMA, ETSI, European Commission/IERC, AOITI , cc -
Source: ITU-T JCA-IoT and SC&C

Abstract:

JCA-IoT and SC&C = Joint Coordination Activity on Internet of Things and Smart Cities and Communities; no explicit RAN action requested

Discussion:

ITU-R AH convener: one attachment missing?, suggests to leave it to SA to answer

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190059 Reply LS to ITU-T SG15-LS161 = RP-182219 on Update of Technical Report - "Transport network support of IMT-2020/5G" (S5-192459; to: ITU-T SG15; cc: RAN, ITU-T SG13; contact: Ericsson)

Type: LS in For: (not specified)
Original outgoing LS: S5-192459, to ITU-T SG15, cc RAN, ITU-T SG13
Source: SA5

Abstract:

no RAN action requested

Discussion:

ITU-R AH convener: strange that SA is no on cc of this LS and the LS was certainly already sent to ITU-T, suggests to just note the Tdoc

conclusion: no LS answer from RAN

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Decision: The document was **noted**.

9 NR

NOTE: This agenda item covers open REL-15 and REL-16 NR WIs/SIs. But NR UE conformance aspects are covered under AI 13 and maintenance of closed REL-14/15 WIs/SIs is covered under AI 14.

9.1 New WI/SI proposals for NR

9.1.1 Proposals led by RAN1

NOTE: The RAN1 capacity is full, no new SI/WI proposals are expected. (This does not apply to follow-up WIs of SIs completed at RAN #83 for which WI TUs were already taken into account.)

RP-190195 Motivation for New WID: NR positioning support

Type: discussion *For: Discussion*
Source: Intel Corporation

Abstract:

moved from AI 9.1 to AI 9.1.1; motivation paper for new WID Positioning support for NR

Discussion:

T-Mobile: regulatory requirements not mentioned?

Intel: we have a requirement that is even tighter

T-Mobile: we would still like to see a rquirement that regulatory requirement is priority

Deutsche Telekom: can [ ] on slide 3 be removed?

Intel: we would be ok to remove the [ ] but the slide is providing the status in RAN1

Decision: The document was **noted**.

RP-190238 Views on scope for NR Positoning WI

Type: discussion *For: (not specified)*
Source: Qualcomm India Pvt Ltd

Abstract:

moved from AI 9.3.13 to AI 9.1.1

Decision: The document was **not treated**.

RP-190278 Views on Rel-16 NR Positioning WID scope

Type: discussion *For: Decision*
Source: vivo

Decision: The document was **not treated**.

RP-190468 On the scope of the NR positioning work item

Type: discussion *For: Decision*
Source: Ericsson

Decision: The document was **not treated**.

RP-190526 Some Observations on NR Positioning Architecture

Type: discussion *For: Agreement*
Source: Ericsson

Decision: The document was **not treated**.

RP-190308 Motivation for Supporting Local Location Management Component (LMC) in RAN in NR Rel-16

Type: discussion *For: Discussion*
Source: CATT, CMCC

Abstract:

Propose to support LMC in NR positioning WID.

Discussion:

moved from AI 9.3.13 to AI 9.1.1

Decision: The document was **not treated**.

RP-190323 Motivation for NR to Support local LMF in RAN

Type: discussion *For: Discussion*
Source: CMCC

Discussion:

moved from AI 9.3.13 to AI 9.1.1

Decision: The document was **not treated**.

RP-190349 Discussion on the WI scope on NR positioning

Type: discussion *For: Discussion*
Source: Huawei, HiSilicon

Discussion:

moved from AI 9.3.13 to AI 9.1.1

Decision: The document was **not treated**.

RP-190503 Considerations on the scope of the NR Positioning WID

Type: discussion *For: (not specified)*
Source: ESA, u-blox AG

Discussion:

moved from AI 9.3.13 to AI 9.1.1

Decision: The document was **not treated**.

RP-190194 New WID: NR positioning support

Type: WID new *For: Approval*
Source: Intel Corporation

Abstract:

moved from AI 9.1 to AI 9.1.1; NR only WI; leading WG: RAN1; WI code to be used: NR_pos; follow-up WI of REL-16 SI FS_NR_pos (led by RAN1) which is completed at RAN #83

Decision: The document was **revised to RP-190617**.

RP-190617 New WID: NR positioning support

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Type: WID new *For: Approval*
Source: Intel Corporation

(Replaces RP-190194)

Discussion:

Huawei: WI includes a study phase? giving RAN2 the leadership is ok if there is UE impact but this is about LMF which is RAN3 business, also having a full study phase makes no sense

Nokia: does not agree with Huawei

Deutsche Telekom: missing the values that we are targeting, missing also R2K, so wording needs to be improved

?: UL RSRP is not high priority

Intel: WID proposal is in line what RAN1 discussed

Nokia: agrees with Ericsson that network synchronisation has impact on several features

RAN chair: does not like to hide major studies in a WI

RAN3 chair: supports this and if we still go for this then RAN2 has to wait until RAN3 has finished their work as the impacts are on RAN3

Decision: The document was **revised to RP-190653**.

RP-190653 New WID: NR positioning support

Type: WID new *For: Approval*
Source: Intel Corporation

(Replaces RP-190617)

Decision: The document was **revised to RP-190723**.

RP-190723 New WID: NR positioning support

Type: WID new *For: Approval*
Source: Intel Corporation

(Replaces RP-190653)

Discussion:

RAN chair: so we need to focus mainly on yellow parts

Huawei: note causes problems for operators outside of China

Qualcomm: "could be" was esp. for your scenario in China but no problem to take it out

Huawei: not happy about RAN#84 deadline

RAN chairman: we could say "latest by RAN #86" or "study ... and if agreed specify"

Deutsche Telekom: no problem with the referenced SI positioning TR?

RAN chair: no, we removed the [ ] there

conclusion: note will be removed, use "study ... and if agreed specify" and align TUs

Decision: The document was **revised to RP-190752**.

RP-190752 New WID: NR positioning support

Type: WID new *For: Approval*
Source: Intel Corporation

(Replaces RP-190723)

Abstract:

new WI for NR; leading WG: RAN1; follow-up WI of REL-16 SI FS_NR_pos

Discussion:

conclusion: approved unseen

Note: It was forgotten in this WID to indicate for each affected spec whether it is affected by Core part or by Perf. part. The rapporteur clarified after RAN #83 that the target dates are: Core: March 20, Perf.: Sep.20.

Another problem to be addressed is that the NR only WID shows the LTE only TS 36.355 as affected spec.

Decision: The document was **approved**.

RP-190227 Motivation for new WID: NR V2X

Type: discussion *For: Discussion*
Source: LG Electronics

Discussion:

CMCC: can be used for public saftey if requirements are met but thinks at the moment the requirements can not be met

LG: but maybe for a very first version of public safety it would be ok

LG: requirements have a very wide range and we may meet some of them but not all

CATT: it may be worth to clarify this in the WID

LG: did not want to modify the text agreed by RAN1

Nokia: we need to make sure that the TUs are realistic for the WI, for the SI we used much more TUs than what was allocated by RAN

RAN1 chairman (Qualcomm): has the same view, so take this into account when defining the scope

ZTE: supports this, any idea how multiple UL grants will be handled in WI?

LG: in the SI there was no agreement how multiple UL grants, so we will have to see in WI

Huawei: we could still consider some downscoping but in general we should move forward with what RAN1 agreed

Mediatek: is first V2X WI for NR so we need to be careful with downscoping

Decision: The document was **noted**.

RP-190496 NR V2X Challenges for the Automotive Ecosystem

Type: discussion *For: Decision*
Source: OnStar Europe, Volkswagen

Discussion:

moved from AI 9.3.4 to AI 9.1.1

Proposal 1: Highly congested scenarios (Option B) should be included in the scenarios that need to be examined during the WI phase.

Proposal 2: The coexistence between UEs using different carrier spacing, the way UEs shift between various carrier spacing regimes and the choice of the right carrier spacing for the scenario should be addressed and explained thoroughly within Rel.16 WI development.

Proposal 3: The implementational challenges of Mode 1 and 2 should be addressed and resolved during NR V2X WI.

Proposal 4: NR V2X should include support for safety applications and be considered as an evolution of LTE-V.

Proposal 5: NR V2X should consider 2Rx antennas as an additional simulation assumption during the WI.

RAN chair: was this discussed in RAN1?

VW: was brought to RAN1, was not considered as part of the baseline and should be brought to WI discussion

Huawei: proposal 3 seems to be in addition to what we agreed offline

Qualcomm: proposal 1 was already discussed in RAN1, 2 is a profiling discussion, 3 and 5 should be in WI, proposal 4 is more radical (we decided differently in Dubrovnik 2 years ago)

OnStar: these proposals are important for automotive industry regarding deployment of NR V2X

RAN chair: it seems proposal 4 regarding public safety has the most comments and people seem to have different views

Qualcomm: technically you can route safety messages via NR V2X but this was not considered in the design before (was designed for ad hoc chunks and not for a sort of semi-persistant scheduling)

RAN chair: we need to see what are the implications so suggests further discussion about this

Decision: The document was **noted**.

RP-190226 New WID on NR-based V2X

Type: WID new *For: Approval*
Source: LG Electronics

Abstract:

new WI for NR only; leading WG: RAN1; WI code to be used: NR_V2X; follow-up WI of REL-16 SI FS_NR_V2X

Discussion:

RAN chair: there are some good aspects: e.g. focussing on FR1, CSI reporting for sidelink would not be done, sidelink control both ways

Huawei: we need to have CSI feedback in REL-16 but we need to decide what's the scope of it

OPPO: not sure whether the CSI feedback would be of much help for the UE; NR control of LTE sidelink would be a new feature that should be considered just later

Decision: The document was **revised to RP-190645**.

RP-190645 New WID on NR-based V2X

Type: WID new *For: Approval*
Source: LG Electronics

(Replaces RP-190226)

Decision: The document was **revised to RP-190674**.

RP-190674 New WID on 5G V2X with NR sidelink

Type: WID new *For: Approval*
Source: LG Electronics

(Replaces RP-190645)

Abstract:

new WI for NR & LTE; leading WG: RAN1

Discussion:

RAN chair: there seem to be still some minor parts open but the WID seems to be rather stable

Ericsson: BS RAN4 specs should not be impacted, Core/Perf. not indicated

LG: got some more comments after RP-190674 that can be included in next version

Nokia: NR V2X can also support basic safety use cases

Vodafone: would remove yellow and blue changes and keep the removed text

Dish: we were the only company requesting mode 3

RAN chair: simulation aspects will be removed (to detailed)

Huawei: system info/RAT selection text is not yet fully clear; NR V2X will need spectrum other than or more than is available in 5.9 GHz

Decision: The document was **revised to RP-190721**.

RP-190721 New WID on 5G V2X with NR sidelink

Type: WID new *For: Approval*
Source: LG Electronics

(Replaces RP-190674)

Discussion:

VW: would like to have a note about simulations to be done by RAN1:

It is in RAN1 scope to consider additional simulation profiles with the UE dropping model option B for the urban scenario (high congestion scenario) and the periodic traffic model 1 (low traffic intensity) as both defined in TR 37.885

Huawei: defining very detailed simulations is not appropriate

RAN chairman: we are not mandating RAN1 to do simulations but if there are inputs on this they should be handled

RAN chairman: it is RAN's understanding that the simulations mentioned by VW are in the scope of RAN1

Huawei: it is a lot of work

RAN chairman: you are not mandated to do the work but if someone else is doing the work we do not want to discard these simulations by saying this is out-of-scope

Huawei: we could indicate in the minutes that car companies would like to see these simulations

RAN chairman: ok, let's do this

RAN chairman: what is "mode 3 like"? this has to be spelled out

Deutsche Telekom: concerned that CQI reporting from gNode B is not covered in REL-16 so we want to put it back

RAN chairman: support for this view? Orange, Telecom Italia; against adding it back? ~10 companies; so it seems we will not converge on having it in; but we can minute that CQI reporting may be rediscussed in June 19 for a potential WID revision

Huawei: wants to remove the yellow text about use cases as justifying NR V2X via safety use cases is not acceptable; prefers "this does not imply that NR V2X does not support basic use cases"

Mediatek: we should formulate in a positive way

Qualcomm: prefers "cannot support" instead of "does not support"

Decision: The document was **revised to RP-190753**.

RP-190753 New WID on 5G V2X with NR sidelink

Type: WID new *For: Approval*
Source: LG Electronics

(Replaces RP-190721)

Discussion:

Orange, Deutsche Telekom: would like to highlight that the current design assumptions for the control of the LTE sidelink by NR Uu will lead to a lower performance of the LTE sidelink than when controlled by LTE Uu

RAN chair: rev marks will be accepted and highlighting will be removed; TUs are ok?

RAN3 chair: TUs missing

MCC: indicate Core/Perf. part for the specs, indicate leading WG for new TRs

Huawei: also add the one new TR number

Decision: The document was **revised to RP-190763**.

RP-190763 New WID on 5G V2X with NR sidelink

Type: WID new *For: Approval*
Source: LG Electronics

(Replaces RP-190753)

Decision: The document was **revised to RP-190766**.

RP-190766 New WID on 5G V2X with NR sidelink

Type: WID new *For: Approval*
Source: LG Electronics

(Replaces RP-190763)

Abstract:

new WI for NR & LTE; leading WG: RAN1

Decision: The document was **approved**.

RP-190216 Discussion on working scope of V2X

Type: discussion *For: (not specified)*
Source: ZTE,Sanechips

Discussion:

moved from AI 9.3.4 to AI 9.1.1

Decision: The document was **not treated**.

RP-190228 Discussion on NR-V2X work item scope

Type: discussion *For: Discussion*
Source: OPPO

Abstract:

Discussion how to proceed the further work of V2X

Decision: The document was **not treated**.

RP-190237 Views on V2X scope

Type: discussion *For: (not specified)*
Source: Qualcomm India Pvt Ltd

Discussion:

moved from AI 9.3.4 to AI 9.1.1

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Decision: The document was **not treated**.

RP-190277 Views on Rel-16 NR V2X WID scope

Type: discussion *For: Decision*
Source: vivo

Decision: The document was **not treated**.

RP-190307 Views on Rel-16 NR V2X WI scope

Type: discussion *For: Discussion*
Source: CATT

Abstract:

Discuss the NR V2X WID scope.

Discussion:

moved from AI 9.3.4 to AI 9.1.1

Decision: The document was **not treated**.

RP-190347 Discussion on the WI scope on NR V2X

Type: discussion *For: Discussion*
Source: Huawei, HiSilicon

Discussion:

moved from AI 9.3.4 to AI 9.1.1

Decision: The document was **not treated**.

RP-190465 On the scope of the V2X work item

Type: discussion *For: Decision*
Source: Ericsson

Decision: The document was **not treated**.

RP-190230 Motivation for new SI proposal on network controlled commercial sidelink-based communication in NR

Type: discussion *For: Information*
Source: OPPO

Abstract:

Motivation paper on SID proposal about R17 SL work for commecial case

Decision: The document was **not treated**.

RP-190229 New SID Proposal: Study on network controlled commercial sidelink-based communication in NR

Type: SID new *For: Information*
Source: OPPO

Abstract:

MCC: REL-17 SIs/WIs are not yet considered

Decision: The document was **not treated**.

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RP-190528 NR V2X work item scope

Type: discussion For: Approval
Source: VODAFONE Group Plc

Abstract:

Requirement to cover cellular coexistence for licensed bands

Decision: The document was **withdrawn**.

RP-190486 Adding 2Rx antennas as a baseline for NR-V2X simulations

Type: discussion For: Agreement
Source: Volkswagen AG, General Motors, Hyundai Motors

Decision: The document was **not treated**.

RP-190036 LS on D2D enabler for public safety communications in 5GS (S6-190280; to: SA, RAN; cc: SA2; contact: Firstnet)

Type: LS in For: (not specified)
Original outgoing LS: S6-190280, to SA, RAN, cc SA2
Source: SA6

Abstract:

FS_MCOver5GS = REL-16 SA6 Study on Mission Critical services support over 5G System; RAN action requested

Discussion:

moved from AI 7 to AI 9.1.1

Decision: The document was **not treated**.

RP-190214 Views on Rel-16 eURLLC WID scope

Type: discussion For: (not specified)
Source: ZTE, Sanechips

Discussion:

moved from AI 9.3.6 to AI 9.1.1

Decision: The document was **not treated**.

RP-190699 Void

Type: other For: -
Source: ETSI MCC

Decision: The document was **withdrawn**.

RP-190221 Views on eURLLC WI

Type: discussion For: Decision
Source: Qualcomm Incorporated

Discussion:

moved from AI 9.3.6 to AI 9.1.1

Decision: The document was **not treated**.

RP-190232 Considerations on the scope of physical layer enhancements for NR URLLC WID

Type: discussion *For: Agreement*
Source: OPPO

Decision: The document was **not treated**.

RP-190276 Views on Rel-16 NR eURLLC WID scope

Type: discussion *For: Decision*
Source: vivo

Decision: The document was **not treated**.

RP-190466 On the scope of the URLLC work item

Type: discussion *For: Decision*
Source: Ericsson

Decision: The document was **not treated**.

RP-190300 Work scope for Rel-16 URLLC

Type: discussion *For: Discussion*
Source: CATT

Abstract:

Discussion on work scope for Rel-16 URLLC WI

Discussion:

moved from AI 9.3.6 to AI 9.1.1

Decision: The document was **not treated**.

RP-190346 New WI proposal: Physical layer enhancements for NR ultra-reliable and low latency communication (URLLC)

Type: WID new *For: Approval*
Source: Huawei, HiSilicon

Abstract:

new WI for NR only; leading WG: RAN1; WI code to be used: NR_L1enh_URLLC; follow-up WI of REL-16 SI FS_NR_L1enh_URLLC;

Decision: The document was **revised to RP-190635**.

RP-190635 New WI proposal: Physical layer enhancements for NR ultra-reliable and low latency communication (URLLC)

Type: WID new *For: Approval*
Source: Huawei, HiSilicon

(Replaces RP-190346)

Discussion:

Nokia: some more offline discussion about IIOT aspects may be needed but apart from this the WID seems to be rather stable

ZTE: we do not want to increase work for V2X use cases

Qualcomm: overlap with IIOT: scenarios should be RAN1 led

Decision: The document was **revised to RP-190654**.

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RP-190654 New WI proposal: Physical layer enhancements for NR ultra-reliable and low latency communication (URLLC)

Type: WID new *For: Approval*
Source: Huawei, HiSilicon

(Replaces RP-190635)

Decision: The document was **revised to RP-190726**.

RP-190726 New WI proposal: Physical layer enhancements for NR ultra-reliable and low latency communication (URLLC)

Type: WID new *For: Approval*
Source: Huawei, HiSilicon

(Replaces RP-190654)

Decision: The document was **approved**.

RP-190215 Views on Rel-16 power saving WID scope

Type: discussion *For: (not specified)*
Source: ZTE, Sanechips

Discussion:

moved from AI 9.3.5 to AI 9.1.1

Decision: The document was **not treated**.

RP-190220 Views on UE power saving WI

Type: discussion *For: Decision*
Source: Qualcomm Incorporated

Discussion:

moved from AI 9.3.5 to AI 9.1.1

Decision: The document was **not treated**.

RP-190233 Views on the scope of Power Saving WID

Type: discussion *For: Agreement*
Source: OPPO

Decision: The document was **not treated**.

RP-190235 Views on NR UE power saving WI

Type: discussion *For: Decision*
Source: Apple Inc.

Discussion:

moved from AI 9.3.5 to AI 9.1.1

Decision: The document was **not treated**.

RP-190275 Views on Rel-16 NR UE power saving WID scope

Type: discussion *For: Decision*
Source: vivo

Decision: The document was **not treated**.

RP-190348 Discussion on the WI scope on NR UE power savings

Type: discussion *For: Discussion*
Source: Huawei, HiSilicon

Discussion:

moved from AI 9.3.5 to AI 9.1.1

Decision: The document was **not treated**.

RP-190299 New WID: UE Power Saving in NR

Type: WID new *For: -*
Source: CATT

Abstract:

wrong Tdoc type "discussion" in Tdoc request; new WI for NR; leading WG: RAN1;

Discussion:

moved from AI 9.3.5 to AI 9.1.1;

MCC: Core and Perf. part box not ticked and TUs are for a SI

Nokia: objectives are very extensive, RAN2 is not even mentioned as impacted groups, RAN2 studies still ongoing, how can this go on in parallel?

RAN1 chair: RAN1 9 months WI and RAN2 6 months WI is a bit strange, suggests for next quarter RAN1 looks only on RAN1 items in the WID and we can revise the WID at RAN #84

vivo: we should discuss also whether RAN4 should already start with this

CATT: power saving in REL-15 was DRX and we look at additional gains

Ericsson: would not agree that all bullets under RAN1 are RAN1 centric

RAN chair: suggests to come up with a RAN1 centric list of objectives to see whether RAN1 can work on this in Q2/2019 while the SI with RAN2 work is still ongoing

Decision: The document was **revised to RP-190655**.

RP-190655 New WID: UE Power Saving in NR

Type: WID new *For: -*
Source: CATT

(Replaces RP-190299)

Discussion:

Ericsson: a) and c) are fine

RAN chair: the intention was to draft a WI with only RAN1 objectives at the moment and RAN2 objectives will only be added in June 19, this was the plan

Nokia: yellow parts have RAN2 impact

RAN chair: then let's remove the yellow parts

Apple: will RAN1 look at the yellow parts in next quarter?

RAN2 chairman: we have an existing RAN2 SI that we will treat, there will be no TUs in RAN2 for this WI in Q2/2019

RAN chair: we can check the RAN2 related SI whether yellow aspects could be studied there

Apple: could RAN1 in the meantime look at the yellow parts?

RAN chair: you can discuss the revision of RP-190655 over email

Decision: The document was **revised to RP-190676**.

RP-190676 New WID: UE Power Saving in NR

Type: WID new *For: -*
Source: CATT

(Replaces RP-190655)

Decision: The document was **revised to RP-190727**.

RP-190727 New WID: UE Power Saving in NR

Type: WID new *For: -*
Source: CATT

(Replaces RP-190676)

Abstract:

new WI for NR; leading WG: RAN1; follow-up WI of ongoing REL-16 SI FS_NR_UE_pow_sav

Discussion:

Orange: is also supporting the WID

Decision: The document was **approved**.

RP-190467 On the scope of the UE power saving work item

Type: discussion *For: Decision*
Source: Ericsson

Decision: The document was **not treated**.

RP-190481 On the Scope of NR UE Power Saving WI

Type: discussion *For: (not specified)*
Source: MediaTek Inc.

Discussion:

moved from AI 9.3.5 to AI 9.1.1

Decision: The document was **not treated**.

RP-190283 Support of diverse UE types in NR Rel-17

Type: discussion *For: Information*
Source: vivo

Decision: The document was **not treated**.

9.1.2 Proposals led by RAN2

NOTE: The RAN2 capacity is full, no new SI/WI proposals are expected. (This does not apply to follow-up WIs of SIs completed at RAN #83 for which WI TUs were already taken into account.)

RP-190191 Motivation for WI on support of NR Industrial Internet of Things (IoT)

Type: discussion *For: Discussion*
Source: Nokia, Nokia Shanghai Bell

Discussion:

ZTE: REL-15 should be taken as baseline, we can remove restriction for PDCP enhancement to limit on NR DC

Nokia: so also standalone?

ZTE: yes

RAN chair: we need to clarify that we have no overlaps with other WIs

Qualcomm: intra-UE prioritization/multiplexing: should be RAN1 led

Decision: The document was **noted**.

RP-190529 Applicability of NR IIoT L2/3 aspects for LTE

Type: discussion For: Approval
Source: VODAFONE Group Plc

Abstract:

Discusses need for enabling LTE L2/3 to support IIoT functions.

Discussion:

moved from AI 9.3.8 to AI 9.1.2

proposal: It is proposed that the following components are enabled for LTE IIOT as part of the Release 16 IIoT work item within TSG RAN:

- Ethernet Header Compression
- Multi-Connectivity solutions

Vodafone: there is also some SA2 work ongoing

Nokia: we cannot piggyback everything on LTE that we postponed in the past, so we need to be careful here

Vodafone: have this for LTE would be available quicker

Broadcom: multiconnectivity 3GPP-non 3GPP network considered?

Vodafone: how would this be different for LTE and for NR?

Ericsson: EPC considered?

Vodafone: no options 4/5/7

Ericsson: not fully clear what multi-connectivity means

Mediatek: we have a study for NR and we need to be careful to transfer NR related study results directly for LTE, this is not the first time that such an attempt happens

LG: header compression could be considered for LTE but does not agree that multi-connectivity would have minimal impact if considered for LTE

Vodafone: clarified that nothing for EPC is considered

RAN chair: try offline to find out the "low hanging fruits" that we could do easily

RAN2 chairman: we have to make sure that the scope of the WI does not exceed the time that is available for it

Decision: The document was **noted**.

RP-190192 Considerations on the scope of WI on support of NR Industrial Internet of Things (IoT)

Type: discussion For: Decision
Source: Nokia, Nokia Shanghai Bell

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Decision: The document was **not treated**.

RP-190279 Views on Rel-16 NR IIOT WID scope

Type: discussion *For: Decision*
Source: vivo

Decision: The document was **not treated**.

RP-190351 Discussion on the WI scope on NR support for Industrial IOT

Type: discussion *For: Discussion*
Source: Huawei, HiSilicon

Discussion:

moved from AI 9.3.8 to AI 9.1.2

Decision: The document was **not treated**.

RP-190535 Views on normative work for I-IOT

Type: discussion *For: Decision*
Source: Qualcomm Incorporated

Discussion:

moved from AI 9.3.8 to AI 9.1.2

Decision: The document was **not treated**.

RP-190190 New WID: Support of NR Industrial Internet of Things (IoT)

Type: WID new *For: Approval*
Source: Nokia, Nokia Shanghai Bell

Abstract:

new WI for NR only; leading WG: RAN2; WI code to be used: FS_NR_IIOT; follow-up WI of REL-16 SI FS_NR_IIOT

Decision: The document was **revised to RP-190678**.

RP-190678 New WID: Support of NR Industrial Internet of Things (IoT)

Type: WID new *For: Approval*
Source: Nokia, Nokia Shanghai Bell

(Replaces RP-190190)

Abstract:

new WI for NR only; leading WG: RAN2; not included NPN aspects which will be covered in RP-190677

Decision: The document was **revised to RP-190701**.

RP-190701 New WID: Support of NR Industrial Internet of Things (IoT)

Type: WID new *For: Approval*
Source: Nokia, Nokia Shanghai Bell

(Replaces RP-190678)

Discussion:

RAN1 chair: RAN1 TU request should be removed

Samsung: would like to replace "design principle" in LTE bullet

Decision: The document was **revised to RP-190728**.

RP-190728 New WID: Support of NR Industrial Internet of Things (IoT)

Type: WID new For: Approval
Source: Nokia, Nokia Shanghai Bell

(Replaces RP-190701)

Abstract:

new WI for NR only; leading WG: RAN2; not included: NPN aspects which will be covered in RP-190677; no Perf. part

Decision: The document was **approved**.

RP-190052 Reply LS to S2-1813393 = RP-182699 on RAN Impact analysis due to NPN (R2-1902716; to: SA2, RAN; cc: RAN3, CT1, SA; contact: Huawei)

Type: LS in For: (not specified)
Original outgoing LS: R2-1902716, to SA2, RAN, cc RAN3, CT1, SA
Source: RAN2

Abstract:

FS_Vertical_LAN = SA2 REL-16 SI Study on 5GS Enhanced support of Vertical and LAN Services; NPN = non-public networks; RAN action requested

Discussion:

moved from AI 7 to AI 9.1.2 (to discuss NPN together with IIOT: separate WI for NPN or extending IIOT)

Decision: The document was **not treated**.

RP-190121 Reply LS to S2-1813393 = RP-182699 on RAN impact analysis of NPN (R3-191168; to: SA2, RAN; cc: RAN2, CT1, SA; contact: Huawei)

Type: LS in For: (not specified)
Original outgoing LS: R3-191168, to SA2, RAN, cc RAN2, CT1, SA
Source: RAN3

Abstract:

FS_Vertical_LAN = SA2 REL-16 SI Study on 5GS Enhanced support of Vertical and LAN Services; NPN = non-public networks; RAN action requested

Discussion:

moved from AI 7 to AI 9.1.2 (to discuss NPN together with IIOT: separate WI for NPN or extending IIOT)

Decision: The document was **not treated**.

RP-190249 Email discussion on CAG objectives

Type: discussion For: Discussion
Source: China Telecomunication Corp.

Abstract:

Summary of email discussion on CAG

Discussion:

moved from AI 9.1.3 to AI 9.1.2 (to discuss NPN together with IIOT: separate WI for NPN or extending IIOT)

Ericsson: what sort of email discussion was this?

China Telecom: was an email discussion among operators

Huawei: we should talk about requirements and not solutions, what is a hybrid set in 5G?

Mediatek: it is either private or public but there is no hybrid

Nokia: agrees with Mediatek and also did not expect such an email discussion

Qualcomm: overall system impact should be studied

Orange: we have hybrid in 4G

RAN chair: we should find out what RAN would have to do on this and whether this fits to the available time budget

Deutsche Telekom: would prefer to not hide this in the IIOT WI

RAN2 chairman: for this WI we did not allocate any TUs so far

RAN3 chairman: when we considered hybrid approaches in the past, this was not a success

RAN chair: please also try to avoid NPN term

conclusion: further offline discussion, China Telecom will report back in RP-190656

Decision: The document was **noted**.

RP-190656 Way forward on scope of NPN

Type: discussion *For: (not specified)*
Source: China Telecom, Huawei, Nokia, Nokia Shanghai Bell, ZTE

Discussion:

Ericsson: we had some comments on the wording

RAN chair: can still be addressed when we draft the WID

Deutsche Telekom: what is "CAG cell discovery"? do we do things differently here? we should use normal RRC procedures; non-public is really everything that is not public?

Mediatek: NPN is defined in 23.501; if there are additional requirements please bring them up in SA1

Huawei: slides in RP-190656 cover SA2 requirements, if operators request something else on top now what do we do?

Deutsche Telekom: text is ok under the assumption that NPN is not restricted to certain deployment scenarios

RAN chair: do we do this as part of IIOT WID or is it a separate WI?

Nokia: we would be also fine to put it under the IIOT WID

Intel: we would prefer to have it separate

RAN3 chair: RAN3 should be the leading WG of this WI, currently no TUs available in RAN3, first available TUs are in Q1/2020

Nokia: is ok to have a separate WI but suggests to have it as RAN2 led WI

Ericsson: prefers separate WI led by RAN3

Decision: The document was **noted**.

RP-190677 New WI: Non-public networks for NR

Type: WID new *For: -*
Source: China Telecom, RAN2/RAN3 chairmen

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Abstract:

new WI for NR; leading WG: RAN3

Discussion:

Ericsson: we should review regarding SA2 work and target one single solution in RAN; terminology used seems to hint that it targets SA2 solution

Samsung: supports this WID

Nokia: wants to avoid that we spend next quarter only on trying to find a common solution

RAN chair: what about adding a note "finding a single solution for CAG and SNPN is not precluded" under 4.1? Any objection? None.

Decision: The document was **revised to RP-190729**.

RP-190729 New WI: Private Network Support for NG-RAN

Type: WID new *For: -*
Source: China Telecom, RAN2/RAN3 chairmen

(Replaces RP-190677)

Abstract:

new WI for NR; leading WG: RAN3

Discussion:

note: WID is submitted under wrong agenda item as RAN3 is the leading WG of this WI

Decision: The document was **approved**.

RP-190250 Motivation for new WI proposal on NPN support for NR

Type: discussion *For: Discussion*
Source: China Telecomunication Corp.

Abstract:

Motivation for new WI proposal

Discussion:

moved from AI 9.1.3 to AI 9.1.2 (to discuss NPN together with IIOT: separate WI for NPN or extending IIOT)

Mediatek: a lot of aspects in contradiction with SA

Qualcomm: we cannot accept changes from what SA2 did

China Telecom: Does not see a contradiction with SA2 conclusions

Decision: The document was **noted**.

RP-190252 New Work Item Proposal on NPN support for NR

Type: WID new *For: Approval*
Source: China Telecomunication Corp.

Abstract:

new WI for NR only; leading WG: RAN3; MCC: what is NPN standing for? non-public networks? This has to be spelled out.

Discussion:

moved from AI 9.1.3 to AI 9.1.2 (to discuss NPN together with IIOT: separate WI for NPN or extending IIOT)

Decision: The document was **revised to RP-190627**.

RP-190627 New Work Item Proposal on NPN support for NR

Type: WID new *For: Approval*
Source: China Telecomunication Corp.

(Replaces RP-190252)

Discussion:

see RP-190729 instead

Decision: The document was **not treated**.

RP-190570 On a potential new RAN WID on non-public-networks

Type: discussion *For: discussion*
Source: Ericsson

Abstract:

related to RP-190052, RP-190121, RP-190250, RP-190252

Discussion:

moved from AI 9.1.3 to AI 9.1.2 (to discuss NPN together with IIOT: separate WI for NPN or extending IIOT)

Decision: The document was **not treated**.

RP-190433 Motivation of NR for Industrial Sensors

Type: discussion *For: Information*
Source: Ericsson España S.A.

Abstract:

draft motivation; related to RP-190432, moved from AI 9.1.1 to AI 9.1.2

Decision: The document was **not treated**.

RP-190432 NR for Industrial Sensors

Type: discussion *For: Information*
Source: Ericsson España S.A.

Abstract:

draft SID, moved from AI 9.1 to AI 9.1.2

Decision: The document was **not treated**.

RP-190358 New WI Proposal on optimisations on UE radio capability signalling - NR/E-UTRA Aspects

Type: WID new *For: Approval*
Source: MediaTek Inc.

Abstract:

new WI for LTE & NR; leading WG: RAN2; follow-up WI of REL-16 SI FS_RACS_RAN (note: There is a related SA2 REL-16 SI in FS_RACS; see also LSin RP-190122)

Discussion:

Ericsson: would like to limit the scope

Huawei: we should not discuss delta-signalling in RAN

Samsung: leaving delta-signallling discussion to RAN2 is critical as RAN2 will not have enough time

RAN chair: after these comments, removing delta signalling may be better otherwise we spend all WG time just on discussing this

RAN3 chairman: so far no TUs are allocated on this topic

Decision: The document was **revised to RP-190657**.

RP-190657 New WI Proposal on optimisations on UE radio capability signalling - NR/E-UTRA Aspects

Type: WID new *For: Approval*
Source: MediaTek Inc.

(Replaces RP-190358)

Abstract:

new WI for LTE & NR; leading WG: RAN2; follow-up WI of REL-16 SI FS_RACS_RAN (note: There is a related SA2 REL-16 SI in FS_RACS; see also LSin RP-190122); no Perf. part

Decision: The document was **approved**.

RP-190475 New WI Proposal on Optimisations on UE Radio Capability Signalling - NR/E-UTRA Aspects

Type: WID new *For: Approval*
Source: MediaTek Inc.

Abstract:

see RP-190358 instead

Decision: The document was **withdrawn**.

RP-190259 Motivation for new WID proposal on UE assisted performance enhancement

Type: discussion *For: Decision*
Source: Apple

Decision: The document was **not treated**.

RP-190260 New WID proposal on UE assisted performance enhancement

Type: WID new *For: Approval*
Source: Apple

Abstract:

MCC: RAT unclear

Decision: The document was **not treated**.

RP-190306 Motivation for study on device to device proximity services in NR

Type: discussion *For: Discussion*
Source: CATT

Abstract:

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Discuss the motivation for supporting D2D in R17

Decision: The document was **not treated**.

RP-190280 New Rel-16 WID: In-device coexistence for NR

Type: WID new *For: Approval*
Source: vivo

Abstract:

new WI for NR only; leading WG: RAN2

Discussion:

RAN chair: is treated here because we indicated we would look at it at RAN #82

RAN2 chair: is aware of the topic and can be treated together with the RAN2 TU allocation; target should be March 20 and not Dec.19;

RAN chair: rapporteur is missing

MCC: indicate whether specs are affected by Core or Perf. part

Decision: The document was **revised to RP-190687**.

RP-190687 New Rel-16 WID: In-device coexistence for NR

Type: WID new *For: Approval*
Source: vivo

(Replaces RP-190280)

Decision: The document was **not treated**.

RP-190326 NR enhancements for Advanced Sleep Modes

Type: discussion *For: Agreement*
Source: Orange

Abstract:

This discussion paper proposes NR enhancements for Advanced Sleep Modes in Rel16.

Decision: The document was **not treated**.

RP-190365 Motivation paper for new SID on NR/WLAN Convergence

Type: discussion *For: (not specified)*
Source: Intel Deutschland GmbH

Decision: The document was **not treated**.

RP-190364 New SID: Study on NR/WLAN Convergence

Type: SID new *For: Approval*
Source: Intel Deutschland GmbH

Abstract:

new WI for NR only; leading WG: RAN2

Decision: The document was **not treated**.

RP-190248 Motivation for SI on multi-SIM devices in RAN

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Type: discussion *For: Discussion*
Source: China Telecomunication Corp., vivo

Abstract:

Motivation for new SI proposal

Decision: The document was **not treated**.

RP-190282 New Rel-17 SID proposal: Study on multi-SIM devices in RAN

Type: discussion *For: Information*
Source: vivo, China Telecommunications

Decision: The document was **not treated**.

RP-190325 Motivation for new Rel-17 WI on-demand SI enhancement for NR

Type: discussion *For: Decision*
Source: Xiaomi Communications

Decision: The document was **not treated**.

RP-190328 New Rel-17 WID on-demand SI enhancement for NR

Type: WID new *For: Approval*
Source: Xiaomi Communications

Abstract:

MCC: REL-17 SIs/WIs are not yet considered, also SI has to be spelled out in WI title

Decision: The document was **not treated**.

RP-190490 Motivation for new WI on Direct data transfer in Inactive

Type: discussion *For: Information*
Source: Intel Corporation

Abstract:

Proposals led by RAN2

Decision: The document was **not treated**.

RP-190261 Clarification on RAN2 scope of R16 Wis

Type: discussion *For: Decision*
Source: Apple

Discussion:

moved from AI 5.2 to AI 9.1.2

Decision: The document was **not treated**.

RP-190309 Way Forward on NR Compression

Type: discussion *For: Discussion*
Source: CATT, CMCC, China Telecom

Abstract:

Propose RAN to discuss how to handle NR compression feature.

Discussion:

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moved from AI 9.3.7 to AI 9.1.2

Proposal 1: Introduce UDC (DEFLATE) support in E-UTRA (5GS) and NR in Rel-16, using E-UTRAN UDC as a baseline.

Proposal 2: Use TEI16 for this work.

Softbank, Mediatek, CMCC: support to include this in REL-16

Qualcomm: does not think it can be included

Ericsson: scope needs to be defined first

LG: we have different layer in NR, RAN2 workload to be considered

Huawei: supports the work but trying a way forward

CATT: has already some simulations

Intel: topic does not belong to UE capabilities

RAN2 chair: suggests to look at the whole RAN2 TU picture on Wed (IDC and this one are candidates that could be shifted to REL-17 in case of overload)

Decision: The document was **noted**.

RP-190690 New WI: Uplink Data Compression for NR

Type: WID new *For: Approval*
Source: CATT

Decision: The document was **not treated**.

9.1.3 Proposals led by RAN3

RP-190125 Motivation for study on Enhancement for Disaggregated gNB Architecture

Type: discussion *For: Discussion*
Source: China Telecommunications,CATT, China Unicom,DISH Network, CAICT

Abstract:

see RP-190285 instead

Decision: The document was **withdrawn**.

RP-190126 New SID on Study on enhancement for disaggregated gNB architecture

Type: SID new *For: Approval*
Source: China Telecommunications,CATT, China Unicom, DISH Network, CAICT

Abstract:

see RP-190287 instead

Decision: The document was **withdrawn**.

RP-190285 Motivation for study on Enhancement for Disaggregated gNB Architecture

Type: discussion *For: Discussion*
Source: China Telecommunications,CATT, China Unicom, CAICT

(Replaces RP-190125)

Decision: The document was **revised to RP-190648**.

RP-190648 Motivation for study on Enhancement for Disaggregated gNB Architecture

Type: discussion *For: Discussion*
Source: China Telecommunications,CATT, China Unicom, CAICT

(Replaces RP-190285)

Decision: The document was **not treated**.

RP-190305 Proposal on approval of disaggregated gNB enhancement SI

Type: discussion *For: Discussion*
Source: CATT ChinaTelecom

Abstract:

Proposal on approval of disaggregated gNB enhancement SI

Decision: The document was **not treated**.

RP-190287 New SID: Study on enhancement for disaggregated gNB architecture

Type: SID new *For: Approval*
Source: China Telecommunications, CATT, China Unicom, CAICT

(Replaces RP-190126)

Abstract:

new SI for NR only; leading WG: RAN3;

Decision: The document was **revised to RP-190649**.

RP-190649 New SID: Study on enhancement for disaggregated gNB architecture

Type: SID new *For: Approval*
Source: China Telecommunications, CATT, China Unicom, CAICT

(Replaces RP-190287)

Abstract:

new SI for NR only; leading WG: RAN3;

Decision: The document was **revised to RP-190702**.

RP-190702 New SID: Study on enhancement for disaggregated gNB architecture

Type: SID new *For: Approval*
Source: China Telecommunications, CATT, China Unicom, CAICT

(Replaces RP-190649)

Abstract:

new SI for NR only; leading WG: RAN3;

Decision: The document was **approved**.

RP-190148 Motivation for New WI on NG interface usage for WWC (Wireless Wireline Convergence)

Type: discussion *For: Discussion*
Source: Huawei, HiSilicon

Decision: The document was **not treated**.

RP-190147 New WI proposal: NG interface usage for WWC (Wireless Wireline Convergence)

Type: WID new *For: Approval*
Source: Huawei, HiSilicon

Abstract:

new WI for NR only; leading WG: RAN3;

Decision: The document was **revised to RP-190738**.

RP-190738 New WI proposal: NG interface usage for WWC (Wireless Wireline Convergence)

Type: WID new *For: Approval*
Source: Huawei, HiSilicon

(Replaces RP-190147)

Discussion:

CMCC: scope is unclear

RAN chairman: extending existing protocols to new interfaces?

Huawei: correct

CMCC: it should be clear what is planned

RAN chair: if you can clarify what should be changed, we can try to accomodate this; assumes that RAN3 leadership will make sure that this will not blow up in terms of TUs

ZTE: in general: we need to make sure that we do not overload WGs anymore

RAN chairman: yes, no further REL-16 WIs/SIs in the future

Decision: The document was **revised to RP-190772**.

RP-190772 New WI proposal: NG interface usage for WWC (Wireless Wireline Convergence)

Type: WID new *For: Approval*
Source: Huawei, HiSilicon

(Replaces RP-190738)

Decision: The document was **approved**.

RP-190675 Study on locating LMF & LCS client in RAN for NR

Type: SID new *For: Approval*
Source: CMCC

Abstract:

new SI for NR only; leading WG: RAN3; this is part taken out of the NR positioning WI after offline discussion

Discussion:

Huawei: we should not predict what will happen in the future, also coordination with SA is needed

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Nokia: would like to indicate that a follow-up WI could be handled in the positioning WI

Huawei: objects to this as this SI and the follow-up WI has to be led by RAN3

CMCC: would like to keep the note

RAN chair: a note in the SI will not help

Decision: The document was **revised to RP-190725**.

RP-190725 Study on local NR positioning in RAN

Type: SID new *For: Approval*
Source: CMCC

(Replaces RP-190675)

Abstract:

new SI for NR only; leading WG: RAN3;

Discussion:

RAN3 chairman: "NG RAN acting as LCS client" precluding a solution?

CMCC: no

Deutsche Telekom: please change RAN in NG RAN and add us as supporting company

Decision: The document was **revised to RP-190754**.

RP-190754 Study on local NR positioning in NG RAN

Type: SID new *For: Approval*
Source: CMCC

(Replaces RP-190725)

Abstract:

new SI for NR only; leading WG: RAN3;

Decision: The document was **approved**.

9.1.4 Proposals led by RAN4 (not spectrum related)

NOTE: The RAN4 capacity is full, no new SI/WI proposals are expected. (This does not apply to follow-up WIs of SIs completed at RAN #83 for which WI TUs were already taken into account.)

RP-190212 Motivation on NR RRM requirements enhancement

Type: discussion *For: (not specified)*
Source: ZTE, Sanechips

Decision: The document was **not treated**.

RP-190211 New WID: NR RRM requirements enhancement

Type: WID new *For: Approval*
Source: ZTE, Sanechips

Abstract:

new WI for NR only; leading WG: RAN4; compare RP-190454

Decision: The document was **not treated**.

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RP-190454 New WID: NR RRM requirement improvement

Type: WID new *For: Approval*
Source: CATT

Abstract:

new WI for NR only; leading WG: RAN4; to specify Rel-15 remaining RRM requirements; compare RP-190211

Decision: The document was **not treated**.

RP-190257 Motivation for new WI on NR performance requirement enhancement

Type: discussion *For: Discussion*
Source: China Telecomunication Corp.

Abstract:

Motivation for new WI proposal

Decision: The document was **not treated**.

RP-190258 New WID: NR performance requirement enhancement

Type: WID new *For: Approval*
Source: China Telecomunication Corp.

Abstract:

new WI for NR only; leading WG: RAN4;

Decision: The document was **revised to RP-190709**.

RP-190709 New WID: NR performance requirement enhancement

Type: WID new *For: Approval*
Source: China Telecomunication Corp.

(Replaces RP-190258)

Decision: The document was **not treated**.

RP-190457 Motivation for NR requirement work continuation in Rel-16

Type: discussion *For: Discussion*
Source: Nokia, Nokia Shanghai Bell

Abstract:

This contribution discusses the Rel-15 NR requirement status and need for continuing NR requirements for Rel-15 NR features and deployment scenarios in Rel-16.

Decision: The document was **not treated**.

RP-190455 NR requirement work continuation in Rel-16

Type: WID new *For: Approval*
Source: Nokia, Nokia Shanghai Bell

Abstract:

RAN4 decided to postpone number of requirements for the basic Rel-15 NR features to Rel-16. This WID proposes to continue NR requirement work for these basic NR features and functionalities in Rel-16; MCC: title not acceptable (REL forbidden in WI titles,

Decision: The document was **not treated**.

RP-190244 Motivation to introduce new SI of measurement gap enhancement

Type: discussion *For: Discussion*
Source: Intel Corporation

Decision: The document was **not treated**.

RP-190243 New SI Proposal: Study on measurement gap enhancement

Type: SID new *For: Approval*
Source: Intel Corporation

Abstract:

new SI for NR only; leading WG: RAN4; secondary WG:RAN2; to enhance the measurement gap mechanism/design from Rel-15, which will be associated with the cell identification/measurement/scheduling in UE RRM.

Decision: The document was **not treated**.

RP-190254 Motivations on NR DL 256QAM support for FR2

Type: discussion *For: Discussion*
Source: China Telecomunication Corp.

Abstract:

Motivation for new WI proposal

Decision: The document was **not treated**.

RP-190253 New WID: Add support of NR DL 256QAM for FR2

Type: WID new *For: Approval*
Source: China Telecomunication Corp.

Abstract:

new WI for NR only; leading WG: RAN4;

Decision: The document was **revised to RP-190652**.

RP-190652 New WID: Add support of NR DL 256QAM for FR2

Type: WID new *For: Approval*
Source: China Telecomunication Corp.

(Replaces RP-190253)

Decision: The document was **withdrawn**.

RP-190318 Motivation for NR support for High speed train scenario

Type: discussion *For: Discussion*
Source: CMCC

Decision: The document was **not treated**.

RP-190317 New WID on NR support for high speed train scenario

Type: WID new *For: Approval*
Source: CMCC

Abstract:

new WI for NR only; leading WG: RAN4

Decision: The document was **not treated**.

RP-190353 Motivation for new WI on introduction of GSM, UTRA, E-UTRA and NR CS(s) to the MSR specification

Type: discussion *For: Information*
Source: Ericsson, Vodafone, Orange, CKH IOD UK, CMCC, Telecom Italia

Abstract:

moved from AI 10.1.4 to AI 9.1.4; Descritption of a WI relating to the BS only to create GSM+LTE+NR and UTRA+LTE+NR capability sets for the MSR specification

Decision: The document was **not treated**.

RP-190354 New WID on introduction of GSM, UTRA, E-UTRA and NR capability set(s) (CS(s)) to the multi-standard radio (MSR) specifications

Type: WID new *For: Approval*
Source: Ericsson, Vodafone, Orange, CKH IOD UK, CMCC, Telecom Italia

Abstract:

moved from AI 10.1.4 to AI 9.1.4; new WI for GSM, UMTS, LTE and NR; leading WG: RAN4;

Decision: The document was **revised to RP-190642**.

RP-190642 New WID on introduction of GSM, UTRA, E-UTRA and NR capability set(s) (CS(s)) to the multi-standard radio (MSR) specifications

Type: WID new *For: Approval*
Source: Ericsson, Vodafone, Orange, CKH IOD UK, CMCC, Telecom Italia

(Replaces RP-190354)

Decision: The document was **approved**.

RP-190383 Motivation for study on NR and NB-IoT/eMTC co-existence

Type: discussion *For: Discussion*
Source: Huawei, HiSilicon

Decision: The document was **not treated**.

RP-190382 New SI proposal: Study on NR and NB-IoT/eMTC co-existence

Type: SID new *For: Discussion*
Source: Huawei, HiSilicon

Abstract:

new SI for NR and LTE; leading WG: RAN4

Decision: The document was **not treated**.

RP-190398 Motivation of CSI-RS based L3 measurement requirements for NR

Type: discussion *For: Discussion*
Source: Huawei, HiSilicon

Decision: The document was **not treated**.

RP-190397 New WI proposal: CSI-RS based L3 measurement requirements for NR

Type: WID new *For: Approval*
Source: Huawei, HiSilicon

Abstract:

new WI for NR only; leading WG: RAN4

Decision: The document was **not treated**.

9.1.5 Proposals led by RAN4 (spectrum related)

RP-190168 Motivation for introduction of n14

Type: discussion *For: Information*
Source: Ericsson

Abstract:

Motivation slides for the introduction of new band n14 to NR specifications

Decision: The document was **not treated**.

RP-190165 New WID on introduction of NR band n14

Type: WID new *For: Approval*
Source: Ericsson

Abstract:

new WI for NR only; leading WG: RAN4; WI code to be used: NR_n14

Discussion:

Ericsson: is for refarming and presented on behalf of AT&T

Ericsson: clarified that Perf. part objective is: To specify band dependent BS conformance tests in 38.141-1/2. 38.141-1/2.

Decision: The document was **approved**.

RP-190169 Motivation for introduction of n30

Type: discussion *For: Information*
Source: Ericsson

Abstract:

Motivation slides for the introduction of new band n30 to NR specifications

Decision: The document was **not treated**.

RP-190166 New WID on introduction of NR band n30

Type: WID new *For: Approval*
Source: Ericsson

Abstract:

new WI for NR only; leading WG: RAN4; WI code to be used: NR_n30

Discussion:

Ericsson: is for refarming and presented on behalf of AT&T

Ericsson: clarified that Perf. part objective is: To specify band dependent BS conformance tests in 38.141-1/2. 38.141-1/2.

Decision: The document was **approved**.

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RP-190385 Motivation for new Study on introduction of NR band 6.425-7.125GHz

Type: discussion *For: Discussion*
Source: Huawei, HiSilicon

Decision: The document was **not treated**.

RP-190384 New SI proposal: Study on introduction of NR band 6.425-7.125GHz

Type: SID new *For: Approval*
Source: Huawei, HiSilicon

Abstract:

new SI for NR only; leading WG: RAN4

Decision: The document was **revised to RP-190707**.

RP-190707 New SI proposal: Study on introduction of NR band 6.425-7.125GHz

Type: SID new *For: Approval*
Source: Huawei, HiSilicon

(Replaces RP-190384)

Abstract:

new SI for NR only; leading WG: RAN4

Discussion:

Deutsche Telekom: still some regulatory aspects to be clarified

Broadcom: has the same view

RAN chair: ok, so we will come back in June 19

Decision: The document was **postponed**.

RP-190473 Motivation for a new NR band covering the 40-43.5 GHz range (band n259)

Type: discussion *For: Approval*
Source: Ericsson LM

Abstract:

A motivation for new NR TDD operating band covering the range 39.8-43.5 GHz in view of WRC-19 preparations. The lower limit of the band can be modified during the work item phase but should not be higher than 40 GHz. Allocation of the entire range 37-43.5

Decision: The document was **not treated**.

RP-190479 New WID: introduction of NR band n259

Type: WID new *For: Approval*
Source: Ericsson

Abstract:

new WI for NR only; leading WG: RAN4; WI code to be used: NR_n259; introduction of Band n259 covering the range 39.8-43.5 GHz (the lower band limit is tentative; it can be modified during the WI but should not be higher than 40 GHz).

Decision: The document was **revised to RP-190682**.

RP-190682 New WID: introduction of NR band n259

Type: WID new *For: Approval*
Source: Ericsson

(Replaces RP-190479)

Discussion:

MCC: WI code may include the band number and once WI code is allocated we cannot change it anymore

Ericsson: we can remove the note indicating that band number could still change

Decision: The document was **revised to RP-190765**.

RP-190765 New WID: introduction of NR band n259

Type: WID new *For: Approval*
Source: Ericsson

(Replaces RP-190682)

Decision: The document was **approved**.

RP-190389 New WI proposal: introduction of 1900MHz NR SUL (supplemental uplink) band

Type: WID new *For: Approval*
Source: Huawei, HiSilicon

Abstract:

new WI for NR only; leading WG: RAN4;

Discussion:

ZTE: is first proposal for a TDD band to use as SUL; so suggests to first study this in RAN4

Huawei: does not think there is a difference compared to FDD bands

Nokia: RAN4 indicated in the past that coexistence would have to be studied first

Qualcomm: is it completely UL?

Huawei: no coexistence problem in the considered region

CMCC: is this a regional requirement?

Huawei: can add a note that this is not regional

RAN chairman: this WI will require more discussion

Decision: The document was **postponed**.

RP-190390 New WI proposal: introduction of NR SUL (supplemental uplink) band with same uplink frequency range of NR band n5

Type: WID new *For: Approval*
Source: Huawei, HiSilicon

Abstract:

new WI for NR only; leading WG: RAN4;

Decision: The document was **approved**.

RP-190393 Handling of addition of new channel bandwidths to NR bands

Type: discussion *For: Discussion*
Source: Huawei, HiSilicon

Decision: The document was **withdrawn**.

RP-190392 New WI proposal: addition of wider channel bandwidth in NR band n38

Type: WID new *For: Approval*
Source: Huawei, HiSilicon

Abstract:

new WI for NR only; leading WG: RAN4;

Decision: The document was **approved**.

RP-190391 New WI proposal: addition of wider channel bandwidth in NR bands n77 and n78

Type: WID new *For: Approval*
Source: Huawei, HiSilicon

Abstract:

new WI for NR only; leading WG: RAN4;

Discussion:

Qualcomm: does this it involve CA? More than 100MHz? which operator has this bandwidth? It adds some complexity.

Huawei: this is not about CA, there are some UK operators interested in this

Deutsche Telekom: we need a process for which bandwidths to be considered, we have 100MHz, should we add this as well?

RAN chair: it seems we need an overall discussion about adding bandwidths, suggests that Huawei leads a corresponding RAN4 discussion and comes back to RAN #84

Decision: The document was **postponed**.

RP-190301 Motivation for Rel-16 NR inter-band carrier aggregation/Dual Connectivity for 3 bands DL with x (x=1, 2) bands UL

Type: discussion *For: Discussion*
Source: CATT

Abstract:

motivation paper for NR CA/DC with 3DL and x UL (x=1, 2)

Decision: The document was **withdrawn**.

RP-190302 New WID: Rel-16 NR Inter-band Carrier Aggregation/Dual Connectivity for 3 bands DL with x (x=1, 2) bands UL

Type: WID new *For: Approval*
Source: CATT

Abstract:

new WI for NR only; leading WG: RAN4; WI code to be used: NR_CADC_R16_3BDL_xBUL

Discussion:

split into 2 WIs now

Decision: The document was **revised to RP-190692**.

RP-190692 New WID: Rel-16 NR Inter-band Carrier Aggregation for 3 bands DL with 1 band bands UL

Type: WID new *For: Approval*
Source: CATT

(Replaces RP-190302)

Abstract:

new WI for NR only; leading WG: RAN4; WI code to be used: NR_CA_R16_3BDL_1BUL

Decision: The document was **approved**.

RP-190693 New WID: Rel-16 NR Inter-band Carrier Aggregation/Dual Connectivity for 3 bands DL with 2 band bands UL

Type: WID new *For: Approval*
Source: ZTE

Abstract:

new WI for NR only; leading WG: RAN4; WI code to be used: NR_CADC_R16_3BDL_2BUL

Decision: The document was **approved**.

RP-190256 Work plan on the generic requirements for NR FR1 UL intra-band contiguous CA in Rel-16

Type: discussion *For: Discussion*
Source: China Telecomunication Corp.

Abstract:

Work plan for the new WI proposal

Decision: The document was **not treated**.

RP-190255 New WID: Generic requirements for NR FR1 UL intra-band contiguous CA in Rel-16

Type: WID new *For: Approval*
Source: China Telecomunication Corp.

Abstract:

new WI for NR only; leading WG: RAN4; MCC: REL has to be removed from WI title; why is this spectrum related? This topic can not be covered under NR_CA_R16_intra?; compare RP-190386

Decision: The document was **revised to RP-190620**.

RP-190620 New WID: Generic RF requirements for NR intra-band contiguous Carrier Aggregation for FR1 with xCC DL/2CC UL (x>=2)

Type: WID new *For: Approval*
Source: China Telecomunication Corp.

(Replaces RP-190255)

Abstract:

new WI for NR only; leading WG: RAN4; WI code to be used: NR_CCA_intra_FR1_xDL_2UL; no Perf. part?

Decision: The document was **withdrawn**.

RP-190387 Motivation for new WI proposal on intra-band non-contiguous CA requirements for FR1

Type: discussion *For: Discussion*
Source: Huawei, HiSilicon

Decision: The document was **not treated**.

RP-190386 New WI proposal: Intra-band non-contiguous CA requirements for FR1

Type: WID new *For: Approval*
Source: Huawei, HiSilicon

Abstract:

MCC: considered RAT unclear; if NR only: we have already a REL-16 WI NR_CA_R16_intra for this; compare RP-190255

Decision: The document was **revised to RP-190610**.

RP-190610 New WI proposal: Generic RF DL requirements for NR intra-band non-contiguous Carrier Aggregation for FR1 with two sub-blocks

Type: WID new *For: Approval*
Source: Huawei, HiSilicon

(Replaces RP-190386)

Abstract:

new WI for NR only; leading WG: RAN4; WI code to be used: NR_NCCA_intra_FR1_DL_2SB

Decision: The document was **not treated**.

RP-190355 Motivation for the new WID on supplemental uplink usage of FR2 spectrum (SA and NSA)

Type: discussion *For: Information*
Source: Apple Inc.

Decision: The document was **not treated**.

RP-190356 New WID on Supplemental uplink usage of FR2 spectrum (SA and NSA)

Type: WID new *For: Approval*
Source: Apple Inc.

Abstract:

MCC: we have already a REL-16 WI NR_SUL_combos_R16 for this

Decision: The document was **not treated**.

RP-190396 Motivation of addition of power class 5 for FR2

Type: discussion *For: Discussion*
Source: Huawei, HiSilicon

Decision: The document was **not treated**.

RP-190395 WID proposal: Add power class 5 for NR frequency range FR2

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Type: WID new For: Approval
Source: Huawei, HiSilicon

Abstract:

new WI for NR only; leading WG: RAN4; power class 5 for FR2 will be specified for UEs with lower maximum transmission power than the existing NR FR2 power classes 1-4 (note: power classes of FR1 and FR2 are defined differently)

Decision: The document was **revised to RP-190708**.

RP-190708 WID proposal: Add power class 5 for NR frequency range FR2

Type: WID new For: Approval
Source: Huawei, HiSilicon

(Replaces RP-190395)

Decision: The document was **not treated**.

9.2 Open REL-15 NR or NR&LTE WIs

9.2.1 NR Access Technology [RAN1 WI: NR_newRAT]

RP-190023 LS on UTRAN, E-UTRAN and 5G Antenna Interface Function specifications (R3-187104; to: RAN4; cc: RAN; contact: Huawei)

Type: LS in For: (not specified)
Original outgoing LS: R3-187104, to RAN4, cc RAN
Source: RAN3

Abstract:

resubmission of RP-182207 which was not treated at RAN #82; no RAN action requested;

Discussion:

note: The CR attached to this LS R3-187105 was approved at RAN #82.

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190053 LS on Completion of X2 TNL Address Discovery for EN-DC (R3-191119; to: SA2, CT4, CT; cc: RAN, SA; contact: Qualcomm)

Type: LS in For: (not specified)
Original outgoing LS: R3-191119, to SA2, CT4, CT, cc RAN, SA
Source: RAN3

Discussion:

LS includes 7 CRs:

- 36.300 (R3-191079);

- set 1 for new container (preferred by RAN3): 36.413 (R3-191080), 36.423 (R3-191117), 38.413 (R3-191124);

- set 2 for legacy container: 36.413 (R3-191081), 36.413 (R3-191118), 38.413 (R3-191125);

an LS from CT4 (or CT) is expected to select the set;

acc. to slide 6 of RP-182190 this topic is addressed by cat.F CRs although they should rather use cat.B CRs;

RAN action requested (although just on cc)

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190622 Reply LS R3-191119 = RP-190053 on Completion of X2 TNL Address Discovery for EN-DC (C4-190589; to: RAN3, RAN; cc: SA2, CT, SA; contact: Nokia)

Type: LS in For: (not specified)
Original outgoing LS: C4-190589, to RAN3, RAN, cc SA2, CT, SA
Source: CT4

Discussion:

CT4 is fine with the approach preferred by RAN3 introducing a new container ("EN-DC SON Configuration Transfer"). CT4 will update the GTPv2 specification accordingly.

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190719 Reply LS to R3-191119 = RP-190053 on Completion of X2 TNL Address Discovery for EN-DC (CP-190187; to: RAN3, RAN; cc: SA, SA2; contact: Orange)

Type: LS in For: -
Original outgoing LS: CP-190187, to RAN3, RAN, cc SA, SA2
Source: CT

Abstract:

RAN action requested, compare RP-190622

Decision: The document was **not treated**.

RP-190561 RAN3 Endorsed CRs for the Introduction of TNL Address discovery for EN-DC

Type: CR pack For: Approval
Source: RAN3

Discussion:

MCC: as explained in LS RP-10053, RAN needs to approve stage 2 CR 36.300 (R2-1902764) and then select set 1 or set 2 based on the reply LS RP-190622 from CT4:

- set 1 for new container (preferred by RAN3): 36.413 (R3-191080), 36.423 (R3-191117), 38.413 (R3-191124);

- set 2 for legacy container: 36.413 (R3-191081), 36.413 (R3-191118), 38.413 (R3-191125);

conclusion: All CRs of RP-190561 are approved except:

R3-191081, R3-191118, R3-191125 which are rejected (following the CT4 LS RP-190622)

Decision: The document was **partially approved**.

RP-190055 Reply LS to RP-182876 on FR1 range (R4-1902222; to: RAN; cc: RAN1, RAN2, RAN3, RAN5; contact: Ericsson)

Type: LS in For: (not specified)
Original outgoing LS: R4-1902222, to RAN, cc RAN1, RAN2, RAN3, RAN5
Source: RAN4

Abstract:

no RAN action requested

Discussion:

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RAN4 chairman: corresponding CRs for FR1 range extension are submitted to RAN #83

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190115 Response LS to RP-182876 on FR1 range (R1-1903816; to: RAN; cc: RAN2, RAN3, RAN4, RAN5; contact: Qualcomm)

Type: LS in For: (not specified)
Original outgoing LS: R1-1903816, to RAN, cc RAN2, RAN3, RAN4, RAN5
Source: RAN1

Abstract:

no explicit RAN action requested

Discussion:

RAN chair: also RAN1 submitted corresponding CRs to RAN #83

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190056 LS on FR2 Beam Correspondence (R4-1902682; to: RAN1, RAN2; cc: RAN; contact: Samsung)

Type: LS in For: (not specified)
Original outgoing LS: R4-1902682, to RAN1, RAN2, cc RAN
Source: RAN4

Abstract:

no RAN action requested

Discussion:

RAN chair: only for information for RAN

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190638 Reply LS to RP-182125 to 3GPP RAN on Work Status of 5GSI (GSMA_5GSI15_004; to RAN; SA, CT, GSMA Future Networks Programme ; contact: T-Mobile)

Type: LS in For: -
Original outgoing LS: GSMA_5GSI15_004, to RAN, cc SA, CT, GSMA Future Networks Programme
Source: GSMA

Abstract:

compare also GSMA LS RP-181994 and RAN #81 reply in RP-182125

Discussion:

RAN chairman: so status quo remains

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190251 Status Report of WI on New Radio Access Technology; rapporteur: NTT DOCOMO

Type: WI status report *For: (not specified)*
Source: RAN1

Abstract:

MCC: late submission; target date change (Core: +3 months; Perf.: +6 months)

Decision: The document was **noted**.

RP-190218 Discussion on correction for SRS frequency domain allocation

Type: discussion *For: Decision*
Source: Qualcomm Incorporated

Discussion:

vivo, Samsung, Ericsson: would support a corresponding CR

RAN chair: anyone who would have serious concern to go forward with a CR? noone

Decision: The document was **noted**.

RP-190219 Draft CR on SRS frequency domain allocation

Type: discussion *For: Discussion*
38.211 v15.4.0
Source: Qualcomm Incorporated

Abstract:

MCC: wrong Tdoc type draft CR, Tdoc was turned in discussion Tdoc

Discussion:

RAN chair: a real CR has to be provided (get CR number, have impact analysis etc.)

Decision: The document was **noted**.

RP-190688 CR on SRS frequency domain allocation

Type: CR *For: Approval*
38.211 v15.4.0 *CR-0009* *Cat: F (Rel-15)*

Source: Qualcomm Incorporated

(Replaces RP-190219)

Abstract:

company CR; CR was not provided to RAN1 so far

Discussion:

Mediatek: CR was not seen by RAN1

Huawei: if CR is approved, then all chipset vendors need to implement it

RAN chairman: is there anyone objecting?

Mediatek: the concern is if we have IOT problems, we can revisit

RAN chairman: yes, this is possible

Decision: The document was **revised to RP-190773**.

RP-190773 CR on SRS frequency domain allocation

Type: CR For: Approval
38.211 v15.4.0 CR-0009 rev 1 Cat: F (Rel-15)

Source: Qualcomm Incorporated

(Replaces RP-190688)

Abstract:

company CR; CR was not provided to RAN1 so far

Decision: The document was **approved**.

RP-190366 Issues with NSA option for 5G NR deployment

Type: discussion For: Discussion
Source: Reliance Jio

Abstract:

It is generally understood that most operators are looking at the Non Stand Alone (NSA) option of 5G NR (Option 3a). The NSA option will have a significant signaling load on the existing LTE cells. The Signaling load can be prohibitive given the fact tha

Discussion:

moved from AI 9.4 to AI 9.2.1

Decision: The document was **not treated**.

RP-190303 Views on Rel-15 NR RRM legacy work

Type: discussion For: Discussion
Source: CATT

Abstract:

To discuss how to handle the remaining RRM work from Rel-15.

Decision: The document was **not treated**.

RP-190394 Handling of Rel-15 NR RAN4 leftover topics

Type: discussion For: Discussion
Source: Huawei, HiSilicon

Decision: The document was **not treated**.

RP-190483 Maximum uplink duty cycle for FR2 and FR2 performance implications

Type: discussion For: Discussion
Source: Nokia, Nokia Shanghai Bell

Abstract:

This document discuss FR2 performance implications due to the range of FR2 maximum UL duty cycle UE capability

Discussion:

proposal: In our view the lowest UL duty cycles like 2% do not allow basic UL control signalling related to even FR2 DL only traffic. Thus, we see that it is important that RAN#83 discuss and decides how to ensure NR FR2 operations can work in practice.

Nokia: RAN4 sent an LS on this but did not analyze implications of lower rate

Samsung: shares Nokia's concern that 2% is too low

Intel: values below 50% are useful but shares Nokia's concern about 2%

T-Mobile: 2% is too low and even 10% is quite low

LG: this topic was discussed for a very long time in RAN4 and we should not remove it

Qualcomm: numbers are just taken out of the hat here so we should see some analysis

vivo: RAN4 is a better place to discuss the duty cycle

Nokia: agrees that table was on the table in RAN4 for a long time but analysis of the numbers was less extensive (e.g. there was no consultation with RAN1/RAN2), this is a static parameter applying at any time

RAN chair: revising the numbers here may be difficult but a minimun would be to send our observations back to RAN4 so that RAN4 can have a 2nd look at this

Samsung, Apple: hope we can solve it this week

Qualcomm: 10% and lowering the power would be like 2% so we need some more analysis

RAN chair: you can discuss a way forward offline and come back with RP-190696

Decision: The document was **noted**.

RP-190696 Way forward on maximum uplink duty cycle for FR2

Type: discussion *For: Discussion*
Source: Nokia

Discussion:

Qualcomm: we were objecting because we do not like to cut out numbers without analysis

RAN chairman: any companies that this is not improving compared to what we have? Oppo, Mediatek; if we do not know what it is an improvement, it is not useful to change

Huawei: to do RAN2 CRs we will need the RAN4 results first

RAN chairman: of course

OPPO: what about 10%?

RAN chairman: 10% is there but with TBD

Decision: The document was **revised to RP-190755**.

RP-190755 Way forward on maximum uplink duty cycle for FR2

Type: discussion *For: Discussion*
Source: Nokia

(Replaces RP-190696)

Decision: The document was **endorsed**.

RP-190536 Clarification on timing reference cell of smtc configuration

Type: discussion *For: Decision*
Source: Qualcomm Incorporated

Decision: The document was **withdrawn**.

RP-190446 Corrections to 36.212 & 36.213 related to inter-RAT Dual Connectivity

Type: CR pack *For: Approval*
Source: RAN1

Decision: The document was **approved**.

RP-190447 Maintenance of NR -38.211

Type: CR pack For: Approval
Source: RAN1

Decision: The document was **approved**.

RP-190448 Maintenance of NR -38.212

Type: CR pack For: Approval
Source: RAN1

Decision: The document was **approved**.

RP-190449 Maintenance of NR -38.213

Type: CR pack For: Approval
Source: RAN1

Decision: The document was **approved**.

RP-190450 Maintenance of NR -38.214

Type: CR pack For: Approval
Source: RAN1

Decision: The document was **approved**.

RP-190425 CR on QCL assumption for receiving PDSCH for RAR

Type: CR For: Approval
38.214 v15.4.0 CR-0025 rev 1 Cat: F (Rel-15)

Source: NTT DOCOMO INC., Ericsson

Abstract:

company CR; RAN1 #96 agreed a 38.213 CR in R1-1903749 (see RP-190xxxx), but the necessity of 38.214 CR was missed at that time; this company CR provides the missing 38.214 CR

Discussion:

Nokia: supports the CR

Decision: The document was **approved**.

RP-190424 CR on QCL assumption for receiving PDSCH for RAR

Type: CR For: Approval
38.214 v15.4.0 CR-0025 Cat: F (Rel-15)

Source: NTT DOCOMO INC., Ericsson

Abstract:

see RP-190425 instead

Decision: The document was **withdrawn**.

RP-190540 RAN2 CRs to NR, part 1

Type: CR pack For: Approval
Source: RAN2

Decision: The document was **approved**.

RP-190541 RAN2 CRs to NR, part 2

Type: CR pack *For: Approval*
Source: RAN2

Decision: The document was **approved**.

RP-190542 RAN2 CRs to NR, part 3

Type: CR pack *For: Approval*
Source: RAN2

Decision: The document was **approved**.

RP-190543 RAN2 CRs to NR, part 4

Type: CR pack *For: Approval*
Source: RAN2

Decision: The document was **approved**.

RP-190544 RAN2 CRs to NR, part 5

Type: CR pack *For: Approval*
Source: RAN2

Decision: The document was **approved**.

RP-190545 RAN2 CRs to NR, part 6

Type: CR pack *For: Approval*
Source: RAN2

Discussion:

MCC: company CR in RP-190637 to replace R2-1902815 of RP-190545

conclusion: all CRs of RP-190545 are approved except

R2-1902815 which is revised in RP-190637

Decision: The document was **partially approved**.

RP-190637 CR to 36.331 on clarification of autonomous gap in EN-DC

Type: CR *For: Approval*
36.331 v15.4.0 *CR-3821 rev 3 Cat: F (Rel-15)*

Source: Qualcomm Incorporated, vivo

Abstract:

company CR; to replace RAN2 agreed CR R2-192815 of RP-190545 because some ASN.1 problems were spotted after RAN2 #105

Decision: The document was **approved**.

RP-190546 RAN2 CRs to NR, part 7

Type: CR pack *For: Approval*
Source: RAN2

Decision: The document was **approved**.

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RP-190554 RAN3 agreed CRs for NR Access Technology (Set 1)

Type: CR pack *For: Approval*
Source: RAN3

Decision: The document was **approved**.

RP-190555 RAN3 agreed CRs for NR Access Technology (Set 2)

Type: CR pack *For: Approval*
Source: RAN3

Decision: The document was **approved**.

RP-190556 RAN3 agreed CRs for NR Access Technology (Set 3)

Type: CR pack *For: Approval*
Source: RAN3

Decision: The document was **approved**.

RP-190615 RAN3 agreed CRs for NR Access Technology (Set 4)

Type: CR pack *For: Approval*
Source: RAN3

Abstract:

CR package that collects 4 CRs for which there are company CRs to revise the RAN3 agreed CRs

Discussion:

MCC: there are company CRs:

- in RP-190523 to replace R3-191152 of RP-190615

- in RP-190202 to replace R3-191109 of RP-190615

- in RP-190201 to replace R3-191106 of RP-190615

- in RP-190611 to replace R3-191137 of RP-190615

conclusion:

R3-191152 is revised in RP-190523,

R3-191109 is revised in RP-190202

R3-191106 is revised in RP-190201

R3-191137 is revised in RP-190611

Decision: The document was **revised**.

RP-190523 Adding Trace Messages in X2AP

Type: CR *For: Approval*
36.423 v15.4.0 *CR-1300 rev 3 Cat: F (Rel-15)*

Source: Ericsson

Abstract:

company CR; to replace RAN3 agreed CR R3-191152 (36.423, CR1300r2) of RP-190???; reason: correct the procedure text to follow RAN3 specification rules.

Decision: The document was **approved**.

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RP-190202 Transfer of the PSCell information to Core Network

Type: CR For: Approval
38.413 v15.2.0 CR-0027 rev 3 Cat: F (Rel-15)

Source: Nokia, Nokia Shanghai Bell

(Replaces R3-191109)

Abstract:

company CR to replace RAN3 agreed CR R3-191109 of RP-190615; reason: PSCell, which was added to be reported to the CN, can only be NR CGI, as it is defined; revision is needed to accommodate options with the eNB as the SN;

Decision: The document was **approved**.

RP-190201 Transfer of the PSCell information for LI purposes

Type: CR For: Approval
38.423 v15.2.0 CR-0017 rev 3 Cat: F (Rel-15)

Source: Nokia, Nokia Shanghai Bell

(Replaces R3-191106)

Abstract:

company CR to replace RAN3 agreed CR R3-191106 of RP-190615; reason: PSCell, which was added to be reported to the CN, can only be NR CGI, as it is defined; revision is needed to accommodate options with the eNB as the SN;

Decision: The document was **approved**.

RP-190611 CR to 38.463 on S-NSSAI update during EPS to 5GS handover

Type: CR For: Approval
38.463 v15.2.0 CR-0035 rev 3 Cat: F (Rel-15)

Source: Huawei

Abstract:

company CR; replacing RAN3 agreed CR R3-191137 of RP-19055? in which an ASN.1 error was after RAN3 #103

Decision: The document was **approved**.

RP-190200 Correction of ASN.1 for SON Configuration Transfer and PDU Session Resource Modify Request Transfer

Type: CR For: Approval
38.413 v15.2.0 CR-0066 Cat: F (Rel-15)

Source: Nokia, Nokia Shanghai Bell

Abstract:

company CR; to correct the misalignment between NGAP tabular and ASN.1 in 2 cases (in both cases, the tabular reflects the correct intention while the ASN.1 is wrong); problem was only spotted after RAN3 #103

Decision: The document was **approved**.

RP-190399 RAN4 CRs to New Radio Access Technology, part 1

Type: CR pack For: Approval
Source: RAN4

Decision: The document was **approved**.

RP-190400 RAN4 CRs to New Radio Access Technology, part 2

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

RP-190401 RAN4 CRs to New Radio Access Technology, part 3

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

RP-190402 RAN4 CRs to New Radio Access Technology, part 4

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

RP-190403 RAN4 CRs to New Radio Access Technology, part 5

Type: CR pack *For: Approval*
Source: RAN4

Discussion:

MCC: company CR

in RP-190569 to replace R4-1902690 of RP-190403

conclusion: All CRs for RP-190403 are approved except

R4-1902690 which is revised in RP-190569

R4-1902678 which is revised in RP-190747

Decision: The document was **partially approved**.

RP-190569 CR to TS 38.133: Implementation of endorsed draft CRs from RAN4#90

Type: CR *For: Approval*
38.133 v15.4.0 *CR-0064 rev 1 Cat: B (Rel-15)*

Source: Intel, Ericsson

Abstract:

company CR; to replace RAN4 agreed CR R4-1902690 of RP-190403; RAN4 #90 agreed to modify the top level structure of annex A of TS 38.133 but it was not implemented correctly into the RAN4 agreed big CR (R4-1902690) of CRpack RP-190403;

Decision: The document was **approved**.

RP-190203 Way forward on network sharing

Type: discussion *For: Endorsement*
Source: Nokia, Nokia Shanghai Bell, Huawei, Samsung

Abstract:

related to "RAN sharing" open issue of RP-182190 slide 6; compare RP-190525

Decision: The document was **revised to RP-190628**.

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RP-190628 Way forward on network sharing

Type: discussion *For: Endorsement*
Source: Nokia, Nokia Shanghai Bell, China Telecom, Bell, CMCC, CATT, KDDI, ZTE, Huawei, Samsung, LG Electronics

(Replaces RP-190203)

Abstract:

related to "RAN sharing" open issue of RP-182190 slide 6; compare RP-190525

Decision: The document was **noted**.

RP-190525 RAN sharing with multiple Cell-ID broadcast in NR

Type: discussion *For: Agreement*
Source: Ericsson

Abstract:

compare RP-190203

Discussion:

proposal: to open a new Rel-16 work item, and to allowing sufficient meeting time to go through all the details of discussion material submitted so far.

Nokia: we do not see a need to distinguish logical nodes, opening a REL-16 WI is not acceptable for us

Samsung: supports Nokia

Interdigital: was leading the offline discussion and supports to take a step back to look at architecture

Huawei: the RAN3 agreement is still that we can have CRs in the next quarter and we should address the Nokia and the Ericsson case

CMCC: supports to have a solution for REL-15

Ericsson: we are specifying logical interfaces between logical nodes, here we consider a set of logical nodes and this is new and we need to look at the impacts, we are not against a common interface as long as it is done in a proper way

RAN chair: so we will strive for REL-15 CR(s) but RAN3 will do an analysis for common interface architecture

Huawei: understands that we will get 2 sets of CRs

Ericsson: per PLMN is already there

Nokia: main focus should be on common interface

Ericsson: common interface without per PLMN is not acceptable for us

RAN chair: then we should have an LS to RAN3 describing what RAN3 has to do

NTT DOCOMO: network sharing is not in the WID

RAN chair: we should cover this also in the exception sheet

Decision: The document was **noted**.

RP-190680 Draft LS on NG-RAN Network Sharing completion (to: RAN3; cc: -; contact: Huawei)

Type: LS out to RAN3 *For: Approval*
Source: Huawei

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Decision: The document was **revised to RP-190730**.

RP-190730 LS on NG-RAN Network Sharing completion (to: RAN3; cc: -; contact: Huawei)

Type: LS out to RAN3 *For: Approval*
Source: RAN

(Replaces RP-190680)

Decision: The document was **approved**.

RP-190204 Common X2 instance between eNB and shared en-gNB

Type: CR *For: Approval*
36.423 v15.4.0 *CR-1295 rev 3 Cat: F (Rel-15)*

Source: Nokia, Nokia Shanghai Bell, Huawei, Samsung

(Replaces R3-191113)

Abstract:

company CR (compare RP-190203, RP-190205, RP-190206); revision of R3-191113 which was rejected by RAN3 #103; related to "RAN sharing" open issue of RP-182190 slide 6

Discussion:

see LS RP-190680 instead

Decision: The document was **rejected**.

RP-190205 Common Xn link for network sharing

Type: CR *For: Approval*
38.423 v15.2.0 *CR-0057 rev 3 Cat: F (Rel-15)*

Source: Nokia, Nokia Shanghai Bell, Huawei, Samsung

(Replaces R3-191112)

Abstract:

company CR (compare RP-190203, RP-190204, RP-190206); revision of R3-191112 which was rejected by RAN3 #103; related to "RAN sharing" open issue of RP-182190 slide 6

Discussion:

see LS RP-190680 instead

Decision: The document was **rejected**.

RP-190206 F1 Served Cell Information

Type: CR *For: Approval*
38.473 v15.4.1 *CR-0248 rev 3 Cat: F (Rel-15)*

Source: Nokia, Nokia Shanghai Bell, Huawei, Samsung

(Replaces R3-191114)

Abstract:

company CR (compare RP-190203, RP-190204, RP-190205); revision of R3-191114 which was rejected by RAN3 #103; related to "RAN sharing" open issue of RP-182190 slide 6

Discussion:

see LS RP-190680 instead

Decision: The document was **rejected**.

RP-190484 Introduction of 30 kHz channel raster and SS raster for band n38 in TS 38.104

Type: CR For: Approval
38.104 v15.4.0 CR-0022 Cat: F (Rel-15)

Source: Huawei

Abstract:

company CR; CR had no RAN4 Tdoc before

Decision: The document was **revised to RP-190624**.

RP-190624 Introduction of 30 kHz channel raster and SS raster for band n38 in TS 38.104

Type: CR For: Approval
38.104 v15.4.0 CR-0022 rev 1 Cat: F (Rel-15)

Source: Huawei, HiSilicon, Bell Mobility

(Replaces RP-190484)

Abstract:

company CR; CR had no RAN4 Tdoc before

Decision: The document was **revised to RP-190663**.

RP-190663 Introduction of 30 kHz channel raster and SS raster for band n38 in TS 38.104

Type: CR For: Approval
38.104 v15.4.0 CR-0022 rev 2 Cat: F (Rel-15)

Source: Huawei, HiSilicon, Bell Mobility

(Replaces RP-190624)

Abstract:

company CR; CR had no RAN4 Tdoc before

Discussion:

will discuss further in RAN4

Decision: The document was **postponed**.

RP-190485 Introduction of 30 kHz channel raster and SS raster for band n38 in TS 38.101-1

Type: CR For: Approval
38.101-1 v15.4.0 CR-0035 Cat: F (Rel-15)

Source: Huawei

Abstract:

company CR; CR had no RAN4 Tdoc before

Decision: The document was **revised to RP-190625**.

RP-190625 Introduction of 30 kHz channel raster and SS raster for band n38 in TS 38.101-1

Type: CR For: Approval
38.101-1 v15.4.0 CR-0035 rev 1 Cat: F (Rel-15)

Source: Huawei, HiSilicon, Bell Mobility

(Replaces RP-190485)

Abstract:

company CR; CR had no RAN4 Tdoc before

Decision: The document was **revised to RP-190664**.

RP-190664 Introduction of 30 kHz channel raster and SS raster for band n38 in TS 38.101-1

Type: CR For: Approval
38.101-1 v15.4.0 CR-0035 rev 2 Cat: F (Rel-15)

Source: Huawei, HiSilicon, Bell Mobility

(Replaces RP-190625)

Abstract:

company CR; CR had no RAN4 Tdoc before

Discussion:

will discuss further in RAN4

Decision: The document was **postponed**.

RP-190367 On FR2 MPR Changes to Accommodate OBW Requirement

Type: discussion For: Discussion
Source: Qualcomm Incorporated

Abstract:

This paper discussed the changes needed in FR2 MPR definition to accomodate the OBW requirement for PC3 UEs. Compare CR in RP-190426

Discussion:

Proposal 1: Middle third DFT-s-QPSK waveforms in 50, 100, 200 and 400M channels shall adopt 0dB MPR for PC3

Proposal 2: The 0dB reference waveform shall be 20RB23, 100MHz channel, 120kSCS, DFT-s-QPSK

Proposal 3: BPSK variants of waveforms in proposal 1 shall also adopt 0dB MPR for PC3

Proposal 4: The PC3 MPR table shall remain unchanged outside the restricted regions outlined in proposal 1

Nokia: agrees is a late proposal but it is an improvement of the situation

NTT DOCOMO: inband emission is the bottleneck, proposal by Qualcomm is very reasonable

Qualcomm: inner part is not really changed, we can discuss outer parts here

Decision: The document was **noted**.

RP-190426 PC3 MPR changes to accommodate FR2 OBW

Type: CR For: Approval
38.101-2 v15.4.0 CR-0019 Cat: F (Rel-15)

Source: Qualcomm Incorporated

Abstract:

company CR; CR proposes changes to the FR2 allowed power backoff (MPR) to enable UEs to meet the occupied bandwidth (OBW) requirement; related to Disc Tdoc R4-1900675, the following agreement captured in the chairman notes: "WF: we adopt proposal but the more detailed condition and proposed values need to be discussed during this meeting" but way forward R4-1902147 was not approved by RAN4 #90 (only noted);

Decision: The document was **revised to RP-190662**.

RP-190662 PC3 MPR changes to accommodate FR2 OBW

Type: CR For: Approval
38.101-2 v15.4.0 CR-0019 rev 1 Cat: F (Rel-15)

Source: Qualcomm Incorporated, Verizon, AT&T, T-Mobile USA, KDDI, Softbank, Telecom Italia, Sony

(Replaces RP-190426)

Abstract:

company CR; CR proposes changes to the FR2 allowed power backoff (MPR) to enable UEs to meet the occupied bandwidth (OBW) requirement; related to Disc Tdoc R4-1900675, the following agreement captured in the chairman notes: "WF: we adopt proposal but the more detailed condition and proposed values need to be discussed during this meeting" but way forward R4-1902147 was not approved by RAN4 #90 (only noted);

Decision: The document was **revised to RP-190679**.

RP-190679 PC3 MPR changes to accommodate FR2 OBW

Type: CR For: Approval
38.101-2 v15.4.0 CR-0019 rev 2 Cat: F (Rel-15)

Source: Qualcomm Incorporated, Verizon, AT&T, T-Mobile USA, KDDI, Softbank, Telecom Italia, Sony

(Replaces RP-190662)

Abstract:

company CR; CR proposes changes to the FR2 allowed power backoff (MPR) to enable UEs to meet the occupied bandwidth (OBW) requirement; related to Disc Tdoc R4-1900675, the following agreement captured in the chairman notes: "WF: we adopt proposal but the more detailed condition and proposed values need to be discussed during this meeting" but way forward R4-1902147 was not approved by RAN4 #90 (only noted);

Discussion:

see RP-190747 instead

Decision: The document was **withdrawn**.

RP-190747 CR to TS 38.101-2: Implementation of endorsed draft CRs from RAN4#90 plus PC3 MPR changes to accommodate FR2 OBW

Type: CR For: Approval
38.101-2 v15.4.0 CR-0018 rev 1 Cat: F (Rel-15)

Source: Qualcomm

Abstract:

company CR; to replace R4-1902678 of RP-190403 in order to include aspects of RP-190662

Discussion:

Huawei: this is a new proposal coming to RAN so we need more time to check

Apple: would also like to have more time to check

Verizon: is an important requirement for us, suggests to approve the CR

RAN chairman: can we approve RP-190747 (as it seems to be important for deployments) and leave RAN4 time until RAN #84 to still check it and come back with a CR to correct this if needed?

Huawei: can we put value in [ ]?

Qualcomm: with [ ] no testing is possible

conclusion: CR is approved, RAN4 is asked to double-check this CR and if needed come back with a correction CR to RAN #84

Decision: The document was **approved**.

RP-190504 Motivation for correction to aperiodic CSI-RS triggering with different numerology between PDCCH and CSI-RS

Type: discussion *For: Decision*
Source: Ericsson

Decision: The document was **revised to RP-190631**.

RP-190631 Motivation for correction to aperiodic CSI-RS triggering with different numerology between PDCCH and CSI-RS

Type: discussion *For: Decision*
Source: Ericsson

(Replaces RP-190504)

Discussion:

T-Mobile: considers this as an important topic that we need to fix in REL-15

Samsung: this issue is not new and well understood (we discussed it at RAN #82), we decided that there will be no further discussion on this

RAN chair: can RAN1 chair clarify the RAN1 decision

Samsung: was discussed in Athens and it was concluded that it will no longer be discussed in REL-15

Nokia: we understand that it is late, but there will be quite some disappointment if we do not have the feature

Apple: we support to have the feature

Huawei: we had the agreement no further non-backward compatible changes will be made and we also had a corresponding 3GPP press release on this; this is not an essential correction and if we are serious about REL-15, we should not approve the CRs

RAN chair: to clarify: The change would not affect all deployments but only certain deployments.

Samsung: if we allow this approach, then you may see a number of other proposals coming back

BT: what happens if you do not want to implement the feature now but 3 years later you want to switch it on, will you have to throw away the devices?

Qualcomm: a REL-15 UE not implementing this feature would still work, does also not see how it could work without the CR

CMCC: has some sympathy for the CRs

Mediatek: would be fine to have the feature as optional

Deutsche Telekom: having it optional would be ok for us

Verizon: considers it as an important feature and supports it

CHTTL, Telecom Italia: also supporting the feature

RAN chair: suggests to have further offline discussion to see whether we can still approve the corresponding WG CRs

Samsung: concerned that more inputs are coming to the TSG challenging WG decisions

RAN chair: that's a valid point, however on this one the RAN1 decison was not based on the technical merits but based on the fact that this is a late request so we should see on RAN what we can decide

Huawei: proponents of other late inputs were so fair to not bring their inputs to RAN

RAN chair: this is also a valid observation

Nokia: just wanted to indicate that also ATT & Sprint are supporting the feature but they were not able to participate in this meeting

conclusion: further offline discussion needed to see whether CRs can be approved

Decision: The document was **noted**.

RP-190505 Correction to aperiodic CSI-RS triggering with different numerology between PDCCH and CSI-RS

Type: CR For: Approval
38.214 v15.4.0 CR-0007 rev 2 Cat: F (Rel-15)

Source: Ericsson, AT&T, T-Mobile USA, Sprint, Nokia, Nokia Shanghai Bell

(Replaces RP-182833)

Abstract:

company CR (compare RP-190504, CRs RP-190506, RP-190507); revision of CR RP-182833 which was postponed at RAN #82 to be handled at RAN1 #96; RAN1 #96 did not reach consensus about draftCR R1-1902120 (see also R1-1902121);

Decision: The document was **revised to RP-190632**.

RP-190632 Correction to aperiodic CSI-RS triggering with different numerology between PDCCH and CSI-RS

Type: CR For: Approval
38.214 v15.4.0 CR-0007 rev 3 Cat: F (Rel-15)

Source: Ericsson, AT&T, T-Mobile USA, Sprint, Nokia, Nokia Shanghai Bell, CHTTL, Deutsche Telekom

(Replaces RP-190505)

Abstract:

company CR (compare RP-190504, CRs RP-190506, RP-190507); revision of CR RP-182833 which was postponed at RAN #82 to be handled at RAN1 #96; RAN1 #96 did not reach consensus about draftCR R1-1902120 (see also R1-1902121);

Discussion:

Huawei: is not an essential correction

Telstra: we see it as a critical correction

Samsung: there are other ways to support this so we agree with Huawei that this is not an essential correction

T-Mobile: the change is important for us

RAN chair: it does not affect implementations not using this, so is anyone formally objecting to the CRs?

Samsung: there is no evidence for the performance improvement and the change is really late

RAN chair: correct, the CR is very late in the REL

Ericsson: is less about performance than about deployment plans

Apple: understands the concerns from Huawei and Samsung but this is a helpful feature

Qualcomm: supports to have the change

RAN chairman: any companies objecting? Samsung and Huawei are objecting

T-Mobile: is there a chance to do a working agreement?

RAN chair: we could do this, the CRs would go in the spec now but if it challenged in June, and voting to confirm the working agreement would not reach 71% we would roll back and have CRs to have remove the changes again

Samsung: WGs had not enough time to review

RAN chairman: CRs were available on WG reflectors for some time

Samsung: we are setting a bad precedence case allowing such a late change; in terms of deployment it may be self-contained but not in terms of implementation

CMCC: supports this feature but also concerned about the process

RAN chairman: CR is approved with a working agreement

Note: It was spotted after RAN #83 that the CR has a cover sheet error showing rev 2 instead of rev 3.

Decision: The document was **approved**.

RP-190506 Capability for aperiodic CSI-RS triggering with different numerology between PDCCH and CSI-RS

Type: CR For: Approval
38.331 v15.4.0 CR-0792 rev 1 Cat: F (Rel-15)

Source: Ericsson, Qualcomm

(Replaces RP-182857)

Abstract:

company CR (compare RP-190504, CRs RP-190505, RP-190507); revision of CR RP-182857 which was postponed at RAN #82; CR was not provided to RAN2 #105

Decision: The document was **revised to RP-190633**.

RP-190633 Capability for aperiodic CSI-RS triggering with different numerology between PDCCH and CSI-RS

Type: CR For: Approval
38.331 v15.4.0 CR-0792 rev 2 Cat: F (Rel-15)

Source: Ericsson, Qualcomm, AT&T, T-Mobile USA, Sprint, Nokia, Nokia Shanghai Bell, CHTTL, Deutsche Telekom

(Replaces RP-190506)

Abstract:

company CR (compare RP-190504, CRs RP-190505, RP-190507); revision of CR RP-182857 which was postponed at RAN #82; CR was not provided to RAN2 #105

Discussion:

RAN chairman: CR is approved with a working agreement

Decision: The document was **approved**.

RP-190507 Capability for aperiodic CSI-RS triggering with different numerology between PDCCH and CSI-RS

Type: CR For: Approval
38.306 v15.4.0 CR-0073 rev 1 Cat: F (Rel-15)

Source: Ericsson, Qualcomm

(Replaces RP-182858)

Abstract:

company CR (compare RP-190504, CRs RP-190505, RP-190506); revision of CR RP-182858 which was postponed at RAN #82; CR was not provided to RAN2 #105

Decision: The document was **revised to RP-190634**.

RP-190634 Capability for aperiodic CSI-RS triggering with different numerology between PDCCH and CSI-RS

Type: CR For: Approval
38.306 v15.4.0 CR-0073 rev 2 Cat: F (Rel-15)

Source: Ericsson, Qualcomm, AT&T, T-Mobile USA, Sprint, Nokia, Nokia Shanghai Bell, CHTTL, Deutsche Telekom

(Replaces RP-190507)

Abstract:

company CR (compare RP-190504, CRs RP-190505, RP-190506); revision of CR RP-182858 which was postponed at RAN #82; CR was not provided to RAN2 #105

Discussion:

RAN chairman: CR is approved with a working agreement

Decision: The document was **approved**.

RP-190213 Revised WID: New Radio Access Technology

Type: WID revised For: Approval
Source: NTT DOCOMO, INC.

Abstract:

last approved WID: RP-181726; some impacted specifications are added

Decision: The document was **approved**.

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RP-190172 Rel-15 Work Item Exception for New Radio Access Technology - Core

Type: WI exception request *For: Approval*
Source: NTT DOCOMO, INC.

Abstract:

Update of open issues in the exception request RP-182791

Discussion:

Telecom Italia: is it possible to declare that the late drop is frozen

Huawei: RAN4 part is not yet done

RAN chairman: stage 3 for RAN1, RAN2, RAN3 of the late drop is completed, RAN4 stage 3 freeze for the late drop will be in June 19

RAN2 chairman: this is in line with what we indicated last time

conclusion: revised to clarify the stage 3 freeze date

Decision: The document was **revised to RP-190771**.

RP-190771 Rel-15 Work Item Exception for New Radio Access Technology - Core

Type: WI exception request *For: Approval*
Source: NTT DOCOMO, INC.

(Replaces RP-190172)

Decision: The document was **approved**.

9.3 Open REL-16 NR or NR&LTE SIs

9.3.1 Study on solutions for NR to support non-terrestrial networks (NTN) [RAN3 SI: FS_NR_NTN_solutions]

RP-190065 Status report for SI Study on solutions for NR to support non-terrestrial networks (NTN); rapporteur: Thales

Type: WI status report *For: (not specified)*
Source: RAN3

Discussion:

MCC: overall completion level missing

Thales: 25%

conclusion: 25% complete

Decision: The document was **noted**.

RP-190710 Revised SID for Study on solutions for NR to support non-terrestrial networks (NTN)

Type: SID revised *For: discussion*
Source: Thales

Abstract:

last approved SID: RP-182880

Decision: The document was **approved**.

9.3.2 Study on self-evaluation towards IMT-2020 submission [RAN SI: FS_5G_eval]

RP-190344 Work plan towards final submission of IMT-2020

Type: discussion *For: Discussion*
Source: Huawei

Discussion:

ITU-R AH convener: Vodafone would like to see LTE evaluation

Huawei: this will depend on company inputs, if they are provided, they can be added; also updates of the documents like link budget document can be considered

some were provided with ideal channel estimation which will be updated,

Intel: REL-16 will be considered?

Huawei: evaluation will be based on REL-15 (for REL-16 we do not have the complete information but REL-15 fulfills the IMT-2020 requirements)

ITU-R AH convener: agrees that updating description template with REL-16 would be enough as evaluation with REL-16 would difficult; so email discussion will take place on ITU-R AH reflector

ITU-R AH convener: deadline for submission is July 2nd, 2019; so we can have RAN, SA, PCG approval at/after RAN #84

Huawei: last time we had comments that were just brought up at PCG level so it would be helpful that review comments are already brought to TSGs to avoid delay

ITU-R AH convener: will inform RAN chairman so that he can raise this at PCG next week

Decision: The document was **endorsed**.

RP-190286 Clarifications and corrections to the 3GPP self-evaluation report

Type: discussion *For: Approval*
Source: Qualcomm Austria RFFE GmbH

Abstract:

moved from AI 8.2 to AI 9.3.2

Discussion:

ITU-R AH convener: difficult to solve this online

Huawei: other 2 Tdocs are related to the same type of changes, we should not remove results until there is an error

Nokia: most of the updates seem to be ok, FR1/FR2 TDD SUL is not supported and we should only submit what we support;

Huawei: we also have simulations with 16 CC should we also remove them?

Nokia: TDD SUL will require more generic work so the situation is different there

Qualcomm: has the same view, if there is no other way to meet requirements it would be useful to include it but this is not the case here

ITU-R AH convener: do we meet requirements removing config. C? and would ITU-R not wonder that we remove something that was included before? suggests to discuss this on ITU-R AH reflector

Qualcomm: instead of removing we could put it in [ ]

Huawei: would not like to put this in [ ]

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ITU-R AH convener: suggests to discuss this further on the ITU-R AH reflector

Huawei: can include part 1 Annex 2 at RAN #84

conclusion: part 1 of Annex 2 agreed, other inputs can be further discussed on ITU-R AH reflector

Decision: The document was **noted**.

RP-190530 Completion of LTE analysis for IMT2020 submission

Type: discussion For: Discussion
Source: VODAFONE Group Plc

Decision: The document was **withdrawn**.

RP-190209 Update description template - Link Budget template for eMBB usage scenario

Type: pCR For: (not specified)
37.910 v1.1.0
Source: ZTE, Sanechips

Discussion:

ITU-R AH convener: where is the text proposed to be added to TR 37.910?

ZTE: intention is to add the attached link budget evaluations

Huawei: in principle no problem with this but suggests to review the inputs on the ITU-R AH reflector first so that we are sure there are no errors

conclusion: RAN agreed to add further link budget evaluations, RAN ITU-R AH reflector will review the values of the attachments of RP-190209 in order to add them at RAN #84

Decision: The document was **postponed**.

RP-190343 Status report for SI: Study on Self-Evaluation towards IMT-2020 submission; rapporteur: Huawei

Type: WI status report For: (not specified)
Source: Huawei

Abstract:

RAN led SI

Discussion:

Intel: There is no spec support for >52.6GHz and so it doesn't make sense 3GPP produces the simulation results for 70 GHz without spec support. We would like to request to delete the following from the status report:

"In addition, FR2 evaluation results for 70 GHz in Indoor test environment are provided. These updated results need to be reviewed, and can be used as basis for final evaluation report."

Ericsson: we need to have 70GHz results, RAN1 work is ongoing, so far there are no results, that's true

Intel: we should clarify it was only 1 company and we do not need this for IMT-2020 submission

Huawei: agrees we have no frequency range for 70GHz, we can clarify this; we should clarify whether we will eventually have some results for IMT-2020 for 70GHz (it is not a requirement)

ITU-R AH convener: we can revise the status report to describe the status but the decision about whether we should have 70GHz results in the IMT-2020 submission will be a longer discussion that can happen on the ITU-R ad hoc reflector

Decision: The document was **revised to RP-190672**.

RP-190672 Status report for SI: Study on Self-Evaluation towards IMT-2020 submission; rapporteur: Huawei

Type: WI status report *For: -*
Source: Huawei

(Replaces RP-190343)

Discussion:

Huawei: 80%, target date unchanged (June 19)

Decision: The document was **noted**.

9.3.3 Feasibility Study on 6 GHz for LTE and NR in Licensed and Unlicensed Operations [RAN SI: FS_6GHz_LTE_NR]

RP-190162 Revised SID: Feasibility Study on 6 GHz for LTE and NR in Licensed and Unlicensed Operations

Type: SID revised *For: Approval*
Source: Ericsson

Abstract:

last approved SID: RP-182312; adding Charter as co-signing company

Decision: The document was **revised to RP-190681**.

RP-190681 Revised SID: Feasibility Study on 6 GHz for LTE and NR in Licensed and Unlicensed Operations

Type: SID revised *For: Approval*
Source: Ericsson

(Replaces RP-190162)

Abstract:

last approved SID: RP-182312;

Decision: The document was **approved**.

RP-190164 Regulatory updates on 5.925-7.125 GHz frequency range

Type: discussion *For: Discussion*
Source: Ericsson

Abstract:

This contribution gives the latest information from on going activities on frequency range 5.925-7.125GHz within the regulatory organisations

Decision: The document was **noted**.

RP-190163 Status Report for SI Feasibility Study on 6 GHz for LTE and NR in Licensed and Unlicensed Operations; rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: Ericsson

Abstract:

RAN led SI

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Decision: The document was **noted**.

9.3.4 Study on NR Vehicle-to-Everything (V2X) [RAN1 SI: FS_NR_V2X]

RP-190037 LS on V2X specification visibility in 3GPP (5GAA_S-190040; to: RAN; cc: SA, CT; contact: Huawei)

Type: LS in For: (not specified)
Original outgoing LS: 5GAA_S-190040, to RAN, cc SA, CT
Source: 5GAA WG4

Abstract:

RAN action requested; see draft reply LSs in RP-190146 from Huawei and RP-190522 from NEC

Discussion:

Deutsche Telekom: may open Panadora's box as you may see more verticals taking out their parts into separate specs; but having some description in TR would be ok

Ericsson: so far our specs are generic and not specific for certain use cases, but would also have no problem to have a TR

RAN chair: we may consider a 900 series TR with all the pointers

Qualcomm: would support to have an informative stage 2 TR with all the pointers, this could be done at the end of the WI

Mediatek: agrees with Qualcomm to have an informative document and to support 5GAA

NEC: also supports to have an informative TR, does not see a problem to cover multiple releases, but a normative spec could create problems

LG: would we cover only NR V2X or both LTE and NR V2X?

RAN chair: for the industry it may be useful to cover both

conclusion: consider to have an informative 900 series TR in the new WI, an LS answer was drafted in RP-190522

Decision: The document was **replied to in RP-190522**.

RP-190145 Discussion on 5GAA LS on V2X specification visibility in 3GPP

Type: discussion For: Discussion
Source: Huawei, HiSilicon

Abstract:

moved from AI 7 to AI 9.3.4; related to LSin 5GAA_S-190040 = RP-190037

Decision: The document was **not treated**.

RP-190146 Draft reply LS to 5GAA_S-190040 = RP-190037 on V2X specs visibility (to: 5GAA; cc: SA, CT; contact: Huawei)

Type: LS out For: Approval
to 5GAA, cc SA, CT
Source: Huawei

Abstract:

moved from AI 7 to AI 9.3.4; compare RP-190522

Decision: The document was **not treated**.

RP-190522 Draft reply LS to 5GAA_S-190040 = RP-190037 on V2X specification visibility in 3GPP (to: 5GAA WG4; cc: SA, CT; contact: NEC)

Type: LS out For: Approval
to 5GAA WG4, cc SA, CT
Source: NEC

Abstract:

Tdoc takes into account the needs of both the automotive industry and the long-standing structuring of radio standards; compare RP-190146

Decision: The document was **revised to RP-190647**.

RP-190647 Draft reply LS to 5GAA_S-190040 = RP-190037 on V2X specification visibility in 3GPP (to: 5GAA; cc: 5GAA WG4 SA, CT; contact: NEC)

Type: LS out For: Approval
to 5GAA, cc 5GAA WG4, SA, CT
Source: NEC

(Replaces RP-190522)

Discussion:

RAN chairman: is rather an informative descrition as stage 2 is normative

Deutsche Telekom: V2X is wider than RAN is this helpful for 5GAA so they do not just want a sidelink description

Huawei: immediate need is more for radio

Nokia: we should replace "sidelink" by "RAN aspects" in TR title

Telecom Italia: we should have SA in to: field

RAN chair: also add SA in actions

Decision: The document was **revised to RP-190756**.

RP-190756 Reply LS to 5GAA_S-190040 = RP-190037 on V2X specification visibility in 3GPP (to: 5GAA, SA; cc: 5GAA WG4, CT; contact: NEC)

Type: LS out For: Approval
to 5GAA, SA, cc 5GAA WG4, CT
Source: RAN

(Replaces RP-190647)

Discussion:

conclusion: LS was at first approved unseen, attachments to be added as well once they are available; later a revision was needed as the attachment changed

Decision: The document was **revised to RP-190767**.

RP-190767 Reply LS to 5GAA_S-190040 = RP-190037 on V2X specification visibility in 3GPP (to: 5GAA, SA; cc: 5GAA WG4, CT; contact: NEC)

Type: LS out For: Approval
to 5GAA, SA, cc 5GAA WG4, CT
Source: RAN

(Replaces RP-190756)

Discussion:

LS was sent to SA on Thu evening of RAN #83

Decision: The document was **approved**.

RP-190038 LS on 2Rx Antennas for NR V2X Sidelink (5GAA_S-190045; to: RAN; cc: RAN1, RAN4; contact: GM)

Type: LS in For: (not specified)
Original outgoing LS: 5GAA_S-190045, to RAN, cc RAN1, RAN4
Source: 5GAA WG4

Abstract:

RAN action requested

Discussion:

RAN chairman: went into WI discussion

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190225 Status report of SI: Study on NR V2X; rapporteur: LG Electronics

Type: WI status report For: (not specified)
Source: RAN1

Discussion:

conclusion: SI is completed

Decision: The document was **noted**.

RP-190262 Support of VRU in NR V2X

Type: discussion For: Decision
Source: Apple

Abstract:

VRU=vulnerable road user

Discussion:

Proposal 1: To work on the VRU use case illustrated by 5GAA in Rel-16 NR V2X WI.

Proposal 2: Suggest to focus on power saving aspect for VRU in Rel-16 NR V2X. A study phase on VRU could be arranged.

RAN chairman: was this included in the drafting of the V2X WI in REL-16? no

Huawei: requirements were set by SA1 and they were included in the WI, this VRU case was not there and would require a corresponding study

LG: looking at the pressure for downscoping, we will not have time to consider this case in the REL-16 V2X WI

Mediatek: supports proposals 1 and 2

RAN chair: without more support this use case will probably go into REL-17

conclusion: if some of the VRU aspects can still be taken into account in the new REL-16 WID, that's ok otherwise REL-17

Decision: The document was **noted**.

RP-190142 TR 38.885 v2.0.0 on NR Study on Vehicle-to-Everything; for approval

Type: draft TR *For: Approval*
38.885 v2.0.0
Source: Huawei

Abstract:

RAN1 TR 38.885 is submitted for approval

Decision: The document was **approved**.

RP-190224 Revised SID: Study on NR V2X

Type: SID revised *For: Approval*
Source: LG Electronics

(Replaces RP-182491)

Abstract:

last approved SID: RP-182491

Decision: The document was **approved**.

9.3.5 Study on UE Power Saving for NR [RAN1 SI: FS_NR_UE_pow_sav]

RP-190297 Status report for SI: Study on UE Power Saving for NR; rapporteur: CATT

Type: WI status report *For: (not specified)*
Source: RAN1

Abstract:

wrong Tdoc type discussion in Tdoc request

Discussion:

Nokia: concerned about two aspects: completion percentage seems too high given the remaining work in RAN2 part of the SID, and it is not clear how to proceed with RAN1 WID while the corresponding RAN1/RAN2 SID is still ongoing

Decision: The document was **revised to RP-190630**.

RP-190630 Status report for SI: Study on UE Power Saving for NR; rapporteur: CATT

Type: WI status report *For: -*
Source: RAN1

(Replaces RP-190297)

Discussion:

MCC: late submission

Nokia: concerned about two aspects: completion percentage seems too high given the remaining work in RAN2 part of the SID, and it is not clear how to proceed with RAN1 WID while the corresponding RAN1/RAN2 SID is still ongoing

Nokia: 60% more realistic than 90%

conclusion: we keep 90%

Decision: The document was **noted**.

RP-190298 Udpate TR38.840

Type: discussion *For: Discussion*
Source: CATT

Abstract:

Update TR38.840 before RAN#83

Discussion:

MCC: a TR in v0.2.0 as discussion Tdoc (wrong Tdoc type) and without presentation cover?

Decision: The document was **withdrawn**.

RP-190574 TR 38.840 v1.0.0 on Study on UE power saving in NR; for information

Type: draft TR 38.840 v1.0.0 *For: Information*
Source: CATT

Abstract:

RAN1 TR 38.840 is provided for information

Decision: The document was **noted**.

9.3.6 Study on physical layer enhancements for NR URLLC [RAN1 SI: FS_NR_L1enh_URLLC]

RP-190030 LS on 5G_URLLC (S2-1813333; to: RAN2, RAN3; cc: RAN; contact: Huawei)

Type: LS in *For: (not specified)*
Original outgoing LS: S2-1813333, to RAN2, RAN3, cc RAN
Source: SA2

Abstract:

resubmission of RP-182694 which was not treated at RAN #82; FS_5G_URLLC = SA2 REL-16 SI Study on enhancement of URLLC supporting in 5GC; no RAN action requested

Discussion:

Huawei: no action for RAN

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190339 Status report for SI: Study on physical layer enhancements for NR ultra-reliable and low latency case (URLLC); rapporteur: Huawei

Type: WI status report *For: (not specified)*
Source: RAN1

Discussion:

conclusion: SI is completed

Decision: The document was **noted**.

RP-190423 TR 38.824 v2.0.0 Study on physical layer enhancements for NR ultra-reliable low latency communication (URLLC); for approval

Type: draft TR *For: Approval*
38.824 v2.0.0
Source: Huawei

Abstract:

RAN1 TR 38.824 is submitted for approval

Discussion:

MCC: some section/figure numbering will still be fixed when MCC will produce v16.0.0

Decision: The document was **revised to RP-190621**.

RP-190621 TR 38.824 v2.0.1 Study on physical layer enhancements for NR ultra-reliable low latency communication (URLLC); for approval

Type: draft TR *For: Approval*
38.824 v2.0.1
Source: Huawei

(Replaces RP-190423)

Abstract:

RAN1 TR 38.824 is submitted for approval

Decision: The document was **approved**.

9.3.7 Study on optimisations on UE radio capability signalling - NR/E-UTRA Aspects [RAN2 SI: FS_RACS_RAN]

RP-190022 Reply LS to S2-184608 = RP-180620 on optimisation of UE capability signalling (R2-1816018; to: SA2; cc: SA, RAN, RAN3, CT1, CT4; contact: MediaTek)

Type: LS in *For: (not specified)*
Original outgoing LS: R2-1816018, to SA2, cc SA, RAN, RAN3, CT1, CT4
Source: RAN2

Abstract:

resubmission of RP-182205 which was not treated at RAN #82; no RAN action requested

Discussion:

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190122 LS on Completion of FS_RACS study (S2-1902903; to: RAN, RAN2, RAN3, CT1, CT4; cc: -; contact: Qualcomm)

Type: LS in *For: (not specified)*
Original outgoing LS: S2-1902903, to RAN, RAN2, RAN3, CT1, CT4, cc -
Source: SA2

Abstract:

no explicit RAN action requested

Discussion:

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190295 Status Report for SI Study on optimisations on UE radio capability signalling – NR/E-UTRA Aspects; rapporteur: MediaTek Inc.

Type: WI status report *For: (not specified)*
Source: RAN2

Discussion:

conclusion: SI is completed

Decision: The document was **noted**.

RP-190474 Status report for SI Study on optimisations on UE radio capability signalling – NR/E-UTRA Aspects; rapporteur: MediaTek Inc.

Type: WI status report *For: (not specified)*
Source: RAN2

Abstract:

see RP-190295 instead

Decision: The document was **withdrawn**.

RP-190296 TR 37.873 v1.0.0 on Study on optimisations on UE radio capability signalling – NR/E-UTRA Aspects; for approval

Type: draft TR *For: Approval*
37.873 v1.0.0
Source: MediaTek Inc.

Abstract:

RAN2 TR 37.873 is submitted for 1-step approval

Decision: The document was **approved**.

9.3.8 Study on NR Industrial IoT [RAN2 SI: FS_NR_IIOT]

RP-190047 Reply LS S2-189051 = RP-181982 on TSN integration in the 5G System (R2-1902371; to: SA2; cc: RAN1, RAN3, SA1, RAN; contact: Nokia)

Type: LS in *For: (not specified)*
Original outgoing LS: R2-1902371, to SA2, cc RAN1, RAN3, SA1, RAN
Source: RAN2

Abstract:

no RAN action requested; moved from AI 7 to AI 9.3.8

Discussion:

RAN chair: only for information for RAN

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190046 Reply LS to S2-1813392 = RP-182698 on RAN Impact analysis due to TSN (R2-1902369; to: SA2; cc: RAN1, RAN3, RAN, SA; contact: Ericsson)

Type: LS in *For: (not specified)*
Original outgoing LS: R2-1902369, to SA2, cc RAN1, RAN3, RAN, SA
Source: RAN2

Abstract:

no RAN action requested; moved from AI 7 to AI 9.3.8

Discussion:

RAN chair: only for information for RAN

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190048 LS on RoHC utilization for Ethernet header compression (R2-1902372; to: IETF, IEEE 802; cc: RAN; contact: Nokia)

Type: LS in *For: (not specified)*
Original outgoing LS: R2-1902372, to IETF, IEEE 802, cc RAN
Source: RAN2

Abstract:

no RAN action requested

Discussion:

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190188 Status Report of SI: Study on NR Industrial Internet of Things (IoT); rapporteur: Nokia

Type: WI status report *For: (not specified)*
Source: RAN2

Discussion:

conclusion: SI is completed

Decision: The document was **noted**.

RP-190476 EHC Solution

Type: discussion *For: (not specified)*
Source: MediaTek Inc.

Decision: The document was **noted**.

RP-190189 TR 38.825 v1.0.0 on Study on NR Industrial Internet of Things (IoT); for approval

Type: draft TR *For: Approval*
38.825 v1.0.0
Source: Nokia, Nokia Shanghai Bell

Abstract:

RAN2 TR 38.825 is submitted for 1-step approval

Decision: The document was **approved**.

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9.3.9 Study on Channel Modelling for Indoor Industrial Scenarios [RAN1 SI: FS_IIIOT_CM]

RP-190469 Status report for SI on Channel Modeling for Indoor Industrial Scenarios; rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN1

Decision: The document was **noted**.

9.3.10 Study on RAN-centric Data Collection and Utilization for LTE and NR [RAN3 SI: FS_LTE_NR_data_collect]

RP-190320 Status report for SI Study on RAN-centric data collection and utilization for LTE and NR; rapporteur: CMCC

Type: WI status report *For: (not specified)*
Source: RAN3

Decision: The document was **revised to RP-190608**.

RP-190608 Status report for SI Study on RAN-centric data collection and utilization for LTE and NR; rapporteur: CMCC

Type: WI status report *For: -*
Source: RAN3

(Replaces RP-190320)

Discussion:

MCC: late Tdoc request

CMCC: TU allocation changed

RAN2 chairman: suggest to not increase the TUs but we can discuss overall RAN2 TU picture on Wed

Decision: The document was **noted**.

9.3.11 Study on radiated metrics & test methodology for the verif. of multi-ant. recept. perf. of NR UEs [RAN4 SI: FS_NR_MIMO_OTA_test]

RP-190234 Status Report for SI: Study on radiated metrics and test methodology for the verification of multi-antenna reception performance of NR UEs; rapporteur: CAICT, OPPO, Samsung

Type: WI status report *For: (not specified)*
Source: RAN4

Decision: The document was **noted**.

9.3.12 Study on NR beyond 52.6 GHz [RAN SI: FS_NR_beyond_52GHz]

RP-190187 Use-cases for FS_NR_beyond_52GHz

Type: discussion *For: Agreement*
Source: Charter Communications, Inc

Abstract:

This contribution aims to identify use-cases which could be employed when using frequencies >52.6GHz.

Decision: The document was **not treated**.

RP-190207 Discussions on potential use cases and deployment scenarios beyond 52.6GHz

Type: discussion *For: (not specified)*
Source: ZTE, Sanechips

Decision: The document was **not treated**.

RP-190239 Use cases and deployment scenarios for NR>52.6

Type: discussion *For: (not specified)*
Source: Qualcomm India Pvt Ltd

Decision: The document was **not treated**.

RP-190281 Use case and design requirements for NR beyond 52.6 GHz

Type: discussion *For: Decision*
Source: vivo

Decision: The document was **not treated**.

RP-190327 Use Case and Deployment Scenarios for spectrum above 52.6GHz

Type: discussion *For: Discussion*
Source: Intel Corporation

Abstract:

Use Case and Deployment Scenarios for spectrum above 52.6GHz

Decision: The document was **not treated**.

RP-190345 NR use cases and scenarios in frequencies above 52.6 GHz

Type: discussion *For: Discussion*
Source: Huawei, HiSilicon

Decision: The document was **not treated**.

RP-190470 Design requirements for NR beyond 52.6 GHz

Type: discussion *For: Decision*
Source: Ericsson

Decision: The document was **not treated**.

RP-190471 Use Cases and Deployments for Beyond 52.6 GHz

Type: discussion *For: Decision*
Source: Ericsson

Decision: The document was **not treated**.

RP-190492 NR beyond 52.6GHz – Potential use cases and deployment scenarios

Type: discussion *For: Decision*
Source: Nokia, Nokia Shanghai Bell

Abstract:

This document identifies potential use cases, deployment scenarios and performance targets for NR beyond 52.6 GHz.

Decision: The document was **not treated**.

RP-190331 Draft TP to TR 38.807 – Use Cases and Deployment Scenarios

Type: pCR For: Approval
38.807 v0.0.4
Source: Intel Corporation

Discussion:

wrong Tdoc type discussion in Tdoc request

Intel: is for initial comments/review here

vivo: has problems with the D2D description

Decision: The document was **revised to RP-190698**.

RP-190698 Draft TP to TR 38.807 – Use Cases and Deployment Scenarios

Type: pCR For: Approval
38.807 v0.0.4
Source: Intel Corporation

(Replaces RP-190331)

Discussion:

RAN chairman: the plan is to approve a pCR at RAN #84

Decision: The document was **postponed**.

RP-190495 NR beyond 52.6GHz – Design requirements and considerations

Type: discussion For: Decision
Source: Nokia, Nokia Shanghai Bell

Abstract:

This document identifies design requirements and considerations for NR beyond 52.6 GHz that are on top of regulatory requirements.

Decision: The document was **not treated**.

RP-190357 Survey on Japanese spectrum usage and regulatory requirements in the frequency band above 52.6GHz

Type: discussion For: Decision
Source: NTT DOCOMO, INC., KDDI

Abstract:

see RP-190359 instead

Decision: The document was **withdrawn**.

RP-190359 Survey on Japanese spectrum usage and regulatory requirements in the frequency band above 52.6GHz

Type: discussion For: Decision
Source: NTT DOCOMO INC., KDDI, Softbank

Decision: The document was **not treated**.

RP-190208 Review Draft TP to TR 38.807 - Operational requirements: spectrum availability and regulatory requirements

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Type: pCR For: Approval
38.807 v0.0.4
Source: ZTE, Sanechips

Discussion:

wrong Tdoc type discussion in Tdoc request

Decision: The document was **revised to RP-190571**.

RP-190571 pCR to TR 38.807 regarding Operational requirements: spectrum availability and regulatory requirements

Type: pCR For: Approval
38.807 v0.0.4
Source: ZTE, Sanechips

(Replaces RP-190208)

Decision: The document was **not treated**.

RP-190472 TP for TR 38.807: Updates on the Global and CEPT spectrum availability and regulatory requirements for bands beyond 52.6GHz

Type: pCR For: Approval
38.807 v0.0.4
Source: Ericsson

Discussion:

wrong Tdoc type discussion in Tdoc request

Decision: The document was **not treated**.

RP-190568 pCR to TR 38.807 v0.0.4 on Operational Requirements

Type: pCR For: Approval
38.807 v0.0.4
Source: Intel

Decision: The document was **revised to RP-190614**.

RP-190614 pCR to TR 38.807 v0.0.4 on Operational Requirements

Type: pCR For: Approval
38.807 v0.0.4
Source: Intel

(Replaces RP-190568)

Discussion:

MCC: multiple versions of this Tdoc were published

Decision: The document was **revised to RP-190694**.

RP-190694 pCR to TR 38.807 v0.0.4 on Operational Requirements

Type: pCR For: Approval
38.807 v0.0.4
Source: Intel

(Replaces RP-190614)

Decision: The document was **approved**.

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RP-190330 TR 38.807 v0.0.5: Study on requirements for NR beyond 52.6 GHz

Type: draft TR *For: Agreement*
38.807 v0.0.5
Source: Intel Corporation

Abstract:

RAN TR 38.807 covering agreements of RAN #83

Discussion:

David: approved pCR and TR are not the same

MCC: as rapporteur you implement approved pCRs into the TR as they are; is pCR correct or TR?

Intel: pCR is correct

RAN chair: so then we need to revise the TR

Decision: The document was **revised to RP-190697**.

RP-190697 TR 38.807 v0.1.0: Study on requirements for NR beyond 52.6 GHz

Type: draft TR *For: Agreement*
38.807 v0.1.0
Source: Intel Corporation

(Replaces RP-190330)

Abstract:

RAN TR 38.807 covering agreements of RAN #83

Decision: The document was **agreed**.

RP-190695 Revised SID on Study on NR beyond 52.6 GHz

Type: SID revised *For: discussion*
Source: Intel

Abstract:

last approved SID: RP-182861

Discussion:

Nokia: why were spectrum ranges deleted? also coming back to objective 1 in Dec. is not precluded

Huawei: we approved such a revision already last time

Decision: The document was **rejected**.

RP-190329 Status report for SI: Study on NR beyond 52.6 GHz; rapporteur: Intel

Type: WI status report *For: (not specified)*
Source: Intel Corporation

Abstract:

RAN led SI

Discussion:

Intel: 40%, Dec.19

Decision: The document was **noted**.

9.3.13 Study on NR positioning support [RAN1 SI: FS_NR_pos]

RP-190050 LS on RAN2 conclusion for NR positioning SI (R2-1902479; to: RAN1, RAN3, SA2, SA3; cc: RAN; contact: Intel)

Type: LS in *For: (not specified)*
Original outgoing LS: R2-1902479, to RAN1, RAN3, SA2, SA3, cc RAN
Source: RAN2

Abstract:

no RAN action requested

Discussion:

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190119 LS on RAN3 conclusion for NR positioning SI (R3-191141; to: RAN2, RAN1, SA2, SA3, RAN; cc: -; contact: Intel)

Type: LS in *For: (not specified)*
Original outgoing LS: R3-191141, to RAN2, RAN1, SA2, SA3, RAN, cc -
Source: RAN3

Abstract:

no explicit RAN action requested; note: printing error in LS title in the Tdoc which talks about RAN2 instead of RAN3

Discussion:

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190196 Status report of SI: Study on NR positioning support; rapporteur: Intel Corporation

Type: WI status report *For: (not specified)*
Source: RAN1

Discussion:

conclusion: SI is completed

Decision: The document was **noted**.

RP-190478 TR 38.855 v2.0.0 on Study on NR positioning support; for approval

Type: draft TR *For: Approval*
38.855 v2.0.0
Source: Ericsson

Abstract:

RAN1 TR 38.855 is submitted for approval

Discussion:

conclusion: removing [ ] from accuracy numbers

Decision: The document was **revised to RP-190724**.

RP-190724 TR 38.855 v2.1.0 on Study on NR positioning support; for approval

Type: draft TR *For: Approval*
38.855 v2.1.0
Source: Ericsson

(Replaces RP-190478)

Abstract:

RAN1 TR 38.855 is submitted for approval

Decision: The document was **approved**.

9.3.14 Study on 7 - 24 GHz frequency range for NR [RAN4 SI: FS_7to24GHz_NR]

RP-190372 Status report for SI: Study on 7 – 24 GHz frequency range; rapporteur: Huawei

Type: WI status report *For: (not specified)*
Source: RAN4

Discussion:

MCC: target date missing (was Dec.19)

Huawei: target is still Dec.19

Decision: The document was **noted**.

RP-190373 SID revision: Study on 7 – 24 GHz frequency range

Type: SID revised *For: Approval*
Source: Huawei

Abstract:

last approved SID: RP-182884; addition of TR number

Decision: The document was **approved**.

9.3.15 Study on high power UE (power class 2) to EN-DC(1 LTE FDD band and 1 NR TDD band) [RAN4 SI: FS_ENDC_UE_PC2_FDD_TDD]

RP-190171 Status report for SI Study on high power UE (power class 2) for EN-DC (1 LTE FDD band + 1 NR TDD band); rapporteur: China Unicom

Type: WI status report *For: (not specified)*
Source: RAN4

Decision: The document was **noted**.

RP-190167 Revised SID: Study on high power UE (power class 2) for EN-DC (1 LTE FDD band + 1 NR TDD band)

Type: SID revised *For: Approval*
Source: China Unicom

(Replaces RP-182895)

Abstract:

wrong Tdoc type SID new in Tdoc request; last approved SID: RP-182895

Discussion:

MCC: TR number still not allocated?

Decision: The document was **approved**.

9.4 Open REL-16 NR or NR&LTE WIs (not spectrum related)

9.4.1 Enhancements on MIMO for NR [RAN1 WI: NR_eMIMO]

RP-190054 LS on FR2 RF Exposure mitigation methods (R4-1902193; to: RAN1; cc: RAN; contact: Qualcomm)

Type: LS in *For: (not specified)*
Original outgoing LS: R4-1902193, to RAN1, cc RAN
Source: RAN4

Abstract:

no RAN action requested

Discussion:

RAN chair: is this related to the Nokia duty cycle Tdoc?

Samsung: understands that RAN1 has no real action

Nokia: we would not like to preclude this

RAN chair: see way forward RP-190696 first

Qualcomm: this LS is about REL-16, while RP-190696 is about REL-15

Apple: thinks that something needs to be done

Samsung: assumes RAN1 will discuss it and can then decide what to do

ZTE: thinks that this LS has some relation to the duty cycle discussion but discussion will happen in RAN1

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190149 Status Report for WI Enhancements on MIMO for NR; rapporteur: Samsung

Type: WI status report *For: (not specified)*
Source: RAN1

Discussion:

Nokia: concerned about the workload in this WI and sees a need to review the objectives in order to ensure the work can be completed in time;

MCC: Perf. part target 9 months after Core part target is not acceptable

RAN chair: so there is a request for downscoping

Qualcomm: instead of addressing optimisations we should focus on areas where we can make progress

Nokia: fears that also at RAN #84 we will further discuss the scope in order to be able to finish something so an early downscoping on aspects where we can make progress would help

Intel: thinks that multi-panel operation should be removed from the WI

LG: supports Qualcomm's view, we started with 4 main topics, multi-panel discussion does not converge, would suggest as a way forward to remove multi-panel objective in June 19 if proponents do not converge (this would encourage the parties to compromise)

vivo: supports to remove objectives where there is no progress possible

Apple: we have a Tdoc on this

RAN1 chair: would suggest to check the situation in June 19 and not to remove objectives already now

Qualcomm: there is a deadlock on multi-panel so breaking this here at RAN #83 would help

RAN chair: any TUs allocated for MIMO in RAN2?

RAN2 chair: yes, would be useful to keep these TUs in the last

conclusion: Perf. part target is June 20 (not Sep.20) and we will not yet do a downscoping

Decision: The document was **noted**.

RP-190197 Discussion on NR MIMO maintenance work

Type: discussion *For: Decision*
Source: Intel Corporation

Abstract:

moved from AI 9.8 to AI 9.4.1

Decision: The document was **revised to RP-190573**.

RP-190573 Discussion on NR MIMO maintenance work

Type: discussion *For: Decision*
Source: Intel Corporation

(Replaces RP-190197)

Discussion:

proposal: Consider follow up maintenance work for NR in RAN1, e.g. as part of Rel-16 TEI work or Rel-16 eMIMO WI, to resolve these issues in backwards compatible manner if applicable

Qualcomm: we have not the same view on all items

Samsung: last topic was discussed for one year and we had a deadlock situation

RAN chair: this is rather to increase the scope than reducing it; I do not like the idea to handle this sort of changes under TEI, find a proper home (WI) for this

Samsung: some aspects could also be shifted to REL-17

ZTE: supports the motivation of this Tdoc, some aspects could be left to UE implementation

Nokia: critical MIMO issues have to be solved, addressing them in REL-17 would not be useful

conclusion: will come back in June 19, we will discourage TEI usage (anyway no TEI expected in Q2/2019), check if topics that should be considered can be done in an existing WI

Decision: The document was **noted**.

RP-190236 Considerations on NR MIMO enhancements

Type: discussion *For: Decision*
Source: Apple Inc.

Decision: The document was **noted**.

9.4.2 Cross Link Interference (CLI) handling and RIM for NR [RAN1 WI: NR_CLI_RIM]

RP-190263 Status report of WI: Cross Link Interference (CLI) handling and Remote Interference Management (RIM) for NR; rapporteur; LG Electronics

Type: WI status report *For: (not specified)*
Source: RAN1

Decision: The document was **revised to RP-190619**.

RP-190619 Status report of WI: Cross Link Interference (CLI) handling and Remote Interference Management (RIM) for NR; rapporteur; LG Electronics

Type: WI status report *For: -*
Source: RAN1

(Replaces RP-190263)

Discussion:

MCC: late submission; target date change: Core/Perf.: +6 months

Decision: The document was **revised to RP-190667**.

RP-190667 Status report of WI: Cross Link Interference (CLI) handling and Remote Interference Management (RIM) for NR; rapporteur; LG Electronics

Type: WI status report *For: -*
Source: RAN1

(Replaces RP-190619)

Discussion:

MCC: late submission; target date change: Core/Perf.: +6 months

LG: additional TU request for RAN2

Decision: The document was **noted**.

RP-190304 Update of evaluation results on RIM

Type: CR *For: Approval*
38.866 v16.0.0 *CR-0001* *Cat: F (Rel-16)*

Source: CATT

Abstract:

company CR; update of simulation results for TR 38.866; was proposed twice in RAN1 as text proposal but was never treated there; WI rapporteur suggested therefore submission to RAN

Decision: The document was **approved**.

RP-190264 Revised WID on Cross Link Interference (CLI) handling and Remote Interference Management (RIM) for NR

Type: WID revised *For: Approval*
Source: LG Electronics

Abstract:

last approved WID: RP-182864

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Decision: The document was **revised to RP-190666**.

RP-190666 Revised WID on Cross Link Interference (CLI) handling and Remote Interference Management (RIM) for NR

Type: WID revised *For: Approval*
Source: LG Electronics

(Replaces RP-190264)

Discussion:

MCC: target date unclear as missing for new TR

LG: target date is RAN #86

MCC: please also indicate that spec is triggered by Core part

Decision: The document was **revised to RP-190700**.

RP-190700 Revised WID on Cross Link Interference (CLI) handling and Remote Interference Management (RIM) for NR

Type: WID revised *For: Approval*
Source: LG Electronics

(Replaces RP-190666)

Decision: The document was **approved**.

9.4.3 NR Mobility Enhancements [RAN2 WI: NR_Mob_enh]

RP-190488 Status report for WI: NR Mobility Enhancements; rapporteur: Intel

Type: WI status report *For: (not specified)*
Source: RAN2

Discussion:

MCC: target date change (Core: +3months, Perf: +9 months)

Decision: The document was **revised to RP-190644**.

RP-190644 Status report for WI: NR Mobility Enhancements; rapporteur: Intel

Type: WI status report *For: -*
Source: RAN2

(Replaces RP-190488)

Discussion:

MCC: late submission, target date change (Core: +3months, Perf: +9 months)

Decision: The document was **noted**.

RP-190489 Revised WID: NR Mobility Enhancements

Type: WID revised *For: Approval*
Source: Intel Corporation

Abstract:

last approved WID: RP-181433

Decision: The document was **approved**.

9.4.4 Multi-RAT Dual-Connectivity and CA enhancements (LTE, NR) [RAN2 WI: LTE_NR_DC_CA_enh]

RP-190184 Status Report for WI: Multi-RAT Dual-Connectivity and Carrier Aggregation enhancements (LTE, NR); rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN2

Discussion:

MCC: target date change (Core: +3 months)

conclusion: Perf. target date is Sep.19

Decision: The document was **noted**.

RP-190748 Way forward on cross-carrier scheduling scope in multi-RAT dual-connectivity and CA enhancement WID

Type: discussion *For: -*
Source: Nokia, Nokia Shanghai Bell, Qualcomm, Ericsson, Intel

Abstract:

related to RP-190184

Discussion:

Qualcomm: is a good way to clarify "is it in the scope or not?" so we support this document

RAN chairman: anyone objecting to endorse this way forward? none

Decision: The document was **endorsed**.

RP-190482 NR CA Enhancement and SCell Power Saving

Type: discussion *For: (not specified)*
Source: MediaTek Inc.

Discussion:

Observation 1: There is an overlapped topic between NR MR-DC/CA enhancement and NR UE power saving on how to achieve LTE-like UE dormancy in a SCell.

Proposal 1: For NR CA enhancement, MR-DC/ CA enhancement WI focus on how to reduce SCell activation latency, and NR UE power saving WI focus on power saving for an activated SCell subject to a small latency increase.

Ericsson: power saving SI ongoing in RAN2 so it is premature to discuss this already

RAN1 chair: there is no need to discuss this now

Interdigital: agrees with RAN1 chair for RAN1 part, and thinks this can be clarified in RAN2 agenda to avoid misunderstandings

LG: no need to discuss this here or to come back on this in June

RAN chair: gets the impression that we have no real problem at the moment and if there really is one, we can address it in June 19

RAN2 chair: sees no overlap in objectives, maybe there is an overlap in solutions but this can be handled in WGs

Decision: The document was **noted**.

RP-190452 Revised WID: Multi-RAT Dual-Connectivity and Carrier Aggregation enhancements

Type: WID revised *For: Approval*
Source: Ericsson

(Replaces RP-182076)

Abstract:

last approved WID: RP-182076

Discussion:

Nokia: we had a comment in the status report

RAN chair: please bring a Tdoc next time on this

NEC: discrepancy: SR: March/June, revWID: March/Sep.?

Ericsson: WID is correct

Decision: The document was **approved**.

9.4.5 Core part: eNB(s) Architecture Evolution for E-UTRAN and NG-RAN [RAN3 WI: LTE_NR_arch_evo-Core]

RP-190352 Status report for WI Core part: eNB(s) Architecture Evolution for E-UTRAN and NG-RAN; rapporteur: China Unicom

Type: WI status report *For: (not specified)*
Source: RAN3

Discussion:

MCC: late submission

Decision: The document was **noted**.

9.4.6 NR-based access to unlicensed spectrum [RAN1 WI: NR_unlic]

RP-190039 LS on Use of no/short LBT in the 3GPP NR-U specification (IEEE_802.11_WG_LS190118; to: RAN1; cc: RAN, IEEE-SA Standards Board, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee; contact: IEEE 802.11 Working Group Chair)

Type: LS in *For: (not specified)*
Original outgoing LS: IEEE_802.11_WG_LS190118, to RAN1, cc RAN, IEEE-SA Standards Board, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee
Source: IEEE 802.11 WG

Abstract:

no RAN action requested

Discussion:

RAN chair: RAN1 looked at this

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190040 LS on Invitation to Coexistence Workshop in Vienna in July 2019 (IEEE_802.11_WG_LS190220; to: RAN; cc: RAN1, IEEE-SA Standards Board, IEEE

802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee; contact: IEEE 802.11 Working Group Chair)

Type: LS in For: (not specified)
Original outgoing LS: IEEE_802.11_WG_LS190220, to RAN, cc RAN1, IEEE-SA Standards Board, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee
Source: IEEE 802.11 WG

Abstract:

Note: The same invitation was also sent to Wireless Broadband Alliance (WBA), ETSI BRAN, GSMA, Wi-Fi Alliance (WFA); no explicit RAN action requested

Discussion:

Ruckus: as deadline is 12.5. and if we treat it at RAN #84, we need to clarify what we will reply/contribute

Decision: The document was **replied to in RP-190661**.

RP-190185 On the upcoming IEEE-3GPP Workshop on NR-U

Type: discussion For: (not specified)
Source: Qualcomm Korea

Abstract:

moved from AI 7 to AI 9.4.6

Discussion:

Broadcom: it would have been better to raise the aspects when the IEEE LS was discussed in IEEE

RAN chair: does not see a real problem that this is an IEEE workshop as the workshops are usually an informative exchange and not binding in a normative way

Ericsson: IEEE decisions are not consensus based

ZTE: using 3GPP logo gives a misleading impression because 3GPP is invited but not inviting

Huawei: for the input from 3GPP to the IEEE workshop, we should not take RAN1 time for preparing it

RAN chair: agrees

Decision: The document was **noted**.

RP-190661 Draft reply to EEE_802.11_WG_LS190220 = RP-190040 on Invitation to Coexistence Workshop in Vienna in July 2019 (to: IEEE 802.11 WG; cc: RAN1; contact: RAN chairman (Nokia))

Type: LS out For: approval
to IEEE 802.11 WG, cc RAN1
Source: RAN chairman (Nokia)

Discussion:

BT: there were some comments already by email

Ericsson: would prefer to remove the 3GPP logo because this is an IEEE workshop

Qualcomm: agrees with Ericsson, they claim other logos cannot be added for copyright issues but 3GPP logo is kept? Same applies there. The workshop is under IEEE and if they cannot add all logos, then remove also the 3GPP logo.

RAN chair: ok, can add this

Ruckus: can you add cc RAN2/RAN4 (as in original LS), also reminds that workshop is in a different hotel than IEEE meeting

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Broadcom: NR-U rapporteurs could be part of the programme committee

Nokia: we could clarify that 3GPP is considering itself as invitee and not as organizer of this workshop

Broadcom: wants to remove "on a common preamble for 6GHz" from last bullet

Ericsson: insists to keep this text

Broadcom: the text implies to limit the discussion to 6GHz only but the discussion is open for 5GHz and 6GHz

Ericsson: 6GHz is based on the WID

RAN chairman: the last bullet is about what RAN will do and we have full control about this

Broadcom: does not agree to limit to 6GHz

RAN chairman: could you live with just saying "common preamble"?

Broadcom: that's ok

Ericsson: insists that common preamble will be only considered for 6GHz

Qualcomm: there are 25 LAA networks up and running so reopening this would not be possible

Ericsson: we need to define the scope for the future discussions in RAN1 and RAN

Broadcom: has no intention to repeat discussions

RAN chairman: clarifies that we will not repeat discussions but if there are new aspects we will consider them

Ericsson: for 5GHz there is a legacy, fears that LTE LAA discussions could be reopened if we are not clear

RAN chairman: how many 3GPP delegates can we expect at the workshop (do not count IEEE delegated)? counted: ~30. So we will indicate 35.

Decision: The document was **revised to RP-190745**.

RP-190745 Reply to IEEE_802.11_WG_LS190220 = RP-190040 on Invitation to Coexistence Workshop in Vienna in July 2019 (to: IEEE 802.11 WG; cc: RAN1, RAN2, RAN4; contact: RAN chairman (Nokia))

Type: LS out *For: approval*
to IEEE 802.11 WG, cc RAN1, RAN2, RAN4
Source: RAN

(Replaces RP-190661)

Decision: The document was **approved**.

RP-190240 Status report for WI NR-based access to unlicensed spectrum; rapporteur: Qualcomm

Type: WI status report *For: (not specified)*
Source: RAN1

Discussion:

Broadcom: wants to discuss the status report in connection with RP-190362 and RP-190363

MCC: target date change (Perf.: +6 months)

Note: The rapporteur clarified after RAN #83 that the target dates in this status report are wrong and that the correct targets are Core part: March 20; Perf. part: Sep.20; in line with revised WID RP-190706.

Decision: The document was **noted**.

RP-190362 Discussion on the use of preambles for better coexistence in 5 GHz

Type: discussion For: (not specified)
Source: Broadcom

Decision: The document was **revised to RP-190612**.

RP-190612 Discussion on the use of preambles for better coexistence in 5 GHz

Type: discussion For: -
Source: Broadcom, Ruckus, AT&T, Blackberry, CableLabs, Cisco, Comcast, Orange

(Replaces RP-190362)

Discussion:

Nokia: RAN1 discussions of Athens did not reach consensus on this

Ericsson: extending the deadline will not change the outcome, "common preamble" is basically an IEEE preamble

ZTE: same view as Nokia and Ericsson

Decision: The document was **noted**.

RP-190363 Discussion on the use of preambles for better coexistence in 6 GHz

Type: discussion For: (not specified)
Source: Broadcom

Decision: The document was **revised to RP-190613**.

RP-190613 Discussion on the use of preambles for better coexistence in 6 GHz

Type: discussion For: -
Source: Broadcom, AT&T, Blackberry, CableLabs, Cisco,Comcast, Orange, Ruckus

(Replaces RP-190363)

Discussion:

Nokia: whole discussion we had was on 6GHz

Qualcomm: relation of specification and workshop is unclear, IEEE waiting for workshop outcome?

Intel: 3 options: with one side apopts a preamble of the other group or both groups develop a new preamble together

Mediatek: currently it seems the proposal is just to use the Wifi preamble in NR-U

Orange: we supported a common preamble as it is the best way to ensure coexistence

Charter: focus in 3GPP WI was actually on 5GHz

Decision: The document was **noted**.

RP-190639 LS on request 3GPP continue consideration of a common preamble in 3GPP NR-U and IEEE 802.11 systems in 5 GHz and 6 GHz (contingent on the allocation of the 6GHz band for unlicensed RLAN operation) (IEEE_80211_WG_LS190315; to: RAN; cc: RAN1, RAN2, RAN4, IEEE-SA Standards Board, IEEE 802.11, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee; contact: IEEE 802.11 Working Group Chair)

Type: LS in For: (not specified)
Original outgoing LS: IEEE_80211_WG_LS190315, to RAN, cc RAN1, RAN2, RAN4, IEEE-SA Standards Board, IEEE 802.11, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee
Source: IEEE 802.11 WG

Discussion:

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Ericsson: we should not expect magics from the workshop, the actual work needs to be done in the WGs

RAN chair: we have another LS about the workshop, the main message is a request to further discuss the common preamble; thinks we can have one single response at the end of RAN #83 to IEEE;

Qualcomm: still confused how wether RAN1 or the workshop should discuss the topic;

Broadcom: this LS was approved by IEEE also including Ericsson, Qualcomm and others; work should be done in RAN1;

RAN chair: WI says that WGs will discuss preambles in Q1/2019 and we will decide in March 19; as it seems the WGs did not converge and we have an LS requesting to continue discussion;

Broadcom: also other topics need decisions

Nokia: the point is that the discussion took already place in RAN1 and we do not see that there is new information that would change the result;

Broadcom: as the source list of RP-190612/RP-190613 shows, there is wide industry interest to solve this

conclusion: no LS answer from RAN, but topic is indicated in LSout RP-190661

Decision: The document was **noted**.

RP-190199 On Channel Access extensions for NR-U

Type: discussion *For: Agreement*
Source: Charter Communications, Inc

Abstract:

On Channel Access extensions for NR-U

Discussion:

proposal: Continue discussions on channel access extensions for 6 GHz (not 5 GHz) in 3GPP RAN WG1 until RAN1#98. The objective is to reach consensus on the structure and content of a common preamble, from a 3GPP perspective, that can be decoded by NR-U and other co-channel technologies

Ericsson: 6GHz is green field i.e. there in no incumbent system; so arguments for 6GHz are even weaker than for 5GHz; what about other technologies?

Ruckus: 6GHz is actually not a green field, we have both system and would like to see some commonality, how ever the commonality looks like;

Qualcomm: series of workshops to design this together? is this realistic?

ZTE: if we consider a common preamble, we should also consider other candidates and not just the Wifi preamble

LG: suggest to have decision here at RAN how to continue

RAN chair: if we just send the topic back to RAN1 we will most probably end with the same result; in theory if there are companies in both camps then there will have an interest in introducing common preamble; so the discussion should rather take place outside of RAN and we could come back to it in June 19 to see whether the situations changes;

Broadcom: if the discussion will be considered in RAN, then it should be considered for 5GHz and 6GHz;

Nokia: if we want to come back to it, then also in RAN we should see the new arguments otherwise we would just repeat the same discussion; WID was rewritten to consider 6GHz first (as in 5GHz it will be even more difficult to come to a conclusion);

Broadcom: we should capture under which conditions we will come back to the topic and Tdocs will be considered in RAN #84

RAN chair: we will have a reply to IEEE in which we will clarify the situation

conclusion: no discussion about common preamble in RAN1 in Q2/2019; we will come back to this topic in RAN #84 (details will be clarified in the answer to IEEE)

Decision: The document was **noted**.

RP-190508 On aspects related to operation of NR on unlicensed spectrum

Type: discussion *For: Decision*
Source: Ericsson

Discussion:

was already covered in the discussions

Decision: The document was **not treated**.

RP-190241 Revised WID for NR-based access to unlicensed spectrum

Type: WID revised *For: Approval*
Source: Qualcomm India Pvt Ltd

Abstract:

last approved WID: RP-182878

Discussion:

Huawei: would like to revise the RAN4 Core part objective: removing "DL only and"

Intel: Perf. part specs missing

Huawei: RAN2/RAN3 specs should target March 20

Decision: The document was **revised to RP-190706**.

RP-190706 Revised WID for NR-based access to unlicensed spectrum

Type: WID revised *For: Approval*
Source: Qualcomm India Pvt Ltd

(Replaces RP-190241)

Decision: The document was **approved**.

9.4.7 2-step RACH for NR [RAN1 WI: NR_2step_RACH]

RP-190129 Status report for WI 2-step RACH for NR; rapporteur: ZTE Corporation

Type: WI status report *For: (not specified)*
Source: RAN1

Discussion:

Note: The rapporteur clarified after RAN #83 that the Core part target is March 20 as indicated in the revised WID RP-190711 (so the Core part target indicated in RP-190129 is wrong).

Decision: The document was **noted**.

RP-190131 Proposed revision of WID “2-step RACH for NR”

Type: WID revised *For: Approval*
Source: THALES

Abstract:

wrong Tdoc type SID in Tdoc request; last approved WID: RP-182894; WI rapporteur is ZTE; compare RP-190128

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Discussion:

Nokia: is confused by "forward compatibility" here

Ericsson: would it not be useful to add this in the NTN SI?

RAN chair: it is not forward compatibility but applying 2-step RACH for NTN

LG: discussed applicability of 2-step RACH for NTN and we concluded it would be applicable but we would only address this after 2-step RACH for terrestrial networks

RAN chair: so we will not update the 2-step RACH for NTN in this WI but it could be considered under the NTN SI

RAN1 chair: so how do we handle this in RAN1? If we consider 2-step RACH for NTN, then we should clarify this in the NTN SID

ZTE: we would not like to add 2-step RACH for NTN in this WI

RAN chair: if there is interest to add 2-step RACH for NTN, then feel free to add it to the NTN SI, we will not add it here in this WI

Decision: The document was **rejected**.

RP-190128 Revised work item proposal 2 step RACH for NR

Type: WID revised *For: Approval*
Source: ZTE Corporation

Abstract:

last approved WID: RP-182894; compare RP-190131

Discussion:

RAN2 chair: revise target date for RAN2 specs

Decision: The document was **revised to RP-190711**.

RP-190711 Revised work item proposal 2 step RACH for NR

Type: WID revised *For: Approval*
Source: ZTE Corporation

(Replaces RP-190128)

Decision: The document was **approved**.

9.4.8 Integrated access and backhaul for NR [RAN2 WI: NR_IAB]

RP-190181 Status report for WI on integrated access and backhaul for NR; rapporteur: Qualcomm Incorporated

Type: WI status report *For: (not specified)*
Source: RAN2

Discussion:

MCC: target date change (Perf.: +6 months)

Note: The rapporteur clarified after RAN #83 that the correct target is Core: March 20.

Decision: The document was **noted**.

RP-190534 Status report for WI on integrated access and backhaul for NR; rapporteur: Qualcomm Incorporated

Type: WI status report *For: (not specified)*
Source: RAN2

Abstract:

see RP-190181 instead

Decision: The document was **withdrawn**.

RP-190182 Revised WID for NR_IAB

Type: WID revised *For: Approval*
Source: Qualcomm Inc

(Replaces RP-182882)

Abstract:

last approved WID: RP-182882

Discussion:

RAN2 chair: RAN2 target dates not changed

Decision: The document was **revised to RP-190712**.

RP-190712 Revised WID for Integrated access and backhaul for NR

Type: WID revised *For: Approval*
Source: Qualcomm Inc

(Replaces RP-190182)

Decision: The document was **approved**.

9.4.9 Core part: SRVCC from 5G to 3G [RAN2 WI: SRVCC_NR_to_UMTS-Core]

RP-190564 Status report for WI Core part: Single Radio Voice Call Continuity from 5G to 3G; rapporteur: China Unicom

Type: WI status report *For: (not specified)*
Source: RAN2

Abstract:

late Tdoc request

Discussion:

MCC: late Tdoc request, WI was started in Dec.18 but no work was done so far as no TUs were allocated

China Unicom: we updated the TUs as well

conclusion: Core part target date is March 20 as in WID

Decision: The document was **noted**.

RP-190429 Impacts of SRVCC

Type: discussion *For: (not specified)*
Source: Ericsson

Discussion:

Proposal 1: Add this objective to the SRVCC WID:

- Signalling of source RAT to target RAT at incoming SRVCC.

Proposal 2: Add this objective to the SRVCC WID:

- Evaluation of return to 5GS after 5G SRVCC and possible addition of NR frequencies in UTRAN.

Proposal 3: Add 0.5 TUs in each of RAN6#12 – RAN6#14.

Nokia: supports proposal 1, no need for proposal 2 (can be solved by implementation)

Samsung: proposal 1 should be handled in WG

Qualcomm: we decided to not do anything on UTRAN side

Huawei: proposal 1 should be handled in WG

conclusion: addressing proposal 1 in RAN2/RAN6 scope, no consensus on supporting proposal 2 (can be done in implementation

Decision: The document was **noted**.

RP-190430 Revised WID: Single Radio Voice Call Continuity from 5G to 3G

Type: WID revised *For: Approval*
Source: China Unicom

Abstract:

last approved WID: RP-182811

Discussion:

Nokia: RRM should be under Perf. part? testing should be removed

Ericsson: impacted specs should be added

MCC: please also also whether specs are impacted by Core part or Perf. part, impacted RAN6 specs, RAN6 as secondary resp. WG

Decision: The document was **revised to RP-190713**.

RP-190713 Revised WID: Single Radio Voice Call Continuity from 5G to 3G

Type: WID revised *For: Approval*
Source: China Unicom

(Replaces RP-190430)

Discussion:

Note: This WI introduces a Perf. part WI for SRVCC_NR_to_UMTS by adding Perf. part objectives

Decision: The document was **approved**.

9.4.10 Core part: Transfer of Iuant interface specs from 25-series to 37-series [RAN3 WI: Iuant_transfer-Core]

RP-190120 LS on responsibility over sections of 37.461 (R3-191145; to: RAN4; cc: RAN; contact: Nokia)

Type: LS in *For: (not specified)*
Original outgoing LS: R3-191145, to RAN4, cc RAN
Source: RAN3

Abstract:

no RAN action requested

Discussion:

Huawei: RAN3 spec with some sections from RAN4, suggestion is that RAN3 takes care of these sections in the future

conclusion: request is confirmed, no LS answer from RAN

Decision: The document was **noted**.

RP-190143 Status report for WI: Core part: Transfer of Iuant interface specifications from 25-series to 37-series; rapporteur: Huawei

Type: WI status report *For: (not specified)*
Source: RAN3

Discussion:

conclusion: WI is completed

Decision: The document was **noted**.

RP-190557 RAN3 agreed CRs for Transfer of Iuant interface specifications from 25-series to 37-series

Type: CR pack *For: Approval*
Source: RAN3

Decision: The document was **approved**.

RP-190607 Presentation of Specifications to TSG: TS 37.460 v1.N.0, TS 37.461 v1.N.0, TS 37.462 v1.N.0, TS 37.466 v1.N.0 (N=8/9/a/b/c/d/e/f)

Type: TS or TR cover *For: discussion*
37.460, 37.461, 37.462, 37.466 v..
Source: ETSI MCC, Huawei, Ericsson

Abstract:

TS presentation cover for RAN3 TSs 37.460, 37.461, 37.462, 37.466

Decision: The document was **noted**.

RP-190575 Iuant interface: General aspects and principles

Type: draft TS *For: Approval*
37.460 v1.8.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.460 Rel-8 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190576 Iuant interface: General aspects and principles

Type: draft TS *For: Approval*
37.460 v1.9.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.460 Rel-9 is submitted for 1-step approval

Decision: The document was **approved**.

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RP-190577 Iuant interface: General aspects and principles

Type: draft TS *For: Approval*
37.460 v1.10.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.460 Rel-10 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190578 Iuant interface: General aspects and principles

Type: draft TS *For: Approval*
37.460 v1.11.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.460 Rel-11 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190579 Iuant interface: General aspects and principles

Type: draft TS *For: Approval*
37.460 v1.12.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.460 Rel-12 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190580 Iuant interface: General aspects and principles

Type: draft TS *For: Approval*
37.460 v1.13.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.460 Rel-13 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190581 Iuant interface: General aspects and principles

Type: draft TS *For: Approval*
37.460 v1.14.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.460 Rel-14 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190582 Iuant interface: General aspects and principles

Type: draft TS *For: Approval*
37.460 v1.15.0
Source: ETSI MCC, Huawei, Ericsson

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Abstract:

RAN3 TS 37.460 Rel-15 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190583 Iuant interface: Layer 1

Type: draft TS For: Approval
37.461 v1.8.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.461 Rel-8 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190584 Iuant interface: Layer 1

Type: draft TS For: Approval
37.461 v1.9.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.461 Rel-9 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190585 Iuant interface: Layer 1

Type: draft TS For: Approval
37.461 v1.10.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.461 Rel-10 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190586 Iuant interface: Layer 1

Type: draft TS For: Approval
37.461 v1.11.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.461 Rel-11 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190587 Iuant interface: Layer 1

Type: draft TS For: Approval
37.461 v1.12.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.461 Rel-12 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190588 Iuant interface: Layer 1

Type: draft TS *For: Approval*
37.461 v1.13.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.461 Rel-13 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190589 Iuant interface: Layer 1

Type: draft TS *For: Approval*
37.461 v1.14.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.461 Rel-14 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190590 Iuant interface: Layer 1

Type: draft TS *For: Approval*
37.461 v1.15.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.461 Rel-15 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190591 Iuant interface: Signalling transport

Type: draft TS *For: Approval*
37.462 v1.8.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.462 Rel-8 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190592 Iuant interface: Signalling transport

Type: draft TS *For: Approval*
37.462 v1.9.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.462 Rel-9 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190593 Iuant interface: Signalling transport

Type: draft TS *For: Approval*
37.462 v1.10.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.462 Rel-10 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190594 Iuant interface: Signalling transport

Type: draft TS *For: Approval*
37.462 v1.11.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.462 Rel-11 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190595 Iuant interface: Signalling transport

Type: draft TS *For: Approval*
37.462 v1.12.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.462 Rel-12 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190596 Iuant interface: Signalling transport

Type: draft TS *For: Approval*
37.462 v1.13.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.462 Rel-13 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190597 Iuant interface: Signalling transport

Type: draft TS *For: Approval*
37.462 v1.14.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.462 Rel-14 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190598 Iuant interface: Signalling transport

Type: draft TS *For: Approval*
37.462 v1.15.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.462 Rel-15 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190599 Iuant Interface: Application Part

Type: draft TS *For: Approval*
37.466 v1.8.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.466 Rel-8 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190600 Iuant Interface: Application Part

Type: draft TS *For: Approval*
37.466 v1.9.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.466 Rel-9 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190601 Iuant Interface: Application Part

Type: draft TS *For: Approval*
37.466 v1.10.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.466 Rel-10 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190602 Iuant Interface: Application Part

Type: draft TS *For: Approval*
37.466 v1.11.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.466 Rel-11 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190603 Iuant Interface: Application Part

Type: draft TS *For: Approval*
37.466 v1.12.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.466 Rel-12 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190604 Iuant Interface: Application Part

Type: draft TS *For: Approval*
37.466 v1.13.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.466 Rel-13 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190605 Iuant Interface: Application Part

Type: draft TS *For: Approval*
37.466 v1.14.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.466 Rel-14 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190606 Iuant Interface: Application Part

Type: draft TS *For: Approval*
37.466 v1.15.0
Source: ETSI MCC, Huawei, Ericsson

Abstract:

RAN3 TS 37.466 Rel-15 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190160 WI update: Transfer of Iuant interface specifications from 25-series to 37-series

Type: WID revised *For: Approval*
Source: Huawei

Abstract:

last approved WID: RP-182824; update the new specification number

Decision: The document was **approved**.

RP-190144 Summary for WI: Transfer of Iuant interface specifications from 25-series to 37-series

Type: WI summary *For: Information*
Source: Huawei

Decision: The document was **noted**.

9.4.11 Core part: Direct data forwarding between NG-RAN and E-UTRAN nodes for inter-system mob. [RAN3 WI: Direct_data_fw_NR-Core]

RP-190524 Status report of WI on Direct data forwarding between NG-RAN and E-UTRAN nodes for inter-system mobility; Rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN3

Decision: The document was **noted**.

9.5 Open REL-16 NR or NR&LTE WIs (spectrum related)

9.5.1 NR and NR+LTE CA baskets [RAN4 WI: NR_CA_R16_intra, NR_CADC_R16_2BDL_xBUL, DC_R16_..BLTE_1BNR_..DL2UL, DC_R16_xBLTE_2BNR_yDL2UL, NR_SUL_combos_R16]

RP-190155 Status report of WI Rel-16 NR intra band Carrier Aggregation for xCC DL/yCC UL including contiguous and non-contiguous spectrum (x>=y); rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN4

Decision: The document was **noted**.

RP-190158 Revised WID: Rel-16 NR intra band Carrier Aggregation for xCC DL/yCC UL including contiguous and non-contiguous spectrum (x>=y)

Type: WID revised *For: Approval*
Source: Ericsson

Abstract:

last approved WID: RP-182256

Decision: The document was **revised to RP-190689**.

RP-190689 Revised WID: Rel-16 NR intra band Carrier Aggregation for xCC DL/yCC UL including contiguous and non-contiguous spectrum (x>=y)

Type: WID revised *For: Approval*
Source: Ericsson

(Replaces RP-190158)

Decision: The document was **approved**.

RP-190493 Status report of WI: Rel-16 NR inter-band CA/DC for 2 bands DL with up to 2 bands UL; rapporteur: ZTE Corporation

Type: WI status report *For: (not specified)*
Source: RAN4

Decision: The document was **noted**.

RP-190494 Revised WI: Rel-16 NR inter-band CA/DC for 2 bands DL with up to 2 bands UL

Type: WID revised *For: Approval*
Source: ZTE Wistron Telecom AB

Abstract:

last approved WID: RP-182501

Discussion:

RAN4 chair: some inter-band CA combinations included here may be considered as examples in generic WIs

Decision: The document was **approved**.

RP-190380 Status report for WI: SA NR SUL, NSA NR SUL, NSA NR SUL with UL sharing from the UE perspective (ULSUP); rapporteur: Huawei

Type: WI status report *For: (not specified)*
Source: RAN4

Discussion:

MCC: target date change (Core: +3 months, Perf.: +3 months)

Decision: The document was **noted**.

RP-190381 WID revision: SA NR SUL, NSA NR SUL, NSA NR SUL with UL sharing from the UE perspective (ULSUP); rapporteur: Huawei

Type: WID revised *For: Approval*
Source: Huawei, HiSilicon

Abstract:

last approved WID: RP-182559

Discussion:

Huawei: some reshuffling between basket WIs needed

Decision: The document was **revised to RP-190714**.

RP-190714 WID revision: SA NR SUL, NSA NR SUL, NSA NR SUL with UL sharing from the UE perspective (ULSUP); rapporteur: Huawei

Type: WID revised *For: Approval*
Source: Huawei, HiSilicon

(Replaces RP-190381)

Discussion:

note: Rapporteur confirmed after RAN #83 that the target dates in this WID are wrong and the target dates in status report RP-190380 are correct.

Decision: The document was **approved**.

RP-190313 Status report for WI Dual Connectivity (EN-DC) of 1 LTE band (1UL/1DL) and 1 NR band (1DL/1UL); rapporteur: NTT DOCOMO

Type: WI status report *For: (not specified)*
Source: RAN4

Discussion:

MCC: Why is there a % complete for a Testing part?

NTT DOCOMO: no testing in this WI, will update this next time

Decision: The document was **noted**.

RP-190312 Revised WID: Dual Connectivity (EN-DC) of 1 LTE band (1UL/1DL) and 1 NR band (1DL/1UL)

Type: WID revised *For: Approval*
Source: NTT DOCOMO INC.

Abstract:

last approved WID: RP-182567

Decision: The document was **revised to RP-190705**.

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RP-190705 Revised WID: Dual Connectivity (EN-DC) of 1 LTE band (1UL/1DL) and 1 NR band (1DL/1UL)

Type: WID revised *For: Approval*
Source: NTT DOCOMO INC.

(Replaces RP-190312)

Discussion:

MCC: affected Perf. part specs missing (probably 38.307 as it is listed under Perf. part objectives) and new TR 37.716-11-11 is not indicated as affected by Core part; so this has to be corrected at RAN #84

Note: Rapporteur indicates that 38.307 is affected by Perf. part.

Decision: The document was **approved**.

RP-190378 Status report for WI: Dual Connectivity (EN-DC) of 2 bands LTE inter-band CA (2DL/1UL) and 1 NR band (1DL/1UL); rapporteur: Huawei

Type: WI status report *For: (not specified)*
Source: RAN4

Discussion:

MCC: target date change (Core: +3 months, Perf.: +3 months)

Decision: The document was **noted**.

RP-190379 WID revision: EN-DC for 3 bands DL with 2 bands UL (2 LTE bands + 1 NR band); rapporteur: Huawei

Type: WID revised *For: Approval*
Source: Huawei, HiSilicon

Abstract:

last approved WID: RP-182557

Discussion:

note: Rapporteur confirmed after RAN #83 that the target dates in this WID are wrong and the target dates in status report RP-190378 are correct.

Decision: The document was **approved**.

RP-190156 Status report of WI Dual Connectivity (EN-DC) of 3 bands LTE inter-band CA (3DL/1UL) and 1 NR band (1DL/1UL); rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN4

Decision: The document was **noted**.

RP-190159 Revised WID: Dual Connectivity (EN-DC) of 3 bands LTE inter-band CA (3DL/1UL) and 1 NR band (1DL/1UL)

Type: WID revised *For: Approval*
Source: Ericsson

Abstract:

last approved WID: RP-182257

Decision: The document was **approved**.

RP-190293 Status report for WI Dual Connectivity (EN-DC) of 4 bands LTE inter-band CA (4DL/1UL) and 1 NR band (1DL/1UL); rapporteur: Nokia

Type: WI status report *For: (not specified)*
Source: RAN4

Decision: The document was **noted**.

RP-190294 Revised WID of Dual Connectivity (EN-DC) of 4 bands LTE inter-band CA (4DL/1UL) and 1 NR band (1DL/1UL)

Type: WID revised *For: Approval*
Source: Nokia, Nokia Shanghai Bell

Abstract:

last approved WID: RP-182534

Decision: The document was **approved**.

RP-190223 Status report for WI Dual Connectivity (EN-DC) of 5 bands LTE inter-band CA (5DL/1UL) and 1 NR band (1DL/1UL) ; rapporteur: Samsung

Type: WI status report *For: (not specified)*
Source: RAN4

Decision: The document was **noted**.

RP-190153 Status report for WI LTE x bands (xDL/1UL x=1.2,3,4) with NR 2 bands (2DL/1UL) EN DC; Rapporteur: LG Electronics

Type: WI status report *For: (not specified)*
Source: RAN4

Abstract:

50% complete

Decision: The document was **noted**.

RP-190151 Revised WID on LTE x bands (xDL/UL x=1.2,3,4) with NR 2 bands (2DL/1UL) EN DC in Rel-16

Type: WID revised *For: Approval*
Source: LG Electronics

Abstract:

last approved WID: RP-182302; to update DC status and include new DC band combinations in Rel-16

Decision: The document was **approved**.

RP-190267 On completion of Rel.16 NR bands and band combinations

Type: discussion *For: Approval*
Source: CHTTL

Discussion:

intended as basis from 3GPP press release

CHTTL: got some comments from Verizon to correct some mistakes

RAN4 chair: we can discuss with interested parties whether we need to add this list or whether a reference to draftCRs is enough for the press release

T-Mobile: agrees that people outside of 3GPP may not be that familiar with the ways we describe combinations

RAN chair: can be solved when drafting the press release

Decision: The document was **revised to RP-190715**.

RP-190715 On completion of Rel.16 NR bands and band combinations

Type: discussion *For: Approval*
Source: CHTTL

(Replaces RP-190267)

Discussion:

note: It was just spotted after RAN #83 that different versions of RP-190715 were published.

Decision: The document was **noted**.

9.5.2 Band 65 for NR [RAN4 WI: NR_band_n65]

RP-190361 Status report for WI Band 65 for New Radio; rapporteur: Dish Network

Type: WI status report *For: (not specified)*
Source: RAN4

Discussion:

MCC: target date change (Core: + 3 months, Perf.: +3 months)

Decision: The document was **noted**.

RP-190360 Revised WID: Band 65 for New Radio

Type: WID revised *For: Approval*
Source: Dish Network, HNS

Abstract:

last approved WID: RP-182258

Decision: The document was **approved**.

9.5.3 Core part: Band 48 for NR [RAN4 WI: NR_n48-Core]

RP-190141 Status report for WI Core part: Introduction of NR band n48, rapporteur: Nokia

Type: WI status report *For: (not specified)*
Source: RAN4

Discussion:

MCC: This WI had no Perf. part so far, it is just created by the WID rev RP-190140 so the Perf. part can only be at 0%; target date change (Core: +3 months)

conclusion: Perf. part is 0% (as just created with RP-190140)

Decision: The document was **noted**.

RP-190140 Revised WI: Core part: Introduction of n48

Type: WID revised *For: Approval*
Source: Nokia

Abstract:

last approved WID: RP-182865

Discussion:

MCC: TR 38.173 makes no sense and TR needs to indicate that it was created by the Core part; WID RP-190140 introduces a new Perf. part WI

RAN4 vice-chairman (Huawei): which Perf. requirements?

Ericsson: just a band number was added

Decision: The document was **approved**.

9.5.4 Band 18 for NR [RAN4 WI: NR_n18]

RP-190176 Status Report for WI: Introduction of NR band n18; rapporteur: KDDI

Type: WI status report *For: (not specified)*
Source: RAN4

Discussion:

MCC: target date change (Core: - 3months; Perf.: -3 months)

Decision: The document was **noted**.

RP-190173 Revised WID: Introduction of NR band n18

Type: WID revised *For: Approval*
Source: KDDI Corporation

Abstract:

last approved WID: RP-182826; more clarifications for WI scope

Discussion:

note: The rapporteur clarified after RAN #83 that the target dates in this WID are wrong. The correct targets (Sep.19 for Core and Perf. part) are given in status report RP-190176.

Decision: The document was **approved**.

9.5.5 Core part: Adding wider channel bandwidths for NR band n7 [RAN4 WI: NR_n7_BW-Core]

RP-190567 Status Report for WI Core part: Adding wider channel bandwidths for NR band n7; rapporteur: BT

Type: WI status report *For: -*
Source: RAN4

Decision: The document was **revised to RP-190609**.

RP-190609 Status Report for WI Core part: Adding wider channel bandwidths for NR band n7; rapporteur: BT

Type: WI status report *For: -*
Source: RAN4

(Replaces RP-190567)

Discussion:

MCC: late submission

Decision: The document was **noted**.

RP-190170 Summary for WI Revised WID on adding wider channel bandwidths in Band n7

Type: discussion *For: (not specified)*
Source: BT

Decision: The document was **noted**.

RP-190137 Revised WID: Addition of wider channel bandwidths for NR Band n7

Type: WID revised *For: Approval*
Source: BT plc

(Replaces RP-182827)

Abstract:

last approved WID: RP-182827

Decision: The document was **approved**.

9.5.6 Addition of 30MHz channel bandwidth for NR band n41 [RAN4 WI: NR_n41_BW]

RP-190177 Status Report for WI: Addition of 30MHz channel bandwidth for NR band n41; rapporteur: KDDI

Type: WI status report *For: (not specified)*
Source: RAN4

Decision: The document was **noted**.

RP-190174 Revised WID: Addition of 30MHz channel bandwidth for NR band n41

Type: WID revised *For: Approval*
Source: KDDI Corporation

Abstract:

last approved WID: RP-182828; more clarifications for WI scope

Decision: The document was **approved**.

9.5.7 Core part: Adding wider channel bandwidths for NR band n50 [RAN4 WI: NR_n50_BW-Core]

RP-190371 Status report for WI: Core part: Addition of new channel bandwidth for NR band n50; rapporteur: Huawei

Type: WI status report *For: (not specified)*
Source: RAN4

Discussion:

MCC: target date missing (was June 19 at RAN #82)

conclusion: June 19 is the target date

Decision: The document was **noted**.

9.5.8 Core part: LTE/NR spectrum sharing in Band 41/n41 frequency range [RAN4 WI: NR_n41_LTE_41_coex-Core]

RP-190178 Status Report for WI: Core part: LTE/NR spectrum sharing in Band 41/n41 frequency range; rapporteur: KDDI

Type: WI status report *For: (not specified)*
Source: RAN4

Decision: The document was **noted**.

RP-190175 Revised WID: Core part: LTE/NR spectrum sharing in Band 41/n41 frequency range

Type: WID revised *For: Approval*
Source: KDDI Corporation

Abstract:

last approved WID: RP-182883; more clarifications for WI scope and supporting company added

Discussion:

MCC: Despite the indications in this revised WID: This WI has no Perf. part as there are no Perf. part objectives; this problem existed already for the previous WID version RP-182883.

Decision: The document was **approved**.

9.5.9 Core part: 29 dBm UE Power Class for LTE band 41 and NR Band n41 [RAN4 WI: LTE_NR_B41_Bn41_PC29dBm-Core]

RP-190501 Status report for WI Core part: 29 dBm UE Power Class for LTE band 41 and NR Band n41; rapporteur: Sprint

Type: WI status report *For: (not specified)*
Source: RAN4

Abstract:

Core: 15%; Dec 19 (+6 months)

Discussion:

MCC: target date change (Core: +6 months)

Decision: The document was **noted**.

RP-190502 Revised WID: 29 dBm UE Power Class for LTE band 41 and NR Band n41

Type: WID revised *For: Approval*
Source: Sprint Corporation

Abstract:

last approved WID: RP-181655 ; added impact to TS 38.817-01; new completion Dec 19 (+6 months)

Decision: The document was **approved**.

9.5.10 High power UE (power class 2) for EN-DC (1 LTE TDD band + 1 NR TDD band) [RAN4 WI: ENDC_UE_PC2_TDD_TDD]

RP-190316 Status report for WI High power UE (power class 2) for EN-DC (1 LTE TDD band + 1 NR TDD band); rapporteur: CMCC

Type: WI status report *For: (not specified)*
Source: RAN4

Abstract:

related WID: RP-182877

Decision: The document was **noted**.

RP-190315 Revised WID on Power Class 2 UE for EN-DC (1 LTE band +1 NR band)

Type: WID revised *For: Approval*
Source: CMCC

Abstract:

last approved WID: RP-182877

Decision: The document was **approved**.

9.6 NR UE capabilities

RP-190028 Response LS to R2-1813471 on UE capability for SUL and SDL (R4-1816779; to: RAN2; cc: RAN; contact: Nokia)

Type: LS in *For: (not specified)*
Original outgoing LS: R4-1816779, to RAN2, cc RAN
Source: RAN4

Abstract:

resubmission of RP-182233 which was not treated at RAN #82; note: R2-1813471 was only sent to RAN4 (and not to/cc RAN); no RAN action requested

Discussion:

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190063 Response LS to RP-182893 on SDL and SUL pairing 3GPP TSG RAN Meeting #82 (CEPT_ECC_PT1_LS190223; to: RAN; cc: RAN4; contact: ECC PT1 Chairman)

Type: LS in *For: (not specified)*
Original outgoing LS: CEPT_ECC_PT1_LS190223, to RAN, cc RAN4
Source: CEPT ECC PT1

Abstract:

no RAN action requested

Discussion:

moved from AI 9.2.1 to AI 9.6

Orange: we cannot say that there is no licensing impact by local operators

Nokia: specifying based on licensing terms would be difficult;

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190324 WF on SDL and SUL pairing

Type: discussion For: Approval
Source: Nokia, Nokia Shanghai Bell

Abstract:

This document discusses possible ways forward on SDL and SUL pairing following the response LS from ECC PT1 to RAN plenary

Discussion:

moved from AI 9.2.1 to AI 9.6

proposal: RAN#83 to discuss if new FDD bands are sufficient for NR SDL-SUL pairing in Rel-15

Ericsson: it is more straight forward to define an FDD band

ZTE: same as Ericsson

Orange: this is not the only technical solution

Decision: The document was **noted**.

RP-190388 Way forward on SDL-SUL pairings

Type: discussion For: Approval
Source: Huawei, HiSilicon

Abstract:

moved from AI 7 to AI 9.2.1; related to LSin RP-190063

Discussion:

moved from AI 9.2.1 to AI 9.6

proposal:

Allow defining both options, decide which option for each band/region based on operators' requests

- A new band combination for a SDL-SUL pair
- A new (paired) FDD band for a SDL-SUL pair

For NR SA SUL band combination and EN-DC band combination with SUL, if NR side only has SDL+SUL pairing without any other NR carrier, i.e. no CA for NR, then no new signalling is needed.

For NR CA band combination as in [3], only one of the two band combinations should be introduced so that there is no need to define any RAN2 signalling to differentiate them.

ZTE: there should be only one option or we get consistency problems

Nokia: agrees with ZTE, RAN4 decision needs to be respected

Qualcomm: FDD band approach fits better into RAN4 procedures; we would prefer to oick just 1 option

Decision: The document was **noted**.

RP-190527 Completion of SDL-SUL combination work

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Type: discussion For: Approval
Source: VODAFONE Group Plc

Abstract:

moved from AI 7 to AI 9.2.1;

follow up discussion doc to LSin RP-190063 from CEPT

Discussion:

moved from AI 9.2.1 to AI 9.6

Proposal:

– Define SDL regulated bands in combination with SUL in the same way as band combinations with SUL

– Ensure that the process for defining SDL regulated bands in combination with SUL is not more restrictive than the approach for defining band combinations today

Qualcomm: disagrees that this will be easier

RAN chair: it seems both proposals are possible but different companies have different preferences

Decision: The document was **noted**.

RP-190116 LS on RAN1 NR UE features update (R1-1903820; to: RAN, RAN2; cc: -; contact: NTT DOCOMO)

Type: LS in For: (not specified)
Original outgoing LS: R1-1903820, to RAN, RAN2, cc -
Source: RAN1

Abstract:

no explicit RAN action requested

Discussion:

conclusion: no LS answer from RAN, RAN endorsed the list

Decision: The document was **noted**.

RP-190124 LS on UE feature list for NR (R4-1902220; to: RAN2, RAN; cc: RAN1, RAN3; contact: NTT DOCOMO)

Type: LS in For: (not specified)
Original outgoing LS: R4-1902220, to RAN2, RAN, cc RAN1, RAN3
Source: RAN4

Abstract:

RAN action requested

Discussion:

Nokia: max UL duty cycle is in attachment but we have an ongoing discussion

conclusion: no LS answer from RAN, list is endorsed apart from duty cycle aspect

Decision: The document was **noted**.

RP-190704 Update of RAN4 UE feature list for REL-15 NR

Type: discussion For: discussion
Source: NTT DOCOMO

Abstract:

related to LSin RP-190124

Discussion:

conclusion: endorsed with understanding that 2-9 will need further discussion

Decision: The document was **endorsed**.

RP-190273 On the management of NR UE capabilities

Type: discussion *For: Decision*
Source: Nokia, Nokia Shanghai Bell

Discussion:

Proposal: UE is required to set the support to "true" after 6 months from the moment that RAN has confirmed that IODT testing against at least two independent networks is available.

NTT DOCOMO: is the same as LTE FGI in past but at some point (from REL-11) we did not use it anymore;

T-Mobile: supports the Nokia proposal

CMCC: strongly supports the Nokia proposal

Qualcomm: not all the cases are equal and that's why some ended up with capability signalling

NTT DOCOMO: one side effect is that all features are optional in the first place

Samsung: proposal is difficult to accept for UE vendors

Apple: same view as Samsung and Qualcomm: every feature should be decided on a case by case basis

Ericsson: does not think we need such a process (as in the Tdoc)

Intel: same view

LG: also supports to consider each feature separately

Huawei: apart from Nokia no network vendor is supporting it

ZTE: we can live without this process

RAN chair: it seems the proposal has not enough support

Nokia: we are not introducing any new signalling scheme so we have cap. bit for mandatory features, agrees not all features were equal

conclusion: no consensus achieved

Decision: The document was **noted**.

RP-190537 Gapless FR2 measurement in LTE standalone operation

Type: discussion *For: Decision*
Source: Qualcomm Incorporated

Discussion:

moved from AI 9.2.1 to AI 9.6

Decision: The document was **revised to RP-190626**.

RP-190626 Gapless FR2 measurement in LTE standalone operation

Type: discussion *For: Decision*
Source: Qualcomm Incorporated

(Replaces RP-190537)

Discussion:

Intel: has a Tdoc in RP-190646, we do not support this

Ericsson: supports the change as it is a small enhancement that avoids problems

Huawei: was discussed in previous RAN2 meeting and it is an optimization so we do not support this change, otherwise we would have to go back to RAN4

Apple: same view as Huawei, too late for this

Mediatek: is against the change

Samsung: proposal was not agreed in RAN2 so why is this brought back now

RAN chair: Looking at the number of companies that have concerns it seems this is too late for REL-15

Qualcomm: it is actually already defined (there is a RAN4 requirement)

Intel: we have explanations in RP-190646 for this

RAN chair: based on the comments received we have no consensus on this, Qualcomm can try until Thu to convince other companies but otherwise the CRs in RP-190538/RP-190539 are rejected

Decision: The document was **noted**.

RP-190646 Discussion on Gapless FR2 measurement in LTE SA

Type: discussion *For: discussion*
Source: Intel

Abstract:

related to RP-190626

Discussion:

late Tdoc request

Decision: The document was **not treated**.

RP-190538 Introducing UE capability for gapless FR2 measurement in LTE standalone operation

Type: CR *For: Approval*
36.331 v15.4.0 *CR-3943* *Cat: F (Rel-15)*

Source: Qualcomm Incorporated

Abstract:

company CR; R2-1902688 was noted at RAN2 #105 without consensus, no CR was submitted to RAN2 #105 for this

Discussion:

moved from AI 9.2.1 to AI 9.6

Decision: The document was **rejected**.

RP-190539 Introducing UE capability for gapless FR2 measurement in LTE standalone operation

Type: CR *For: Approval*
36.306 v15.3.0 *CR-1687* *Cat: F (Rel-15)*

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Source: Qualcomm Incorporated

Abstract:

company CR; R2-1902688 was noted at RAN2 #105 without consensus, no CR was submitted to RAN2 #105 for this

Discussion:

moved from AI 9.2.1 to AI 9.6

Decision: The document was **rejected**.

9.7 Small Technical Enhancements and Improvements for REL-16 [TEI16]

RP-190242 Addressing TEI16 items at WGs

Type: discussion For: (not specified)
Source: Qualcomm India Pvt Ltd

Discussion:

RAN chair: we will come back on TEI topic at RAN #84

Decision: The document was **not treated**.

9.8 Other NR documents

RP-190179 Concerns on Release 16 Schedule

Type: discussion For: Decision
Source: AT&T GNS Belgium SPRL, T Mobile USA

Abstract:

This contribution discusses concerns on the Release 16 schedule as decided in RAN #82

Discussion:

presented by T-Mobile

RAN chair: we can reconfirm that 3GPP is committed to the REL-16 schedule and we of course do not plan delays

Decision: The document was **noted**.

RP-190404 RAN4 CR to test methods for New Radio

Type: CR pack For: Approval
Source: RAN4

Decision: The document was **approved**.

RP-190265 Motivation for new SI : study on flexible and full duplex for NR

Type: discussion For: Discussion
Source: LG Electronics

Abstract:

Motivation for new SI of study on flexible and full duplex for NR

Decision: The document was **not treated**.

RP-190266 Discussion on C-IoT evolution for NR

Type: discussion *For: Discussion*
Source: LG Electronics

Abstract:

Motivation for study of C-IoT evolution for NR

Decision: The document was **not treated**.

RP-190269 Motivation for new WI: Connection-free data transfer

Type: discussion *For: Information*
Source: LG Electronics

Decision: The document was **not treated**.

RP-190270 Motivation for new WI: Consistent user experience in mobility

Type: discussion *For: Information*
Source: LG Electronics

Decision: The document was **not treated**.

RP-190271 Motivation for new WI: NR broadcast

Type: discussion *For: Information*
Source: LG Electronics

Decision: The document was **not treated**.

10 LTE

NOTE: This agenda item covers open REL-15 and REL-16 LTE WIs/SIs. But LTE UE conformance aspects are covered under AI 13 and maintenance of closed REL-8 to REL-15 WIs/SIs is covered under AI 14. Open WIs/SIs that affect LTE and NR are covered under AI 9.

10.1 New WI/SI proposals for LTE

10.1.1 Proposals led by RAN1

NOTE: The RAN1 capacity is full, no new SI/WI proposals are expected. (This does not apply to follow-up WIs of SIs completed at RAN #82 for which WI TUs were already taken into account.)

RP-190135 Motivation for WI for LTE-based 5G terrestrial broadcast

Type: discussion *For: Information*
Source: Qualcomm Incorporated

Discussion:

moved from AI 10.3.3 to AI 10.1.1

Decision: The document was **noted**.

RP-190350 Discussion on the WI scope on LTE-based 5G terrestrial broadcast

Type: discussion *For: Discussion*
Source: Huawei, HiSilicon

Abstract:

moved from AI 10.3.3 to AI 10.1.1

Discussion:

MUST = multiuser superposition transmission

Proposal 1: to introduce MUST support for SC-PTM and MBSFN, with Rel-14 MUST as a baseline.

Proposal 2: to introduce new numerology with Tcp at least 300 μs (ideally in the order of 400μs) and Tu at least 2.6ms for MBSFN.

Proposal 3: Other enhancements (new numerology with 100μs Tcp and 400 μs Tu, improvements in CAS, and non-uniform constellation) can be considered or further studied if TU allows.

Proposal 4: if RAN approves a Rel-16 LTE EN-TV WI targeting DL-only broadcast and HPHT, then potential study/work on 5G broadcast/multicast for NG-RAN in Rel-17 should not target DL-only broadcast and HPHT.

Nokia: prop. 1 not needed to meet the requirements, prop.2/3/4 are ok for us

Ericsson: same view on prop.1

Nokia: gains depend on baseline (for TDM gains are smaller)

ZTE: for BS there is no improvement

Decision: The document was **noted**.

RP-190134 WID proposal for LTE-based 5G terrestrial broadcast

Type: WID new *For: Approval*
Source: Qualcomm Incorporated

Abstract:

moved from AI 10.3.3 to AI 10.1.1; LTE only WI; leading WG: RAN1; WI code to be used: LTE_terr_bcast; follow-up WI of REL-16 SI FS_LTE_terr_bcast (led by RAN1) which is completed at RAN #83

Decision: The document was **revised to RP-190671**.

RP-190717 Way forward on 5G broadcast

Type: discussion *For: -*
Source: Huawei, HiSilicon, Deutsche Telekom, Orange, Qualcomm, EBU, Shanghai Jiao tong University

Discussion:

EBU: This does not exclude to use the whole carrier for broadcast

ZTE: would prefer to postpone a decision to June 19

Deutsche Telekom: MPMT and HPHT defined?

Ericsson: MPMT is 60km cell size, 60m high

Decision: The document was **endorsed**.

RP-190671 WID proposal for LTE-based 5G terrestrial broadcast

Type: WID new *For: Approval*
Source: Qualcomm Incorporated

(Replaces RP-190134)

Discussion:

Ericsson: a bit strange that we did not take the SI outcome into account to define the WI

Nokia: it is clear that there is no consensus to include MUST in the WI

RAN chair: apart from the MUST objective is the rest clear?

EBU: long and short numerologies are important, we need to make sure that broadcast is robust enough, if we can get MUST it's fine but if we run into resource problems we can leave it out

Shanghai Jiao tong University: MUST is already successfully used (e.g. in Korea)

ZTE: MUST would have impact on RAN2

Huawei: does not think that a lot of work needs to be done on MUST in WGs, maybe we can come back with a list of things what needs to be done

Nokia: MUST here is different from MUST in REL-14, is a totally different scenario

Qualcomm: would like to add a sentence in the justification

Nokia: proposed sentence is captured in the SI and it is not really an objective

conclusion: objective on MUST will be removed

Nokia, Nokia Shanghai Bell, ZTE, Ericsson will then also be supporting companies of the WI

RAN chair: check if any further companies, please add them

Decision: The document was **revised to RP-190732**.

RP-190732 WID proposal for LTE-based 5G terrestrial broadcast

Type: WID new *For: Approval*
Source: Qualcomm Incorporated

(Replaces RP-190671)

Abstract:

LTE only WI; leading WG: RAN1; WI code to be used: LTE_terr_bcast; follow-up WI of REL-16 SI FS_LTE_terr_bcast

Decision: The document was **approved**.

10.1.2 Proposals led by RAN2

NOTE: The RAN2 capacity is full, no new SI/WI proposals are expected. (This does not apply to follow-up WIs of SIs completed at RAN #82 for which WI TUs were already taken into account.)

10.1.3 Proposals led by RAN3

10.1.4 Proposals led by RAN4 (not spectrum related)

NOTE: The RAN4 capacity is full, no new SI/WI proposals are expected. (This does not apply to follow-up WIs of SIs completed at RAN #82 for which WI TUs were already taken into account.)

10.1.5 Proposals led by RAN4 (spectrum related)

RP-190288 Motivation for LTE-LAA based Access in 6GHz Spectrum

Type: discussion *For: Information*
Source: Ericsson

Abstract:

LTE LAA has been specified in 5150-5925MHz spectrum (band 46) and in 3.5 GHz CBRS (band 49). Specify new band and requirements in 6 GHz for LTE LAA usage.

Decision: The document was **not treated**.

RP-190289 New WID on Introduction of 6GHz band for LTE-license assisted access (LAA)

Type: WID new *For: Approval*
Source: Ericsson

Abstract:

new WI for LTE only; leading WG: RAN4; to specify new band and requirements in 6 GHz for LTE LAA usage;

Decision: The document was **revised to RP-190660**.

RP-190660 New WID on Introduction of 6GHz band for LTE-license assisted access (LAA)

Type: WID new *For: Approval*
Source: Ericsson

(Replaces RP-190289)

Decision: The document was **not treated**.

RP-190292 Motivation for Power Class 2 UE for LTE bands 31 and 72

Type: discussion *For: Discussion*
Source: Nokia, Argonet

Decision: The document was **not treated**.

RP-190291 New WID: Power Class 2 UE for LTE bands 31 and 72

Type: WID new *For: Approval*
Source: Nokia, Argonet

Abstract:

new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_PC2_B31_B72

Decision: The document was **revised to RP-190665**.

RP-190665 New WID: Power Class 2 UE for LTE bands 31 and 72

Type: WID new *For: Approval*
Source: Nokia, Argonet

(Replaces RP-190291)

Abstract:

new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_PC2_B31_B72

Discussion:

MCC: Core and Perf. part indications missing; TU table is missing

Rapporteur confirmed after RAN #83 that the TU table of RP-190291 is also applicable for RP-190665.

Decision: The document was **approved**.

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10.2 Open REL-15 LTE WIs (not spectrum related)

10.2.1 Perf. part: Shortened TTI and processing time for LTE [LTE_sTTIandPT-Perf]

RP-190127 Status report for WI Perf. part: Shortened TTI and processing time for LTE; rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN4

Discussion:

MCC: target date has to be March 19 if it is 100% complete

conclusion: WI is completed (target date March 19)

Decision: The document was **noted**.

RP-190405 RAN4 CRs to Perf. part: Shortened TTI and processing time for LTE

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

10.2.2 Perf. part: Further NB-IoT enhancements [NB_IOTenh2-Perf]

RP-190369 Status report for WI Perf part: Further NB-IoT enhancements; rapporteur: Huawei

Type: WI status report *For: (not specified)*
Source: RAN4

Discussion:

conclusion: WI is completed

Decision: The document was **noted**.

RP-190406 RAN4 CRs to Perf. part: Further NB-IoT enhancements

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

10.2.3 Perf. part: Enhancing LTE CA Utilization [LTE_euCA-Perf]

RP-190431 Status report for WI: Perf. part: Enhancing LTE CA Utilization; rapporteur: Nokia

Type: WI status report *For: (not specified)*
Source: RAN4

Discussion:

conclusion: WI is completed

Decision: The document was **noted**.

RP-190407 RAN4 CRs to Perf. part: Enhancing LTE CA Utilization

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

10.2.4 Perf. part: UE req. for LTE DL 8Rx antenna ports [LTE_8Rx_AP_DL-Perf]

RP-190370 Status report for WI: Perf. part: UE requirements for LTE DL 8Rx antenna ports; rapporteur: Huawei

Type: WI status report *For: (not specified)*
Source: RAN4

Discussion:

conclusion: WI is completed

Decision: The document was **noted**.

RP-190408 RAN4 CRs to UE requirements for LTE DL 8Rx antenna ports

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

10.3 Open REL-16 LTE SIs/WIs (non-spectrum)

10.3.1 Additional MTC enhancements for LTE [RAN1 WI: LTE_eMTC5]

RP-190049 Response LS to S2-1813400 = RP-182700 on Completion of Study on Cellular IoT support and evolution for the 5G System (R2-1902436; to: SA2, RAN, RAN3; cc: SA, CT; contact: Qualcomm)

Type: LS in *For: (not specified)*
Original outgoing LS: R2-1902436, to SA2, RAN, RAN3, cc SA, CT
Source: RAN2

Abstract:

FS_CIoT_5G = SA2 REL-16 SI Study on Cellular IoT support and evolution for the 5G System; no explicit RAN action requested

Discussion:

moved from AI 7 to AI 10.3.1 (FS_CIoT_5G: connecting NB-IoT and eMTC to 5GC)

conclusion: LS answer was drafted in RP-190565

Decision: The document was **replied to in RP-190565**.

RP-190498 WF on 5G C-IoT

Type: discussion *For: Agreement*
Source: TELECOM ITALIA S.p.A., Vodafone, Huawei, Qualcomm

Abstract:

Way Forward to RAN2 LS in RP-190049 "Response LS on Completion of Study on Cellular IoT support and evolution for the 5G System"

Discussion:

moved from AI 7 to AI 10.3.1 (FS_CIoT_5G: connecting NB-IoT and eMTC to 5GC)

proposals:

1. Ensure devices supporting EPS and 5GS C-IoT are able to meet C-IoT objectives set in Rel-13, in particular UE battery life and complexity

Note: Fundamentally different solutions for 5GS CIoT compared to EPS

CIoT will lead to increased device complexity and cost. (i.e. multiple options to implement and test)

2. Send a response LS to SA2, RAN2 and RAN3 stating the desire to have a common UP solution for EPC and 5GC.

Telecom Italia: Sequans also supports this Tdoc

RAN chair: so Tdoc is supporting user plane optimisation option

Nokia: simply shifting efforts on core network side without proper technical analysis is not the right approach

Vodafone: we want to make sure that IOT with 5GC is a success so we need to make sure that the transition is smooth

RAN chair: it seems the missing consensus from RAN2 has come to RAN now

RAN2 chair: we have just discussed it in RAN2 for one meeting and bringing it then immediately to RAN is too early

Telecom Italia: the reason was that there was already an LSout from RAN2

Decision: The document was **noted**.

RP-190117 Reply LS to S2-1813394 = RP-182731 on Signalling optimization for RRC Inactive N3 path switch (R3-191102; to: SA2, RAN; cc: RAN2; contact: Qualcomm)

Type: LS in For: (not specified)
Original outgoing LS: R3-191102, to SA2, RAN, cc RAN2
Source: RAN3

Abstract:

FS_CIoT_5G = SA2 REL-16 SI Study on Cellular IoT support and evolution for the 5G System; RAN action requested

Discussion:

moved from AI 7 to AI 10.3.1 (FS_CIoT_5G: connecting NB-IoT and eMTC to 5GC)

RAN chair: so draft LSout RP-190733 will also go to RAN3 clarifying that this requires further study

Decision: The document was **replied to in RP-190733**.

RP-190565 Draft Response LS to R2-1902436 = RP-190049 on Completion of Study on Cellular IoT support and evolution for the 5G System (to: RAN2, SA2, RAN3, CT; cc: SA; contact: Qualcomm)

Type: LS out For: Approval
to RAN2, SA2, RAN3, CT, cc SA
Source: Qualcomm

Discussion:

moved from AI 7 to AI 10.3.1 (FS_CIoT_5G: connecting NB-IoT and eMTC to 5GC)

RAN chair: as this LS seems to be not agreeable, we could clarify back at least that RAN WGs will study this more

T-Mobile: we need to clarify also that both options are on the table

Decision: The document was **revised to RP-190733**.

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RP-190733 Response LS to R2-1902436 = RP-190049 and R3-191102 = RP-190117 on Completion of Study on Cellular IoT support and evolution for the 5G System and Signalling optimization for RRC Inactive N3 path switch (to: RAN2, RAN3, SA2, SA; cc: RAN1, CT; contact: Qualcomm)

Type: LS out *For: Approval*
to RAN2, RAN3, SA2, SA, cc RAN1, CT
Source: Qualcomm

(Replaces RP-190565)

Discussion:

Telecom Italia: suggests adding a sentence about performance requirements for battery life and UE complexity

Sony: we decided to give WGs a quarter to discuss this so we should not try to preclude this here

Telecom Italia: if do not provide guidance WGs will discuss but without clear goal

RAN chair: suggests some more offline discussion and encourages to have a short LS

Qualcomm: after offline discussion we can go with RP-190733 text (just removing CT from the LS)

Decision: The document was **revised to RP-190768**.

RP-190768 Response LS to R2-1902436 = RP-190049 and R3-191102 = RP-190117 on Completion of Study on Cellular IoT support and evolution for the 5G System and Signalling optimization for RRC Inactive N3 path switch (to: RAN2, RAN3, SA2, SA; cc: RAN1, CT; contact: Qualcomm)

Type: LS out *For: Approval*
to RAN2, RAN3, SA2, SA, cc RAN1, CT
Source: RAN

(Replaces RP-190733)

Discussion:

LS was provided to SA on Thu evening of RAN #83

Decision: The document was **approved**.

RP-190531 Status report for WI Additional MTC enhancements for LTE; rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN1

Discussion:

MCC: target date change (Core: +3 months, Perf.: +3 months)

Decision: The document was **noted**.

RP-190532 Revised WID for Additional MTC enhancements for LTE

Type: WID revised *For: Approval*
Source: Ericsson

Abstract:

last approved WID: RP-182891

Discussion:

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LG: not convinced that it is useful to do such a study in the WI

RAN4 vice-chair (Huawei) does not agree with RAN4 objectives

Decision: The document was **revised to RP-190734**.

RP-190734 Revised WID for Additional MTC enhancements for LTE

Type: WID revised *For: Approval*
Source: Ericsson

(Replaces RP-190532)

Discussion:

Vodafone: why do we now have a huge number of RAN4 open issues on coexistence of LTE MTC with NR although we said some months ago that there are no issues?

T-Mobile: so far RAN4 has not done any coexistence studies for LTE MTC or NB-IOT with NR

Nokia: what Vodafone mentioned was that RAN1 did not identify issues

Vodafone: can we replace "identify issues"?

T-Mobile: we had a longer debate in June 18 what to be studied so we should avoid now to modify this

RAN chairman: any objection to approve the Tdoc as it is? none

conclusion: revised to align with RP-190757

Decision: The document was **revised to RP-190770**.

RP-190770 Revised WID for Additional MTC enhancements for LTE

Type: WID revised *For: Approval*
Source: Ericsson

(Replaces RP-190734)

Discussion:

MCC: adding a SI TR into a WI (on top with unclear Core/Perf. and internal/external classification and unclear leading WG) is not acceptable; revision is needed at RAN #84

Decision: The document was **approved**.

10.3.2 Additional enhancements for NB-IoT [RAN1 WI: NB_IOTenh3]

RP-190026 Reply LS to RP-182176 on RAN6 impact for Rel-16 NB-IoT enhancements related to Inter-RAT cell selection (R6-180181; to: RAN2; cc: RAN; contact: Nokia)

Type: LS in *For: (not specified)*
Original outgoing LS: R6-180181, to RAN2, cc RAN
Source: RAN6

Abstract:

resubmission of RP-182210 which was not treated at RAN #82; no RAN action requested

Discussion:

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190336 Status report for WI: Additional enhancements for NB-IoT; rapporteur: Huawei

Type: WI status report *For: (not specified)*
Source: RAN1

Discussion:

MCC: target date change (Core: +3 months)

Decision: The document was **noted**.

RP-190368 NB-IOT enhancements for capacity and throughput

Type: discussion *For: (not specified)*
Source: Reliance Jio

Abstract:

3GPP has introduced the NB-IoT specification in release 13 for applications like smart metering, child monitoring etc. NB-IOT defines 250 kbps (multi-tone) 20 kbps (single-tone) as the throughput in a 200 Khz channel. At times this throughput will be insu

Decision: The document was **withdrawn**.

RP-190337 WID revision: Additional enhancements for NB-IoT

Type: WID revised *For: Approval*
Source: Huawei

Abstract:

last approved WID: RP-182902; compare RP-190533

Decision: The document was **revised to RP-190731**.

RP-190731 WID revision: Additional enhancements for NB-IoT

Type: WID revised *For: Approval*
Source: Huawei

(Replaces RP-190337)

Decision: The document was **revised to RP-190735**.

RP-190735 WID revision: Additional enhancements for NB-IoT

Type: WID revised *For: Approval*
Source: Huawei

(Replaces RP-190731)

Discussion:

RAN chairman: Ericsson aspects covered?

Huawei: yes

Decision: The document was **revised to RP-190757**.

RP-190757 WID revision: Additional enhancements for NB-IoT

Type: WID revised *For: Approval*
Source: Huawei

(Replaces RP-190735)

Discussion:

Nokia: didn't we want to change eMTC and NB-IOT in the same way? would be fine with this Tdoc but eMTC should be aligned

Huawei: Two bullets from SA2 LS were not added to the NB-IoT objective on 5GC connection:

- Inter-RAT mobility support to/from NB-IoT

- Core Network selection and steering for CIoT

The rapporteur will clarify whether there is an impact to RAN and come back on this in RAN#84 as needed.

Decision: The document was **approved**.

RP-190769 WID revision: Additional enhancements for NB-IoT

Type: WID revised *For: Approval*
Source: Huawei

(Replaces RP-190757)

Decision: The document was **withdrawn**.

RP-190533 Revised WID for Additional enhancements for NB-IoT

Type: WID revised *For: Approval*
Source: Ericsson

Abstract:

last approved WID: RP-182902; WI rapporteur is Huawei; compare: RP-190337

Decision: The document was **not treated**.

10.3.3 Study on LTE-based 5G terrestrial broadcast [RAN1 SI: FS_LTE_terr_bcast]

RP-190132 Status report for WI Study on LTE-based 5G terrestrial broadcast; rapporteur: Qualcomm

Type: WI status report *For: (not specified)*
Source: RAN1

Abstract:

wrong Tdoc type discussion in Tdoc request

Discussion:

conclusion: SI is completed

Decision: The document was **noted**.

RP-190133 TR 36.776 v2.0.0 on Evolved Universal Terrestrial Radio Access (E-UTRA); Study on 5G requirements for eMBMS; for approval

Type: draft TR *For: Approval*
36.776 v2.0.0
Source: Qualcomm Incorporated

Abstract:

RAN1 TR 36.776 is submitted for approval

Decision: The document was **approved**.

10.3.4 DL MIMO efficiency enhancements for LTE [RAN1 WI: LTE_DL_MIMO_EE]

RP-190338 Status report for WI: DL MIMO efficiency enhancements for LTE; rapporteur: Huawei

Type: WI status report *For: (not specified)*
Source: RAN1

Discussion:

MCC: target date change (Core: +3 months, Perf.: +3 months)

Decision: The document was **noted**.

10.3.5 Even further Mobility enhancement in E-UTRAN [RAN2 WI: LTE_feMob]

RP-190247 Status report of WI: Even further mobility enhancement in E-UTRAN; rapporteur: China Telecom

Type: WI status report *For: (not specified)*
Source: RAN2

Discussion:

conclusion: March 20 for Core and Perf. part

Decision: The document was **noted**.

RP-190272 Revised WID: Even further mobility enhancement in E-UTRAN

Type: WID revised *For: Approval*
Source: China Telecomunication Corp.

Abstract:

last approved WID: RP-181544; to shift the target target date from Dec.19 to March 2020

Discussion:

NEC: in contradiction to status report so far

Decision: The document was **approved**.

10.3.6 Further perf. enh. for LTE in high speed scenario [RAN4 WI: LTE_high_speed_enh2]

RP-190246 Status Report for WI: Further performance enhancement for LTE in high speed scenario; Rapporteur: NTT DOCOMO, INC.

Type: WI status report *For: (not specified)*
Source: RAN4

Discussion:

MCC: target date change (Core: -3 months)

Decision: The document was **revised to RP-190703**.

RP-190703 Status Report for WI: Further performance enhancement for LTE in high speed scenario; Rapporteur: NTT DOCOMO, INC.

Type: WI status report *For: -*
Source: RAN4

(Replaces RP-190246)

Discussion:

NTT DOCOMO: revised based on Qualcomm, % complete and target dates unchanged

Decision: The document was **noted**.

10.4 Open REL-16 LTE WIs (spectrum related)

10.4.1 LTE Advanced CA baskets [RAN4 WI: LTE_CA_R16_intra, LTE_CA_R16_..BDL_1BUL, LTE_CA_R16_..BDL_2BUL]

RP-190154 Status report for WI Rel-16 LTE intra-band Carrier Aggregation for x CC DL/y CC UL including contiguous and non-contiguous spectrum (x>=y); rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN4

Decision: The document was **noted**.

RP-190157 Revised WID: Rel-16 LTE intra-band Carrier Aggregation for x CC DL/y CC UL including contiguous and non-contiguous spectrum (x>=y)

Type: WID revised *For: Approval*
Source: Ericsson

Abstract:

last approved WID: RP-182255

Decision: The document was **approved**.

RP-190499 Status Report for WI Rel16 LTE inter-band CA for 2 bands DL with 1 band UL; rapporteur: Qualcomm

Type: WI status report *For: (not specified)*
Source: RAN4

Decision: The document was **noted**.

RP-190500 Revised WID: Rel16 LTE inter-band CA for 2 bands DL with 1 band UL

Type: WID revised *For: Approval*
Source: Qualcomm Incorporated

Abstract:

last approved WID: RP-182345

Decision: The document was **approved**.

RP-190374 Status report for WI: LTE Advanced inter-band CA Rel-16 for 3DL/1UL; rapporteur: Huawei

Type: WI status report *For: (not specified)*
Source: RAN4

Discussion:

MCC: target date change (Core: +3 months, Perf.: +3 months)

Decision: The document was **noted**.

RP-190375 WID revision: LTE Advanced inter-band CA Rel-16 for 3DL/1UL; rapporteur: Huawei

Type: WID revised *For: Approval*
Source: Huawei, HiSilicon

Abstract:

last approved WID: RP-182553

Discussion:

note: Rapporteur confirmed after RAN #83 that the target dates in this WID are wrong and the target dates in status report RP-190374 are correct.

Decision: The document was **approved**.

RP-190139 Status Report for WI: Rel'16 LTE inter-band CA for x bands DL (x=4, 5) with 1 band UL, Rapporteur: Nokia, Nokia Shanghai Bell

Type: WI status report *For: (not specified)*
Source: RAN4

Decision: The document was **noted**.

RP-190138 Revised WI: Rel'16 LTE inter-band CA for x bands DL (x=4, 5) with 1 band UL

Type: WID revised *For: Approval*
Source: Nokia, Nokia Shanghai Bell

Abstract:

last approved WID: RP-182330

Decision: The document was **approved**.

RP-190376 Status report for WI: LTE Advanced inter-band CA Rel-16 for 2DL/2UL; rapporteur: Huawei

Type: WI status report *For: (not specified)*
Source: RAN4

Discussion:

MCC: target date change (Core: +3 months, Perf.: +3 months)

Decision: The document was **noted**.

RP-190377 WID revision: LTE Advanced inter-band CA Rel-16 for 2DL/2UL; rapporteur: Huawei

Type: WID revised *For: Approval*
Source: Huawei, HiSilicon

Abstract:

last approved WID: RP-182555

Decision: The document was **approved**.

RP-190152 Status report for WI Rel-16 LTE inter-band Carrier Aggregation for x bands DL (x= 3, 4, 5) with 2 band UL; rapporteur: LG Electronics

Type: WI status report *For: (not specified)*
Source: RAN4

Abstract:

50% complete

Decision: The document was **noted**.

RP-190150 Revised WID on LTE-A inter-band xDL/2UL CA with x=3,4,5 in rel-16

Type: WID revised *For: Approval*
Source: LG Electronics

Abstract:

last approved WID: RP-182301; to update status and include new LTE-A CA band combinations in Rel-16

Decision: The document was **approved**.

RP-190409 RAN4 CRs to Rel-16 LTE Advanced CA baskets

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

10.4.2 Add. LTE bands for UE cat.M1 and/or NB1 in Rel-16 [RAN4 WI: LTE_bands_R16_M1_NB1]

RP-190334 Status report for WI Additional LTE bands for UE category M1 and/or NB1 in Rel-16; rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN4

Decision: The document was **noted**.

RP-190332 Updated WID on Additional LTE bands for UE category M1 and/or NB1 in Rel-16

Type: WID revised *For: Approval*
Source: Ericsson

Abstract:

last approved WID: RP-182768; band 7 is added to support NB1

Decision: The document was **approved**.

10.4.3 Core part: Add. LTE bands for UE cat.M2 and/or NB2 in in Rel-16 [RAN4 WI: LTE_bands_R16_M2_NB2-Core]

RP-190335 Status report for WI Core part: Additional LTE bands for UE category M2 and/or NB2 in Rel-16; rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN4

Decision: The document was **noted**.

RP-190333 Updated WID on Additional LTE bands for UE category M2 and/or NB2 in Rel-16

Type: WID revised *For: Approval*
Source: Ericsson

Abstract:

wrong WI code in Tdoc request; last approved WID: RP-182769; band7 is added to support NB2

Decision: The document was **approved**.

10.4.4 410 - 430 MHz E-UTRA FDD Band(s) for LTE PPDR and PMR/PAMR in Europe [RAN4 WI: LTE410_Europe_PPDR]

RP-190290 Status report for WI 410 - 430 MHz E-UTRA FDD Band(s) for LTE PPDR and PMR/PAMR in Europe; rapporteur: Nokia

Type: WI status report *For: (not specified)*
Source: RAN4

Decision: The document was **noted**.

10.5 Closed REL-16 LTE WIs (spectrum related)

10.5.1 E-UTRA 2.4 GHz TDD Band for US [RAN4 WI: LTE_TDD_2400_US]

10.6 LTE UE capabilities/UE categories

10.7 Small Technical Enhancements and Improvements for REL-16 [TEI16]

11 UMTS

NOTE: This agenda item covers open REL-15 and REL-16 UMTS WIs/SIs. But UMTS UE conformance aspects are covered under AI13 and maintenance of closed REL-8 to REL-15 WIs/SIs is covered under AI 14. Open WIs/SIs that affect UMTS and LTE are covered under AI 10.

11.1 New WI/SI proposals for UMTS

11.2 Open REL-15 UMTS WIs/SIs

11.3 Open REL-16 UMTS WIs/SIs

11.4 UMTS UE capabilities/IoT bits/UE categories

11.5 Small Technical Enhancements and Improvements for REL-16 [TEI16]

12 GERAN

NOTE: This agenda item covers open REL-15 and REL-16 GERAN WIs/SIs. But GERAN MS conformance aspects are covered under AI13 and maintenance of closed REL-8 to REL-15 WIs/SIs is covered under AI 14. Open WIs/SIs that affect GERAN and UMTS are covered under AI 11.

12.1 New WI/SI proposals for GERAN (normally led by RAN6)

12.2 Open REL-15 GERAN WIs/SIs

12.3 Open REL-16 GERAN WIs/SIs

12.4 Small Technical Enhancements and Improvements for REL-16 [TEI16]

RP-190060 RAN6 agreed CRs for REL-16 WI: GERAN TEI16

Type: CR pack *For: Approval*
Source: RAN6

Decision: The document was **approved**.

13 New and open RAN5 UE Conformance testing WIs and SIs

NOTE: For closed WIs/SIs and TEIx_Test with x<=14 see agenda item 14.

13.1 New WI/SI proposals for UE conformance testing (led by RAN5)

RP-190321 New WID on UE Conformance Test Aspects - Rel-16 NR CA and DC; and NR and LTE DC Configurations

Type: WID new *For: Approval*
Source: CMCC, Ericsson, China Unicom

Abstract:

new WI for LTE and NR; leading WG: RAN5; tested: NR_CA_R16_intra, NR_CADC_R16_2BDL_xBUL, NR_SUL_combos_R16, DC_R16_1BLTE_1BNR_2DL2UL, DC_R16_2BLTE_1BNR_3DL2UL, DC_R16_3BLTE_1BNR_4DL2UL, DC_R16_4BLTE_1BNR_5DL2UL, DC_R16_5BLTE_1BNR_6DL2UL, DC_R16_xBLTE_2BNR

Decision: The document was **approved**.

RP-190509 New WID on: UE Conformance Test Aspects - Enhancements on Full-Dimension (FD) MIMO for LTE

Type: WID new *For: Approval*
Source: Ericsson

Abstract:

new WI for LTE only; leading WG: RAN5; tested: REL-14 WI LTE_eFDMIMO-Core; WI code to be used: LTE_eFDMIMO-UEConTest

Decision: The document was **revised to RP-190650**.

RP-190650 New WID on: UE Conformance Test Aspects - Enhancements on Full-Dimension (FD) MIMO for LTE

Type: WID new *For: Approval*
Source: Ericsson

(Replaces RP-190509)

Abstract:

new WI for LTE only; leading WG: RAN5; tested: REL-14 WI LTE_eFDMIMO-Core; WI code to be used: LTE_eFDMIMO-UEConTest

Decision: The document was **approved**.

RP-190510 New WID on: UE Conformance Test Aspects - Extended-Band12 new E-UTRA Band (Band 85)

Type: WID new *For: Approval*
Source: Ericsson

Abstract:

new WI for LTE; leading WG: RAN5; tested: REL-15 WI Ext_B12_LTE-Core; WI code to be used: Ext_B12_LTE-UEConTest

Decision: The document was **approved**.

13.2 Open Rel-13 WIs

13.2.1 UE Conf. Test Aspects - Rel-13 LTE CA configurations [LTE_CA_Rel13-UEConTest]

RP-190518 Status report for WI UE Conformance Test Aspects - Rel-13 CA configurations; rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN5

Abstract:

Test: 82%, Jun 19

Decision: The document was **noted**.

RP-190067 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Rel-13 LTE CA configurations (LTE_CA_Rel13-UEConTest)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

13.2.2 UE Conf. Test Aspects - WLAN/3GPP Radio Level Integration and Interworking Enh. [LTE_WLAN_radio-UEConTest]

RP-190193 Status Report for WI UE Conformance Test Aspects – Wireless Local Area Network (WLAN) – 3GPP Radio Level Integration and Interworking Enhancements; rapporteur: Intel

Type: WI status report *For: (not specified)*
Source: RAN5

Discussion:

conclusion: WI is completed

Decision: The document was **noted**.

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RP-190068 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - WLAN/3GPP Radio Level Integration and Interworking Enhancements (LTE_WLAN_radio-UEConTest)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

13.2.3 UE Conf. Test Aspects - LTE CA Enh. Beyond 5 Carriers: PUCCH on Scell [LTE_CA_enh_b5C_PUCCH-UEConTest]

RP-190341 Status report for WI: UE Conformance Test Aspects - LTE Carrier Aggregation Enhancement Beyond 5 Carriers - PUCCH on Scell; rapporteur: Huawei

Type: WI status report *For: (not specified)*
Source: RAN5

Discussion:

MCC: target date change (+6 months)

Decision: The document was **noted**.

13.2.4 UE Conf. Test Aspects - Interf. Mitigation for DL Control Channels of LTE [LTE_IM_DLCCH-UEConTest]

RP-190198 Status Report for WI UE Conformance Test Aspects – Interference Mitigation for Downlink Control Channels of LTE; rapporteur: Intel Corporation

Type: WI status report *For: (not specified)*
Source: RAN5

Discussion:

conclusion: WI is completed

Decision: The document was **noted**.

RP-190069 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Interference Mitigation for Downlink Control Channels of LTE (LTE_IM_DLCCH-UEConTest)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

13.2.5 UE Conf. Test Aspects - Elevation Beamforming/Full-Dimension MIMO for LTE [LTE_EBF_FDMIMO-UEConTest]

RP-190511 Status report for WI UE Conformance Test Aspects – Elevation Beamforming/Full-Dimension MIMO for LTE; rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN5

Abstract:

Test: 40%, Jun 19

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Decision: The document was **noted**.

RP-190070 RAN5 agreed non TTCN CR(s) WI MS Conformance Test Aspects - Elevation Beamforming/Full-Dimension MIMO for LTE (LTE_EBF_FDMIMO-UEConTest)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

13.3 Open Rel-14 WIs

13.3.1 UE Conf. Test Aspects - Rel-14 CA configurations [LTE_CA_R14-UEConTest]

RP-190519 Status report for WI UE Conformance Test Aspects - Rel-14 CA configurations; rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN5

Abstract:

Test: 22%, Dec 19 (+6 months)

Discussion:

MCC: target date change (+6 months)

Decision: The document was **noted**.

RP-190071 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Rel-14 CA configurations

(LTE_CA_R14-UEConTest)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

13.3.2 UE Conf. Test Aspects - 4 Rx antenna ports with CA for LTE DL [LTE_4Rx_AP_DL_CA-UEConTest]

RP-190512 Status report for WI UE Conformance Test Aspects - 4 Rx antenna ports with CA for LTE DL; rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN5

Abstract:

Test: 100%

Discussion:

conclusion: WI is completed

Decision: The document was **noted**.

RP-190072 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects – 4 Rx antenna ports with CA for LTE DL

(LTE_4Rx_AP_DL_CA-UEConTest)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

13.3.3 UE Conf. Test Aspects - Support for LTE-based V2X Services [LTE_V2X-UEConTest]

RP-190340 Status report for WI: UE Conformance Test Aspects -Support for LTE-based V2X Services; rapporteur: Huawei

Type: WI status report *For: (not specified)*
Source: RAN5

Discussion:

MCC: target date change (+6 months)

Decision: The document was **noted**.

RP-190073 RAN5 agreed non TTCN CR(s) WI MS Conformance Test Aspects - Support for LTE-based V2X Services (LTE_V2X-UEConTest)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

13.3.4 UE Conf. Test Aspects - Further enhanced MTC for LTE [LTE_feMTC-UEConTest]

RP-190513 Status report for WI UE Conformance Test Aspects - Further enhanced MTC for LTE; rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN5

Abstract:

Test: 61%, Jun 19 (+3 months)

Discussion:

MCC: target date change (+3 months)

Decision: The document was **noted**.

RP-190074 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Further enhanced MTC for LTE (LTE_feMTC-UEConTest)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

RP-190514 Revised WID: UE Conformance Test Aspects - Further enhanced MTC for LTE

Type: WID revised *For: Approval*
Source: Ericsson

Abstract:

last approved WID: RP-180414

Discussion:

Note: Rapporteur clarified after RAN #83 that the target date of this WI is June 19 and that RP-190514 has out-of-date target indications.

Decision: The document was **approved**.

13.3.5 UE Conf. Test Aspects - UL capacity enhancements for LTE [LTE_UL_CAP_enh-UEConTest]

RP-190515 Status report for WI UE Conformance Test Aspects - Uplink capacity enhancements for LTE; rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN5

Abstract:

Test: 100%

Discussion:

conclusion: WI is completed

Decision: The document was **noted**.

RP-190075 RAN5 agreed non TTCN CR(s) under WI UE Conformance Test Aspects – Uplink capacity enhancements for LTE (LTE_UL_CAP_enh-UEConTest)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

13.3.6 UE Conf. Test Aspects - Mission Critical Improvements [MCImp-UEConTest]

RP-190136 Status report for WI UE Conformance Test Aspects - Mission Critical Improvements; rapporteur: NIST

Type: WI status report *For: (not specified)*
Source: RAN5

Abstract:

30% complete and on schedule

Decision: The document was **noted**.

13.4 Open Rel-15 WIs

13.4.1 UE Conf. Test Aspects - 5G system with NR and LTE [5GS_NR_LTE-UEConTest]

RP-190029 LS on the testability of FR2 transmitter and reception tests (R5-188184; to: RAN4, RAN; cc: -; contact: Anritsu)

Type: LS in For: (not specified)
Original outgoing LS: R5-188184, to RAN4, RAN, cc -
Source: RAN5

Abstract:

resubmission of RP-182234 which was not treated at RAN #82; no RAN action requested

Discussion:

RAN chair: no RAN action needed

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190517 Status report for WI UE Conformance Test Aspects – 5G system with NR and LTE; rapporteur: Ericsson

Type: WI status report For: (not specified)
Source: RAN5

Abstract:

Test: 41%, Mar 20 (+9 months)

Decision: The document was **revised to RP-190566**.

RP-190566 Status report for WI UE Conformance Test Aspects – 5G system with NR and LTE; rapporteur: Ericsson

Type: WI status report For: (not specified)
Source: RAN5

(Replaces RP-190517)

Abstract:

Test: 41%, Mar 20 (+9 months)

Discussion:

MCC: target date change (+9 months)

Decision: The document was **noted**.

RP-190076 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - 5G system with NR and LTE (5GS_NR_LTE-UEConTest) (Batch 1)

Type: CR pack For: Approval
Source: RAN5

Discussion:

Apple: To R5-192845 of RP-190076: The concern is with the RAN5 choice to reduce the conformance test limit of maximum peak EIRP from 43 dBm (the current core requirement per 38.101-2) to 33 dBm. Since this is a regulatory requirement, the test tolerance for this limit is 0 dB, and the probability of a conforming UE exceeding this arbitrary limit is too large.

The currently endorsed measurement uncertainty for DUT size 15/30 cm is 4.8-5.1 dB. Let's round it to 5 dB. In order to achieve 99% confidence interval (3 sigma, 7.5 dB), the design target for peak EIRP needs to be less than 25.5 dBm. Given the minimum peak EIRP requirement of 22.4 dBm (for 28 GHz bands) there only remains 3.1 dB between the min and max.

Furthermore, from the network performance point of view, this arbitrary limit may influence UE designs to unnecessarily target lower peak EIRP operating points, thereby potentially degrading network performance overall.

Apple: after offline discussion there will be one company CR from Ericsson in RP-190722 to replace one CR of the CRpack and to address our comment, i.e. RP-190076 is not affected

Decision: The document was **approved**.

RP-190722 Updates to maximum output power test cases

Type: CR For: Approval
38.521-2 v15.1.0 CR-0118 rev 3 Cat: F (Rel-15)

Source: Ericsson

Abstract:

company CR; to replace R5-192865 on RP-190079 following a comment/flag from Apple

Discussion:

RAN5 chairman: it says "draft" before Tdoc number

Apple: we would co-source it

RAN5 chairman: Keysight achieved this compromise

Decision: The document was **revised to RP-190746**.

RP-190746 Updates to maximum output power test cases

Type: CR For: Approval
38.521-2 v15.1.0 CR-0118 rev 4 Cat: F (Rel-15)

Source: Ericsson, Apple

(Replaces RP-190722)

Abstract:

company CR; to replace R5-192865 on RP-190079 following a comment/flag from Apple

Decision: The document was **approved**.

RP-190077 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - 5G system with NR and LTE (5GS_NR_LTE-UEConTest) (Batch 2)

Type: CR pack For: Approval
Source: RAN5

Decision: The document was **approved**.

RP-190078 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - 5G system with NR and LTE (5GS_NR_LTE-UEConTest) (Batch 3)

Type: CR pack For: Approval
Source: RAN5

Decision: The document was **approved**.

RP-190079 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - 5G system with NR and LTE (5GS_NR_LTE-UEConTest) (Batch 4)

Type: CR pack For: Approval
Source: RAN5

Discussion:

Apple: To R5-192865 of RP-190079: The concern is with the RAN5 choice to reduce the conformance test limit of maximum peak EIRP from 43 dBm (the current core requirement per 38.101-2) to 33 dBm. Since this is a regulatory requirement, the test tolerance for this limit is 0 dB, and the probability of a conforming UE exceeding this arbitrary limit is too large.

The currently endorsed measurement uncertainty for DUT size 15/30 cm is 4.8-5.1 dB. Let's round it to 5 dB. In order to achieve 99% confidence interval (3 sigma, 7.5 dB), the design target for peak EIRP needs to be less than 25.5 dBm. Given the minimum peak EIRP requirement of 22.4 dBm (for 28 GHz bands) there only remains 3.1 dB between the min and max.

Furthermore, from the network performance point of view, this arbitrary limit may influence UE designs to unnecessarily target lower peak EIRP operating points, thereby potentially degrading network performance overall.

conclusion:

All CRs of RP-190079 are approved except

R5-192865 which is revised in company CR RP-190722

Decision: The document was **partially approved**.

RP-190080 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - 5G system with NR and LTE (5GS_NR_LTE-UEConTest) (Batch 5)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

RP-190222 TS 38.521-4 v1.0.0 on 5GS; User Equipment (UE) conformance specification; Radio transmission and reception; Part 4: Performance; for approval

Type: draft TS *For: Approval*
38.521-4 v1.0.0
Source: Qualcomm UK Ltd

Abstract:

RAN5 TS 38.521-4 is submitted for 1-step approval

Decision: The document was **approved**.

RP-190161 TS 38.533 v1.0.0 on 5GS; User Equipment (UE) conformance specification; Radio Resource Management (RRM); for approval

Type: draft TS *For: Approval*
38.533 v1.0.0
Source: ROHDE & SCHWARZ

Abstract:

RAN5 TS 38.533 is submitted for 1-step approval

Decision: The document was **approved**.

13.4.2 UE Conf. Test Aspects - Rel-15 CA configurations [LTE_CA_R15-UEConTest]

RP-190520 Status report for WI UE Conformance Test Aspects - Rel-15 CA configurations; rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN5

Abstract:

Test: 15%, Dec 19 (+6 months)

Discussion:

MCC: target date change (+6 months)

Decision: The document was **noted**.

RP-190081 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Rel-15 CA configurations (LTE_CA_R15-UEConTest)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

13.4.3 UE Conf. Test Aspects - Add UE Power Class 2 to band 41 intra-band contiguous LTE CA [LTE_CA_C_B41_PC2-UEConTest]

RP-190477 Status report for WI: UE Conformance Test Aspects - Add UE Power Class 2 to band 41 intra-band contiguous LTE Carrier Aggregation; rapporteur: Sprint

Type: WI status report *For: (not specified)*
Source: RAN5

Discussion:

MCC: target date change (+3 months)

Decision: The document was **noted**.

13.4.4 UE Conf. Test aspects - LTE bands with UE cat.M2 and/or NB2 in Rel-15 [LTE_bands_R15_M2_NB2-UEConTest]

RP-190516 Status report for WI UE Conformance Test Aspects - Additional LTE bands for UE category M2 and/or NB2 in Rel-15; rapporteur: Ericsson

Type: WI status report *For: (not specified)*
Source: RAN5

Abstract:

Test: 75%, Jun 19 (+3 months)

Discussion:

MCC: target date change (+3 months)

Decision: The document was **noted**.

13.4.5 UE Conf. Test Aspects - QoE Measurement Collection for streaming services in E-UTRAN [LTE_QMC_Streaming-UEConTest]

RP-190451 Status report for WI UE Conformance Test Aspects - Quality of Experience (QoE) Measurement Collection for streaming services in E-UTRAN; rapporteur: China Unicom

Type: WI status report *For: (not specified)*
Source: RAN5

Discussion:

MCC: target date change (+3 months)

Decision: The document was **noted**.

RP-190082 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Quality of Experience (QoE) Measurement Collection for streaming services in E-UTRAN (LTE_QMC_Streaming-UEConTest)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

13.4.6 UE Conf. Test Aspects - 450 MHz Band for LTE in Region 3 [LTE450_Reg3-UEConTest]

RP-190453 Status report for WI UE Conformance Test Aspects - 450 MHz Band for LTE in Region 3; rapporteur: China Unicom

Type: WI status report *For: (not specified)*
Source: RAN5

Discussion:

MCC: target date change (+6 months)

Decision: The document was **noted**.

RP-190083 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - 450 MHz Band for LTE in Region 3 (LTE450_Reg3-UEConTest)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

13.4.7 UE Conf. Test Aspects - UL Data Compression in LTE [LTE_UDC-UEConTest]

RP-190310 Status Report for WI: UE Conformance Test Aspects - UL Data Compression in LTE

Type: WI status report *For: (not specified)*
Source: RAN5

Abstract:

Test: 100%, Mar, 2019

Discussion:

MCC: WI is completed

Decision: The document was **noted**.

RP-190084 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - UL Data Compression in LTE (LTE_UDC-UEConTest)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

RP-190311 Revised WID on UE Conformance Test Aspects - UL Data Compression in LTE

Type: WID revised *For: Approval*
Source: CATT

Abstract:

last approved WID: RP-180918; removing the specification which is not impacted

Decision: The document was **approved**.

13.4.8 UE Conf. Test Aspects - 5G system Non-3GPP Access [5GS_Ph1-CT_n3GPPA-UEConTest]

RP-190268 Status report for WI UE Conformance Test Aspects – 5G System Non-3GPP Access; rapporteur: Motorola Mobility

Type: WI status report *For: (not specified)*
Source: RAN5

Decision: The document was **noted**.

RP-190085 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - 5G system Non-3GPP Access (5GS_Ph1-CT_n3GPPA-UEConTest)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

13.4.9 UE Conf. Test Aspects - Enhanced LTE Support for Aerial Vehicles [LTE_Aerial-UEConTest]

RP-190066 Status report for WI UE Conformance Test Aspects - Enhanced LTE Support for Aerial Vehicles; rapporteur: NTT DOCOMO

Type: WI status report *For: (not specified)*
Source: RAN5

Abstract:

Test: 5%, June 19

Decision: The document was **noted**.

13.4.10 UE Conf. Test Aspects - Shortened TTI and processing time for LTE [LTE_sTTIandPT-UEConTest]

RP-190342 Status report for WI: UE conformance test aspects on shortened TTI and processing time for LTE; rapporteur: Huawei

Type: WI status report *For: (not specified)*
Source: RAN5

Discussion:

MCC: target date change (-6 months) but no progress?

Note: WID RP-182429 approved at RAN #82 indicated 36.523-3 with target date June 20; it seems Huawei did not consider this TF160 work in the target date.

conclusion: target date: Dec.19

conclusion: target date: Dec.19 (some offline discussion with RAN5 experts needed to find a consistent approach regarding TF160 impacts)

Decision: The document was **noted**.

13.4.11 UE Conf. Test Aspects - Bluetooth/WLAN measurement collection in LTE MDT [LTE_MDT_BT_WLAN-UEConTest]

RP-190322 Status report for WI UE Conformance Test Aspects - Bluetooth/WLAN measurement collection in LTE Minimization of Drive Tests (MDT); rapporteur: CMCC

Type: WI status report *For: (not specified)*
Source: RAN5

Decision: The document was **noted**.

RP-190086 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Bluetooth/WLAN measurement collection in LTE Minimization of Drive Tests (MDT)(LTE_MDT_BT_WLAN-UEConTest)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

13.4.12 UE Conf. Test Aspects - Enhancing LTE CA Utilization [LTE_euCA-UEConTest]

RP-190562 Status report for WI UE Conformance Test Aspects – Rel-16 LTE CA configurations; rapporteur: Nokia

Type: WI status report *For: (not specified)*
Source: RAN5

Abstract:

late Tdoc request

Discussion:

MCC: why does this RAN5 WI have a Perf. part?

Nokia: printing error

Decision: The document was **noted**.

13.4.13 Test - (Small) Technical Enhancements and Improvements for Rel-15 [TEI15_Test]

RP-190087 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-15 Conformance Testing (TEI15_Test)

Type: CR pack *For: Approval*
Source: RAN5

Discussion:

MCC: company CR

in RP-190616 to replace R5-192730 of RP-190087

conclusion: All CRs of RP-190087 are approved except

R5-192730 which is revised in RP-190616

Decision: The document was **partially approved**.

RP-190616 Updating 8.5.4.1 to check FGI 103 and 104

Type: CR For: Approval
36.523-1 v15.4.0 CR-4739 rev 2 Cat: F (Rel-15)

Source: Huawei, HiSilicon

Abstract:

company CR; to replace RAN5 agreed CR R5-192730 of RP-190087; reason: R5-192730 is updating a signaling test case to check the FGI bits 103/104 are mandated for Rel-15 onward UEs. After the agreement of R5-192730 it was identified that the necessary transition period which RAN plenary has requested is missing; this is corrected by the company CR

Discussion:

RAN chair: note for 6 months grace period for FGI was added

Decision: The document was **approved**.

13.5 Open Rel-15 SIs

13.6 Open Rel-16 WIs

13.6.1 UE Conformance Test Aspects - Rel-16 CA configurations [LTE_CA_R16-UEConTest]

RP-190521 Status report for WI UE Conformance Test Aspects - Rel-16 CA configurations; rapporteur: Ericsson

Type: WI status report For: (not specified)
Source: RAN5

Abstract:

Test: 6%, Jun 20

Decision: The document was **noted**.

RP-190088 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Rel-16 CA configurations (LTE_CA_R16-UEConTest)

Type: CR pack For: Approval
Source: RAN5

Decision: The document was **approved**.

13.6.2 UE Conf. Test Aspects - E-UTRA 2.4 GHz TDD Band for US (Band 53) [LTE_TDD_2400_US-UEConTest]

RP-190064 Status report for WI UE Conformance Test Aspects – E-UTRA 2.4 GHz TDD Band for US (Band 53); rapporteur: Globalstar

Type: WI status report *For: (not specified)*
Source: RAN5

Decision: The document was **noted**.

RP-190089 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - E-UTRA 2.4 GHz TDD Band for US (Band 53) (LTE_TDD_2400_US-UEConTest)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

13.6.3 Test - (Small) Technical Enhancements and Improvements for Rel-16 [TEI16_Test]

13.7 Open Rel-16 SIs

14 Maintenance for closed WIs/SIs for REL-15 and earlier

NOTE: REL-4, REL-5, REL-6 and REL-7 were closed after RAN #65, i.e. no CRs to specifications of these releases will be considered anymore.

RP-190024 LS on Vehicle mounted UE antenna performance (R4-1814315; to: 5GAA (Board, WG2, WG4); cc: RAN, RAN5; contact: Samsung)

Type: LS in *For: (not specified)*
Original outgoing LS: R4-1814315, to 5GAA (Board, WG2, WG4), cc RAN, RAN5
Source: RAN4

Abstract:

resubmission of RP-182208 which was not treated at RAN #82; wrong WI code and REL on the LS; compare LSin RP-181522; no RAN action requested

Discussion:

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190025 LS to RAN5 and GCF on method to distinguish vehicle UE from handheld UE (R4-1814321; to: RAN5, GCF CAG; cc: RAN; contact: Huawei)

Type: LS in *For: (not specified)*
Original outgoing LS: R4-1814321, to RAN5, GCF CAG, cc RAN
Source: RAN4

Abstract:

resubmission of RP-182209 which was not treated at RAN #82; no RAN action requested

Discussion:

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190027 LS on conclusion of "Study on evaluation for 2 RX exception in Rel-15 vehicle mounted UE for NR" (R4-1816775; to: RAN; cc: RAN5, RAN2, SA, 5GAA; contact: Samsung)

Type: LS in For: (not specified)
Original outgoing LS: R4-1816775, to RAN, cc RAN5, RAN2, SA, 5GAA
Source: RAN4

Abstract:

resubmission of RP-182232 which was not treated at RAN #82; RAN action requested

Discussion:

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190043 Reply LS to RP-182177 regarding LTE LAA channel combinations for 5GHz (R4-1902248; to: RAN, RAN2; cc: RAN1; contact: Charter Communications)

Type: LS in For: (not specified)
Original outgoing LS: R4-1902248, to RAN, RAN2, cc RAN1
Source: RAN4

Abstract:

related to:

RAN #81: IEEE LS IEEE_802.11_LS_180713b = RP-181524, RAN LS RP-182177,

RAN #82: RAN4 LS R4-1816774 = RP-182231;

RAN #83: RAN4 LS R4-1902248 = RP-190043, RAN2 LS R2-1902566 = RP-190051, see also RP-190180;

RAN action requested

Discussion:

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190051 Reply LS to R4-1902248 = RP-190043 and RP-182177 regarding LTE LAA channel combinations for 5GHz (R2-1902566; to: RAN, RAN4; cc: RAN1; contact: Charter Communications)

Type: LS in For: (not specified)
Original outgoing LS: R2-1902566, to RAN, RAN4, cc RAN1
Source: RAN2

Abstract:

related to:

RAN #81: IEEE LS IEEE_802.11_LS_180713b = RP-181524, RAN LS RP-182177,

RAN #82: RAN4 LS R4-1816774 = RP-182231;

RAN #83: RAN4 LS R4-1902248 = RP-190043, RAN2 LS R2-1902566 = RP-190051, see also RP-190180;

no explicit RAN action requested

Discussion:

conclusion: no LS answer from RAN

Decision: The document was **noted**.

RP-190180 Draft reply LS to IEEE_802.11_LS_180713b = RP-181524 in relation to certain channel combinations for LAA in 5GHz (to: IEEE 802.11 WG, IEEE-SA Board of Governors, IEEE 802 LMSC, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee; cc: RAN4, RAN2, RAN1; contact: Charter Communications)

Type: LS out For: Approval
to IEEE 802.11 WG, IEEE-SA Board of Governors, IEEE 802 LMSC, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee, cc RAN4, RAN2, RAN1
Source: Charter Communications, Inc

Abstract:

moved from AI 7 to AI 14; related to fair coexistence between IEEE 802.11 technologies and LTE LAA; is a follow-up reply to RAN's previous RP-182178; related also to RP-190043 and RP-190022

Discussion:

Charter: RAN2 and RAN4 agreed on solutions and have CRs to RAN #83

Nokia: had a number of comments that are not yet reflected (LS is paraphrasing some agreements that we need to clarify)

Decision: The document was **revised to RP-190749**.

RP-190749 Draft reply LS to IEEE_802.11_LS_180713b = RP-181524 in relation to certain channel combinations for LAA in 5GHz (to: IEEE 802.11 WG, IEEE-SA Board of Governors, IEEE 802 LMSC, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee; cc: RAN4, RAN2, RAN1; contact: Charter Communications)

Type: LS out For: Approval
to IEEE 802.11 WG, IEEE-SA Board of Governors, IEEE 802 LMSC, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee, cc RAN4, RAN2, RAN1
Source: Charter Communications, Inc

(Replaces RP-190180)

Decision: The document was **revised to RP-190758**.

RP-190758 Reply LS to IEEE_802.11_LS_180713b = RP-181524 in relation to certain channel combinations for LAA in 5GHz (to: IEEE 802.11 WG, IEEE-SA Board of Governors, IEEE 802 LMSC, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee; cc: RAN4, RAN2, RAN1; contact: Charter Communications)

Type: LS out For: Approval
to IEEE 802.11 WG, IEEE-SA Board of Governors, IEEE 802 LMSC, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee, cc RAN4, RAN2, RAN1
Source: RAN

(Replaces RP-190749)

Decision: The document was **approved**.

RP-190245 On the scope of non-BL UE in CE mode for R15 eFeMTC WI

Type: discussion For: Approval
Source: Intel Corporation

Abstract:

The features introduced for BL UE in R15 eFeMTC WI shall not be applicable for R15 non-BL UE

Discussion:

moved from AI 15 to AI 14

BL = bandwidth limited (e.g. less than 6PRB), CE = coverage extension;

Proposal: the R15 RAN4 requirement for non-BL UE in CE mode shall reuse the R14 requirements for non-BL UE in CE mode, i.e., no requirements for new features introduced in R15 eFeMTC WI will be specified for R15 non-BL UE in CE mode in RAN4

RAN chair: this is why we avoid / because it can be interpreted as and or or

Huawei: the / is clarified in 3.1 36.212

Ericsson: the misunderstanding is affecting only one company and we clarified this for about 1 year already, so we think nothing needs to be done on this

Orange: would not support to do changes

RAN chairman: WI is already done and there seem to be no support for this problem, so you can discuss this further offline and if we overlooked something you can come back at RAN #84

RAN4 chairman: should RAN4 look at this in the meeting?

RAN chairman: the WI is done, how you handle this in RAN4 is up to RAN4

Ericsson: is a question of maintenance, if it is a feature there is no problem to have requirements

RAN chair: specs should not hide something

conclusion: send technically correct CRs to RAN #84

Decision: The document was **noted**.

RP-190434 Corrections to 36.211 & 36.213 of higher layer signalling for special subframe configuration 10 (Maintenance of Rel-14 Uplink Capacity Enhancements for LTE)

Type: CR pack *For: Approval*
Source: RAN1

Decision: The document was **approved**.

RP-190435 Correction on NPRACH format 2 configuration presence (Maintenance Rel-15 Further NB-IoT enhancements)

Type: CR pack *For: Approval*
Source: RAN1

Decision: The document was **approved**.

RP-190436 Corrections to sTTI and SPT implementation

Type: CR pack *For: Approval*
Source: RAN1

Decision: The document was **approved**.

RP-190437 Maintenance of even further enhanced MTC for LTE

Type: CR pack *For: Approval*
Source: RAN1

Decision: The document was **approved**.

RP-190438 Correction on PSSCH resource pool determination in 36.213

Type: CR pack *For: Approval*
Source: RAN1

Decision: The document was **approved**.

RP-190439 Maintenance of SRS (sounding reference signal) switching between LTE component carriers

Type: CR pack *For: Approval*
Source: RAN1

Decision: The document was **approved**.

RP-190440 Correction on rate matching for 1024QAM

Type: CR pack *For: Approval*
Source: RAN1

Decision: The document was **approved**.

RP-190441 Power control for RACH-less HO

Type: CR pack *For: Approval*
Source: RAN1

Decision: The document was **approved**.

RP-190442 On MPDCCH USS/CSS differentiation

Type: CR pack *For: Approval*
Source: RAN1

Decision: The document was **approved**.

RP-190443 Maintenance of further enhanced MTC for LTE

Type: CR pack *For: Approval*
Source: RAN1

Decision: The document was **approved**.

RP-190444 Corrections on channel access procedures in 37.213

Type: CR pack *For: Approval*
Source: RAN1

Decision: The document was **approved**.

RP-190445 Maintenance of Voice and Video Enhancement for LTE

Type: CR pack *For: Approval*
Source: RAN1

Decision: The document was **approved**.

RP-190547 RAN2 CRs to Rel-12 Wis

Type: CR pack *For: Approval*
Source: RAN2

Decision: The document was **approved**.

RP-190548 RAN2 CRs to Rel-13 Wis

Type: CR pack *For: Approval*
Source: RAN2

Decision: The document was **approved**.

RP-190549 RAN2 CRs to Rel-14 Wis

Type: CR pack *For: Approval*
Source: RAN2

Decision: The document was **approved**.

RP-190550 RAN2 CRs to Rel-15 Wis, part 1

Type: CR pack *For: Approval*
Source: RAN2

Decision: The document was **approved**.

RP-190551 RAN2 CRs to Rel-15 Wis, part 2

Type: CR pack *For: Approval*
Source: RAN2

Decision: The document was **approved**.

RP-190552 RAN2 CRs to Rel-15 Wis, part 3

Type: CR pack *For: Approval*
Source: RAN2

Decision: The document was **approved**.

RP-190553 RAN2 CRs to Rel-15 Wis, part 4

Type: CR pack *For: Approval*
Source: RAN2

Decision: The document was **approved**.

RP-190558 RAN3 agreed CRs for (Small) Technical Enhancements and Improvements for Rel-15

Type: CR pack *For: Approval*
Source: RAN3

Decision: The document was **approved**.

RP-190559 RAN3 agreed CRs for Even further enhanced MTC for LTE

Type: CR pack *For: Approval*
Source: RAN3

Decision: The document was **approved**.

RP-190560 RAN3 agreed CRs for Separation of CP and UP for Split Option 2 of NR

Type: CR pack *For: Approval*
Source: RAN3

Decision: The document was **approved**.

RP-190410 RAN4 CRs to Small Technical Enhancements and Improvements for REL-9

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

RP-190411 RAN4 CRs to Maintenance for closed WIs/SIs for REL-12

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

RP-190412 RAN4 CRs to Maintenance for closed WIs/SIs for REL-13, part 1

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

RP-190413 RAN4 CRs to Maintenance for closed WIs/SIs for REL-13, part 2

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

RP-190414 RAN4 CRs to Maintenance for closed WIs/SIs for REL-13, part 3

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

RP-190415 RAN4 CRs to Maintenance for closed WIs/SIs for REL-14, part 1

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

RP-190416 RAN4 CRs to Maintenance for closed WIs/SIs for REL-14, part 2

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

RP-190417 RAN4 CRs to Maintenance for closed WIs/SIs for REL-14, part 3

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

RP-190418 RAN4 CRs to Maintenance for closed WIs/SIs for REL-15, part 1

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

RP-190419 RAN4 CRs to Maintenance for closed WIs/SIs for REL-15, part 2

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

RP-190420 RAN4 CRs to Maintenance for closed WIs/SIs for REL-15, part 3

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Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

RP-190421 RAN4 CRs to Maintenance for closed WIs/SIs for REL-15, part 4

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

RP-190422 RAN4 CRs to Maintenance for closed WIs/SIs for REL-15, part 5

Type: CR pack *For: Approval*
Source: RAN4

Decision: The document was **approved**.

RP-190090 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel 99 Conformance Testing(TEI_Test)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

RP-190091 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-8 Conformance Testing(TEI8_Test)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

RP-190092 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-9 Conformance Testing(TEI9_Test)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

RP-190093 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-10 Conformance Testing (TEI10_Test)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

RP-190094 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-11 Conformance Testing (TEI11_Test)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

RP-190095 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-12 Conformance Testing (TEI12_Test)

Type: CR pack *For: Approval*
Source: RAN5

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Decision: The document was **approved**.

RP-190096 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-13 Conformance Testing (TEI13_Test)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

RP-190097 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-14 Conformance Testing (TEI14_Test)

Type: CR pack *For: Approval*
Source: RAN5

Decision: The document was **approved**.

RP-190098 CR to 34.229-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 34.229-3 (prose), Annex A

Type: CR pack *For: Approval*
34.229-3 v..
Source: RAN5

Decision: The document was **approved**.

RP-190099 CR to 34.229-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 34.229-3 (TTCN), Annex A

Type: CR pack *For: Approval*
34.229-3 v..
Source: RAN5

Decision: The document was **approved**.

RP-190100 CR to 34.123-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 34.123-3 (prose), Annex A

Type: CR pack *For: Approval*
34.123-3 v..
Source: RAN5

Decision: The document was **withdrawn**.

RP-190101 CR to 34.123-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 34.123-3 (TTCN), Annex A

Type: CR pack *For: Approval*
34.123-3 v..
Source: RAN5

Decision: The document was **approved**.

RP-190102 CR to 36.523-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 36.523-3 (prose), Annex A

Type: CR pack *For: Approval*
36.523-3 v..
Source: RAN5

Decision: The document was **approved**.

RP-190103 CR to 36.523-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 36.523-3 (TTCN), Annex A

Type: CR pack *For: Approval*
36.523-3 v..
Source: RAN5

Decision: The document was **approved**.

RP-190104 CR to 37.751-4: Add new verified and e-mail agreed TTCN test cases in the TC lists in 37.571-4 (prose), Annex A

Type: CR pack *For: Approval*
37.571-4 v..
Source: RAN5

Decision: The document was **withdrawn**.

RP-190105 CR to 37.571-4: Add new verified and e-mail agreed TTCN test cases in the TC lists in 37.571-4 (TTCN), Annex A

Type: CR pack *For: Approval*
37.571-4 v..
Source: RAN5

Decision: The document was **approved**.

RP-190106 CR to 38.523-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 38.523-3 (prose), Annex A

Type: CR pack *For: Approval*
38.523-3 v..
Source: RAN5

Decision: The document was **approved**.

RP-190107 CR to 38.523-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 38.523-3 (TTCN), Annex A

Type: CR pack *For: Approval*
38.523-3 v..
Source: RAN5

Decision: The document was **approved**.

RP-190061 RAN6 agreed CRs for REL-13 WI: CIoT_EC_GSM-Core

Type: CR pack *For: Approval*
Source: RAN6

Decision: The document was **approved**.

RP-190062 RAN6 agreed CRs for REL-13 WI: CIoT_EC_GSM-Perf

Type: CR pack *For: Approval*
Source: RAN6

Decision: The document was **approved**.

15 Any other business

Intel: we will host a 2 day informal workshop on NR beyond 52GHz on 20./21.5.2019 in Santa Clara on Mon/Tue after WG meetings in Reno

Deutsche Telekom: would be good to make this sort of announcements 6 months before as people may have booked flights already

RP-190130 Preliminary views on NTN activities in Rel-17

Type: discussion *For: Information*
Source: THALES

Decision: The document was **revised to RP-190618**.

RP-190618 Preliminary views on NTN activities in Rel-17

Type: discussion *For: Information*
Source: THALES

(Replaces RP-190130)

Decision: The document was **not treated**.

RP-190186 Views & principles on 3GPP RAN Rel-17

Type: discussion *For: (not specified)*
Source: Qualcomm Korea

Decision: The document was **not treated**.

RP-190217 Rel17 timeline and potential directions

Type: discussion *For: (not specified)*
Source: ZTE,Sanechips

Abstract:

moved from AI 9.8 to AI 15

Decision: The document was **not treated**.

RP-190231 Consideration on R17 Timeline and Scope

Type: discussion *For: Agreement*
Source: OPPO

Abstract:

Discussion on R17 Timeline and Potential Scope

Decision: The document was **not treated**.

RP-190284 Considerations on Rel-17

Type: discussion *For: Discussion*
Source: vivo

Decision: The document was **not treated**.

RP-190427 Release 17 timing

Type: discussion *For: Decision*
Source: Ericsson España S.A.

Decision: The document was **not treated**.

RP-190456 Initial views on Rel-17 NR

Type: discussion *For: (not specified)*
Source: Samsung Electronics France SA

Decision: The document was **not treated**.

RP-190458 MediaTek's View on 3GPP Rel-17

Type: discussion *For: (not specified)*
Source: MediaTek Inc.

Decision: The document was **not treated**.

RP-190459 Rel-17 UE-based Indoor Coverage Enhancement

Type: discussion *For: (not specified)*
Source: MediaTek Inc.

Decision: The document was **not treated**.

RP-190460 Rel-17 Energy Efficiency Improvement

Type: discussion *For: (not specified)*
Source: MediaTek Inc.

Decision: The document was **not treated**.

RP-190461 Rel-17 NR IoT

Type: discussion *For: (not specified)*
Source: MediaTek Inc.

Decision: The document was **not treated**.

RP-190462 Rel-17 Enhanced NB-IoT

Type: discussion *For: (not specified)*
Source: MediaTek Inc.

Decision: The document was **not treated**.

RP-190463 Rel-17 Non-Terrestrial Networks

Type: discussion *For: (not specified)*
Source: MediaTek Inc.

Decision: The document was **not treated**.

RP-190464 Rel-17 Higher Layer Protocol Enhancements

Type: discussion *For: (not specified)*
Source: MediaTek Inc.

Decision: The document was **not treated**.

RP-190480 Rel-16/17 Timeline

Type: discussion *For: (not specified)*
Source: MediaTek Inc.

Discussion:

moved from AI 9 to AI 15

Decision: The document was **not treated**.

RP-190487 Views on Rel-17 schedule and scope

Type: discussion *For: (not specified)*
Source: Huawei, HiSilicon

Decision: The document was **not treated**.

RP-190491 Discussion on network-assisted UE cooperation for Rel-17

Type: discussion *For: (not specified)*
Source: Huawei, HiSilicon

Decision: The document was **not treated**.

RP-190497 Considerations on Rel-17

Type: discussion *For: Discussion*
Source: NEC

(Replaces RP-182636)

Abstract:

This contribution proposes considerations for Rel-17 standards work.

Decision: The document was **not treated**.

RP-190563 Preparing for Release-17

Type: discussion *For: (not specified)*
Source: TSG RAN Chairman, RAN WG Chairmen

Abstract:

late Tdoc request

Discussion:

Dish: on which day will we do the discussion?

RAN chair: on Tue

Huawei: also considering new proposals coming in Sep.?

RAN chair: would be better to have them in June already as otherwise we would have to rehash everything again so encourage people to bring them in June (but in Sep. is still possible)

Huawei: no rapporteur aspect was controversial also in PCG, so statement about rapporteurship of slide 3 should better be removed

RAN chair: there was a question whether RAN has a different understanding of rapporteurships and the answer was no and the topic was closed at PCG

Huawei: slide 3 does not change the role of the rapporteur which is defined in the working procedures

RAN chairman: agrees with this

OnFace: if it not possible to attend the June meeting can I still bring a proposal?

RAN chairman: in principle yes but the later you come to the "party" the more difficult it will become to get into the "party"

conclusion: endorsed with the understanding that the text on slide 3 does not change the role of the rapporteur which is defined in the 3GPP working procedures

Decision: The document was **endorsed**.

RP-190641 Status of time budgets for RAN1/2/3/4/6 ongoing and new WIs/SIs after RAN #83

Type: report *For: Endorsement*
Source: RAN1/RAN2/RAN3/RAN4/RAN6 chairmen

Decision: The document was **endorsed after email discussion**.

16 Closing of the meeting

The TSG RAN chairman Balazs Bertenyi (Nokia) thanked the delegates for participating and contributing to RAN meeting #83, he thanked the host for organizing the meeting and the social event and he closed the meeting on Thursday March 21st, 2019 at 18:15.

Annex A: List of participants

The list of participants of this RAN meeting #83 is attached to this report.

Total number of participants: 280 (registered before the meeting: 386)

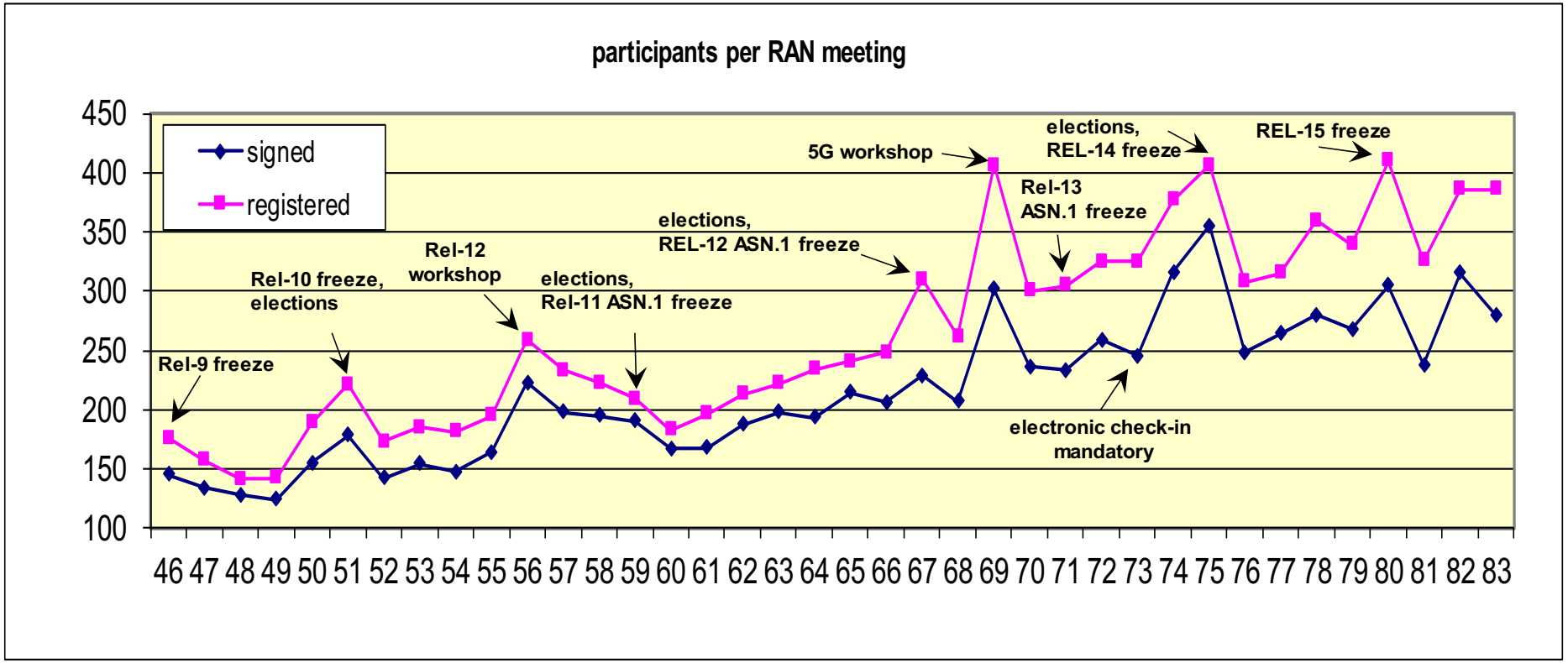


Fig. A-1: Participants per RAN meeting (registered beforehand and actual participants who signed/checked in)
(1 week TSG: #63, #66 and further meetings)

Annex B: List of contribution documents

The list of Tdocs of this RAN meeting #83 is attached to this report.

Total number of Tdocs: 773 (RP-190001 - RP-190773) of which 753 Tdocs are available, i.e. 20 are not available and they are withdrawn.

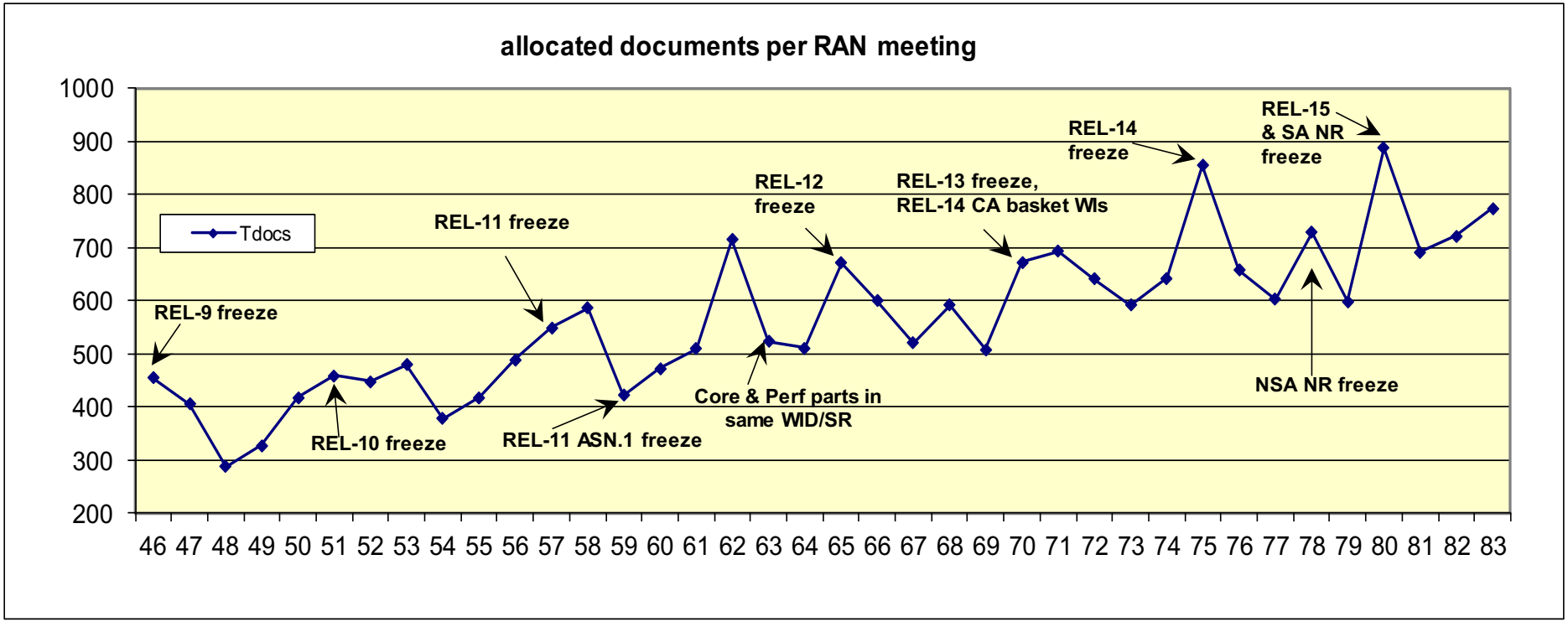


Fig. A-1: Number of allocated Tdocs per RAN meeting

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Annex C: Lists of liaison statements

In total 62 LSs/LTIs were received for RAN #83 (RP-190003 was handled by email before RAN #83).

9 of them were resubmissions of RAN #82: RP-190022 = RP-182205, RP-190023 = RP-182207, RP-190024 = RP-182208, RP-190025 = RP-182209, RP-190026 = RP-182210, RP-190027 = RP-182232, RP-190028 = RP-182233, RP-190029 = RP-182234, RP-190030 = RP-182694.
57 LSs/LTIs were treated (5 were not treated: RP-190036, RP-190052, RP-190121, RP-190719, RP-190720; they will be resubmitted to RAN #84).
Note: LSin RP-190123 is not counted here as it was withdrawn because it was provided in RP-190572 with correct attachments.
10 outgoing LSs/LTIs were sent from RAN #83 (1 of them agreed by email before RAN #83: RP-190004).

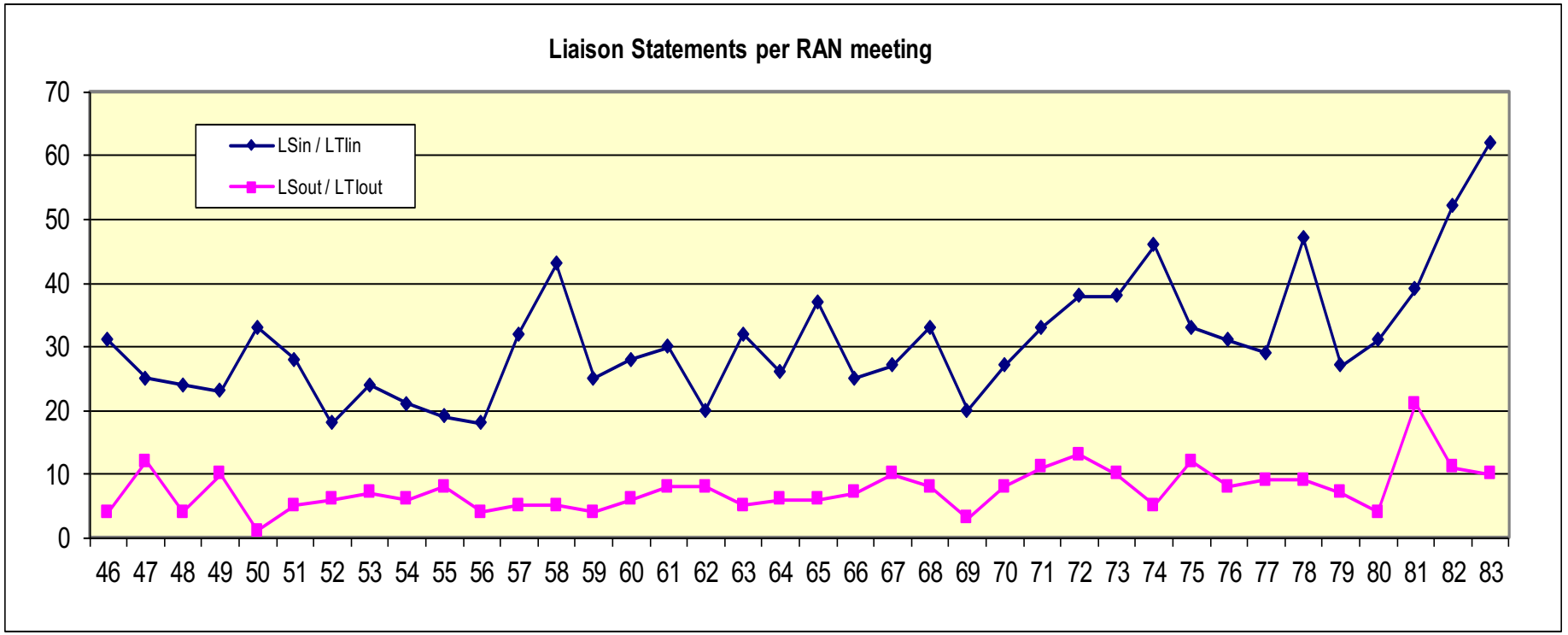


Fig. C-1: Number of incoming/outgoing Liason Statements (LS) and Letter to ITU (LTI) per RAN meeting

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C1: Incoming liaison statements

Document	Original	Title	From	Decision	Reply in
RP-190022	R2-1816018	Reply LS to S2-184608 = RP-180620 on optimisation of UE capability signalling (R2-1816018; to: SA2; cc: SA, RAN, RAN3, CT1, CT4; contact: MediaTek)	RAN2	noted	
RP-190023	R3-187104	LS on UTRAN, E-UTRAN and 5G Antenna Interface Function specifications (R3-187104; to: RAN4; cc: RAN; contact: Huawei)	RAN3	noted	
RP-190024	R4-1814315	LS on Vehicle mounted UE antenna performance (R4-1814315; to: 5GAA (Board, WG2, WG4); cc: RAN, RAN5; contact: Samsung)	RAN4	noted	
RP-190025	R4-1814321	LS to RAN5 and GCF on method to distinguish vehicle UE from handheld UE (R4-1814321; to: RAN5, GCF CAG; cc: RAN; contact: Huawei)	RAN4	noted	
RP-190026	R6-180181	Reply LS to RP-182176 on RAN6 impact for Rel-16 NB-IoT enhancements related to Inter-RAT cell selection (R6-180181; to: RAN2; cc: RAN; contact: Nokia)	RAN6	noted	
RP-190027	R4-1816775	LS on conclusion of "Study on evaluation for 2 RX exception in Rel-15 vehicle mounted UE for NR" (R4-1816775; to: RAN; cc: RAN5, RAN2, SA, 5GAA; contact: Samsung)	RAN4	noted	
RP-190028	R4-1816779	Response LS to R2-1813471 on UE capability for SUL and SDL (R4-1816779; to: RAN2; cc: RAN; contact: Nokia)	RAN4	noted	
RP-190029	R5-188184	LS on the testability of FR2 transmitter and reception tests (R5-188184; to: RAN4, RAN; cc: -; contact: Anritsu)	RAN5	noted	
RP-190030	S2-1813333	LS on 5G_URLLC (S2-1813333; to: RAN2, RAN3; cc: RAN; contact: Huawei)	SA2	noted	
RP-190031	S2-1901077	Reply LS to RP-182843 on PARLOS RAN impacts (S2-1901077; to: RAN, RAN2, RAN3, CT1; cc: SA; contact: Lenovo)	SA2	noted	
RP-190032	S3i190043	Reply LS to ETSI LI(18)R45019r1 on Reporting All Cell IDs in 5G (S3i190043; to: ETSI TC LI, RAN, RAN3, SA2, CT; cc: CT1, CT3; contact: PIDS)	SA3 LI	noted	
RP-190033	S4-190195	Reply LS to S2-1813384 = RP-182697 on Collection of Slice Related Data Analytics from UEs (S4-190195; to: SA2; cc: SA, RAN, RAN2, RAN3, SA5, CT1; contact: Ericsson)	SA4	noted	
RP-190034	S5-191340	Reply LS to S2-1813384 = RP-182697 on Collection of Slice Related Data Analytics from UEs (S5-191340; to: SA2; cc: SA, SA4, RAN, RAN3, RAN2; contact: Ericsson)	SA5	noted	
RP-190035	S5-191342	Reply LS to S2-1813404 = RP-182701 on Slice related Data Analytics (S5-191342; to: SA2; cc: SA, RAN, RAN3, RAN2; contact: Ericsson)	SA5	noted	
RP-190036	S6-190280	LS on D2D enabler for public safety communications in 5GS (S6-190280; to: SA, RAN; cc: SA2; contact: Firstnet)	SA6	not treated	
RP-190037	5GAA_S-190040	LS on V2X specification visibility in 3GPP (5GAA_S-190040; to: RAN; cc: SA, CT; contact: Huawei)	5GAA WG4	replied to	RP-190767
RP-190038	5GAA_S-190045	LS on 2Rx Antennas for NR V2X Sidelink (5GAA_S-190045; to: RAN; cc: RAN1, RAN4; contact: GM)	5GAA WG4	noted	
RP-190039	IEEE_802.11_WG_LS 190118	LS on Use of no/short LBT in the 3GPP NR-U specification (IEEE_802.11_WG_LS190118; to: RAN1; cc: RAN, IEEE-SA Standards Board, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee; contact: IEEE 802.11 Working Group Chair)	IEEE 802.11 WG	noted	
RP-190040	IEEE_802.11_WG_LS 190220	LS on Invitation to Coexistence Workshop in Vienna in July 2019 (IEEE_802.11_WG_LS190220; to: RAN; cc: RAN1, IEEE-SA Standards Board, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee; contact: IEEE 802.11 Working Group Chair)	IEEE 802.11 WG	replied to	RP-190745
RP-190041	ITU_T_SG11-LS73	LS on Amendment for ITU-T Q.731.3 on new functionalities to the calling line identification presentation (ITU_T_SG11-LS73; to: RAN, CT, SA, ITU-T SG2, ETSI TC NTECH; cc: -; contact: CAICT)	ITU-T SG11	noted	
RP-190042	ITU_T_SG12-LS68	LS on Draft new Recommendation E.RQST – “KPI targets for mobile networks” (ITU_T_SG12-LS68; to: RAN1, SA5, RAN6, RAN, SA; cc: -; contact: RURA Rwanda)	ITU-T SG12	replied to	RP-190673
RP-190043	R4-1902248	Reply LS to RP-182177 regarding LTE LAA channel combinations for 5GHz (R4-1902248; to: RAN, RAN2; cc: RAN1; contact: Charter Communications)	RAN4	noted	

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Document	Original	Title	From	Decision	Reply in
RP-190044	ITU_T_JCA-IoT_SC_C-LS38	LS on “Request to update the IoT and SC&C Standards Roadmap and the list of contact points” (ITU_T_JCA-IoT_SC_C-LS38; to: RAN, SA, all ITU-T Study Groups, ITU-T TSAG, ITU-R WP1A, WP1B and WP5A, ITU-T FG-AI4H, ITU-T FG-VM, ITU-T FG NET-2030, ITU-T FG-ML5G, ITU-T FG DLT, ITU-T FG DFC, ITU-T FG-DPM, ITU-D SG2, AR Standards, CEN, ECMA, ETSI, European Commission/IERC, AOITI WG3, GISFI, GS1 / EPC Global, GSC MSTF, IEEE-SA, IETF, IMTC UC IoT Activity Group, ISO/IEC JTC 1/SC 29/WG 11, ISO/IEC JTC 1, ISO/IEC JTC1 SC 31, ISO/IEC JTC1 SC 41, ISO/IEC JTC1 SC 6, ISO TC 122, ISO/TC184/SC5, ISO/TC 204, Mandat International, OGC, OMA, oneM2M, TIA, W3C, YRP Ubiquitous Networking Laboratory, AFNOR, AHCIET, ANEC, ANSI, BSI, CCSA, CDP, CEDARE, CEN-CENELEC-ETSI Smart Sustainable Cities & Communities (CEN/CENELEC/ETSI SSCC CG), CIC, CITEL, CPS, The Climate Group; Digital Europe, DIN, DKE (DIN/VDE), ECLAC, ETNO, ETSI TC EE, ETSI TC Smart M2M, European Commission (DG Connect), GeSI, GSMA, ICLEI, IDB, IEC SEG 1, IEC TC 100, IEC TC 111, IEEE FDC, IEEE SA, IEEE IC-CSHBA ISO/IECJTC 1/SG Smart Cities, MOHURD, SAC, StEP, UNCDF, UNDP, UNECE, UN Environment, UNESCO, UNFCCC, UN-Habitat, UNIDO, WBCSD for YRPGHG Protocol, WHO, WMO; cc: -; contact: ETRI)	ITU-T JCA-IoT and SC&C	noted	
RP-190045	R2-1902335	Reply LS to RP-182897 and S2-1813378 = RP-182729 on RAN related parameters collected from UE (R2-1902335; to: RAN, SA2; cc: RAN3; contact: Huawei)	RAN2	noted	
RP-190046	R2-1902369	Reply LS to S2-1813392 = RP-182698 on RAN Impact analysis due to TSN (R2-1902369; to: SA2; cc: RAN1, RAN3, RAN, SA; contact: Ericsson)	RAN2	noted	
RP-190047	R2-1902371	Reply LS S2-189051 = RP-181982 on TSN integration in the 5G System (R2-1902371; to: SA2; cc: RAN1, RAN3, SA1, RAN; contact: Nokia)	RAN2	noted	
RP-190048	R2-1902372	LS on RoHC utilization for Ethernet header compression (R2-1902372; to: IETF, IEEE 802; cc: RAN; contact: Nokia)	RAN2	noted	
RP-190049	R2-1902436	Response LS to S2-1813400 = RP-182700 on Completion of Study on Cellular IoT support and evolution for the 5G System (R2-1902436; to: SA2, RAN, RAN3; cc: SA, CT; contact: Qualcomm)	RAN2	replied to	RP-190768
RP-190050	R2-1902479	LS on RAN2 conclusion for NR positioning SI (R2-1902479; to: RAN1, RAN3, SA2, SA3; cc: RAN; contact: Intel)	RAN2	noted	
RP-190051	R2-1902566	Reply LS to R4-1902248 = RP-190043 and RP-182177 regarding LTE LAA channel combinations for 5GHz (R2-1902566; to: RAN, RAN4; cc: RAN1; contact: Charter Communications)	RAN2	noted	
RP-190052	R2-1902716	Reply LS to S2-1813393 = RP-182699 on RAN Impact analysis due to NPN (R2-1902716; to: SA2, RAN; cc: RAN3, CT1, SA; contact: Huawei)	RAN2	not treated	
RP-190053	R3-191119	LS on Completion of X2 TNL Address Discovery for EN-DC (R3-191119; to: SA2, CT4, CT; cc: RAN, SA; contact: Qualcomm)	RAN3	noted	
RP-190054	R4-1902193	LS on FR2 RF Exposure mitigation methods (R4-1902193; to: RAN1; cc: RAN; contact: Qualcomm)	RAN4	noted	
RP-190055	R4-1902222	Reply LS to RP-182876 on FR1 range (R4-1902222; to: RAN; cc: RAN1, RAN2, RAN3, RAN5; contact: Ericsson)	RAN4	noted	
RP-190056	R4-1902682	LS on FR2 Beam Correspondence (R4-1902682; to: RAN1, RAN2; cc: RAN; contact: Samsung)	RAN4	noted	
RP-190057	C1-191388	Reply LS to S3i190043 = RP-190032 on reporting all Cell IDs in 5G (C1-191388; to: SA3-LI; cc: ETSI TC LI, RAN, RAN3, SA2, CT, CT3; contact: Qualcomm)	CT1	noted	
RP-190058	C1-191726	Reply LS to S2-1901077 = RP-190031 on PARLOS RAN impacts (C1-191726; to: SA2; cc: RAN, RAN2, RAN3, SA; contact: Motorola)	CT1	noted	
RP-190059	S5-192459	Reply LS to ITU-T SG15-LS161 = RP-182219 on Update of Technical Report - "Transport network support of IMT-2020/5G" (S5-192459; to: ITU-T SG15; cc: RAN, ITU-T SG13; contact: Ericsson)	SA5	noted	
RP-190063	CEPT_ECC_PT1_LS190223	Response LS to RP-182893 on SDL and SUL pairing 3GPP TSG RAN Meeting #82 (CEPT_ECC_PT1_LS190223; to: RAN; cc: RAN4; contact: ECC PT1 Chairman)	CEPT ECC PT1	noted	
RP-190108	GSMA_TSGIoT15_003	LS on OTA testing of IoT devices (GSMA_TSGIoT15_003; to: CTIA, RAN4, RAN; cc: -; contact: CMCC)	GSMA	noted	

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Document	Original	Title	From	Decision	Reply in
RP-190109	ITU-R WP5D/TEMP/0710(Rev.1)	LS on Confirmation of receipt of updated information related to proposals for the terrestrial components of the radio interface(s) for IMT-2020 (ITU-R WP5D/TEMP/0710(Rev.1); to: RAN, Korea, China, ETSI, DECT Forum, TSDSI; cc: -; contact: Counsellor ITU-R SG5)	ITU-R WP5D	noted	
RP-190110	ITU-R WP5D/TEMP/0690	LS on Information of evaluation report for the terrestrial components of the radio interface(s) for IMT-2020 (ITU-R WP5D/TEMP/0690; to: ATIS WTSC, 5G Infrastructure Association, ChEG Chinese Evaluation Group, Canadian Evaluation Group, Wireless World Research Forum, TCOE India, 5GMF, TTA SPG33, Trans Pacific Evaluation Group, ETSI Evaluation Group, Egyptian Evaluation Group, 5G India Forum; cc: RAN, Korea, China, ETSI, DECT Forum, TSDSI; contact: Counsellor ITU-R SG5)	ITU-R WP5D	noted	
RP-190111	ITU-R WP5D/TEMP/0707(Rev.1)	LS on availability of updated information related to proposals for the terrestrial components of the radio interface(s) for IMT-2020 (ITU-R WP5D/TEMP/0707(Rev.1); to: ATIS WTSC, 5G Infrastructure Association, ChEG Chinese Evaluation Group, Canadian Evaluation Group, Wireless World Research Forum, TCOE India, 5GMF, 5G India Forum, TTA SPG33, Trans-Pacific Evaluation Group, ETSI Evaluation Group, Egyptian Evaluation Group; cc: RAN, Korea, China, ETSI, DECT Forum, TSDSI; contact: Counsellor ITU-R SG5)	ITU-R WP5D	noted	
RP-190112	ITU-R WP5D/TEMP/0706(Rev.1)	LS on Further Information on ITU-R Working Party 5D Workshop on IMT-2020 Terrestrial Radio Interfaces Evaluation (ITU-R WP5D/TEMP/0706(Rev.1); to: ATIS WTSC, 5G Infrastructure Association, ChEG Chinese Evaluation Group, Canadian Evaluation Group, Wireless World Research Forum, TCOE India, 5GMF, TTA SPG33, Trans-Pacific Evaluation Group, ETSI Evaluation Group, Egyptian Evaluation Group, 5G India Forum, RAN, Korea, China, ETSI, DECT Forum, TSDSI; cc: -; contact: Counsellor ITU-R SG5)	ITU-R WP5D	replied to	RP-190739
RP-190113	ITU-R WP5D/TEMP/0698	LS on the schedule for updating Recommendation ITU-R M.1457 to revision 15 (ITU-R WP5D/TEMP/0698; to: RAN, SA, 3GPP2, ARIB, ATIS, CCSA, ETSI, IEEE, TIA, TSDSI, TTA, TTC; cc: -; contact: Counsellor ITU-R SG5)	ITU-R WP5D	noted	
RP-190114	ITU-R WP5D/TEMP/0673(Rev.1)	LS for test methods over-the-air TRP measurements of IMT radio equipment utilizing active antennas (ITU-R WP5D/TEMP/0673(Rev.1); to: ITU-R WP1A, ITU-R WP1C; cc: RAN4, RAN5, RAN; contact: Counsellor ITU-R SG5)	ITU-R WP5D	noted	
RP-190115	R1-1903816	Response LS to RP-182876 on FR1 range (R1-1903816; to: RAN; cc: RAN2, RAN3, RAN4, RAN5; contact: Qualcomm)	RAN1	noted	
RP-190116	R1-1903820	LS on RAN1 NR UE features update (R1-1903820; to: RAN, RAN2; cc: -; contact: NTT DOCOMO)	RAN1	noted	
RP-190117	R3-191102	Reply LS to S2-1813394 = RP-182731 on Signalling optimization for RRC Inactive N3 path switch (R3-191102; to: SA2, RAN; cc: RAN2; contact: Qualcomm)	RAN3	replied to	RP-190768
RP-190118	R3-191111	Response LS to S3i190043 = RP-190032 on reporting all cell IDs in 5G (R3-191111; to: SA3-LI; cc: SA, SA2, SA3, RAN, CT, CT1, CT3, ETSI TC LI; contact: Nokia)	RAN3	noted	
RP-190119	R3-191141	LS on RAN3 conclusion for NR positioning SI (R3-191141; to: RAN2, RAN1, SA2, SA3, RAN; cc: -; contact: Intel)	RAN3	noted	
RP-190120	R3-191145	LS on responsibility over sections of 37.461 (R3-191145; to: RAN4; cc: RAN; contact: Nokia)	RAN3	noted	
RP-190121	R3-191168	Reply LS to S2-1813393 = RP-182699 on RAN impact analysis of NPN (R3-191168; to: SA2, RAN; cc: RAN2, CT1, SA; contact: Huawei)	RAN3	not treated	
RP-190122	S2-1902903	LS on Completion of FS_RACS study (S2-1902903; to: RAN, RAN2, RAN3, CT1, CT4; cc: -; contact: Qualcomm)	SA2	noted	
RP-190124	R4-1902220	LS on UE feature list for NR (R4-1902220; to: RAN2, RAN; cc: RAN1, RAN3; contact: NTT DOCOMO)	RAN4	noted	
RP-190572	S2-1902908	LS on EPS Additional RRM Policy Index (S2-1902908; to: RAN, RAN3, RAN2, CT , CT4; cc: SA; contact: Vodafone)	SA2	replied to	RP-190762
RP-190622	C4-190589	Reply LS R3-191119 = RP-190053 on Completion of X2 TNL Address Discovery for EN-DC (C4-190589; to: RAN3, RAN; cc: SA2, CT, SA; contact: Nokia)	CT4	noted	
RP-190638	GSMA_5GSI15_004	Reply LS to RP-182125 to 3GPP RAN on Work Status of 5GSI (GSMA_5GSI15_004; to RAN; SA, CT, GSMA Future Networks Programme ; contact: T-Mobile)	GSMA	noted	

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Document	Original	Title	From	Decision	Reply in
RP-190639	IEEE_80211_WG_LS190315	LS on request 3GPP continue consideration of a common preamble in 3GPP NR-U and IEEE 802.11 systems in 5 GHz and 6 GHz (contingent on the allocation of the 6GHz band for unlicensed RLAN operation) (IEEE_80211_WG_LS190315; to: RAN; cc: RAN1, RAN2, RAN4, IEEE-SA Standards Board, IEEE 802.11, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee; contact: IEEE 802.11 Working Group Chair)	IEEE 802.11 WG	noted	
RP-190719	CP-190187	Reply LS to R3-191119 = RP-190053 on Completion of X2 TNL Address Discovery for EN-DC (CP-190187; to: RAN3, RAN; cc: SA, SA2; contact: Orange)	CT	not treated	
RP-190720	5GAA_S-1900056	LS on NR V2X spectrum allocation (5GAA_S-1900056; to: RAN; cc: RAN1, RAN2, RAN4; contact: Huawei)	5GAA WG4	not treated	

C2: Outgoing liaison statements

Document	Title	To	Cc	reply to LSin
RP-190004	Draft LTI in reply to LS ITU_D_SG1_Q1_1_LS_SG1RGQ_104-E = RP-182215 on Strategies and policies for the deployment of broadband in developing countries (to: SA; cc: -; contact: Samsung)	SA	-	ITU_D_SG1_Q1_1_LS_SG1RGQ_104-E = RP-182215
RP-190673	Reply LS to ITU_T_SG12-LS68 = RP-190042 on Draft new Recommendation E.RQST – "KPI targets for mobile networks" (to: SA; cc: RAN1, SA5, RAN6; contact: Nokia)	SA	RAN1, SA5, RAN6	ITU_T_SG12-LS68 = RP-190042
RP-190730	LS on NG-RAN Network Sharing completion (to: RAN3; cc: -; contact: Huawei)	RAN3	-	-
RP-190739	Reply LS to ITU-R WP5D/TEMP/0706(Rev.1) = RP-190112 on Further Information on ITU-R Working Party 5D Workshop on IMT-2020 Terrestrial Radio Interfaces Evaluation (to: ITU-R WP5D; cc: SA; contact: ZTE)	ITU-R WP5D	SA	ITU-R WP5D/TEMP/0706(Rev.1) = RP-190112
RP-190745	Reply to IEEE_802.11_WG_LS190220 = RP-190040 on Invitation to Coexistence Workshop in Vienna in July 2019 (to: IEEE 802.11 WG; cc: RAN1, RAN2, RAN4; contact: RAN chairman (Nokia))	IEEE 802.11 WG	RAN1, RAN2, RAN4	IEEE_802.11_WG_LS190220 = RP-190040
RP-190758	Reply LS to IEEE_802.11_LS_180713b = RP-181524 in relation to certain channel combinations for LAA in 5GHz (to: IEEE 802.11 WG, IEEE-SA Board of Governors, IEEE 802 LMSC, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee; cc: RAN4, RAN2, RAN1; contact: Charter Communications)	IEEE 802.11 WG, IEEE-SA Board of Governors, IEEE 802 LMSC, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee	RAN4, RAN2, RAN1	IEEE_802.11_LS_180713b = RP-181524
RP-190762	Reply LS to S2-1902908 = RP-190572 on EPS Additional RRM Policy Index (to: RAN3, SA2, SA; cc: RAN2, CT, CT4; contact: Vodafone)	RAN3, SA2, SA	RAN2, CT, CT4	S2-1902908 = RP-190572
RP-190764	Draft LTI reply to ITU_R_WP5A_TEMP_349rev1 = RP-182236 on the revision of Recommendation ITU-R M.2084-0 (to: SA; cc: -; contact: ZTE)	SA	-	ITU_R_WP5A_TEMP_349rev1 = RP-182236
RP-190767	Reply LS to 5GAA_S-190040 = RP-190037 on V2X specification visibility in 3GPP (to: 5GAA, SA; cc: 5GAA WG4, CT; contact: NEC)	5GAA, SA	5GAA WG4, CT	5GAA_S-190040 = RP-190037
RP-190768	Response LS to R2-1902436 = RP-190049 and R3-191102 = RP-190117 on Completion of Study on Cellular IoT support and evolution for the 5G System and Signalling optimization for RRC Inactive N3 path switch (to: RAN2, RAN3, SA2, SA; cc: RAN1, CT; contact: Qualcomm)	RAN2, RAN3, SA2, SA	RAN1, CT	R2-1902436 = RP-190049, R3-191102 = RP-190117

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Annex D: List of change requests

1741 CRs (incl. cat.A CRs and 36 company CRs) were handled at RAN #83 and 1709 CRs were approved.

A corresponding list of all CRs is included in the attached Tdoc list.

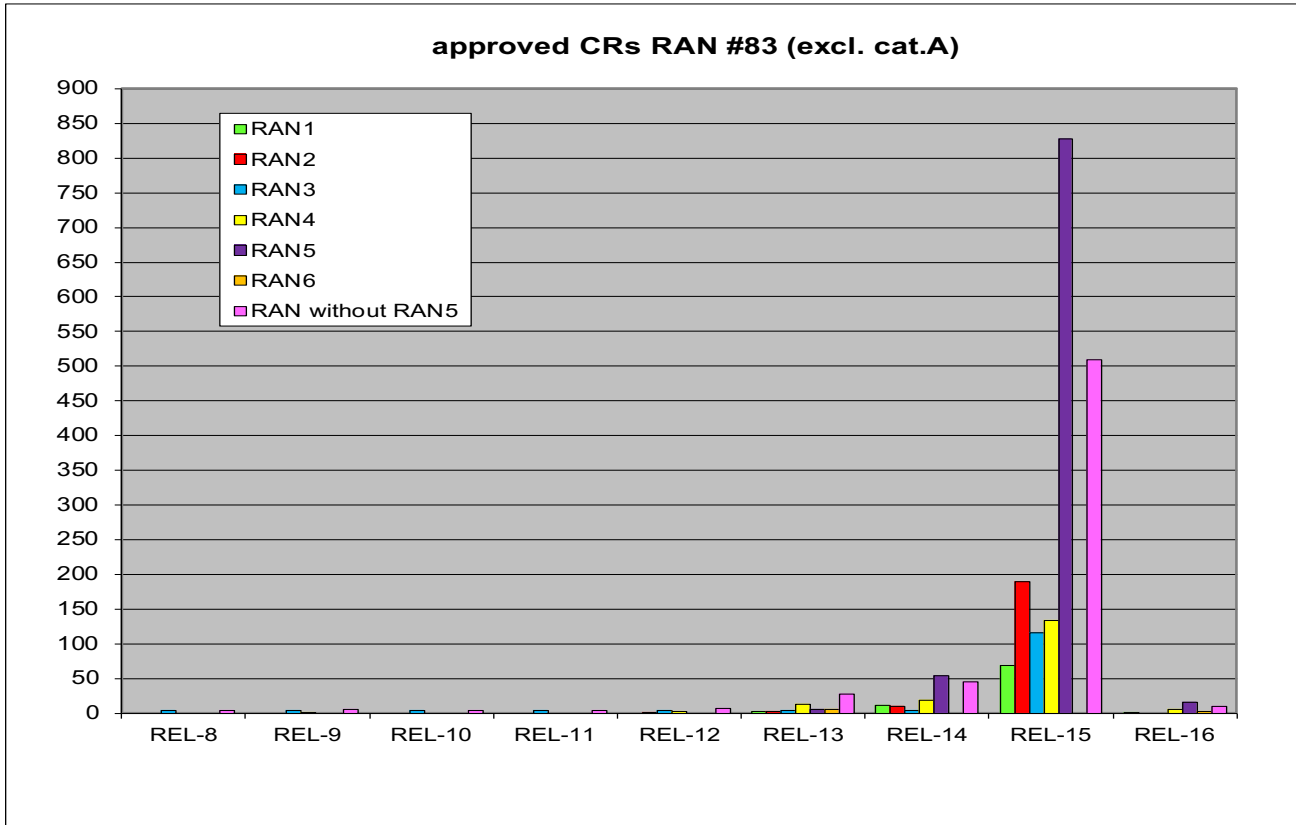


Fig. D-1: Approved CRs (excluding category A CRs) of this RAN meeting per WG and release

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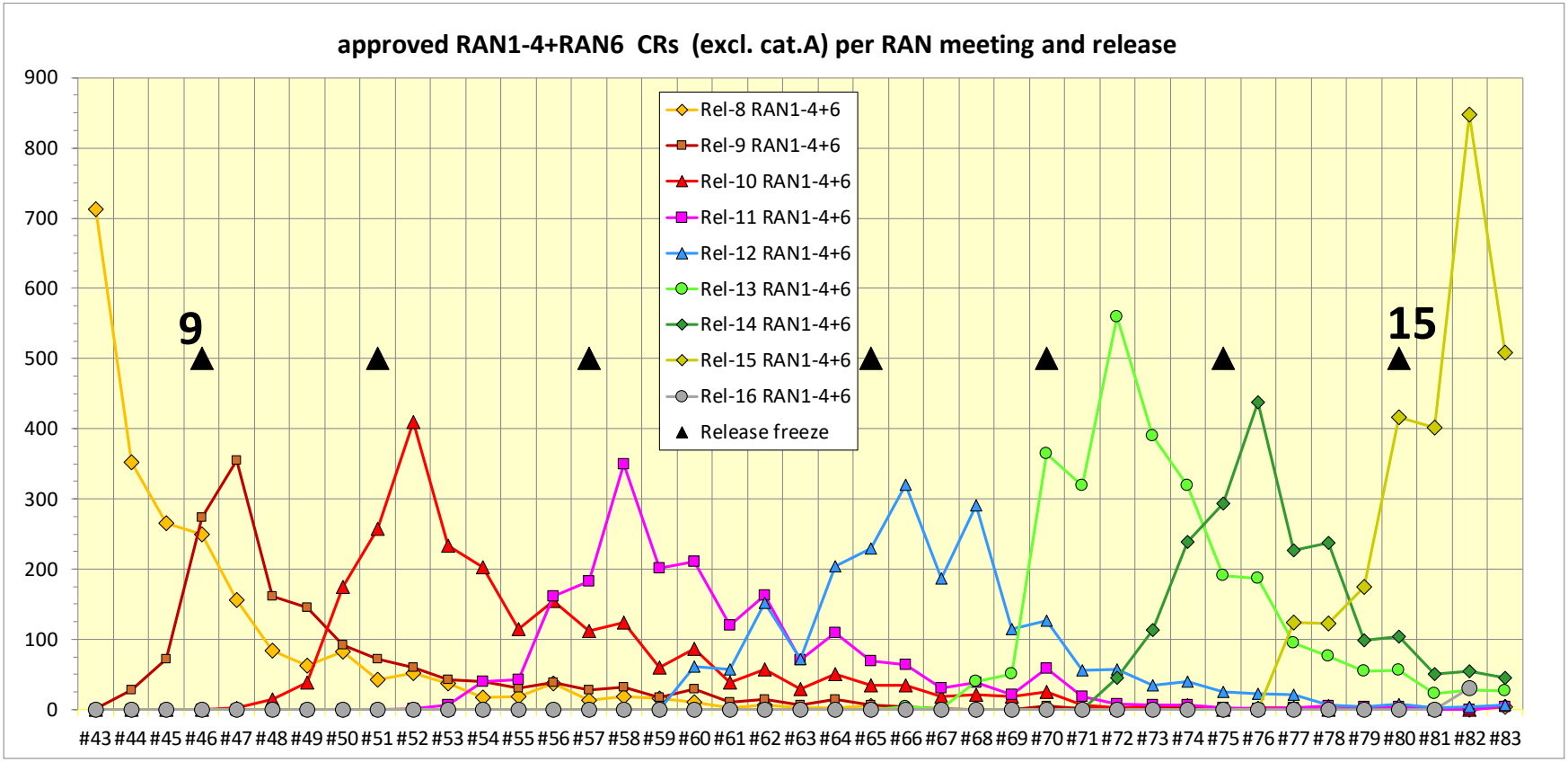


Fig. D-2: Approved CRs RAN1+2+3+4+6 (excluding category A CRs) of this and previous RAN meetings per release
REL freeze: REL-8: RAN #42, REL-9: RAN #46, REL-10: RAN #51, REL-11: RAN #57, REL-12: RAN #65, REL-13: RAN #70, REL-14: RAN #75, REL-15: RAN #80; REL-16: planned for RAN #87;
ASN.1 freeze: REL-8: RAN #43 (713 CRs* at #43), REL-9: RAN #47 (355 CRs* at #47), REL-10: RAN #52 (409 CRs* at #52) (apart from Un: #53), REL-11: RAN #59 (349 CRs* at #58), REL-12: RAN #67 (320 CRs* at #66), REL-13: RAN #71 (apart from NB-IOT: #72) (559 CRs* at #72), REL-14: RAN #76 (438 CRs* at #76), REL-15: RAN #81 (848 CRs* at #82), REL-16: planned for RAN #88
***: peak number of CRs in this release (excl. cat.A and testing CRs)**

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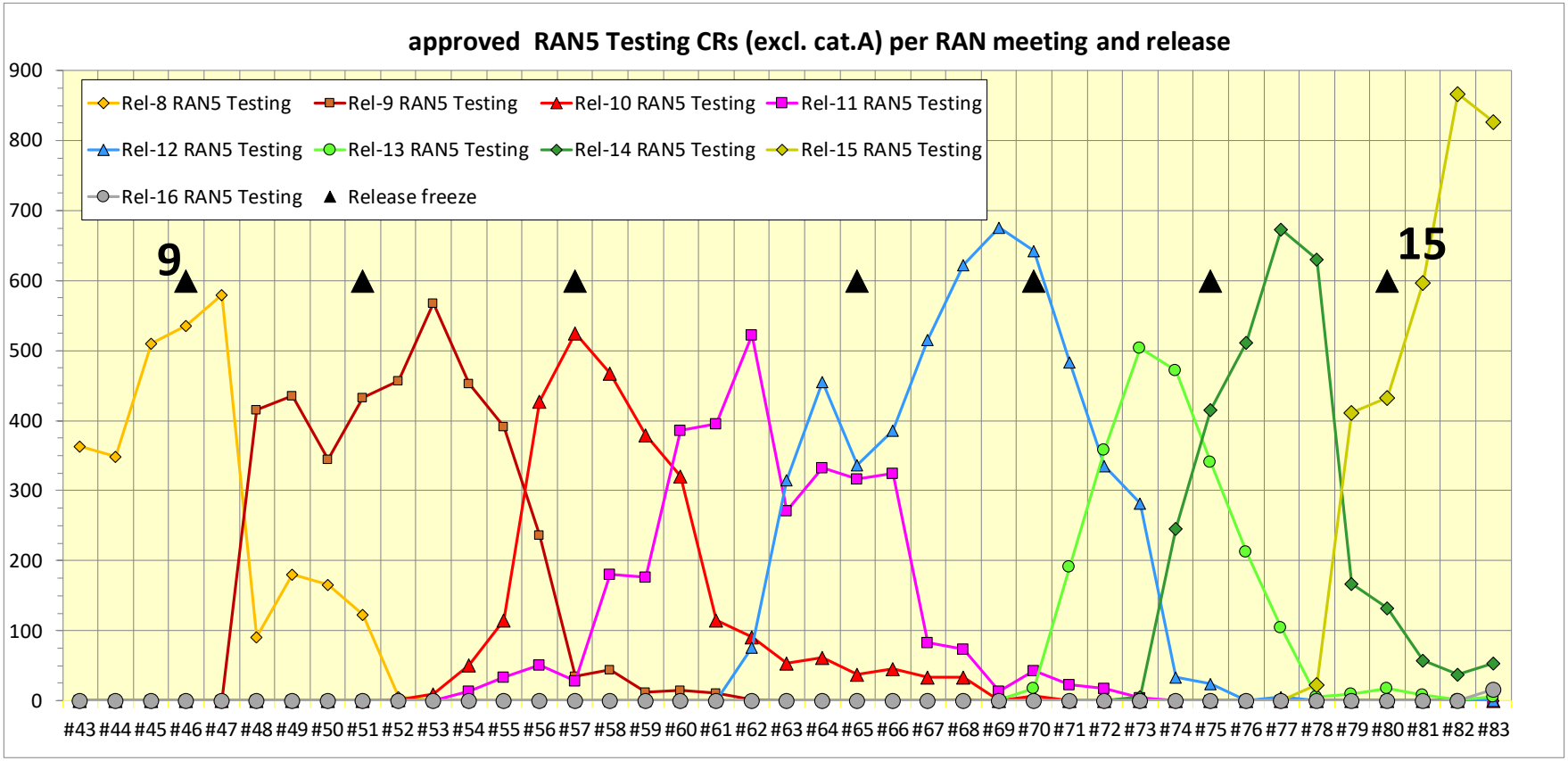


Fig. D-3: Approved CRs RAN5 (<u>excluding</u> category A CRs) of this and previous RAN meetings per release
<u>REL freeze</u>: REL-8: RAN #42, REL-9: RAN #46, REL-10: RAN #51, REL-11: RAN #57, REL-12: RAN #65, REL-13: RAN #70, REL-14: RAN #75, REL-15: RAN #80, REL-16: planned for RAN #87;
<u>ASN.1 freeze</u>: REL-8: RAN #43, REL-9: RAN #47, REL-10: RAN #52 (apart from Un: #53), REL-11: RAN #59, REL-12: RAN #67, REL-13: RAN #71 (apart from NB-IOT: #72), REL-14: RAN #76, REL-15: RAN #81, REL-16: planned for RAN #88

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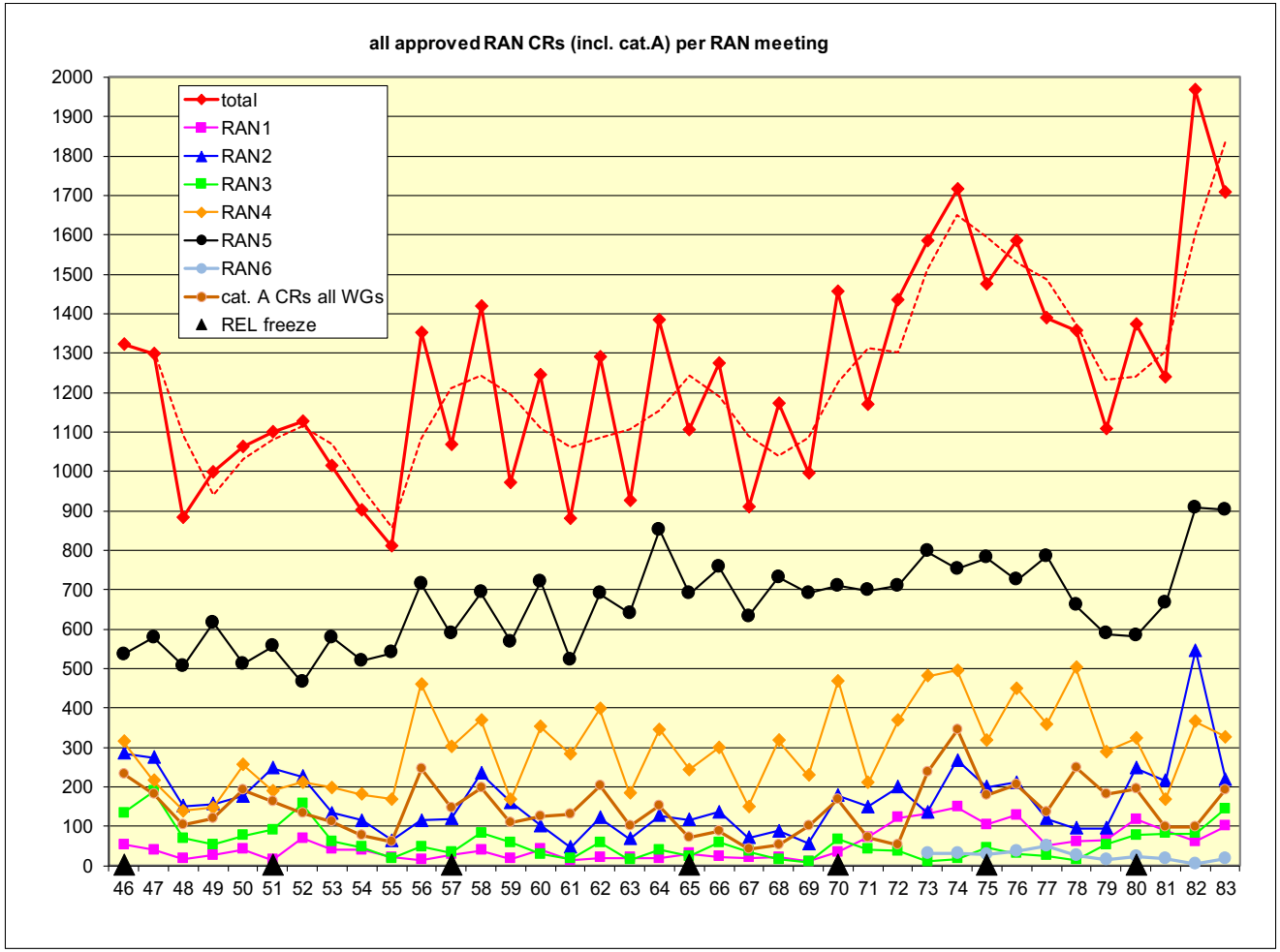


Fig. D-4: Approved CRs (all releases <u>including</u> category A CRs) per RAN WG and per RAN meeting
<u>REL freeze</u>: REL-8: RAN #42, REL-9: RAN #46, REL-10: RAN #51, REL-11: RAN #57, REL-12: RAN #65, REL-13: RAN #70, REL-14: RAN #75, REL-15: RAN #80, REL-16: planned for RAN #87;
<u>ASN.1 freeze</u>: REL-8: RAN #43, REL-9: RAN #47, REL-10: RAN #52 (apart from Un: #53),REL-11: RAN #59, REL-12: RAN #67, REL-13: RAN #71 (apart from NB-IOT: #72), REL-14: RAN #76, REL-15: RAN #81, REL-16: planned for RAN #88

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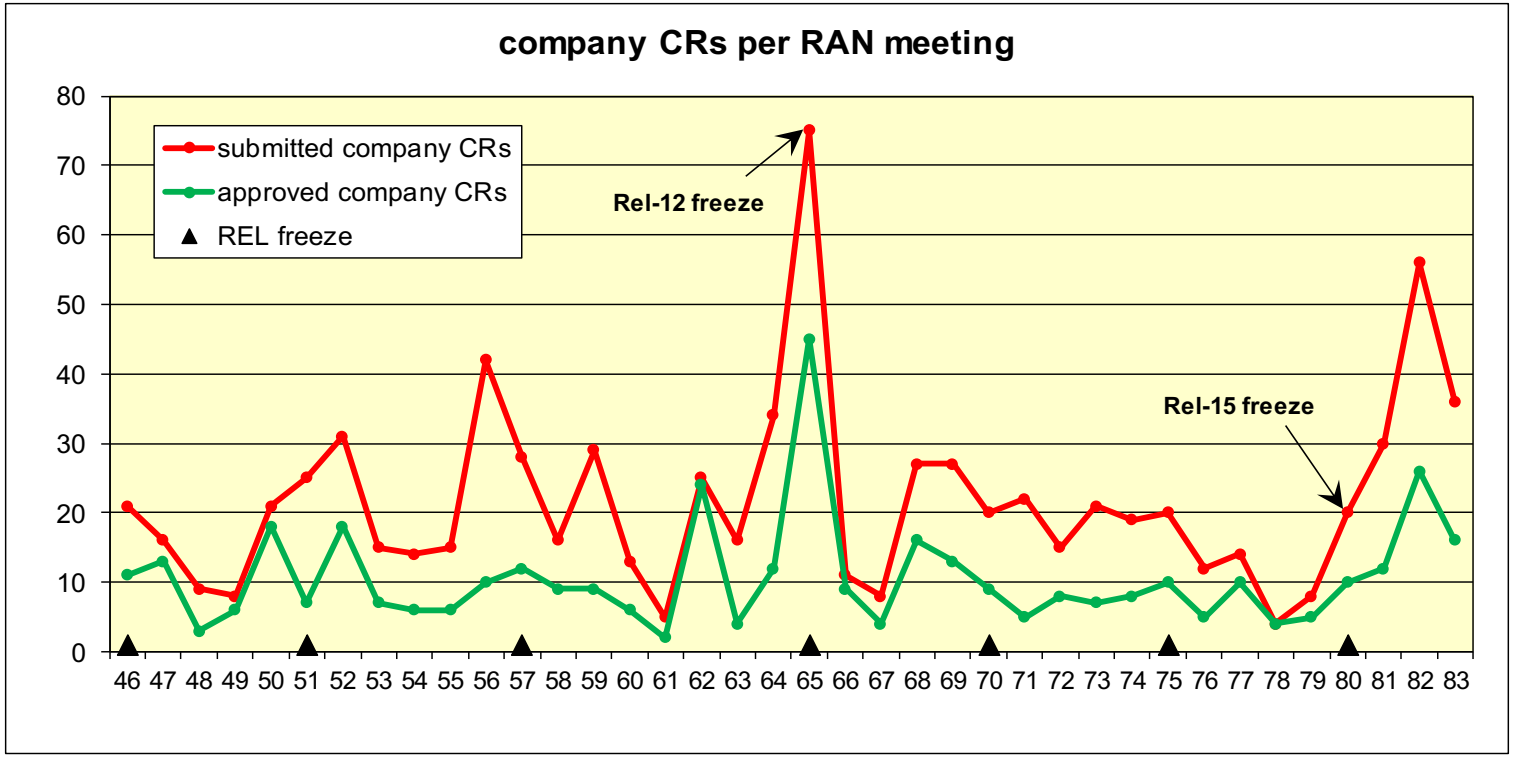


Fig. D-5: Company CRs directly submitted to TSG RAN

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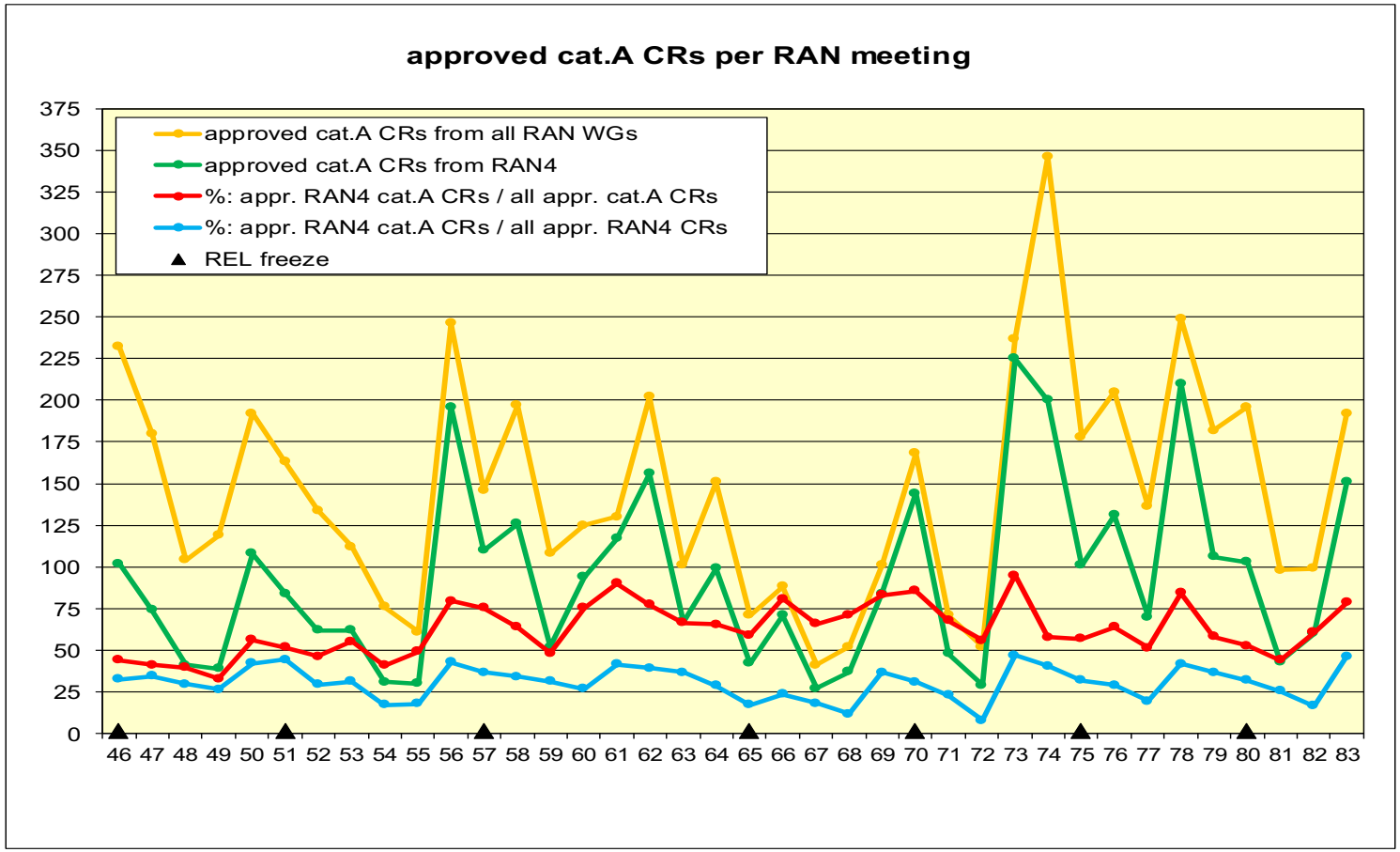


Fig. D-6: approved cat.A CRs per RAN meeting and the RAN4 contribution to them

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Annex E: List of draft Technical Specifications and Technical Reports

1 noted specification that was provided for information:

leader	Agenda	Tdoc	Title	Doc-type	Spec	WorkItem	Rel	Vers
R1	9.3.5	RP-190574	TR 38.840 v1.0.0 on Study on UE power saving in NR; for information	draft TR	38.840	FS_NR_UE_pow_sav	Rel-16	1.0.0

40 approved specifications that are now under CR control:

leader	Agenda	Tdoc	Title	Doc-type	Spec	WorkItem	Rel	Vers
R3	9.4.10	RP-190575	Iuant interface: General aspects and principles	draft TS	37.460	Iuant_transfer-Core	Rel-8	1.8.0
R3	9.4.10	RP-190576	Iuant interface: General aspects and principles	draft TS	37.460	Iuant_transfer-Core	Rel-9	1.9.0
R3	9.4.10	RP-190577	Iuant interface: General aspects and principles	draft TS	37.460	Iuant_transfer-Core	Rel-10	1.10.0
R3	9.4.10	RP-190578	Iuant interface: General aspects and principles	draft TS	37.460	Iuant_transfer-Core	Rel-11	1.11.0
R3	9.4.10	RP-190579	Iuant interface: General aspects and principles	draft TS	37.460	Iuant_transfer-Core	Rel-12	1.12.0
R3	9.4.10	RP-190580	Iuant interface: General aspects and principles	draft TS	37.460	Iuant_transfer-Core	Rel-13	1.13.0
R3	9.4.10	RP-190581	Iuant interface: General aspects and principles	draft TS	37.460	Iuant_transfer-Core	Rel-14	1.14.0
R3	9.4.10	RP-190582	Iuant interface: General aspects and principles	draft TS	37.460	Iuant_transfer-Core	Rel-15	1.15.0
R3	9.4.10	RP-190583	Iuant interface: Layer 1	draft TS	37.461	Iuant_transfer-Core	Rel-8	1.8.0
R3	9.4.10	RP-190584	Iuant interface: Layer 1	draft TS	37.461	Iuant_transfer-Core	Rel-9	1.9.0
R3	9.4.10	RP-190585	Iuant interface: Layer 1	draft TS	37.461	Iuant_transfer-Core	Rel-10	1.10.0
R3	9.4.10	RP-190586	Iuant interface: Layer 1	draft TS	37.461	Iuant_transfer-Core	Rel-11	1.11.0
R3	9.4.10	RP-190587	Iuant interface: Layer 1	draft TS	37.461	Iuant_transfer-Core	Rel-12	1.12.0
R3	9.4.10	RP-190588	Iuant interface: Layer 1	draft TS	37.461	Iuant_transfer-Core	Rel-13	1.13.0
R3	9.4.10	RP-190589	Iuant interface: Layer 1	draft TS	37.461	Iuant_transfer-Core	Rel-14	1.14.0
R3	9.4.10	RP-190590	Iuant interface: Layer 1	draft TS	37.461	Iuant_transfer-Core	Rel-15	1.15.0
R3	9.4.10	RP-190591	Iuant interface: Signalling transport	draft TS	37.462	Iuant_transfer-Core	Rel-8	1.8.0
R3	9.4.10	RP-190592	Iuant interface: Signalling transport	draft TS	37.462	Iuant_transfer-Core	Rel-9	1.9.0
R3	9.4.10	RP-190593	Iuant interface: Signalling transport	draft TS	37.462	Iuant_transfer-Core	Rel-10	1.10.0
R3	9.4.10	RP-190594	Iuant interface: Signalling transport	draft TS	37.462	Iuant_transfer-Core	Rel-11	1.11.0
R3	9.4.10	RP-190595	Iuant interface: Signalling transport	draft TS	37.462	Iuant_transfer-Core	Rel-12	1.12.0
R3	9.4.10	RP-190596	Iuant interface: Signalling transport	draft TS	37.462	Iuant_transfer-Core	Rel-13	1.13.0
R3	9.4.10	RP-190597	Iuant interface: Signalling transport	draft TS	37.462	Iuant_transfer-Core	Rel-14	1.14.0
R3	9.4.10	RP-190598	Iuant interface: Signalling transport	draft TS	37.462	Iuant_transfer-Core	Rel-15	1.15.0
R3	9.4.10	RP-190599	Iuant Interface: Application Part	draft TS	37.466	Iuant_transfer-Core	Rel-8	1.8.0
R3	9.4.10	RP-190600	Iuant Interface: Application Part	draft TS	37.466	Iuant_transfer-Core	Rel-9	1.9.0
R3	9.4.10	RP-190601	Iuant Interface: Application Part	draft TS	37.466	Iuant_transfer-Core	Rel-10	1.10.0
R3	9.4.10	RP-190602	Iuant Interface: Application Part	draft TS	37.466	Iuant_transfer-Core	Rel-11	1.11.0
R3	9.4.10	RP-190603	Iuant Interface: Application Part	draft TS	37.466	Iuant_transfer-Core	Rel-12	1.12.0
R3	9.4.10	RP-190604	Iuant Interface: Application Part	draft TS	37.466	Iuant_transfer-Core	Rel-13	1.13.0
R3	9.4.10	RP-190605	Iuant Interface: Application Part	draft TS	37.466	Iuant_transfer-Core	Rel-14	1.14.0
R3	9.4.10	RP-190606	Iuant Interface: Application Part	draft TS	37.466	Iuant_transfer-Core	Rel-15	1.15.0

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leader	Agenda	Tdoc	Title	Doc-type	Spec	WorkItem	Rel	Vers
R5	13.4.1	RP-190222	TS 38.521-4 v1.0.0 on 5GS; User Equipment (UE) conformance specification; Radio transmission and reception; Part 4: Performance	draft TS	38.521-4	5GS_NR_LTE-UEConTest	Rel-15	1.0.0
R5	13.4.1	RP-190161	TS 38.533 v1.0.0 on 5GS; User Equipment (UE) conformance specification; Radio Resource Management (RRM)	draft TS	38.533	5GS_NR_LTE-UEConTest	Rel-15	1.0.0
R1	10.3.3	RP-190133	TR 36.776 v2.0.0 on Evolved Universal Terrestrial Radio Access (E-UTRA); Study on 5G requirements for eMBMS	draft TR	36.776	FS_LTE_terr_bcast	Rel-16	2.0.0
R2	9.3.7	RP-190296	TR 37.873 v1.0.0 on Study on optimisations on UE radio capability signalling – NR/E-UTRA Aspects	draft TR	37.873	FS_RACS_RAN	Rel-16	1.0.0
R2	9.3.8	RP-190189	TR 38.825 v1.0.0 on Study on NR Industrial Internet of Things (IoT)	draft TR	38.825	FS_NR_IIOT	Rel-16	1.0.0
R1	9.3.6	RP-190621	TR 38.824 v2.0.1 Study on physical layer enhancements for NR ultra-reliable low latency communication (URLLC)	draft TR	38.824	FS_NR_L1enh_URLLC	Rel-16	2.0.1
R1	9.3.13	RP-190724	TR 38.855 v2.1.0 on Study on NR positioning support; for approval	draft TR	38.855	FS_NR_pos	Rel-16	2.1.0
R1	9.3.4	RP-190142	TR 38.885 v2.0.0 on NR Study on Vehicle-to-Everything; for approval	draft TR	38.885	FS_NR_V2X	Rel-16	2.0.0

1 agreed specification (note: It is under RAN leadership, i.e. it is handled in RAN via pCRs like a TR maintained in a WG):

leader	Agenda	Tdoc	Title	Doc-type	Spec	WorkItem	Rel	Vers
RP	9.3.12	RP-190697	TR 38.807 v0.1.0: Study on requirements for NR beyond 52.6 GHz	draft TR	38.807	FS_NR_beyond_52GHz	Rel-16	0.1.0

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Annex F: List of approved new and revised Work Items

Document	Title	new/revised
RP-190702	New SID: Study on enhancement for disaggregated gNB architecture	SID new
RP-190754	Study on local NR positioning in NG RAN	SID new

Document	Title	new/revised
RP-190165	New WID on introduction of NR band n14	WID new
RP-190166	New WID on introduction of NR band n30	WID new
RP-190321	New WID on UE Conformance Test Aspects - Rel-16 NR CA and DC; and NR and LTE DC Configurations	WID new
RP-190390	New WI proposal: introduction of NR SUL (supplemental uplink) band with same uplink frequency range of NR band n5	WID new
RP-190392	New WI proposal: addition of wider channel bandwidth in NR band n38	WID new
RP-190510	New WID on: UE Conformance Test Aspects - Extended-Band12 new E-UTRA Band (Band 85)	WID new
RP-190642	New WID on introduction of GSM, UTRA, E-UTRA and NR capability set(s) (CS(s)) to the multi-standard radio (MSR) specifications	WID new
RP-190650	New WID on: UE Conformance Test Aspects - Enhancements on Full-Dimension (FD) MIMO for LTE	WID new
RP-190657	New WI Proposal on optimisations on UE radio capability signalling - NR/E-UTRA Aspects	WID new
RP-190665	New WID: Power Class 2 UE for LTE bands 31 and 72	WID new
RP-190692	New WID: Rel-16 NR Inter-band Carrier Aggregation for 3 bands DL with 1 band bands UL	WID new
RP-190693	New WID: Rel-16 NR Inter-band Carrier Aggregation/Dual Connectivity for 3 bands DL with 2 band bands UL	WID new
RP-190726	New WI proposal: Physical layer enhancements for NR ultra-reliable and low latency communication (URLLC)	WID new
RP-190727	New WID: UE Power Saving in NR	WID new
RP-190728	New WID: Support of NR Industrial Internet of Things (IoT)	WID new
RP-190729	New WI: Private Network Support for NG-RAN	WID new
RP-190732	WID proposal for LTE-based 5G terrestrial broadcast	WID new
RP-190752	New WID: NR positioning support	WID new
RP-190759	New WID: RF requirement for NR frequency range 1 (FR1)	WID new
RP-190760	New WID: Add support of NR DL 256QAM for frequency range 2 (FR2)	WID new
RP-190761	New WID: RF requirements for FR2	WID new
RP-190765	New WID: introduction of NR band n259	WID new
RP-190766	New WID on 5G V2X with NR sidelink	WID new
RP-190772	New WI proposal: NG interface usage for WWC (Wireless Wireline Convergence)	WID new

Document	Title	new/revised
RP-190167	Revised SID: Study on high power UE (power class 2) for EN-DC (1 LTE FDD band + 1 NR TDD band)	SID revised
RP-190224	Revised SID: Study on NR V2X	SID revised
RP-190373	SID revision: Study on 7 – 24 GHz frequency range	SID revised
RP-190681	Revised SID: Feasibility Study on 6 GHz for LTE and NR in Licensed and Unlicensed Operations	SID revised
RP-190710	Revised SID for Study on solutions for NR to support non-terrestrial networks (NTN)	SID revised

Document	Title	new/revised
RP-190137	Revised WID: Addition of wider channel bandwidths for NR Band n7	WID revised
RP-190138	Revised WI: Rel'16 LTE inter-band CA for x bands DL (x=4, 5) with 1 band UL	WID revised
RP-190140	Revised WI: Core part: Introduction of n48	WID revised
RP-190150	Revised WID on LTE-A inter-band xDL/2UL CA with x=3,4,5 in rel-16	WID revised
RP-190151	Revised WID on LTE x bands (xDL/UL x=1.2,3,4) with NR 2 bands (2DL/1UL) EN DC in Rel-16	WID revised
RP-190157	Revised WID: Rel-16 LTE intra-band Carrier Aggregation for x CC DL/y CC UL including contiguous and non-contiguous spectrum (x>=y)	WID revised
RP-190159	Revised WID: Dual Connectivity (EN-DC) of 3 bands LTE inter-band CA (3DL/1UL) and 1 NR band (1DL/1UL)	WID revised
RP-190160	WI update: Transfer of Iuant interface specifications from 25-series to 37-series	WID revised
RP-190173	Revised WID: Introduction of NR band n18	WID revised
RP-190174	Revised WID: Addition of 30MHz channel bandwidth for NR band n41	WID revised
RP-190175	Revised WID: Core part: LTE/NR spectrum sharing in Band 41/n41 frequency range	WID revised
RP-190213	Revised WID: New Radio Access Technology	WID revised
RP-190272	Revised WID: Even further mobility enhancement in E-UTRAN	WID revised
RP-190294	Revised WID of Dual Connectivity (EN-DC) of 4 bands LTE inter-band CA (4DL/1UL) and 1 NR band (1DL/1UL)	WID revised
RP-190311	Revised WID on UE Conformance Test Aspects - UL Data Compression in LTE	WID revised
RP-190315	Revised WID on Power Class 2 UE for EN-DC (1 LTE band +1 NR band)	WID revised
RP-190332	Updated WID on Additional LTE bands for UE category M1 and/or NB1 in Rel-16	WID revised
RP-190333	Updated WID on Additional LTE bands for UE category M2 and/or NB2 in Rel-16	WID revised

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Document	Title	new/revised
RP-190360	Revised WID: Band 65 for New Radio	WID revised
RP-190375	WID revision: LTE Advanced inter-band CA Rel-16 for 3DL/1UL	WID revised
RP-190377	WID revision: LTE Advanced inter-band CA Rel-16 for 2DL/2UL	WID revised
RP-190379	WID revision: EN-DC for 3 bands DL with 2 bands UL (2 LTE bands + 1 NR band)	WID revised
RP-190452	Revised WID: Multi-RAT Dual-Connectivity and Carrier Aggregation enhancements	WID revised
RP-190489	Revised WID: NR Mobility Enhancements	WID revised
RP-190494	Revised WI: Rel-16 NR inter-band CA/DC for 2 bands DL with up to 2 bands UL	WID revised
RP-190500	Revised WID: Rel16 LTE inter-band CA for 2 bands DL with 1 band UL	WID revised
RP-190502	Revised WID: 29 dBm UE Power Class for LTE band 41 and NR Band n41	WID revised
RP-190514	Revised WID: UE Conformance Test Aspects - Further enhanced MTC for LTE	WID revised
RP-190689	Revised WID: Rel-16 NR intra band Carrier Aggregation for xCC DL/yCC UL including contiguous and non-contiguous spectrum (x>=y)	WID revised
RP-190700	Revised WID on Cross Link Interference (CLI) handling and Remote Interference Management (RIM) for NR	WID revised
RP-190705	Revised WID: Dual Connectivity (EN-DC) of 1 LTE band (1UL/1DL) and 1 NR band (1DL/1UL)	WID revised
RP-190706	Revised WID for NR-based access to unlicensed spectrum	WID revised
RP-190711	Revised work item proposal 2 step RACH for NR	WID revised
RP-190712	Revised WID for Integrated access and backhaul for NR	WID revised
RP-190713	Revised WID: Single Radio Voice Call Continuity from 5G to 3G	WID revised
RP-190714	WID revision: SA NR SUL, NSA NR SUL, NSA NR SUL with UL sharing from the UE perspective (ULSUP)	WID revised
RP-190757	WID revision: Additional enhancements for NB-IoT	WID revised
RP-190770	Revised WID for Additional MTC enhancements for LTE	WID revised

For more details see 3GPP workplan: http://www.3gpp.org/ftp/Information/WORK_PLAN/

NOTE: REL-4, REL-5, REL-6 and REL-7 were closed after RAN #65, i.e. no CRs to specifications of these releases will be considered anymore.

REL-7:
REL-7 stage 1 freeze: Sep.05 TSG #29
REL-7 stage 2 freeze: Sep. 06 TSG #33
REL-7 freeze: March 07 TSG #35
REL-7 ASN.1 freeze: March 08 TSG #39

REL-8: 7 quarters
REL-8 stage 1 freeze: Dec.07 TSG #38
REL-8 stage 2 freeze: June 08 TSG #40
REL-8 freeze: Dec.08 TSG #42
REL-8 ASN.1 freeze: March 09 TSG #43

REL-9: 4 quarters
REL-9 stage 1 freeze: Dec.08 TSG #42
REL-9 stage 2 freeze: June 09 TSG #44
REL-9 freeze: Dec.09 TSG #46
REL-9 ASN.1 freeze: March 10 TSG #47

REL-10: 5 quarters
REL-10 stage 1 freeze: March 10 TSG #47
REL-10 stage 2 freeze: Sep.10 TSG #49
REL-10 freeze: March 11 TSG #51
REL-10 ASN.1 freeze: June 11 TSG #52 (apart from Un for Relays: frozen in Sep.11 at TSG #53)

REL-11: 6 quarters
REL-11 stage 1 freeze: Sep.11 TSG #53
REL-11 stage 2 freeze: March 12 TSG #55
REL-11 freeze: Sep.12 TSG #57
REL-11 ASN.1 freeze: March 13 TSG #59

REL-12: 8 quarters
REL-12 stage 1 freeze: March 13 TSG #59
REL-12 stage 2 freeze: Dec.13 TSG #62
REL-12 freeze: Sep.14 TSG #65
REL-12 ASN.1 freeze: March 15 TSG #67

REL-13:	5 quarters	
REL-13 stage 1 freeze:	Sep.14	TSG #65
REL-13 stage 2 freeze:	June 15	TSG #68
REL-13 freeze:	Dec.15	TSG #70
REL-13 ASN.1 freeze:	March 16	TSG #71 (apart from NB-IoT aspects in 36.331: frozen in June 16 at RAN #72)

REL-14:	5 quarters	
REL-14 stage 1 freeze:	March 16	TSG #71
REL-14 stage 2 freeze:	Sep.16	TSG #73
REL-14 freeze:	March 17	TSG #75**
REL-14 ASN.1 freeze:	June 17	TSG #76**

**: These target dates were endorsed by SA #69 (in connection with proposal SP-150564), and with RP-152228 the REL-14 freeze date was confirmed.

REL-15:	5 quarters	
REL-15 stage 1 freeze:	June 17	TSG #76
REL-15 stage 2 freeze:	Dec.17	TSG #78
REL-15 freeze:	June 18	TSG #80, see RP-152228 (RAN #70)
REL-15 ASN.1 freeze:	Sep.18	TSG #81

note: Acc. to RP-170741 (RAN #75): "**early drop** of REL-15": completion of stage 3 for Non-Standalone (NSA) 5G-NR eMBB (incl. low latency support) with Option 3 targeted for Dec.17 (ASN.1 freeze: March 18).

note: Acc. to RP-180554 (RAN #79): introduction of a "**late drop** of REL-15" (to be completed in Dec.18, ASN.1 freeze in March 19) to exclusively contain NR architecture options that were not completed by the REL-15 ASN.1 freeze in Sep.18 (option 4, option 7; NR-NR DC to be considered to be added, option 5 if not completed by Sep.18). Note: Finally option 5 is not part of the late drop of REL-15 as it was already completed.

note: Acc. to SP-181241 (TSG #82) the stage 3 freeze of the "**late drop** of REL-15" was shifted from Dec.18 to March 19 (the corresponding ASN.1 freeze was shifted from March 19 to June 19).

REL-16:	7 quarters	
REL-16 stage 1 freeze:	Dec.18	TSG #82
REL-16 stage 2 freeze:	June 19	TSG #84 (planned)
REL-16 freeze:	March 20	TSG #87 (planned), (originally Dec.19 acc. to RP-152228 (RAN #70))
REL-16 ASN.1 freeze:	June 20	TSG #88 (planned)

note: Acc. to SP-181241 (TSG #82) the REL-16 stage 3 freeze was shifted from Dec.19 to March 20 (the corresponding ASN.1 freeze was shifted from March 20 to June 20).

REL-17:	5 quarters (acc. to RP-190716)	
REL-17 stage 1 freeze:	Dec.19	TSG #86 (planned)
REL-17 stage 2 freeze:	Sep.20	TSG #89 (planned)
REL-17 freeze:	June 21	TSG #92 (planned)
REL-17 ASN.1 freeze:	Sep.21	TSG #93 (planned)

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Annex G: List of RAN meetings

MEETING	DATES	LOCATION	HOST
RAN #47	16 March – 19 March 2010	Vienna, Austria	EF3
RAN #48	1 June – 4 June 2010	Seoul, Korea	TTA
RAN #49	14 Sep. – 17 Sep. 2010	San Antonio, USA	NAF3
RAN #50	7 Dec. – 10 Dec. 2010	Istanbul, Turkey	EF3
RAN #51 @	15 March – 18 March 2011	Kansas City, USA	Sprint Nextel
RAN #52	31 May – 3 June 2011	Bratislava, Slovakia	EF3
RAN #53	13 Sep. – 16 Sep. 2011	Fukuoka, Japan	ARIB & TTC
RAN #54	6 Dec. – 9 Dec. 2011	Berlin, Germany	EF3
RAN #55	28 Feb. – 2 March 2012	Xiamen, China	ZTE, CMCC
REL-12 workshop ***	11 June - 12 June 2012	Ljubljana, Slovenia	EF3
RAN #56	13 June – 15 June 2012	Ljubljana, Slovenia	EF3
RAN #57	4 Sep. – 7 Sep. 2012	Chicago, USA	NAF3
RAN #58	4 Dec. – 7 Dec. 2012	Barcelona, Spain	EF3
RAN #59 @	26 Feb. – 1 March 2013	Vienna, Austria	EF3
RAN #60	11 June – 14 June 2013	Oranjestad, Aruba	NAF3
RAN #61	3 Sep. – 6 Sep. 2013	Porto, Portugal	EF3
RAN #62	3 Dec. – 6 Dec. 2013	Busan, Korea	TTA
RAN #63 **	3 March – 6 March 2014	Fukuoka, Japan	ARIB & TTC
RAN #64	10 June – 13 June 2014	Sophia Antipolis, France	ETSI
RAN workshop LTE-U	13 June 2014	Sophia Antipolis, France	ETSI
RAN #65	9 Sep. – 12 Sep. 2014	Edinburgh, Scotland	EF3
RAN #66 **	8 Dec. – 11 Dec. 2014	Maui, USA	NAF3
RAN #67 ** @	9 March – 12 March 2015	Shanghai, China	Huawei
RAN #68 **	15 June – 18 June 2015	Malmö, Sweden	EF3
workshop LAA	29 Aug. 2015	Beijing, China	Huawei
RAN #69 **	14 Sep. – 16 Sep. 2015	Phoenix, USA	NAF3
workshop 5G	17 Sep. – 18 Sep. 2015	Phoenix, USA	NAF3
RAN #70 **	7 Dec. – 10 Dec. 2015	Sitges, Spain	EF3
5G Req. ad hoc	28 Jan. - 29 Jan. 2016	Barcelona, Spain	EF3
RAN #71 **	7 March – 10 March 2016	Göteborg, Sweden	EF3
RAN #72 **	13 June – 16 June 2016	Busan, Korea	TTA
RAN #73 **	19 Sep. – 22 Sep. 2016	New Orleans, USA	NAF3
RAN #74 **	5 Dec. – 8 Dec. 2016	Vienna, Austria	EF3
RAN #75 ** @	6 March - 9 March 2017	Dubrovnik, Croatia	EF3
RAN #76 **	5 June - 8 June 2017	West Palm Beach, USA	NAF3
RAN #77 **	11 Sep. - 14 Sep. 2017	Sapporo, Japan	ARIB & TTC
RAN #78 **	18 Dec. - 21 Dec. 2017	Lisbon, Portugal	EF3
RAN #79 **	19 March – 22 March 2018	Chennai, India	IF3
RAN #80 **	11 June – 14 June 2018	La Jolla (CA), USA	NAF3
RAN #81 **	10 Sep. – 13 Sep. 2018	Gold Coast, Australia	Telstra
Workshop on 3GPP submission towards IMT-2020	24 Oct. – 25 Oct. 2018	Brussels, Belgium	EC
**RAN #82 ** **	**10 Dec. – 13 Dec. 2018**	**Sorrento, Italy**	**EF3**
RAN #83 ** @	18 March - 21 March 2019	Shenzhen, China	Huawei
RAN #84 **	3 June - 6 June 2019	Newport Beach, USA	NAF3
RAN #85 **	16 Sep. - 19 Sep. 2019	Newport Beach, USA	NAF3
RAN #86 **	9 Dec. - 12 Dec. 2019	Sitges, Spain	EF3
RAN #87 **	16 March - 19 March 2020	tbd, Korea	TTA
RAN #88 **	15 June – 18 June 2020	Malmo, Sweden	EF3
RAN #89 **	14 Sep. – 17 Sep. 2020	Funchal, Madeira, Portugal	EF3
RAN #90 **	7 Dec. – 10 Dec. 2020	tbd, North America	NAF3
RAN #91 ** @	22 March - 25 March 2021	tbd, North America	NAF3
RAN #92 **	14 June - 17 June 2021	tbd, Japan	JF3

MEETING	DATES	LOCATION	HOST
RAN #93 **	13 Sep. - 16 Sep. 2021	tbd, Australia	Telstra
RAN #94 **	13 Dec. - 16 Dec. 2021	tbd, EU	EF3

***: RAN Workshop on REL-12 and onwards
**: 1 week TSG i.e. in same week with CT and SA, therefore RAN starting on Monday (compare RP-131328)
@: elections

Annex G: List of action items

Nothing to report

Annex H: List of email discussions after RAN #83

Time budget summary:
Goal: to endorse TU summary as outcome of RAN #83.
Rapporteur: RAN1/2/3/4/6 chairmen.
Deadline: 05.04.2019
conclusion: Email discussion was kicked off on the RAN reflector by the RAN4 chairman on 29.03.2019 with draft_RP-190641_v1.zip.
The endorsed time budget overview was sent out on 15.04.2019 in **RP-190641**.

RAN4 NR Rel-16 BS and UE demodulation scope:
Goal: Define RAN4 NR Rel-16 BS and UE demodulation scope (see RP-190659)
Rapporteur: Intel
Deadline: Tdoc request deadline RAN #84
conclusion: Email discussion was kicked off on the RAN_DRAFTS reflector by Yang Tang (Intel) on 20.05.2019. An email discussion summary was provided to RAN #84 in **RP-191025**.

RAN4 NR Rel-16 RRM scope:
Goal: Define RAN4 NR Rel-16 RRM scope (see RP-190659)
Rapporteur: Intel
Deadline: Tdoc request deadline RAN #84
conclusion: Email discussion was kicked off on the RAN_DRAFTS reflector by Yang Tang (Intel) on 21.05.2019. An email discussion summary was provided to RAN #84 in **RP-191024**.

RAN4 NR Rel-16 HST (high speed train) scope:
Goal: Define RAN4 NR Rel-16 HST scope (see RP-190659)
Rapporteur: Intel
Deadline: Tdoc request deadline RAN #84
conclusion: Email discussion was kicked off on the RAN_DRAFTS reflector by Yang Tang (Intel) on 22.05.2019. An email discussion summary was provided to RAN #84 in **RP-191026**.

Annex I: History

Document history		
Date	**TSG RAN Tdoc**	**Subject**
21.03.2019	-	Draft report of RAN #83 provided directly after RAN #83
09.04.2019	-	Draft report of RAN #83 v1.0
12.05.2019	RP-190776	Draft report of RAN #83 v2.0 as submitted to RAN #84 (revision marks relative to v1.0)
03.06.2019	RP-191479	Report of RAN #83 approved by RAN #84 Note: Annex H was updated compared RP-190776 to add 3 more email discussions that were missing in RP-190776.

In case of comments/questions/corrections please contact:

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APPENDIX H

Available	Decision	Tdoc	Title	Source	ReservationDate	AvailabilityDate
Yes	revised	RP-190001	Agenda for RAN #83 held in Shenzhen, China, 18.03.-	RAN chairm	27.02.19 21:10	27.02.19 21:17
Yes	revised	RP-190002	Draft report of RAN #82 held in Sorrento, Italia, 10.12.-	ETSI MCC	27.02.19 21:10	02.03.19 02:58
Yes	noted	RP-190003	Draft LTI in reply to LS ITU_D_SG1_Q1_1_LS_SG1RGQ_104-E = RP-182215 on Strategies and policies for the deployment of broadband in developing countries (RT-190002; to: RAN;	3GPP ITU-R ad hoc	27.02.19 21:10	27.02.19 21:17
Yes	agreed	RP-190004	Draft LTI in reply to LS ITU_D_SG1_Q1_1_LS_SG1RGQ_104-E = RP-182215 on Strategies and policies for the deployment of broadband in developing countries (to: SA; cc: -; contact:	RAN	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190005	Status Report RAN WG1	RAN1 chairman (Qualcomm)	27.02.19 21:10	17.03.19 10:40
Yes	noted	RP-190006	List of CRs from RAN WG1	ETSI MCC	27.02.19 21:10	14.03.19 01:43
Yes	noted	RP-190007	Status Report RAN WG2	RAN2 chairman (Intel)	27.02.19 21:10	18.03.19 18:13
Yes	noted	RP-190008	List of CRs from RAN WG2	ETSI MCC	27.02.19 21:10	14.03.19 11:27
Yes	noted	RP-190009	Status Report RAN WG3	RAN3 chairm	27.02.19 21:10	15.03.19 18:24
Yes	noted	RP-190010	List of CRs from RAN WG3	ETSI MCC	27.02.19 21:10	17.03.19 04:46

Yes	revised	RP-190011	Status Report RAN WG4	RAN4 chairman (Samsung)	27.02.19 21:10	17.03.19 04:46
Yes	noted	RP-190012	List of CRs from RAN WG4	ETSI MCC	27.02.19 21:10	14.03.19 11:27
Yes	noted	RP-190013	Status Report RAN WG5	RAN5 chairman	27.02.19 21:10	17.03.19 04:46
Yes	noted	RP-190014	List of CRs from RAN WG5	ETSI MCC	27.02.19 21:10	14.03.19 11:56
Yes	approved	RP-190015	Status Report MCC TF160 (for approval)	ETSI MCC	27.02.19 21:10	11.03.19 19:54
Yes	noted	RP-190016	Status Report RAN WG6	RAN6 chairm	27.02.19 21:10	15.03.19 18:24
Yes	noted	RP-190017	List of CRs from RAN WG6	ETSI MCC	27.02.19 21:10	07.03.19 16:03
Yes	noted	RP-190018	TSG SA Report to TSG RAN - Questions for Advice and Requests	SA chairman (Samsung)	27.02.19 21:10	19.03.19 05:41
Yes	noted	RP-190019	3GPP Support Team Report	ETSI MCC	27.02.19 21:10	12.03.19 23:04
Yes	noted	RP-190020	Status Report ITU-R Ad hoc	3GPP ITU-R Ad hoc	27.02.19 21:10	15.03.19 18:24

Yes	noted	RP-190021	3GPP Work Plan review at Plenary #83	ETSI MCC	27.02.19 21:10	21.03.19 05:45
Yes	noted	RP-190022	Reply LS to S2-184608 = RP-180620 on optimisation of UE capability signalling (R2-1816018; to: SA2; cc: SA, RAN,	RAN2	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190023	LS on UTRAN, E-UTRAN and 5G Antenna Interface Function specifications (R3-187104; to: RAN4; cc: RAN; contact: Huawei)	RAN3	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190024	LS on Vehicle mounted UE antenna performance (R4-1814315; to: 5GAA (Board, WG2, WG4); cc: RAN, RAN5; contact: Samsung)	RAN4	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190025	LS to RAN5 and GCF on method to distinguish vehicle UE from handheld UE (R4-1814321; to: RAN5, GCF CAG; cc: RAN; contact:	RAN4	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190026	Reply LS to RP-182176 on RAN6 impact for Rel-16 NB-IoT enhancements related to Inter-RAT cell selection (R6-180181;	RAN6	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190027	LS on conclusion of "Study on evaluation for 2 RX exception in Rel-15 vehicle mounted UE for NR" (R4-1816775; to: RAN; cc:	RAN4	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190028	Response LS to R2-1813471 on UE capability for SUL and SDL (R4-1816779; to: RAN2; cc: RAN; contact: Nokia)	RAN4	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190029	LS on the testability of FR2 transmitter and reception tests (R5-188184; to: RAN4, RAN; cc: -; contact: Anritsu)	RAN5	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190030	LS on 5G_URLLC (S2-1813333; to: RAN2, RAN3; cc: RAN; contact: Huawei)	SA2	27.02.19 21:10	27.02.19 21:17

Yes	noted	RP-190031	Reply LS to RP-182843 on PARLOS RAN impacts (S2-1901077; to: RAN, RAN2, RAN3, CT1; cc: SA; contact: Lenovo)	SA2	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190032	Reply LS to ETSI LI(18)R45019r1 on Reporting All Cell IDs in 5G (S3i190043; to: ETSI TC LI, RAN, RAN3, SA2, CT; cc: CT1, CT3;	SA3 LI	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190033	Reply LS to S2-1813384 = RP-182697 on Collection of Slice Related Data Analytics from UEs (S4-190195; to: SA2; cc: SA, RAN, RAN2, RAN3, SA5, CT1; contact:	SA4	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190034	Reply LS to S2-1813384 = RP-182697 on Collection of Slice Related Data Analytics from UEs (S5-191340; to: SA2; cc: SA, SA4, RAN, RAN3, RAN2; contact:	SA5	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190035	Reply LS to S2-1813404 = RP-182701 on Slice related Data Analytics (S5-191342; to: SA2; cc: SA, RAN, RAN3, RAN2; contact: Ericsson)	SA5	27.02.19 21:10	27.02.19 21:17
Yes	not treated	RP-190036	LS on D2D enabler for public safety communications in 5GS (S6-190280; to: SA, RAN; cc: SA2; contact: Firstnet)	SA6	27.02.19 21:10	27.02.19 21:17

Yes	replied to	RP-190037	LS on V2X specification visibility in 3GPP (5GAA_S-190040; to: RAN; cc: SA, CT; contact: Huawei)	5GAA WG4	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190038	LS on 2Rx Antennas for NR V2X Sidelink (5GAA_S-190045; to: RAN; cc: RAN1, RAN4; contact:	5GAA WG4	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190039	LS on Use of no/short LBT in the 3GPP NR-U specification (IEEE_802.11_WG_LS190118; to: RAN1; cc: RAN, IEEE-SA Standards Board, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee; contact: IEEE 802.11 Working Group Chair)	IEEE 802.11 WG	27.02.19 21:10	27.02.19 21:17

Yes	replied to	RP-190040	LS on Invitation to Coexistence Workshop in Vienna in July 2019 (IEEE_802.11_WG_LS190220; to: RAN; cc: RAN1, IEEE-SA Standards Board, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee; contact: IEEE 802.11 Working Group Chair)	IEEE 802.11 WG	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190041	LS on Amendment for ITU-T Q.731.3 on new functionalities to the calling line identification presentation (ITU_T_SG11-LS73;	ITU-T SG11	27.02.19 21:10	27.02.19 21:17
Yes	replied to	RP-190042	LS on Draft new Recommendation E.RQST – "KPI targets for mobile networks" (ITU_T_SG12-LS68; to: RAN1, SA5, RAN6, RAN, SA; cc: -; contact: RURA Rwanda)	ITU-T SG12	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190043	Reply LS to RP-182177 regarding LTE LAA channel combinations for 5GHz (R4-1902248; to: RAN, RAN2; cc: RAN1; contact: Charter Communications)	RAN4	27.02.19 21:10	27.02.19 21:17

Yes	noted	RP-190044	LS on "Request to update the IoT and SC&C Standards Roadmap and the list of contact points" (ITU_T_JCA-IoT_SC_C-LS38; to: RAN, SA, all ITU-T Study Groups, ITU-T TSAG, ITU-R WP1A, WP1B and WP5A, ITU-T FG-AI4H, ITU-T FG-VM, ITU-T FG NET-2030, ITU-T FG-ML5G, ITU-T FG DLT, ITU-T FG DFC, ITU-T FG-DPM, ITU-D SG2, AR Standards, CEN, ECMA, ETSI, European Commission/IERC, AOITI WG3, GISFI, GS1 / EPC Global, GSC MSTF, IEEE-SA, IETF, IMTC UC IoT Activity Group, ISO/IEC JTC 1/SC 29/WG 11, ISO/IEC JTC 1, ISO/IEC JTC1 SC 31, ISO/IEC JTC1 SC 41, ISO/IEC JTC1 SC 6, ISO TC 122, ISO/TC184/SC5, ISO/TC 204, Mandat International, OGC, OMA, oneM2M, TIA, W3C, YRP Ubiquitous Networking Laboratory, AFNOR, AHCIET, ANEC, ANSI, BSI, CCSA, CDP, CEDARE, CEN-CENELEC-ETSI Smart Sustainable Cities &	ITU-T JCA-IoT and SC&C	27.02.19 21:10	27.02.19 21:17
Yes	noted	RP-190045	Reply LS to RP-182897 and S2-1813378 = RP-182729 on RAN related parameters collected from UE (R2-1902335; to: RAN, SA2; cc: RAN3; contact: Huawei)	RAN2	27.02.19 21:10	07.03.19 00:49
Yes	noted	RP-190046	Reply LS to S2-1813392 = RP-182698 on RAN Impact analysis due to TSN (R2-1902369; to: SA2; cc: RAN1, RAN3, RAN, SA;	RAN2	27.02.19 21:10	07.03.19 00:49
Yes	noted	RP-190047	Reply LS S2-189051 = RP-181982 on TSN integration in the 5G System (R2-1902371; to: SA2; cc: RAN1, RAN3, SA1, RAN; contact:	RAN2	27.02.19 21:10	07.03.19 00:49
Yes	noted	RP-190048	LS on RoHC utilization for Ethernet header compression (R2-	RAN2	27.02.19 21:10	07.03.19 00:49
Yes	replied to	RP-190049	Response LS to S2-1813400 = RP-182700 on Completion of Study on Cellular IoT support and evolution for the 5G System (R2-1902436; to: SA2, RAN, RAN3; cc:	RAN2	27.02.19 21:10	07.03.19 00:49

Yes	noted	RP-190050	LS on RAN2 conclusion for NR positioning SI (R2-1902479; to: RAN1, RAN3, SA2, SA3; cc: RAN;	RAN2	27.02.19 21:10	07.03.19 00:49
Yes	noted	RP-190051	Reply LS to R4-1902248 = RP-190043 and RP-182177 regarding LTE LAA channel combinations for 5GHz (R2-1902566; to: RAN, RAN4; cc: RAN1; contact: Charter Communications)	RAN2	27.02.19 21:10	07.03.19 00:49
Yes	not treated	RP-190052	Reply LS to S2-1813393 = RP-182699 on RAN Impact analysis due to NPN (R2-1902716; to: SA2, RAN; cc: RAN3, CT1, SA; contact: Huawei)	RAN2	27.02.19 21:10	07.03.19 00:49
Yes	noted	RP-190053	LS on Completion of X2 TNL Address Discovery for EN-DC (R3-191119; to: SA2, CT4, CT; cc: RAN, SA; contact: Qualcomm)	RAN3	27.02.19 21:10	07.03.19 00:49

Yes	noted	RP-190054	LS on FR2 RF Exposure mitigation methods (R4-1902193; to: RAN1; cc: RAN; contact: Qualcomm)	RAN4	27.02.19 21:10	07.03.19 00:49
Yes	noted	RP-190055	Reply LS to RP-182876 on FR1 range (R4-1902222; to: RAN; cc: RAN1, RAN2, RAN3, RAN5; contact: Ericsson)	RAN4	27.02.19 21:10	07.03.19 00:49
Yes	noted	RP-190056	LS on FR2 Beam Correspondence (R4-1902682; to: RAN1, RAN2;	RAN4	27.02.19 21:10	07.03.19 00:49
Yes	noted	RP-190057	Reply LS to S3i190043 = RP-190032 on reporting all Cell IDs in 5G (C1-191388; to: SA3-LI; cc: ETSI TC LI, RAN, RAN3, SA2, CT, CT3; contact: Qualcomm)	CT1	27.02.19 21:10	07.03.19 00:49
Yes	noted	RP-190058	Reply LS to S2-1901077 = RP-190031 on PARLOS RAN impacts (C1-191726; to: SA2; cc: RAN, RAN2, RAN3, SA; contact: Motorola)	CT1	27.02.19 21:10	07.03.19 00:49
Yes	noted	RP-190059	Reply LS to ITU-T SG15-LS161 = RP-182219 on Update of Technical Report - "Transport network support of IMT-2020/5G" (S5-192459; to: ITU-T	SA5	27.02.19 21:10	07.03.19 00:49
Yes	approved	RP-190060	RAN6 agreed CRs for REL-16 WI: GERAN TEI16	RAN6	27.02.19 21:10	07.03.19 16:03
Yes	approved	RP-190061	RAN6 agreed CRs for REL-13 WI: CIoT_EC_GSM-Core	RAN6	27.02.19 21:10	07.03.19 16:03
Yes	approved	RP-190062	RAN6 agreed CRs for REL-13 WI: CIoT_EC_GSM-Perf	RAN6	27.02.19 21:10	07.03.19 16:03

Yes	noted	RP-190063	Response LS to RP-182893 on SDL and SUL pairing 3GPP TSG RAN Meeting #82 (CEPT_ECC_PT1_LS190223; to: RAN; cc: RAN4; contact: ECC PT1 Chairman)	CEPT ECC PT1	27.02.19 21:14	07.03.19 00:49
Yes	noted	RP-190064	Status report for WI UE Conformance Test Aspects – E-UTRA 2.4 GHz TDD Band for US	RAN5	01.03.19 07:37	07.03.19 13:53
Yes	noted	RP-190065	Status report for SI Study on solutions for NR to support non-terrestrial networks (NTN);	RAN3	02.03.19 11:04	11.03.19 19:54
Yes	noted	RP-190066	Status report for WI UE Conformance Test Aspects -	RAN5	05.03.19 08:24	05.03.19 08:45
Yes	approved	RP-190067	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Rel-13 LTE CA configurations	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190068	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - WLAN/3GPP Radio Level	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190069	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Interference Mitigation for	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190070	RAN5 agreed non TTCN CR(s) WI MS Conformance Test Aspects - Elevation Beamforming/Full-	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190071	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Rel-14 CA configurations	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190072	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects – 4 Rx antenna ports with CA for LTE	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190073	RAN5 agreed non TTCN CR(s) WI MS Conformance Test Aspects -	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190074	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects -	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190075	RAN5 agreed non TTCN CR(s) under WI UE Conformance Test Aspects – Uplink capacity	RAN5	05.03.19 18:26	14.03.19 11:56

Yes	approved	RP-190076	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - 5G system with NR and LTE (5GS_NR_LTE-UEConTest) (Batch 1)	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190077	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - 5G	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190078	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - 5G	RAN5	05.03.19 18:26	14.03.19 11:56

Yes	partially approved	RP-190079	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - 5G system with NR and LTE (5GS_NR_LTE-UEConTest) (Batch 4)	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190080	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - 5G	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190081	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects -	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190082	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Quality of Experience (QoE)	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190083	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - 450 MHz Band for LTE in Region 3	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190084	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - UL	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190085	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - 5G system Non-3GPP Access	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190086	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Bluetooth/WLAN measurement	RAN5	05.03.19 18:26	14.03.19 11:56

Yes	partially approved	RP-190087	RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-15 Conformance Testing (TEI15_Test)	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190088	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects -	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190089	RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - E-UTRA 2.4 GHz TDD Band for US	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190090	RAN5 agreed non TTCN CR(s) under WI Small Technical	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190091	RAN5 agreed non TTCN CR(s) under WI Small Technical	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190092	RAN5 agreed non TTCN CR(s) under WI Small Technical	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190093	RAN5 agreed non TTCN CR(s) under WI Small Technical	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190094	RAN5 agreed non TTCN CR(s) under WI Small Technical	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190095	RAN5 agreed non TTCN CR(s) under WI Small Technical	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190096	RAN5 agreed non TTCN CR(s) under WI Small Technical	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190097	RAN5 agreed non TTCN CR(s) under WI Small Technical	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190098	CR to 34.229-3: Add new verified and e-mail agreed TTCN test cases	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190099	CR to 34.229-3: Add new verified and e-mail agreed TTCN test cases	RAN5	05.03.19 18:26	14.03.19 11:56
No	withdrawn	RP-190100	CR to 34.123-3: Add new verified and e-mail agreed TTCN test cases	RAN5	05.03.19 18:26	
Yes	approved	RP-190101	CR to 34.123-3: Add new verified and e-mail agreed TTCN test cases	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190102	CR to 36.523-3: Add new verified and e-mail agreed TTCN test cases	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190103	CR to 36.523-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 36.523-3 (TTCN), Annex A	RAN5	05.03.19 18:26	14.03.19 11:56

No	withdrawn	RP-190104	CR to 37.751-4: Add new verified and e-mail agreed TTCN test cases	RAN5	05.03.19 18:26	
Yes	approved	RP-190105	CR to 37.571-4: Add new verified and e-mail agreed TTCN test cases	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190106	CR to 38.523-3: Add new verified and e-mail agreed TTCN test cases	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	approved	RP-190107	CR to 38.523-3: Add new verified and e-mail agreed TTCN test cases	RAN5	05.03.19 18:26	14.03.19 11:56
Yes	noted	RP-190108	LS on OTA testing of IoT devices (GSMA_TSGIoT15_003; to: CTIA, RAN4, RAN; cc: -; contact: CMCC)	GSMA	05.03.19 22:27	07.03.19 00:51
Yes	noted	RP-190109	LS on Confirmation of receipt of updated information related to proposals for the terrestrial components of the radio interface(s) for IMT-2020 (ITU-R WP5D/TEMP/0710(Rev.1); to:	ITU-R WP5D	05.03.19 22:27	07.03.19 00:51
Yes	noted	RP-190110	LS on Information of evaluation report for the terrestrial components of the radio interface(s) for IMT-2020 (ITU-R WP5D/TEMP/0690; to: ATIS WTSC, 5G Infrastructure Association, ChEG Chinese Evaluation Group, Canadian Evaluation Group, Wireless World Research Forum, TCOE India, 5GMF, TTA SPG33, Trans Pacific Evaluation Group, ETSI Evaluation Group, Egyptian Evaluation Group, 5G India Forum; cc: RAN, Korea, China, ETSI, DECT Forum, TSDSI; contact: Counsellor ITU-R SG5)	ITU-R WP5D	05.03.19 22:27	07.03.19 00:51

Yes	noted	RP-190111	LS on availability of updated information related to proposals for the terrestrial components of the radio interface(s) for IMT-2020 (ITU-R WP5D/TEMP/0707(Rev.1); to: ATIS WTSC, 5G Infrastructure Association, ChEG Chinese Evaluation Group, Canadian Evaluation Group, Wireless World Research Forum, TCOE India, 5GMF, 5G India Forum, TTA SPG33, Trans-Pacific Evaluation Group, ETSI Evaluation Group, Egyptian Evaluation Group; cc: RAN, Korea, China, ETSI, DECT Forum, TSDSI; contact: Counsellor ITU-R SG5)	ITU-R WP5D	05.03.19 22:27	07.03.19 00:54

Yes	replied to	RP-190112	LS on Further Information on ITU-R Working Party 5D Workshop on IMT-2020 Terrestrial Radio Interfaces Evaluation (ITU-R WP5D/TEMP/0706(Rev.1); to: ATIS WTSC, 5G Infrastructure Association, ChEG Chinese Evaluation Group, Canadian Evaluation Group, Wireless World Research Forum, TCOE India, 5GMF, TTA SPG33, Trans-Pacific Evaluation Group, ETSI Evaluation Group, Egyptian Evaluation Group, 5G India Forum, RAN, Korea, China, ETSI, DECT Forum, TSDSI; cc: -; contact: Counsellor ITU-R SG5)	ITU-R WP5D	05.03.19 22:27	07.03.19 00:49
Yes	noted	RP-190113	LS on the schedule for updating Recommendation ITU-R M.1457 to revision 15 (ITU-R WP5D/TEMP/0698; to: RAN, SA, 3GPP2, ARIB, ATIS, CCSA, ETSI, IEEE, TIA, TSDSI, TTA, TTC; cc: -; contact: Counsellor ITU-R SG5)	ITU-R WP5D	05.03.19 22:27	07.03.19 00:55
Yes	noted	RP-190114	LS for test methods over-the-air TRP measurements of IMT radio equipment utilizing active antennas (ITU-R WP5D/TEMP/0673(Rev.1); to: ITU-R WP1A, ITU-R WP1C; cc:	ITU-R WP5D	05.03.19 22:27	07.03.19 00:49
Yes	noted	RP-190115	Response LS to RP-182876 on FR1 range (R1-1903816; to: RAN; cc: RAN2, RAN3, RAN4, RAN5; contact: Qualcomm)	RAN1	05.03.19 22:27	07.03.19 00:49
Yes	noted	RP-190116	LS on RAN1 NR UE features update (R1-1903820; to: RAN,	RAN1	05.03.19 22:27	07.03.19 00:49

Yes	replied to	RP-190117	Reply LS to S2-1813394 = RP-182731 on Signalling optimization for RRC Inactive N3 path switch (R3-191102; to: SA2, RAN; cc: RAN2; contact:	RAN3	05.03.19 22:27	07.03.19 00:49
Yes	noted	RP-190118	Response LS to S3i190043 = RP-190032 on reporting all cell IDs in 5G (R3-191111; to: SA3-LI; cc: SA, SA2, SA3, RAN, CT, CT1, CT3, ETSI TC LI; contact: Nokia)	RAN3	05.03.19 22:27	07.03.19 00:49
Yes	noted	RP-190119	LS on RAN3 conclusion for NR positioning SI (R3-191141; to: RAN2, RAN1, SA2, SA3, RAN; cc: -; contact: Intel)	RAN3	05.03.19 22:27	07.03.19 00:49
Yes	noted	RP-190120	LS on responsibility over sections of 37.461 (R3-191145; to: RAN4; cc: RAN; contact: Nokia)	RAN3	05.03.19 22:27	07.03.19 00:49
Yes	not treated	RP-190121	Reply LS to S2-1813393 = RP-182699 on RAN impact analysis of NPN (R3-191168; to: SA2, RAN; cc: RAN2, CT1, SA; contact: Huawei)	RAN3	05.03.19 22:27	07.03.19 00:49
Yes	noted	RP-190122	LS on Completion of FS_RACS study (S2-1902903; to: RAN, RAN2, RAN3, CT1, CT4; cc: -; contact: Qualcomm)	SA2	05.03.19 22:27	11.03.19 19:54
Yes	withdrawn	RP-190123	LS on EPS Additional RRM Policy Index (S2-1902908; to: RAN, RAN3, RAN2, CT , CT4; cc: SA; contact: Vodafone)	SA2	05.03.19 22:27	11.03.19 19:54
Yes	noted	RP-190124	LS on UE feature list for NR (R4-1902220; to: RAN2, RAN; cc: RAN1, RAN3; contact: NTT DOCOMO)	RAN4	05.03.19 22:27	11.03.19 19:54
No	withdrawn	RP-190125	Motivation for study on Enhancement for Disaggregated gNB Architecture	China Telecommunications ,CATT,	05.03.19 23:13	
No	withdrawn	RP-190126	New SID on Study on enhancement for disaggregated gNB architecture	China Telecommunications ,CATT,	05.03.19 23:16	

Yes	noted	RP-190127	Status report for WI Perf. part: Shortened TTI and processing time for LTE; rapporteur: Ericsson	RAN4	06.03.19 08:17	11.03.19 19:54
Yes	revised	RP-190128	Revised work item proposal 2 step RACH for NR	ZTE Corporation	06.03.19 08:20	11.03.19 19:54
Yes	noted	RP-190129	Status report for WI 2-step RACH for NR; rapporteur: ZTE Corporation	RAN1	06.03.19 08:25	11.03.19 19:54
Yes	revised	RP-190130	Preliminary views on NTN activities in Rel-17	THALES	06.03.19 10:12	11.03.19 19:54
Yes	rejected	RP-190131	Proposed revision of WID “2-step RACH for NR”	THALES	06.03.19 10:41	11.03.19 19:54
Yes	noted	RP-190132	Status report for WI Study on LTE-based 5G terrestrial broadcast; rapporteur: Qualcomm	RAN1	06.03.19 13:34	11.03.19 23:59
Yes	approved	RP-190133	TR 36.776 v2.0.0 on Evolved Universal Terrestrial Radio Access (E-UTRA); Study on 5G	Qualcomm Incorp	06.03.19 13:35	11.03.19 23:59
Yes	revised	RP-190134	WID proposal for LTE-based 5G terrestrial broadcast	Qualcomm Incorporated	06.03.19 13:36	11.03.19 23:59

Yes	noted	RP-190135	Motivation for WI for LTE-based 5G terrestrial broadcast	Qualcomm Incorp	06.03.19 13:37	11.03.19 23:59
Yes	noted	RP-190136	Status report for WI UE Conformance Test Aspects -	RAN5	06.03.19 16:23	11.03.19 19:54
Yes	approved	RP-190137	Revised WID: Addition of wider channel bandwidths for NR Band	BT plc	06.03.19 18:59	11.03.19 19:54
Yes	approved	RP-190138	Revised WI: Rel'16 LTE inter-band CA for x bands DL (x=4, 5) with 1 band UL	Nokia, Nokia Shangh	06.03.19 19:02	11.03.19 19:54
Yes	noted	RP-190139	Status Report for WI: Rel'16 LTE inter-band CA for x bands DL (x=4, 5) with 1 band UL, Rapporteur:	RAN4	06.03.19 19:02	11.03.19 19:54
Yes	approved	RP-190140	Revised WI: Core part: Introduction of n48	Nokia	06.03.19 19:02	11.03.19 19:54
Yes	noted	RP-190141	Status report for WI Core part: Introduction of NR band n48, rapporteur: Nokia	RAN4	06.03.19 19:02	11.03.19 19:54
Yes	approved	RP-190142	TR 38.885 v2.0.0 on NR Study on Vehicle-to-Everything; for	Huawei	06.03.19 22:19	12.03.19 23:04
Yes	noted	RP-190143	Status report for WI: Core part: Transfer of Iuant interface	RAN3	06.03.19 23:06	11.03.19 19:54
Yes	noted	RP-190144	Summary for WI: Transfer of Iuant interface specifications from 25-	Huawei	06.03.19 23:06	11.03.19 19:54
Yes	not treated	RP-190145	Discussion on 5GAA LS on V2X specification visibility in 3GPP	Huawei, HiSilicon	06.03.19 23:06	11.03.19 19:54
Yes	not treated	RP-190146	Draft reply LS to 5GAA_S-190040 = RP-190037 on V2X specs visibility (to: 5GAA; cc: SA, CT; contact: Huawei)	Huawei	06.03.19 23:06	11.03.19 19:54
Yes	revised	RP-190147	New WI proposal: NG interface usage for WWC (Wireless	Huawei,	06.03.19 23:06	11.03.19 19:54
Yes	not treated	RP-190148	Motivation for New WI on NG interface usage for WWC	Huawei,	06.03.19 23:06	11.03.19 19:54

Yes	noted	RP-190149	Status Report for WI Enhancements on MIMO for NR; rapporteur: Samsung	RAN1	07.03.19 01:56	11.03.19 23:59
Yes	approved	RP-190150	Revised WID on LTE-A inter-band xDL/2UL CA with x=3,4,5 in rel-16	LG Electronics	07.03.19 03:52	11.03.19 19:54
Yes	approved	RP-190151	Revised WID on LTE x bands (xDL/UL x=1.2,3,4) with NR 2 bands (2DL/1UL) EN DC in Rel-16	LG Electronics	07.03.19 03:54	11.03.19 19:54
Yes	noted	RP-190152	Status report for WI Rel-16 LTE inter-band Carrier Aggregation for x bands DL (x= 3, 4, 5) with 2	RAN4	07.03.19 03:57	11.03.19 19:54
Yes	noted	RP-190153	Status report for WI LTE x bands (xDL/1UL x=1.2,3,4) with NR 2 bands (2DL/1UL) EN DC;	RAN4	07.03.19 04:00	11.03.19 19:54
Yes	noted	RP-190154	Status report for WI Rel-16 LTE intra-band Carrier Aggregation for x CC DL/y CC UL including	RAN4	07.03.19 06:59	11.03.19 19:54
Yes	noted	RP-190155	Status report of WI Rel-16 NR intra band Carrier Aggregation for xCC DL/yCC UL including	RAN4	07.03.19 06:59	11.03.19 19:54

Yes	noted	RP-190156	Status report of WI Dual Connectivity (EN-DC) of 3 bands LTE inter-band CA (3DL/1UL) and	RAN4	07.03.19 06:59	11.03.19 19:54
Yes	approved	RP-190157	Revised WID: Rel-16 LTE intra-band Carrier Aggregation for x CC	Ericsson	07.03.19 06:59	11.03.19 19:54
Yes	revised	RP-190158	Revised WID: Rel-16 NR intra band Carrier Aggregation for xCC	Ericsson	07.03.19 06:59	11.03.19 19:54
Yes	approved	RP-190159	Revised WID: Dual Connectivity (EN-DC) of 3 bands LTE inter-band CA (3DL/1UL) and 1 NR band	Ericsson	07.03.19 06:59	11.03.19 19:54
Yes	approved	RP-190160	WI update: Transfer of Iuant interface specifications from 25-series to 37-series	Huawei	07.03.19 07:03	11.03.19 19:54
Yes	approved	RP-190161	TS 38.533 v1.0.0 on 5GS; User Equipment (UE) conformance specification; Radio Resource	ROHDE & SCHWA	07.03.19 07:05	14.03.19 21:19
Yes	revised	RP-190162	Revised SID: Feasibility Study on 6 GHz for LTE and NR in Licensed and Unlicensed Operations	Ericsson	07.03.19 08:02	11.03.19 19:54
Yes	noted	RP-190163	Status Report for SI Feasibility Study on 6 GHz for LTE and NR in	Ericsson	07.03.19 08:02	11.03.19 19:54
Yes	noted	RP-190164	Regulatory updates on 5.925-7.125 GHz frequency range	Ericsson	07.03.19 08:02	11.03.19 19:54
Yes	approved	RP-190165	New WID on introduction of NR band n14	Ericsson	07.03.19 08:02	11.03.19 19:54
Yes	approved	RP-190166	New WID on introduction of NR band n30	Ericsson	07.03.19 08:02	11.03.19 19:54
Yes	approved	RP-190167	Revised SID: Study on high power UE (power class 2) for EN-DC (1 LTE FDD band + 1 NR TDD band)	China Unicom	07.03.19 08:21	11.03.19 19:54
Yes	not treated	RP-190168	Motivation for introduction of n14	Ericsson	07.03.19 08:34	11.03.19 19:54
Yes	not treated	RP-190169	Motivation for introduction of n30	Ericsson	07.03.19 08:34	11.03.19 19:54
Yes	noted	RP-190170	Summary for WI Revised WID on adding wider channel	BT	07.03.19 09:13	11.03.19 19:54

Yes	noted	RP-190171	Status report for SI Study on high power UE (power class 2) for EN-DC (1 LTE FDD band + 1 NR TDD	RAN4	07.03.19 09:33	11.03.19 19:54
Yes	revised	RP-190172	Rel-15 Work Item Exception for New Radio Access Technology - Core	NTT DOCOMO, INC.	07.03.19 10:03	21.03.19 05:45
Yes	approved	RP-190173	Revised WID: Introduction of NR band n18	KDDI Corporation	07.03.19 10:16	11.03.19 19:54
Yes	approved	RP-190174	Revised WID: Addition of 30MHz channel bandwidth for NR band n41	KDDI Corporation	07.03.19 10:19	11.03.19 19:54
Yes	approved	RP-190175	Revised WID: Core part: LTE/NR spectrum sharing in Band 41/n41 frequency range	KDDI Corporation	07.03.19 10:22	11.03.19 19:54
Yes	noted	RP-190176	Status Report for WI: Introduction of NR band n18;	RAN4	07.03.19 10:30	11.03.19 19:54
Yes	noted	RP-190177	Status Report for WI: Addition of 30MHz channel bandwidth for	RAN4	07.03.19 10:32	11.03.19 19:54
Yes	noted	RP-190178	Status Report for WI: Core part: LTE/NR spectrum sharing in Band 41/n41 frequency range;	RAN4	07.03.19 10:35	11.03.19 19:54
Yes	noted	RP-190179	Concerns on Release 16 Schedule	AT&T GNS Belgium	07.03.19 11:53	13.03.19 13:37

Yes	revised	RP-190180	Draft reply LS to IEEE_802.11_LS_180713b = RP-181524 in relation to certain channel combinations for LAA in 5GHz (to: IEEE 802.11 WG, IEEE-SA Board of Governors, IEEE 802 LMSC, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee; cc: RAN4, RAN2, RAN1; contact: Charter Communications)	Charter Communications, Inc	07.03.19 13:23	11.03.19 19:54
Yes	noted	RP-190181	Status report for WI on integrated access and backhaul for NR; rapporteur: Qualcomm	RAN2	07.03.19 14:53	11.03.19 19:54
Yes	revised	RP-190182	Revised WID for NR_IAB	Qualcomm Inc	07.03.19 14:56	11.03.19 19:54
Yes	not treated	RP-190183	Compendium of SA documents relating to working methods	MCC	07.03.19 15:30	07.03.19 15:35
Yes	noted	RP-190184	Status Report for WI: Multi-RAT Dual-Connectivity and Carrier	RAN2	07.03.19 15:51	11.03.19 23:59

Yes	noted	RP-190185	On the upcoming IEEE-3GPP Workshop on NR-U	Qualcomm Korea	07.03.19 16:10	11.03.19 19:54
Yes	not treated	RP-190186	Views & principles on 3GPP RAN Rel-17	Qualcomm	07.03.19 16:13	11.03.19 19:54
Yes	not treated	RP-190187	Use-cases for FS_NR_beyond_52GHz	Charter Communications, Inc	07.03.19 17:10	11.03.19 19:54
Yes	noted	RP-190188	Status Report of SI: Study on NR Industrial Internet of Things (IoT);	RAN2	07.03.19 17:19	11.03.19 23:59
Yes	approved	RP-190189	TR 38.825 v1.0.0 on Study on NR Industrial Internet of Things (IoT); for approval	Nokia, Nokia Shangh	07.03.19 17:19	11.03.19 23:59
Yes	revised	RP-190190	New WID: Support of NR Industrial Internet of Things (IoT)	Nokia, Nokia Shanghai Bell	07.03.19 17:19	11.03.19 23:59
Yes	noted	RP-190191	Motivation for WI on support of NR Industrial Internet of Things (IoT)	Nokia, Nokia Shanghai Bell	07.03.19 17:19	11.03.19 23:59
Yes	not treated	RP-190192	Considerations on the scope of WI on support of NR Industrial	Nokia, Nokia	07.03.19 17:19	11.03.19 23:59
Yes	noted	RP-190193	Status Report for WI UE Conformance Test Aspects – Wireless Local Area Network	RAN5	07.03.19 19:48	11.03.19 19:54

Yes	revised	RP-190194	New WID: NR positioning support	Intel Corporation	07.03.19 19:50	12.03.19 01:11
Yes	noted	RP-190195	Motivation for New WID: NR positioning support	Intel Corporation	07.03.19 19:50	12.03.19 01:11
Yes	noted	RP-190196	Status report of SI: Study on NR positioning support; rapporteur:	RAN1	07.03.19 19:50	12.03.19 01:11
Yes	revised	RP-190197	Discussion on NR MIMO maintenance work	Intel Corpor	07.03.19 19:50	12.03.19 01:11
Yes	noted	RP-190198	Status Report for WI UE Conformance Test Aspects – Interference Mitigation for	RAN5	07.03.19 19:52	11.03.19 19:54
Yes	noted	RP-190199	On Channel Access extensions for NR-U	Charter Communications, Inc	07.03.19 22:13	11.03.19 19:54

Yes	approved	RP-190200	Correction of ASN.1 for SON Configuration Transfer and PDU Session Resource Modify Request Transfer	Nokia, Nokia Shanghai Bell	07.03.19 22:49	11.03.19 23:59
Yes	approved	RP-190201	Transfer of the PSCell information for LI purposes	Nokia, Nokia Shanghai Bell	07.03.19 22:56	11.03.19 23:59
Yes	approved	RP-190202	Transfer of the PSCell information to Core Network	Nokia, Nokia Shanghai Bell	07.03.19 23:01	11.03.19 23:59
Yes	revised	RP-190203	Way forward on network sharing	Nokia, Nokia Shanghai Bell,	08.03.19 00:03	11.03.19 23:59
Yes	rejected	RP-190204	Common X2 instance between eNB and shared en-gNB	Nokia, Nokia Shanghai Bell, Huawei, Samsung	08.03.19 00:07	11.03.19 23:59
Yes	rejected	RP-190205	Common Xn link for network sharing	Nokia, Nokia Shanghai Bell, Huawei, Samsung	08.03.19 00:08	11.03.19 23:59

Yes	rejected	RP-190206	F1 Served Cell Information	Nokia, Nokia Shanghai Bell, Huawei, Samsung	08.03.19 00:10	11.03.19 23:59
Yes	not treated	RP-190207	Discussions on potential use cases	ZTE, Sanech	08.03.19 01:05	11.03.19 19:54
Yes	revised	RP-190208	Review Draft TP to TR 38.807 - Operational requirements:	ZTE, Sanech	08.03.19 01:07	11.03.19 19:54
Yes	postponed	RP-190209	Update description template - Link Budget template for eMBB usage scenario	ZTE, Sanechips	08.03.19 01:24	11.03.19 19:54
Yes	revised	RP-190210	Draft LTI reply to ITU_R_WP5A_TEMP_349rev1 = RP-182236 on the revision of Recommendation ITU-R M.2084-0 (to: SA; cc: -; contact: ZTE)	ZTE, Sanechips	08.03.19 01:26	11.03.19 19:54
Yes	not treated	RP-190211	New WID: NR RRM requirements enhancement	ZTE, Sanechips	08.03.19 01:34	11.03.19 19:54
Yes	not treated	RP-190212	Motivation on NR RRM requirements enhancement	ZTE, Sanech	08.03.19 01:35	11.03.19 19:54
Yes	approved	RP-190213	Revised WID: New Radio Access Technology	NTT DOCOMO,	08.03.19 01:50	20.03.19 07:05
Yes	not treated	RP-190214	Views on Rel-16 eURLLC WID scope	ZTE, Sanech	08.03.19 01:50	11.03.19 19:54
Yes	not treated	RP-190215	Views on Rel-16 power saving WID scope	ZTE, Sanech	08.03.19 01:52	11.03.19 19:54
Yes	not treated	RP-190216	Discussion on working scope of V2X	ZTE,Sanechips	08.03.19 01:53	11.03.19 19:54

Yes	not treated	RP-190217	Rel17 timeline and potential directions	ZTE,Sanechips	08.03.19 01:55	13.03.19 13:37
Yes	noted	RP-190218	Discussion on correction for SRS frequency domain allocation	Qualcomm Incorporated	08.03.19 02:05	11.03.19 23:59
Yes	noted	RP-190219	Draft CR on SRS frequency domain allocation	Qualcomm Incorp	08.03.19 02:05	11.03.19 23:59
Yes	not treated	RP-190220	Views on UE power saving WI	Qualcomm	08.03.19 02:05	11.03.19 23:59
Yes	not treated	RP-190221	Views on eURLLC WI	Qualcomm	08.03.19 02:05	11.03.19 23:59
Yes	approved	RP-190222	TS 38.521-4 v1.0.0 on 5GS; User Equipment (UE) conformance specification; Radio transmission	Qualcomm UK Ltd	08.03.19 02:36	14.03.19 21:19
Yes	noted	RP-190223	Status report for WI Dual Connectivity (EN-DC) of 5 bands LTE inter-band CA (5DL/1UL) and	RAN4	08.03.19 02:46	11.03.19 19:54
Yes	approved	RP-190224	Revised SID: Study on NR V2X	LG Electro	08.03.19 02:56	11.03.19 19:54
Yes	noted	RP-190225	Status report of SI: Study on NR V2X; rapporteur: LG Electronics	RAN1	08.03.19 02:56	11.03.19 19:54
Yes	revised	RP-190226	New WID on NR-based V2X	LG Electronics	08.03.19 02:56	11.03.19 19:54

Yes	noted	RP-190227	Motivation for new WID: NR V2X	LG Electronics	08.03.19 02:56	11.03.19 19:54
Yes	not treated	RP-190228	Discussion on NR-V2X work item scope	OPPO	08.03.19 03:27	11.03.19 19:54
Yes	not treated	RP-190229	New SID Proposal: Study on network controlled commercial	OPPO	08.03.19 03:27	11.03.19 19:54
Yes	not treated	RP-190230	Motivation for new SI proposal on network controlled commercial sidelink-based	OPPO	08.03.19 03:27	11.03.19 19:54
Yes	not treated	RP-190231	Consideration on R17 Timeline and Scope	OPPO	08.03.19 03:27	11.03.19 19:54
Yes	not treated	RP-190232	Considerations on the scope of physical layer enhancements for	OPPO	08.03.19 03:27	11.03.19 19:54
Yes	not treated	RP-190233	Views on the scope of Power Saving WID	OPPO	08.03.19 03:27	11.03.19 19:54
Yes	noted	RP-190234	Status Report for SI: Study on radiated metrics and test methodology for the verification	RAN4	08.03.19 04:34	11.03.19 19:54
Yes	not	RP-	Views on NR UE power saving WI	Apple	08.03.19 04:37	11.03.19 23:59
Yes	noted	RP-	Considerations on NR MIMO	Apple	08.03.19 04:37	11.03.19 23:59
Yes	not treated	RP-190237	Views on V2X scope	Qualcomm	08.03.19 04:48	12.03.19 01:11
Yes	not treated	RP-190238	Views on scope for NR Positoning WI	Qualcomm	08.03.19 04:50	11.03.19 23:59

Yes	not treated	RP-190239	Use cases and deployment scenarios for NR>52.6	Qualcomm	08.03.19 04:53	12.03.19 23:04
Yes	noted	RP-190240	Status report for WI NR-based access to unlicensed spectrum; rapporteur: Qualcomm	RAN1	08.03.19 04:57	11.03.19 23:59
Yes	revised	RP-190241	Revised WID for NR-based access to unlicensed spectrum	Qualcomm India Pvt Ltd	08.03.19 04:59	11.03.19 23:59
Yes	not treated	RP-190242	Addressing TEI16 items at WGs	Qualcomm	08.03.19 05:00	12.03.19 23:04
Yes	not treated	RP-190243	New SI Proposal: Study on measurement gap enhancement	Intel Corporation	08.03.19 05:09	11.03.19 19:54
Yes	not treated	RP-190244	Motivation to introduce new SI of measurement gap	Intel Corpor	08.03.19 05:09	11.03.19 19:54

Yes	noted	RP-190245	On the scope of non-BL UE in CE mode for R15 eFeMTC WI	Intel Corporation	08.03.19 05:09	11.03.19 19:54
Yes	revised	RP-190246	Status Report for WI: Further performance enhancement for	RAN4	08.03.19 05:26	11.03.19 19:54
Yes	noted	RP-190247	Status report of WI: Even further mobility enhancement in E-	RAN2	08.03.19 05:45	11.03.19 19:54
Yes	not treated	RP-190248	Motivation for SI on multi-SIM devices in RAN	China Telecomunica	08.03.19 05:48	11.03.19 19:54

Yes	noted	RP-190249	Email discussion on CAG objectives	China Telecommunication Corp.	08.03.19 05:51	11.03.19 19:54
Yes	noted	RP-190250	Motivation for new WI proposal on NPN support for NR	China Telecommunication Corp.	08.03.19 05:53	11.03.19 19:54
Yes	noted	RP-190251	Status Report of WI on New Radio Access Technology; rapporteur: NTT DOCOMO	RAN1	08.03.19 05:53	20.03.19 07:05
Yes	revised	RP-190252	New Work Item Proposal on NPN support for NR	China Telecommunication Corp.	08.03.19 05:55	11.03.19 19:54
Yes	revised	RP-190253	New WID: Add support of NR DL 256QAM for FR2	China Telecommunica	08.03.19 05:57	11.03.19 19:54

Yes	not treated	RP-190254	Motivations on NR DL 256QAM support for FR2	China Telecommunica	08.03.19 05:59	11.03.19 19:54
Yes	revised	RP-190255	New WID: Generic requirements for NR FR1 UL intra-band contiguous CA in Rel-16	China Telecommunication Corp.	08.03.19 06:03	11.03.19 19:54
Yes	not treated	RP-190256	Work plan on the generic requirements for NR FR1 UL intra-band contiguous CA in Rel-16	China Telecommunica	08.03.19 06:04	11.03.19 19:54
Yes	not treated	RP-190257	Motivation for new WI on NR performance requirement enhancement	China Telecommunica	08.03.19 06:09	11.03.19 19:54
Yes	revised	RP-190258	New WID: NR performance requirement enhancement	China Telecommunica	08.03.19 06:11	11.03.19 19:54
Yes	not	RP-	Motivation for new WID proposal	Apple	08.03.19 06:14	11.03.19 19:54
Yes	not	RP-	New WID proposal on UE assisted	Apple	08.03.19 06:14	11.03.19 19:54
Yes	not	RP-	Clarification on RAN2 scope of	Apple	08.03.19 06:14	11.03.19 19:54
Yes	noted	RP-190262	Support of VRU in NR V2X	Apple	08.03.19 06:14	11.03.19 19:54
Yes	revised	RP-190263	Status report of WI: Cross Link Interference (CLI) handling and	RAN1	08.03.19 06:16	13.03.19 13:37
Yes	revised	RP-190264	Revised WID on Cross Link Interference (CLI) handling and	LG Electro	08.03.19 06:16	13.03.19 13:37

Yes	not treated	RP-190265	Motivation for new SI : study on flexible and full duplex for NR	LG Electronics	08.03.19 06:16	14.03.19 11:56
Yes	not treated	RP-190266	Discussion on C-IoT evolution for NR	LG Electro	08.03.19 06:16	14.03.19 11:56
Yes	revised	RP-190267	On completion of Rel.16 NR bands and band combinations	CHTTL	08.03.19 06:40	18.03.19 18:13
Yes	noted	RP-190268	Status report for WI UE Conformance Test Aspects – 5G System Non-3GPP Access; rapporteur: Motorola Mobility	RAN5	08.03.19 06:41	11.03.19 19:54
Yes	not treated	RP-190269	Motivation for new WI: Connection-free data transfer	LG Electro	08.03.19 06:59	18.03.19 18:13
Yes	not treated	RP-190270	Motivation for new WI: Consistent user experience in	LG Electro	08.03.19 07:00	18.03.19 18:13
Yes	not treated	RP-190271	Motivation for new WI: NR broadcast	LG Electro	08.03.19 07:01	18.03.19 18:13
Yes	approved	RP-190272	Revised WID: Even further mobility enhancement in E-UTRAN	China Telecommunication	08.03.19 07:39	11.03.19 19:54

Yes	noted	RP-190273	On the management of NR UE capabilities	Nokia, Nokia Shanghai Bell	08.03.19 08:04	11.03.19 23:59

Yes	noted	RP-190274	Discussion on LS on EPS Additional RRM Policy Index	Nokia, Nokia Shanghai Bell	08.03.19 08:13	11.03.19 23:59
Yes	not treated	RP-190275	Views on Rel-16 NR UE power saving WID scope	vivo	08.03.19 08:14	11.03.19 19:54
Yes	not treated	RP-190276	Views on Rel-16 NR eURLLC WID scope	vivo	08.03.19 08:14	11.03.19 19:54
Yes	not treated	RP-190277	Views on Rel-16 NR V2X WID scope	vivo	08.03.19 08:14	11.03.19 19:54
Yes	not treated	RP-190278	Views on Rel-16 NR Positioning WID scope	vivo	08.03.19 08:14	11.03.19 19:54
Yes	not treated	RP-190279	Views on Rel-16 NR IIOT WID scope	vivo	08.03.19 08:14	11.03.19 19:54
Yes	revised	RP-190280	New Rel-16 WID: In-device coexistence for NR	vivo	08.03.19 08:14	11.03.19 23:59
Yes	not treated	RP-190281	Use case and design requirements for NR beyond 52.6 GHz	vivo	08.03.19 08:14	11.03.19 19:54
Yes	not treated	RP-190282	New Rel-17 SID proposal: Study on multi-SIM devices in RAN	vivo, China Teleco	08.03.19 08:14	11.03.19 19:54

Yes	not treated	RP-190283	Support of diverse UE types in NR Rel-17	vivo	08.03.19 08:14	11.03.19 19:54
Yes	not treated	RP-190284	Considerations on Rel-17	vivo	08.03.19 08:14	11.03.19 19:54
Yes	revised	RP-190285	Motivation for study on Enhancement for Disaggregated gNB Architecture	China Telecommunications	08.03.19 08:20	08.03.19 08:30
Yes	noted	RP-190286	Clarifications and corrections to the 3GPP self-evaluation report	Qualcomm Austria RFFE GmbH	08.03.19 08:22	13.03.19 23:05
Yes	revised	RP-190287	New SID: Study on enhancement for disaggregated gNB architecture	China Telecommunications	08.03.19 08:37	11.03.19 19:54
Yes	not treated	RP-190288	Motivation for LTE-LAA based Access in 6GHz Spectrum	Ericsson	08.03.19 08:37	11.03.19 19:54

Yes	revised	RP-190289	New WID on Introduction of 6GHz band for LTE-license assisted access (LAA)	Ericsson	08.03.19 08:37	11.03.19 19:54
Yes	noted	RP-190290	Status report for WI 410 - 430 MHz E-UTRA FDD Band(s) for LTE	RAN4	08.03.19 08:46	11.03.19 19:54
Yes	revised	RP-190291	New WID: Power Class 2 UE for LTE bands 31 and 72	Nokia, Argonet	08.03.19 08:46	11.03.19 19:54
Yes	not treated	RP-190292	Motivation for Power Class 2 UE for LTE bands 31 and 72	Nokia, Argone	08.03.19 08:46	11.03.19 19:54
Yes	noted	RP-190293	Status report for WI Dual Connectivity (EN-DC) of 4 bands LTE inter-band CA (4DL/1UL) and	RAN4	08.03.19 08:46	11.03.19 19:54
Yes	approved	RP-190294	Revised WID of Dual Connectivity (EN-DC) of 4 bands LTE inter-band CA (4DL/1UL) and 1 NR band	Nokia, Nokia Shangh	08.03.19 08:46	11.03.19 19:54
Yes	noted	RP-190295	Status Report for SI Study on optimisations on UE radio	RAN2	08.03.19 08:47	11.03.19 19:54
Yes	approved	RP-190296	TR 37.873 v1.0.0 on Study on optimisations on UE radio capability signalling – NR/E-UTRA	MediaTek Inc.	08.03.19 08:55	11.03.19 19:54
Yes	revised	RP-190297	Status report for SI: Study on UE Power Saving for NR; rapporteur: CATT	RAN1	08.03.19 09:08	11.03.19 19:54
Yes	withdrawn	RP-190298	Udpate TR38.840	CATT	08.03.19 09:08	11.03.19 19:54

Yes	revised	RP-190299	New WID: UE Power Saving in NR	CATT	08.03.19 09:08	11.03.19 19:54
Yes	not treated	RP-190300	Work scope for Rel-16 URLLC	CATT	08.03.19 09:08	11.03.19 19:54
No	withdrawn	RP-190301	Motivation for Rel-16 NR inter-band carrier aggregation/Dual Connectivity for 3 bands DL with	CATT	08.03.19 09:08	
Yes	revised	RP-190302	New WID: Rel-16 NR Inter-band Carrier Aggregation/Dual Connectivity for 3 bands DL with x (x=1, 2) bands UL	CATT	08.03.19 09:08	11.03.19 19:54
Yes	not treated	RP-190303	Views on Rel-15 NR RRM legacy work	CATT	08.03.19 09:08	11.03.19 19:54
Yes	approved	RP-190304	Update of evaluation results on RIM	CATT	08.03.19 09:08	11.03.19 19:54
Yes	not treated	RP-190305	Proposal on approval of disaggregated gNB enhancement SI	CATT ChinaTelecom	08.03.19 09:08	11.03.19 19:54
Yes	not treated	RP-190306	Motivation for study on device to device proximity services in NR	CATT	08.03.19 09:08	11.03.19 19:54

Yes	not treated	RP-190307	Views on Rel-16 NR V2X WI scope	CATT	08.03.19 09:08	11.03.19 19:54
Yes	not treated	RP-190308	Motivation for Supporting Local Location Management	CATT, CMCC	08.03.19 09:08	11.03.19 19:54
Yes	noted	RP-190309	Way Forward on NR Compression	CATT, CMCC, China Telecom	08.03.19 09:08	11.03.19 19:54
Yes	noted	RP-190310	Status Report for WI: UE Conformance Test Aspects - UL	RAN5	08.03.19 09:08	11.03.19 19:54
Yes	approved	RP-190311	Revised WID on UE Conformance Test Aspects - UL Data Compression in LTE	CATT	08.03.19 09:08	11.03.19 19:54
Yes	revised	RP-190312	Revised WID: Dual Connectivity (EN-DC) of 1 LTE band (1UL/1DL) and 1 NR band (1DL/1UL)	NTT DOCOMO	08.03.19 09:14	11.03.19 19:54
Yes	noted	RP-190313	Status report for WI Dual Connectivity (EN-DC) of 1 LTE band (1UL/1DL) and 1 NR band (1DL/1UL); rapporteur: NTT	RAN4	08.03.19 09:17	11.03.19 19:54
Yes	revised	RP-190314	Operator view on 5G NR	SK Teleco	08.03.19 09:29	11.03.19 19:54
Yes	approved	RP-190315	Revised WID on Power Class 2 UE for EN-DC (1 LTE band +1 NR band)	CMCC	08.03.19 09:34	11.03.19 19:54
Yes	noted	RP-190316	Status report for WI High power UE (power class 2) for EN-DC (1 LTE TDD band + 1 NR TDD band);	RAN4	08.03.19 09:34	11.03.19 19:54
Yes	not treated	RP-190317	New WID on NR support for high speed train scenario	CMCC	08.03.19 09:34	11.03.19 19:54
Yes	not treated	RP-190318	Motivation for NR support for High speed train scenario	CMCC	08.03.19 09:34	11.03.19 19:54

Yes	noted	RP-190319	Observation of RAN3 workload and proposals	CMCC	08.03.19 09:34	11.03.19 19:54
Yes	revised	RP-190320	Status report for SI Study on RAN-centric data collection and	RAN3	08.03.19 09:34	11.03.19 19:54
Yes	approved	RP-190321	New WID on UE Conformance Test Aspects - Rel-16 NR CA and DC; and NR and LTE DC Configurations	CMCC, Ericsson, China Unicom	08.03.19 09:34	11.03.19 19:54
Yes	noted	RP-190322	Status report for WI UE Conformance Test Aspects - Bluetooth/WLAN measurement	RAN5	08.03.19 09:34	11.03.19 19:54
Yes	not treated	RP-190323	Motivation for NR to Support local LMF in RAN	CMCC	08.03.19 09:34	11.03.19 19:54

Yes	noted	RP-190324	WF on SDL and SUL pairing	Nokia, Nokia Shanghai Bell	08.03.19 09:39	11.03.19 19:54
Yes	not treated	RP-190325	Motivation for new Rel-17 WI on-demand SI enhancement for NR	Xiaomi Comm	08.03.19 09:50	08.03.19 10:13
Yes	not treated	RP-190326	NR enhancements for Advanced Sleep Modes	Orange	08.03.19 09:52	11.03.19 19:54
Yes	not treated	RP-190327	Use Case and Deployment Scenarios for spectrum above 52.6GHz	Intel Corporation	08.03.19 09:52	11.03.19 23:59
Yes	not treated	RP-190328	New Rel-17 WID on-demand SI enhancement for NR	Xiaomi Communications	08.03.19 09:54	08.03.19 10:13
Yes	noted	RP-190329	Status report for SI: Study on NR beyond 52.6 GHz; rapporteur:	Intel Corpor	08.03.19 09:55	20.03.19 18:53
Yes	revised	RP-190330	TR 38.807 v0.0.5: Study on requirements for NR beyond 52.6 GHz	Intel Corporation	08.03.19 10:01	20.03.19 07:05
Yes	revised	RP-190331	Draft TP to TR 38.807 – Use Cases and Deployment Scenarios	Intel Corporation	08.03.19 10:04	18.03.19 18:13
Yes	approved	RP-190332	Updated WID on Additional LTE bands for UE category M1 and/or NB1 in Rel-16	Ericsson	08.03.19 10:11	11.03.19 19:54
Yes	approved	RP-190333	Updated WID on Additional LTE bands for UE category M2 and/or NB2 in Rel-16	Ericsson	08.03.19 10:11	11.03.19 19:54
Yes	noted	RP-190334	Status report for WI Additional LTE bands for UE category M1 and/or NB1 in Rel-16;	RAN4	08.03.19 10:11	11.03.19 19:54
Yes	noted	RP-190335	Status report for WI Core part: Additional LTE bands for UE category M2 and/or NB2 in Rel-	RAN4	08.03.19 10:11	11.03.19 19:54
Yes	noted	RP-190336	Status report for WI: Additional enhancements for NB-IoT;	RAN1	08.03.19 10:20	11.03.19 19:54

Yes	revised	RP-190337	WID revision: Additional enhancements for NB-IoT	Huawei	08.03.19 10:20	11.03.19 19:54
Yes	noted	RP-190338	Status report for WI: DL MIMO efficiency enhancements for LTE;	RAN1	08.03.19 10:20	11.03.19 19:54
Yes	noted	RP-190339	Status report for SI: Study on physical layer enhancements for	RAN1	08.03.19 10:20	11.03.19 23:59
Yes	noted	RP-190340	Status report for WI: UE Conformance Test Aspects -	RAN5	08.03.19 10:20	11.03.19 19:54
Yes	noted	RP-190341	Status report for WI: UE Conformance Test Aspects - LTE Carrier Aggregation Enhancement Beyond 5 Carriers - PUCCH on	RAN5	08.03.19 10:20	11.03.19 19:54
Yes	noted	RP-190342	Status report for WI: UE conformance test aspects on shortened TTI and processing time for LTE; rapporteur: Huawei	RAN5	08.03.19 10:20	11.03.19 19:54
Yes	revised	RP-190343	Status report for SI: Study on Self-Evaluation towards IMT-2020 submission; rapporteur: Huawei	Huawei	08.03.19 10:20	11.03.19 19:54

Yes	endorsed	RP-190344	Work plan towards final submission of IMT-2020	Huawei	08.03.19 10:20	11.03.19 19:54
Yes	not treated	RP-190345	NR use cases and scenarios in frequencies above 52.6 GHz	Huawei,	08.03.19 10:20	11.03.19 19:54
Yes	revised	RP-190346	New WI proposal: Physical layer enhancements for NR ultra-reliable and low latency communication (URLLC)	Huawei, HiSilicon	08.03.19 10:20	11.03.19 19:54
Yes	not treated	RP-190347	Discussion on the WI scope on NR V2X	Huawei,	08.03.19 10:20	11.03.19 19:54
Yes	not treated	RP-190348	Discussion on the WI scope on NR UE power savings	Huawei,	08.03.19 10:20	11.03.19 19:54
Yes	not treated	RP-190349	Discussion on the WI scope on NR positioning	Huawei,	08.03.19 10:20	11.03.19 19:54

Yes	noted	RP-190350	Discussion on the WI scope on LTE-based 5G terrestrial broadcast	Huawei, HiSilicon	08.03.19 10:20	11.03.19 19:54
Yes	not treated	RP-190351	Discussion on the WI scope on NR support for Industrial IOT	Huawei,	08.03.19 10:20	11.03.19 19:54
Yes	noted	RP-190352	Status report for WI Core part: eNB(s) Architecture Evolution for	RAN3	08.03.19 10:33	17.03.19 10:40
Yes	not treated	RP-190353	Motivation for new WI on introduction of GSM, UTRA, E-UTRA and NR CS(s) to the MSR specification	Ericsson, Vodafone, Orange, CKH IOD	08.03.19 10:40	11.03.19 23:59
Yes	revised	RP-190354	New WID on introduction of GSM, UTRA, E-UTRA and NR capability set(s) (CS(s)) to the multi-standard radio (MSR) specifications	Ericsson, Vodafone, Orange	08.03.19 10:42	11.03.19 23:59
Yes	not treated	RP-190355	Motivation for the new WID on supplemental uplink usage of FR2	Apple Inc.	08.03.19 10:47	11.03.19 19:54
Yes	not treated	RP-190356	New WID on Supplemental uplink usage of FR2 spectrum (SA and NSA)	Apple Inc.	08.03.19 10:47	11.03.19 19:54
No	withdrawn	RP-190357	Survey on Japanese spectrum usage and regulatory	NTT DOCO	08.03.19 11:10	

Yes	revised	RP-190358	New WI Proposal on optimisations on UE radio capability signalling - NR/E-UTRA Aspects	MediaTek Inc.	08.03.19 11:14	11.03.19 19:54
Yes	not treated	RP-190359	Survey on Japanese spectrum usage and regulatory requirements in the frequency	NTT DOCOMO	08.03.19 11:17	11.03.19 19:54
Yes	approved	RP-190360	Revised WID: Band 65 for New Radio	Dish Networ	08.03.19 11:18	11.03.19 19:54
Yes	noted	RP-190361	Status report for WI Band 65 for New Radio; rapporteur: Dish	RAN4	08.03.19 11:26	11.03.19 19:54
Yes	revised	RP-190362	Discussion on the use of preambles for better coexistence in 5 GHz	Broadcom	08.03.19 11:34	11.03.19 19:54
Yes	revised	RP-190363	Discussion on the use of preambles for better coexistence in 6 GHz	Broadcom	08.03.19 11:38	11.03.19 19:54
Yes	not treated	RP-190364	New SID: Study on NR/WLAN Convergence	Intel Deutsc	08.03.19 11:38	11.03.19 19:54
Yes	not treated	RP-190365	Motivation paper for new SID on NR/WLAN Convergence	Intel Deutsc	08.03.19 11:39	11.03.19 19:54
Yes	not treated	RP-190366	Issues with NSA option for 5G NR deployment	Reliance Jio	08.03.19 11:43	11.03.19 19:54

Yes	noted	RP-190367	On FR2 MPR Changes to Accommodate OBW Requirement	Qualcomm Incorporated	08.03.19 11:50	11.03.19 23:59
No	withdrawn	RP-190368	NB-IOT enhancements for capacity and throughput	Reliance Jio	08.03.19 11:59	
Yes	noted	RP-190369	Status report for WI Perf part: Further NB-IoT enhancements;	RAN4	08.03.19 12:05	11.03.19 19:54
Yes	noted	RP-190370	Status report for WI: Perf. part: UE requirements for LTE DL 8Rx	RAN4	08.03.19 12:05	11.03.19 19:54
Yes	noted	RP-190371	Status report for WI: Core part: Addition of new channel bandwidth for NR band n50;	RAN4	08.03.19 12:05	11.03.19 19:54
Yes	noted	RP-190372	Status report for SI: Study on 7 – 24 GHz frequency range;	RAN4	08.03.19 12:05	11.03.19 19:54
Yes	approved	RP-190373	SID revision: Study on 7 – 24 GHz frequency range	Huawei	08.03.19 12:05	11.03.19 19:54
Yes	noted	RP-190374	Status report for WI: LTE Advanced inter-band CA Rel-16 for 3DL/1UL; rapporteur: Huawei	RAN4	08.03.19 12:05	11.03.19 19:54
Yes	approved	RP-190375	WID revision: LTE Advanced inter-band CA Rel-16 for 3DL/1UL; rapporteur: Huawei	Huawei, HiSilicon	08.03.19 12:05	11.03.19 19:54

Yes	noted	RP-190376	Status report for WI: LTE Advanced inter-band CA Rel-16 for 2DL/2UL; rapporteur: Huawei	RAN4	08.03.19 12:05	11.03.19 19:54
Yes	approved	RP-190377	WID revision: LTE Advanced inter-band CA Rel-16 for 2DL/2UL; rapporteur: Huawei	Huawei, HiSilic	08.03.19 12:05	11.03.19 19:54
Yes	noted	RP-190378	Status report for WI: Dual Connectivity (EN-DC) of 2 bands LTE inter-band CA (2DL/1UL) and	RAN4	08.03.19 12:05	11.03.19 19:54
Yes	approved	RP-190379	WID revision: EN-DC for 3 bands DL with 2 bands UL (2 LTE bands + 1 NR band); rapporteur: Huawei	Huawei, HiSilicon	08.03.19 12:05	11.03.19 19:54
Yes	noted	RP-190380	Status report for WI: SA NR SUL, NSA NR SUL, NSA NR SUL with UL	RAN4	08.03.19 12:05	11.03.19 19:54
Yes	revised	RP-190381	WID revision: SA NR SUL, NSA NR SUL, NSA NR SUL with UL sharing	Huawei,	08.03.19 12:05	11.03.19 19:54
Yes	not treated	RP-190382	New SI proposal: Study on NR and NB-IoT/eMTC co-existence	Huawei,	08.03.19 12:05	11.03.19 23:59
Yes	not treated	RP-190383	Motivation for study on NR and NB-IoT/eMTC co-existence	Huawei,	08.03.19 12:05	11.03.19 23:59
Yes	revised	RP-190384	New SI proposal: Study on introduction of NR band 6.425-	Huawei,	08.03.19 12:05	11.03.19 23:59
Yes	not treated	RP-190385	Motivation for new Study on introduction of NR band 6.425-	Huawei,	08.03.19 12:05	11.03.19 23:59
Yes	revised	RP-190386	New WI proposal: Intra-band non-contiguous CA requirements for FR1	Huawei, HiSilicon	08.03.19 12:05	11.03.19 23:59
Yes	not treated	RP-190387	Motivation for new WI proposal on intra-band non-contiguous CA	Huawei,	08.03.19 12:05	11.03.19 23:59

Yes	noted	RP-190388	Way forward on SDL-SUL pairings	Huawei, HiSilicon	08.03.19 12:05	11.03.19 23:59
Yes	postponed	RP-190389	New WI proposal: introduction of 1900MHz NR SUL (supplemental uplink) band	Huawei, HiSilicon	08.03.19 12:05	11.03.19 19:54
Yes	approved	RP-190390	New WI proposal: introduction of NR SUL (supplemental uplink)	Huawei,	08.03.19 12:05	11.03.19 19:54

Yes	postponed	RP-190391	New WI proposal: addition of wider channel bandwidth in NR bands n77 and n78	Huawei, HiSilicon	08.03.19 12:05	11.03.19 19:54
Yes	approved	RP-190392	New WI proposal: addition of wider channel bandwidth in NR	Huawei,	08.03.19 12:05	11.03.19 19:54
No	withdrawn	RP-190393	Handling of addition of new channel bandwidths to NR bands	Huawei,	08.03.19 12:05	
Yes	not treated	RP-190394	Handling of Rel-15 NR RAN4 leftover topics	Huawei,	08.03.19 12:05	11.03.19 23:59
Yes	revised	RP-190395	WID proposal: Add power class 5 for NR frequency range FR2	Huawei, HiSilicon	08.03.19 12:05	11.03.19 23:59
Yes	not treated	RP-190396	Motivation of addition of power class 5 for FR2	Huawei,	08.03.19 12:05	11.03.19 23:59
Yes	not treated	RP-190397	New WI proposal: CSI-RS based L3 measurement requirements for	Huawei,	08.03.19 12:05	11.03.19 23:59
Yes	not treated	RP-190398	Motivation of CSI-RS based L3 measurement requirements for	Huawei,	08.03.19 12:05	11.03.19 23:59
Yes	approved	RP-190399	RAN4 CRs to New Radio Access Technology, part 1	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190400	RAN4 CRs to New Radio Access Technology, part 2	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190401	RAN4 CRs to New Radio Access Technology, part 3	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190402	RAN4 CRs to New Radio Access Technology, part 4	RAN4	08.03.19 12:09	14.03.19 11:27

Yes	partially approved	RP-190403	RAN4 CRs to New Radio Access Technology, part 5	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190404	RAN4 CR to test methods for New Radio	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190405	RAN4 CRs to Perf. part: Shortened TTI and processing time for LTE	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190406	RAN4 CRs to Perf. part: Further NB-IoT enhancements	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190407	RAN4 CRs to Perf. part: Enhancing LTE CA Utilization	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190408	RAN4 CRs to UE requirements for LTE DL 8Rx antenna ports	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190409	RAN4 CRs to Rel-16 LTE Advanced CA baskets	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190410	RAN4 CRs to Small Technical Enhancements and	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190411	RAN4 CRs to Maintenance for closed WIs/SIs for REL-12	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190412	RAN4 CRs to Maintenance for closed WIs/SIs for REL-13, part 1	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190413	RAN4 CRs to Maintenance for closed WIs/SIs for REL-13, part 2	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190414	RAN4 CRs to Maintenance for closed WIs/SIs for REL-13, part 3	RAN4	08.03.19 12:09	14.03.19 11:27

Yes	approved	RP-190415	RAN4 CRs to Maintenance for closed WIs/SIs for REL-14, part 1	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190416	RAN4 CRs to Maintenance for closed WIs/SIs for REL-14, part 2	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190417	RAN4 CRs to Maintenance for closed WIs/SIs for REL-14, part 3	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190418	RAN4 CRs to Maintenance for closed WIs/SIs for REL-15, part 1	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190419	RAN4 CRs to Maintenance for closed WIs/SIs for REL-15, part 2	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190420	RAN4 CRs to Maintenance for closed WIs/SIs for REL-15, part 3	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190421	RAN4 CRs to Maintenance for closed WIs/SIs for REL-15, part 4	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	approved	RP-190422	RAN4 CRs to Maintenance for closed WIs/SIs for REL-15, part 5	RAN4	08.03.19 12:09	14.03.19 11:27
Yes	revised	RP-190423	TR 38.824 v2.0.0 Study on physical layer enhancements for	Huawei	08.03.19 12:14	11.03.19 23:59
No	withdrawn	RP-190424	CR on QCL assumption for receiving PDSCH for RAR	NTT DOCO	08.03.19 12:26	

Yes	approved	RP-190425	CR on QCL assumption for receiving PDSCH for RAR	NTT DOCOMO INC., Ericsson	08.03.19 12:29	11.03.19 19:54
Yes	revised	RP-190426	PC3 MPR changes to accommodate FR2 OBW	Qualcomm Incorporated	08.03.19 12:34	11.03.19 23:59
Yes	not treated	RP-190427	Release 17 timing	Ericsson	08.03.19 12:36	11.03.19 19:54
Yes	noted	RP-190428	RAN4 NR work prioritization	Qualcomm Incorporated	08.03.19 12:38	11.03.19 23:59

Yes	noted	RP-190429	Impacts of SRVCC	Ericsson	08.03.19 12:41	11.03.19 23:59
Yes	revised	RP-190430	Revised WID: Single Radio Voice Call Continuity from 5G to 3G	China Unicom	08.03.19 12:43	11.03.19 19:54
Yes	noted	RP-190431	Status report for WI: Perf. part: Enhancing LTE CA Utilization; rapporteur: Nokia	RAN4	08.03.19 12:43	11.03.19 19:54
Yes	not treated	RP-190432	NR for Industrial Sensors	Ericsson	08.03.19 12:45	11.03.19 19:54
Yes	not treated	RP-190433	Motivation of NR for Industrial Sensors	Ericsson España	08.03.19 12:48	11.03.19 19:54
Yes	approved	RP-190434	Corrections to 36.211 & 36.213 of higher layer signalling for special subframe configuration	RAN1	08.03.19 12:49	14.03.19 01:43
Yes	approved	RP-190435	Correction on NPRACH format 2 configuration presence	RAN1	08.03.19 12:49	14.03.19 01:43
Yes	approved	RP-190436	Corrections to sTTI and SPT implementation	RAN1	08.03.19 12:49	14.03.19 01:43
Yes	approved	RP-190437	Maintenance of even further enhanced MTC for LTE	RAN1	08.03.19 12:49	14.03.19 01:43
Yes	approved	RP-190438	Correction on PSSCH resource pool determination in 36.213	RAN1	08.03.19 12:49	14.03.19 01:43
Yes	approved	RP-190439	Maintenance of SRS (sounding reference signal) switching	RAN1	08.03.19 12:49	14.03.19 01:43

Yes	approved	RP-190440	Correction on rate matching for 1024QAM	RAN1	08.03.19 12:49	14.03.19 01:43
Yes	approved	RP-190441	Power control for RACH-less HO	RAN1	08.03.19 12:49	14.03.19 01:43
Yes	approved	RP-190442	On MPDCCH USS/CSS differentiation	RAN1	08.03.19 12:49	14.03.19 01:43
Yes	approved	RP-190443	Maintenance of further enhanced MTC for LTE	RAN1	08.03.19 12:49	14.03.19 01:43
Yes	approved	RP-190444	Corrections on channel access procedures in 37.213	RAN1	08.03.19 12:49	14.03.19 01:43
Yes	approved	RP-190445	Maintenance of Voice and Video Enhancement for LTE	RAN1	08.03.19 12:49	14.03.19 01:43
Yes	approved	RP-190446	Corrections to 36.212 & 36.213 related to inter-RAT Dual	RAN1	08.03.19 12:49	14.03.19 01:43
Yes	approved	RP-190447	Maintenance of NR -38.211	RAN1	08.03.19 12:49	14.03.19 01:43
Yes	approved	RP-190448	Maintenance of NR -38.212	RAN1	08.03.19 12:49	14.03.19 01:43
Yes	approved	RP-190449	Maintenance of NR -38.213	RAN1	08.03.19 12:49	14.03.19 01:43
Yes	approved	RP-190450	Maintenance of NR -38.214	RAN1	08.03.19 12:49	14.03.19 01:43
Yes	noted	RP-190451	Status report for WI UE Conformance Test Aspects - Quality of Experience (QoE)	RAN5	08.03.19 12:50	11.03.19 19:54
Yes	approved	RP-190452	Revised WID: Multi-RAT Dual-Connectivity and Carrier Aggregation enhancements	Ericsson	08.03.19 12:51	11.03.19 23:59
Yes	noted	RP-190453	Status report for WI UE Conformance Test Aspects - 450 MHz Band for LTE in Region 3;	RAN5	08.03.19 12:53	11.03.19 19:54
Yes	not treated	RP-190454	New WID: NR RRM requirement improvement	CATT	08.03.19 12:59	11.03.19 19:54

Yes	not treated	RP-190455	NR requirement work continuation in Rel-16	Nokia, Nokia Shanghai Bell	08.03.19 13:06	11.03.19 19:54
Yes	not treated	RP-190456	Initial views on Rel-17 NR	Samsung Electro	08.03.19 13:07	11.03.19 23:59
Yes	not treated	RP-190457	Motivation for NR requirement work continuation in Rel-16	Nokia, Nokia Shanghai Bell	08.03.19 13:09	11.03.19 19:54
Yes	not	RP-	MediaTek's View on 3GPP Rel-17	MediaT	08.03.19 13:09	11.03.19 19:54
Yes	not	RP-	Rel-17 UE-based Indoor Coverage	MediaT	08.03.19 13:10	11.03.19 19:54
Yes	not	RP-	Rel-17 Energy Efficiency	MediaT	08.03.19 13:11	11.03.19 19:54
Yes	not	RP-	Rel-17 NR IoT	MediaT	08.03.19 13:12	11.03.19 19:54
Yes	not	RP-	Rel-17 Enhanced NB-IoT	MediaT	08.03.19 13:13	11.03.19 19:54
Yes	not	RP-	Rel-17 Non-Terrestrial Networks	MediaT	08.03.19 13:14	11.03.19 19:54
Yes	not	RP-	Rel-17 Higher Layer Protocol	MediaT	08.03.19 13:15	11.03.19 19:54
Yes	not treated	RP-190465	On the scope of the V2X work item	Ericsson	08.03.19 13:18	11.03.19 23:59
Yes	not treated	RP-190466	On the scope of the URLLC work item	Ericsson	08.03.19 13:18	11.03.19 23:59
Yes	not treated	RP-190467	On the scope of the UE power saving work item	Ericsson	08.03.19 13:18	11.03.19 23:59
Yes	not treated	RP-190468	On the scope of the NR positioning work item	Ericsson	08.03.19 13:18	11.03.19 23:59
Yes	noted	RP-190469	Status report for SI on Channel Modeling for Indoor Industrial	RAN1	08.03.19 13:18	11.03.19 23:59
Yes	not treated	RP-190470	Design requirements for NR beyond 52.6 GHz	Ericsson	08.03.19 13:18	11.03.19 23:59
Yes	not treated	RP-190471	Use Cases and Deployments for Beyond 52.6 GHz	Ericsson	08.03.19 13:18	11.03.19 23:59
Yes	not treated	RP-190472	TP for TR 38.807: Updates on the Global and CEPT spectrum	Ericsson	08.03.19 13:18	11.03.19 23:59

Yes	not treated	RP-190473	Motivation for a new NR band covering the 40-43.5 GHz range (band n259)	Ericsson LM	08.03.19 13:22	11.03.19 23:59
No	withdrawn	RP-190474	Status report for SI Study on optimisations on UE radio	RAN2	08.03.19 13:22	
No	withdrawn	RP-190475	New WI Proposal on Optimisations on UE Radio	MediaTek Inc.	08.03.19 13:24	
Yes	noted	RP-	EHC Solution	MediaT	08.03.19 13:26	11.03.19 19:54
Yes	noted	RP-190477	Status report for WI: UE Conformance Test Aspects - Add UE Power Class 2 to band 41 intra-	RAN5	08.03.19 13:28	08.03.19 13:57
Yes	revised	RP-190478	TR 38.855 v2.0.0 on Study on NR positioning support; for approval	Ericsson	08.03.19 13:29	14.03.19 21:19
Yes	revised	RP-190479	New WID: introduction of NR band n259	Ericsson	08.03.19 13:32	11.03.19 23:59
Yes	not	RP-	Rel-16/17 Timeline	MediaT	08.03.19 13:33	11.03.19 19:54
Yes	not	RP-	On the Scope of NR UE Power	MediaT	08.03.19 13:34	11.03.19 19:54

Yes	noted	RP-190482	NR CA Enhancement and SCell Power Saving	MediaTek Inc.	08.03.19 13:35	11.03.19 19:54

Yes	noted	RP-190483	Maximum uplink duty cycle for FR2 and FR2 performance implications	Nokia, Nokia Shanghai Bell	08.03.19 13:36	11.03.19 19:54
Yes	revised	RP-190484	Introduction of 30 kHz channel raster and SS raster for band n38	Huawei	08.03.19 13:41	11.03.19 19:54
Yes	revised	RP-190485	Introduction of 30 kHz channel raster and SS raster for band n38	Huawei	08.03.19 13:44	11.03.19 19:54
Yes	not treated	RP-190486	Adding 2Rx antennas as a baseline for NR-V2X simulations	Volkswagen AG,	08.03.19 13:44	11.03.19 23:59
Yes	not treated	RP-190487	Views on Rel-17 schedule and scope	Huawei,	08.03.19 13:46	11.03.19 19:54
Yes	revised	RP-190488	Status report for WI: NR Mobility Enhancements; rapporteur: Intel	RAN2	08.03.19 13:48	11.03.19 23:59
Yes	approved	RP-190489	Revised WID: NR Mobility Enhancements	Intel Corpor	08.03.19 13:48	11.03.19 23:59
Yes	not treated	RP-190490	Motivation for new WI on Direct data transfer in Inactive	Intel Corpor	08.03.19 13:48	12.03.19 01:11
Yes	not treated	RP-190491	Discussion on network-assisted UE cooperation for Rel-17	Huawei,	08.03.19 13:48	11.03.19 19:54
Yes	not treated	RP-190492	NR beyond 52.6GHz – Potential use cases and deployment scenarios	Nokia, Nokia Shanghai Bell	08.03.19 13:53	11.03.19 19:54

Yes	noted	RP-190493	Status report of WI: Rel-16 NR inter-band CA/DC for 2 bands DL with up to 2 bands UL;	RAN4	08.03.19 13:56	11.03.19 19:54
Yes	approved	RP-190494	Revised WI: Rel-16 NR inter-band CA/DC for 2 bands DL with up to 2 bands UL	ZTE Wistron	08.03.19 13:58	11.03.19 19:54
Yes	not treated	RP-190495	NR beyond 52.6GHz – Design requirements and considerations	Nokia, Nokia Shanghai Bell	08.03.19 14:00	11.03.19 19:54
Yes	noted	RP-190496	NR V2X Challenges for the Automotive Ecosystem	OnStar Europe, Volkswagen	08.03.19 14:18	11.03.19 23:59
Yes	not treated	RP-190497	Considerations on Rel-17	NEC	08.03.19 14:33	11.03.19 19:54

Yes	noted	RP-190498	WF on 5G C-IoT	TELECOM ITALIA S.p.A., Vodafone, Huawei, Qualcomm	08.03.19 14:33	11.03.19 19:54
Yes	noted	RP-190499	Status Report for WI Rel16 LTE inter-band CA for 2 bands DL with 1 band UL; rapporteur:	RAN4	08.03.19 14:47	11.03.19 19:54
Yes	approved	RP-190500	Revised WID: Rel16 LTE inter-band CA for 2 bands DL with 1 band UL	Qualcomm Incorp	08.03.19 14:47	11.03.19 19:54
Yes	noted	RP-190501	Status report for WI Core part: 29 dBm UE Power Class for LTE band 41 and NR Band n41; rapporteur:	RAN4	08.03.19 14:50	11.03.19 23:59
Yes	approved	RP-190502	Revised WID: 29 dBm UE Power Class for LTE band 41 and NR Band n41	Sprint Corporation	08.03.19 14:56	11.03.19 23:59
Yes	not treated	RP-190503	Considerations on the scope of the NR Positioning WID	ESA, u-blox	08.03.19 15:09	11.03.19 23:59
Yes	revised	RP-190504	Motivation for correction to aperiodic CSI-RS triggering with	Ericsson	08.03.19 15:13	11.03.19 23:59

Yes	revised	RP-190505	Correction to aperiodic CSI-RS triggering with different numerology between PDCCH and CSI-RS	Ericsson, AT&T, T-Mobile USA, Sprint, Nokia, Nokia Shanghai Bell	08.03.19 15:13	11.03.19 23:59
Yes	revised	RP-190506	Capability for aperiodic CSI-RS triggering with different numerology between PDCCH and CSI-RS	Ericsson, Qualcomm	08.03.19 15:13	11.03.19 23:59
Yes	revised	RP-190507	Capability for aperiodic CSI-RS triggering with different numerology between PDCCH and CSI-RS	Ericsson, Qualcomm	08.03.19 15:13	11.03.19 23:59
Yes	not treated	RP-190508	On aspects related to operation of NR on unlicensed spectrum	Ericsson	08.03.19 15:13	11.03.19 23:59
Yes	revised	RP-190509	New WID on: UE Conformance Test Aspects - Enhancements on Full-Dimension (FD) MIMO for LTE	Ericsson	08.03.19 15:19	11.03.19 19:54
Yes	approved	RP-190510	New WID on: UE Conformance Test Aspects - Extended-Band12 new E-UTRA Band (Band 85)	Ericsson	08.03.19 15:19	11.03.19 19:54
Yes	noted	RP-190511	Status report for WI UE Conformance Test Aspects – Elevation Beamforming/Full-	RAN5	08.03.19 15:19	11.03.19 19:54
Yes	noted	RP-190512	Status report for WI UE Conformance Test Aspects - 4 Rx antenna ports with CA for LTE DL;	RAN5	08.03.19 15:19	11.03.19 19:54
Yes	noted	RP-190513	Status report for WI UE Conformance Test Aspects -	RAN5	08.03.19 15:19	11.03.19 19:54
Yes	approved	RP-190514	Revised WID: UE Conformance Test Aspects - Further enhanced MTC for LTE	Ericsson	08.03.19 15:19	11.03.19 19:54

Yes	noted	RP-190515	Status report for WI UE Conformance Test Aspects - Uplink capacity enhancements	RAN5	08.03.19 15:19	11.03.19 19:54
Yes	noted	RP-190516	Status report for WI UE Conformance Test Aspects - Additional LTE bands for UE category M2 and/or NB2 in Rel-	RAN5	08.03.19 15:19	11.03.19 19:54
Yes	revised	RP-190517	Status report for WI UE Conformance Test Aspects – 5G	RAN5	08.03.19 15:19	11.03.19 19:54
Yes	noted	RP-190518	Status report for WI UE Conformance Test Aspects - Rel-13 CA configurations;	RAN5	08.03.19 15:19	11.03.19 19:54
Yes	noted	RP-190519	Status report for WI UE Conformance Test Aspects - Rel-	RAN5	08.03.19 15:19	11.03.19 19:54
Yes	noted	RP-190520	Status report for WI UE Conformance Test Aspects - Rel-	RAN5	08.03.19 15:19	11.03.19 19:54
Yes	noted	RP-190521	Status report for WI UE Conformance Test Aspects - Rel-	RAN5	08.03.19 15:19	11.03.19 19:54
Yes	revised	RP-190522	Draft reply LS to 5GAA_S-190040 = RP-190037 on V2X specification visibility in 3GPP (to: 5GAA WG4; cc: SA, CT; contact: NEC)	NEC	08.03.19 15:28	12.03.19 23:04
Yes	approved	RP-190523	Adding Trace Messages in X2AP	Ericsson	08.03.19 15:32	11.03.19 23:59
Yes	noted	RP-190524	Status report of WI on Direct data forwarding between NG-RAN and E-UTRAN nodes for inter-system	RAN3	08.03.19 15:32	11.03.19 23:59

Yes	noted	RP-190525	RAN sharing with multiple Cell-ID broadcast in NR	Ericsson	08.03.19 15:32	11.03.19 23:59
Yes	not treated	RP-190526	Some Observations on NR Positioning Architecture	Ericsson	08.03.19 15:32	11.03.19 23:59
Yes	noted	RP-190527	Completion of SDL-SUL combination work	VODAFONE Group Plc	08.03.19 15:37	11.03.19 23:59
No	withdrawn	RP-190528	NR V2X work item scope	VODAFONE Group	08.03.19 15:43	

Yes	noted	RP-190529	Applicability of NR IIoT L2/3 aspects for LTE	VODAFONE Group Plc	08.03.19 15:48	11.03.19 23:59
No	withdrawn	RP-190530	Completion of LTE analysis for IMT2020 submission	VODAFONE	08.03.19 15:49	
Yes	noted	RP-190531	Status report for WI Additional MTC enhancements for LTE;	RAN1	08.03.19 15:58	11.03.19 23:59
Yes	revised	RP-190532	Revised WID for Additional MTC enhancements for LTE	Ericsson	08.03.19 15:59	11.03.19 23:59
Yes	not treated	RP-190533	Revised WID for Additional enhancements for NB-IoT	Ericsson	08.03.19 16:00	11.03.19 23:59
No	withdrawn	RP-190534	Status report for WI on integrated access and backhaul	RAN2	08.03.19 20:06	
Yes	not treated	RP-190535	Views on normative work for I-IOT	Qualcomm	08.03.19 20:06	11.03.19 23:59
No	withdrawn	RP-190536	Clarification on timing reference cell of smtc configuration	Qualcomm	08.03.19 20:06	
Yes	revised	RP-190537	Gapless FR2 measurement in LTE standalone operation	Qualcomm	08.03.19 20:06	11.03.19 23:59

Yes	rejected	RP-190538	Introducing UE capability for gapless FR2 measurement in LTE standalone operation	Qualcomm Incorporated	08.03.19 20:06	11.03.19 23:59
Yes	rejected	RP-190539	Introducing UE capability for gapless FR2 measurement in LTE standalone operation	Qualcomm Incorporated	08.03.19 20:07	11.03.19 23:59
Yes	approved	RP-190540	RAN2 CRs to NR, part 1	RAN2	09.03.19 00:18	14.03.19 11:27
Yes	approved	RP-190541	RAN2 CRs to NR, part 2	RAN2	09.03.19 00:18	14.03.19 11:27
Yes	approved	RP-190542	RAN2 CRs to NR, part 3	RAN2	09.03.19 00:18	14.03.19 11:27
Yes	approved	RP-190543	RAN2 CRs to NR, part 4	RAN2	09.03.19 00:18	14.03.19 11:27
Yes	approved	RP-190544	RAN2 CRs to NR, part 5	RAN2	09.03.19 00:18	14.03.19 11:27
Yes	partially approved	RP-190545	RAN2 CRs to NR, part 6	RAN2	09.03.19 00:18	14.03.19 11:27
Yes	approved	RP-190546	RAN2 CRs to NR, part 7	RAN2	09.03.19 00:18	14.03.19 11:27
Yes	approved	RP-190547	RAN2 CRs to Rel-12 Wis	RAN2	09.03.19 00:18	14.03.19 11:27
Yes	approved	RP-190548	RAN2 CRs to Rel-13 Wis	RAN2	09.03.19 00:18	14.03.19 11:27
Yes	approved	RP-190549	RAN2 CRs to Rel-14 Wis	RAN2	09.03.19 00:18	14.03.19 11:27

Yes	approved	RP-190550	RAN2 CRs to Rel-15 Wis, part 1	RAN2	09.03.19 00:18	14.03.19 11:27
Yes	approved	RP-190551	RAN2 CRs to Rel-15 Wis, part 2	RAN2	09.03.19 00:18	14.03.19 11:27
Yes	approved	RP-190552	RAN2 CRs to Rel-15 Wis, part 3	RAN2	09.03.19 00:18	14.03.19 11:27
Yes	approved	RP-190553	RAN2 CRs to Rel-15 Wis, part 4	RAN2	09.03.19 00:18	14.03.19 11:27
Yes	approved	RP-190554	RAN3 agreed CRs for NR Access Technology (Set 1)	RAN3	09.03.19 09:30	14.03.19 11:56
Yes	approved	RP-190555	RAN3 agreed CRs for NR Access Technology (Set 2)	RAN3	09.03.19 09:30	14.03.19 11:56
Yes	approved	RP-190556	RAN3 agreed CRs for NR Access Technology (Set 3)	RAN3	09.03.19 09:30	14.03.19 11:56
Yes	approved	RP-190557	RAN3 agreed CRs for Transfer of Iuant interface specifications	RAN3	09.03.19 09:30	14.03.19 11:56
Yes	approved	RP-190558	RAN3 agreed CRs for (Small) Technical Enhancements and	RAN3	09.03.19 09:30	14.03.19 11:56
Yes	approved	RP-190559	RAN3 agreed CRs for Even further enhanced MTC for LTE	RAN3	09.03.19 09:30	14.03.19 11:56
Yes	approved	RP-190560	RAN3 agreed CRs for Separation of CP and UP for Split Option 2 of	RAN3	09.03.19 09:30	14.03.19 11:56

Yes	partially approved	RP-190561	RAN3 Endorsed CRs for the Introduction of TNL Address discovery for EN-DC	RAN3	09.03.19 09:30	14.03.19 11:56
Yes	noted	RP-190562	Status report for WI UE Conformance Test Aspects – Rel-	RAN5	10.03.19 14:00	11.03.19 19:54
Yes	endorsed	RP-190563	Preparing for Release-17	TSG RAN Chairman, RAN WG Chairmen	11.03.19 19:46	11.03.19 19:54
Yes	noted	RP-190564	Status report for WI Core part: Single Radio Voice Call Continuity from 5G to 3G; rapporteur: China Unicom	RAN2	11.03.19 10:50	12.03.19 23:04

Yes	revised	RP-190565	Draft Response LS to R2-1902436 = RP-190049 on Completion of Study on Cellular IoT support and evolution for the 5G System (to: RAN2, SA2, RAN3, CT; cc: SA; contact: Qualcomm)	Qualcomm	11.03.19 19:46	13.03.19 13:37
Yes	noted	RP-190566	Status report for WI UE Conformance Test Aspects – 5G	RAN5	08.03.19 15:19	13.03.19 23:05
Yes	revised	RP-190567	Status Report for WI Core part: Adding wider channel	RAN4	11.03.19 20:15	12.03.19 23:04
Yes	revised	RP-190568	pCR to TR 38.807 v0.0.4 on Operational Requirements	Intel	12.03.19 00:43	12.03.19 23:04
Yes	approved	RP-190569	CR to TS 38.133: Implementation of endorsed draft CRs from RAN4#90	Intel, Ericsson	12.03.19 19:40	19.03.19 12:06
Yes	not treated	RP-190570	On a potential new RAN WID on non-public-networks	Ericsson	12.03.19 19:57	13.03.19 13:37
Yes	not treated	RP-190571	pCR to TR 38.807 regarding Operational requirements:	ZTE, Sanech	12.03.19 20:31	14.03.19 11:27
Yes	replied to	RP-190572	LS on EPS Additional RRM Policy Index (S2-1902908; to: RAN, RAN3, RAN2, CT , CT4; cc: SA; contact: Vodafone)	SA2	12.03.19 20:43	12.03.19 23:04

Yes	noted	RP-190573	Discussion on NR MIMO maintenance work	Intel Corporation	12.03.19 21:22	13.03.19 23:05
Yes	noted	RP-190574	TR 38.840 v1.0.0 on Study on UE power saving in NR; for	CATT	12.03.19 22:12	17.03.19 04:46
Yes	approved	RP-190575	Iuant interface: General aspects and principles	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190576	Iuant interface: General aspects and principles	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190577	Iuant interface: General aspects and principles	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190578	Iuant interface: General aspects and principles	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190579	Iuant interface: General aspects and principles	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190580	Iuant interface: General aspects and principles	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190581	Iuant interface: General aspects and principles	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24

Yes	approved	RP-190582	Iuant interface: General aspects and principles	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190583	Iuant interface: Layer 1	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190584	Iuant interface: Layer 1	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190585	Iuant interface: Layer 1	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190586	Iuant interface: Layer 1	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190587	Iuant interface: Layer 1	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190588	Iuant interface: Layer 1	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190589	Iuant interface: Layer 1	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190590	Iuant interface: Layer 1	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190591	Iuant interface: Signalling transport	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190592	Iuant interface: Signalling transport	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190593	Iuant interface: Signalling transport	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190594	Iuant interface: Signalling transport	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190595	Iuant interface: Signalling transport	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190596	Iuant interface: Signalling transport	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190597	Iuant interface: Signalling transport	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24

Yes	approved	RP-190598	Iuant interface: Signalling transport	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190599	Iuant Interface: Application Part	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190600	Iuant Interface: Application Part	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190601	Iuant Interface: Application Part	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190602	Iuant Interface: Application Part	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190603	Iuant Interface: Application Part	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190604	Iuant Interface: Application Part	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190605	Iuant Interface: Application Part	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	approved	RP-190606	Iuant Interface: Application Part	ETSI MCC, Huawei	13.03.19 10:55	15.03.19 18:24
Yes	noted	RP-190607	Presentation of Specifications to TSG: TS 37.460 v1.N.0, TS 37.461 v1.N.0, TS 37.462 v1.N.0, TS 37.466 v1.N.0	ETSI MCC, Huawei,	13.03.19 10:55	15.03.19 18:24
Yes	noted	RP-190608	Status report for SI Study on RAN-centric data collection and utilization for LTE and NR; rapporteur: CMCC	RAN3	13.03.19 13:41	14.03.19 11:27
Yes	noted	RP-190609	Status Report for WI Core part: Adding wider channel	RAN4	13.03.19 14:20	14.03.19 11:27
Yes	not treated	RP-190610	New WI proposal: Generic RF DL requirements for NR intra-band non-contiguous Carrier Aggregation for FR1 with two sub-blocks	Huawei, HiSilicon	13.03.19 16:29	14.03.19 01:43
Yes	approved	RP-190611	CR to 38.463 on S-NSSAI update during EPS to 5GS handover	Huawei	13.03.19 16:36	18.03.19 18:13

Yes	noted	RP-190612	Discussion on the use of preambles for better coexistence in 5 GHz	Broadcom, Ruckus, AT&T, Blackberry,	13.03.19 22:39	18.03.19 18:13
Yes	noted	RP-190613	Discussion on the use of preambles for better coexistence in 6 GHz	Broadcom, AT&T, Blackberry, CableLabs, Cisco,Comcast, Orange, Ruckus	13.03.19 22:39	18.03.19 18:13
Yes	revised	RP-190614	pCR to TR 38.807 v0.0.4 on Operational Requirements	Intel	13.03.19 22:50	15.03.19 18:24
Yes	revised	RP-190615	RAN3 agreed CRs for NR Access Technology (Set 4)	RAN3	14.03.19 09:44	14.03.19 21:19

Yes	approved	RP-190616	Updating 8.5.4.1 to check FGI 103 and 104	Huawei, HiSilicon	14.03.19 10:25	17.03.19 04:46
Yes	revised	RP-190617	New WID: NR positioning support	Intel Corporation	14.03.19 11:16	18.03.19 18:13
Yes	not treated	RP-190618	Preliminary views on NTN activities in Rel-17	THALES	14.03.19 12:42	20.03.19 09:27
Yes	revised	RP-190619	Status report of WI: Cross Link Interference (CLI) handling and	RAN1	14.03.19 12:44	15.03.19 18:24
No	withdrawn	RP-190620	New WID: Generic RF requirements for NR intra-band contiguous Carrier Aggregation for FR1 with xCC DL/2CC UL (x>=2)	China Telecommunication Corp.	14.03.19 14:14	
Yes	approved	RP-190621	TR 38.824 v2.0.1 Study on physical layer enhancements for	Huawei	14.03.19 20:10	17.03.19 04:46
Yes	noted	RP-190622	Reply LS R3-191119 = RP-190053 on Completion of X2 TNL Address Discovery for EN-DC (C4-190589; to: RAN3, RAN; cc: SA2, CT, SA; contact: Nokia)	CT4	14.03.19 22:00	14.03.19 22:35

Yes	approved	RP-190623	Agenda for RAN #83 held in Shenzhen, China, 18.03.-	RAN chairm	14.03.19 22:27	14.03.19 22:35
Yes	revised	RP-190624	Introduction of 30 kHz channel raster and SS raster for band n38	Huawei,	15.03.19 16:22	17.03.19 04:46
Yes	revised	RP-190625	Introduction of 30 kHz channel raster and SS raster for band n38	Huawei,	15.03.19 16:24	17.03.19 04:46
Yes	noted	RP-190626	Gapless FR2 measurement in LTE standalone operation	Qualcomm Incorporated	15.03.19 17:23	17.03.19 04:46
Yes	not treated	RP-190627	New Work Item Proposal on NPN support for NR	China Telecommunica	15.03.19 17:28	18.03.19 18:13
Yes	noted	RP-190628	Way forward on network sharing	Nokia, Nokia Shanghai Bell, China Telecom, Bell, CMCC	15.03.19 17:32	17.03.19 04:46

Yes	revised	RP-190629	Draft reply LS to ITU_T_SG12-LS68 = RP-190042 on Draft new Recommendation E.RQST – "KPI targets for mobile networks" (to: ITU-T SG12, SA; cc: RAN1, SA5, RAN6; contact: Nokia)	Nokia	15.03.19 17:35	17.03.19 04:46
Yes	noted	RP-190630	Status report for SI: Study on UE Power Saving for NR; rapporteur: CATT	RAN1	15.03.19 18:08	17.03.19 04:46

Yes	noted	RP-190631	Motivation for correction to aperiodic CSI-RS triggering with different numerology between PDCCH and CSI-RS	Ericsson	16.03.19 08:23	18.03.19 18:13

Yes	approved	RP-190632	Correction to aperiodic CSI-RS triggering with different numerology between PDCCH and CSI-RS	Ericsson, AT&T, T-Mobile USA, Sprint, Nokia, Nokia Shanghai Bell, CHTTL, Deutsche Telekom	16.03.19 08:23	18.03.19 18:13
Yes	approved	RP-190633	Capability for aperiodic CSI-RS triggering with different numerology between PDCCH and CSI-RS	Ericsson, Qualcomm, AT&T, T-Mobile USA,	16.03.19 08:24	18.03.19 18:13
Yes	approved	RP-190634	Capability for aperiodic CSI-RS triggering with different numerology between PDCCH and CSI-RS	Ericsson, Qualcomm, AT&T, T-Mobile USA,	16.03.19 08:24	18.03.19 18:13
Yes	revised	RP-190635	New WI proposal: Physical layer enhancements for NR ultra-reliable and low latency communication (URLLC)	Huawei, HiSilicon	16.03.19 18:42	18.03.19 18:13

Yes	noted	RP-190636	Operator view on 5G NR	SK telecom, KT, LGUplus, Verizon	16.03.19 18:46	17.03.19 10:40
Yes	approved	RP-190637	CR to 36.331 on clarification of autonomous gap in EN-DC	Qualcomm Incorporated, vivo	16.03.19 18:50	19.03.19 05:41
Yes	noted	RP-190638	Reply LS to RP-182125 to 3GPP RAN on Work Status of 5GSI (GSMA_5GSI15_004; to RAN; SA, CT, GSMA Future Networks Programme ; contact: T-Mobile)	GSMA	16.03.19 19:47	17.03.19 06:07

Yes	noted	RP-190639	LS on request 3GPP continue consideration of a common preamble in 3GPP NR-U and IEEE 802.11 systems in 5 GHz and 6 GHz (contingent on the allocation of the 6GHz band for unlicensed RLAN operation) (IEEE_80211_WG_LS190315; to: RAN; cc: RAN1, RAN2, RAN4, IEEE-SA Standards Board, IEEE 802.11, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee; contact: IEEE 802.11 Working Group Chair)	IEEE 802.11 WG	16.03.19 19:52	17.03.19 06:07
Yes	noted	RP-190640	TR 21.915 v1.0.0 on Rel-15 description	ETSI MCC	17.03.19 09:58	21.03.19 05:45
Yes	endorsed	RP-190641	Status of time budgets for RAN1/2/3/4/6 ongoing and new WIs/SIs after RAN #83	RAN1/ RAN2/ RAN3/	17.03.19 10:05	
Yes	approved	RP-190642	New WID on introduction of GSM, UTRA, E-UTRA and NR capability set(s) (CS(s)) to the multi-standard radio (MSR) specifications	Ericsson, Vodafone, Orange	17.03.19 16:19	20.03.19 18:53
Yes	approved	RP-	Report of RAN #82 held in	ETSI	18.03.19 02:23	24.03.19 19:22
Yes	noted	RP-190644	Status report for WI: NR Mobility Enhancements; rapporteur: Intel	RAN2	18.03.19 02:45	18.03.19 18:13
Yes	revised	RP-	New WID on NR-based V2X	LG	18.03.19 03:12	19.03.19 05:41
Yes	not treated	RP-190646	Discussion on Gapless FR2 measurement in LTE SA	Intel	18.03.19 03:27	18.03.19 18:13

Yes	revised	RP-190647	Draft reply LS to 5GAA_S-190040 = RP-190037 on V2X specification visibility in 3GPP (to: 5GAA; cc: 5GAA WG4 SA, CT; contact: NEC)	NEC	18.03.19 03:34	21.03.19 05:45
Yes	not treated	RP-190648	Motivation for study on Enhancement for Disaggregated gNB Architecture	China Telecommunications	18.03.19 03:44	19.03.19 05:41
Yes	revised	RP-190649	New SID: Study on enhancement for disaggregated gNB architecture	China Telecommunications	18.03.19 03:44	19.03.19 05:41
Yes	approved	RP-190650	New WID on: UE Conformance Test Aspects - Enhancements on Full-Dimension (FD) MIMO for LTE	Ericsson	18.03.19 04:10	18.03.19 18:13
Yes	noted	RP-190651	Clarifying the use of acronyms for new Work Items	ETSI MCC	18.03.19 04:11	18.03.19 18:13
No	withdrawn	RP-190652	New WID: Add support of NR DL 256QAM for FR2	China Telecomunica	18.03.19 04:27	
Yes	revised	RP-	New WID: NR positioning	Intel	18.03.19 04:30	20.03.19 09:27
Yes	revised	RP-190654	New WI proposal: Physical layer enhancements for NR ultra-	Huawei,	18.03.19 04:41	20.03.19 09:27
Yes	revised	RP-190655	New WID: UE Power Saving in NR	CATT	18.03.19 04:52	19.03.19 05:41

Yes	noted	RP-190656	Way forward on scope of NPN	China Telecom, Huawei, Nokia, Nokia Shanghai Bell, ZTE	18.03.19 07:43	19.03.19 05:41
Yes	approved	RP-190657	New WI Proposal on optimisations on UE radio capability signalling - NR/E-UTRA Aspects	MediaTek Inc.	18.03.19 07:53	20.03.19 09:27
Yes	revised	RP-	Way forward for NR RF	Nokia	18.03.19 08:13	20.03.19 18:53

Yes	noted	RP-190659	Scope for RAN4 RRM/Demodulation work in REL-16	Intel	18.03.19 08:13	21.03.19 05:45
Yes	not	RP-	New WID on Introduction of	Ericsso	18.03.19 09:42	19.03.19 05:41

Yes	revised	RP-190661	Draft reply to EEE_802.11_WG_LS190220 = RP-190040 on Invitation to Coexistence Workshop in Vienna in July 2019 (to: IEEE 802.11 WG; cc: RAN1; contact: RAN chairman (Nokia))	RAN chairman (Nokia)	18.03.19 09:59	20.03.19 18:53
Yes	revised	RP-190662	PC3 MPR changes to accommodate FR2 OBW	Qualcomm Incorporated, Verizon, AT&T, T-Mobile USA, KDDI, Softbank, Telecom Italia, Sony	18.03.19 16:09	19.03.19 05:41
Yes	postponed	RP-190663	Introduction of 30 kHz channel raster and SS raster for band n38	Huawei,	18.03.19 16:45	19.03.19 05:41
Yes	postponed	RP-190664	Introduction of 30 kHz channel raster and SS raster for band n38	Huawei,	18.03.19 16:46	19.03.19 05:41

Yes	approved	RP-190665	New WID: Power Class 2 UE for LTE bands 31 and 72	Nokia, Argonet	18.03.19 17:51	19.03.19 09:38
Yes	revised	RP-190666	Revised WID on Cross Link Interference (CLI) handling and Remote Interference Management (RIM) for NR	LG Electronics	18.03.19 18:03	20.03.19 07:05
Yes	noted	RP-190667	Status report of WI: Cross Link Interference (CLI) handling and Remote Interference	RAN1	18.03.19 18:04	20.03.19 07:05
Yes	revised	RP-190668	Draft reply LS to ITU-R WP5D/TEMP/0706(Rev.1) = RP-190112 on Further Information on ITU-R Working Party 5D	ZTE	19.03.19 01:25	19.03.19 05:41
Yes	revised	RP-190669	Draft LTI reply to ITU_R_WP5A_TEMP_349rev1 = RP-182236 on the revision of Recommendation ITU-R M.2084-0 (to: SA; cc: -; contact: ZTE)	ZTE, Sanechips	19.03.19 01:35	19.03.19 12:06
Yes	revised	RP-190670	Draft reply LS to ITU_T_SG12-LS68 = RP-190042 on Draft new Recommendation E.RQST – "KPI targets for mobile networks" (to: SA; cc: RAN1, SA5, RAN6; contact:	Nokia	19.03.19 01:50	19.03.19 05:41

Yes	revised	RP-190671	WID proposal for LTE-based 5G terrestrial broadcast	Qualcomm Incorporated	19.03.19 02:02	20.03.19 09:27
Yes	noted	RP-190672	Status report for SI: Study on Self-Evaluation towards IMT-2020	Huawei	19.03.19 02:53	19.03.19 12:06
Yes	approved	RP-190673	Reply LS to ITU_T_SG12-LS68 = RP-190042 on Draft new Recommendation E.RQST – "KPI targets for mobile networks" (to:	RAN	19.03.19 03:00	19.03.19 05:41
Yes	revised	RP-190674	New WID on 5G V2X with NR sidelink	LG Electronics	19.03.19 03:14	20.03.19 07:05

Yes	revised	RP-190675	Study on locating LMF & LCS client in RAN for NR	CMCC	19.03.19 03:18	20.03.19 09:27
Yes	revised	RP-	New WID: UE Power Saving in NR	CATT	19.03.19 03:29	20.03.19 09:27
Yes	revised	RP-190677	New WI: Non-public networks for NR	China Telecom, RAN2/ RAN3 chairmen	19.03.19 04:30	20.03.19 09:27
Yes	revised	RP-190678	New WID: Support of NR Industrial Internet of Things (IoT)	Nokia, Nokia Shanghai Bell	19.03.19 04:39	20.03.19 18:53
Yes	withdrawn	RP-190679	PC3 MPR changes to accommodate FR2 OBW	Qualcomm Incorporated, Verizon, AT&T, T-Mobile USA, KDDI, Softbank, Telecom Italia, Sony	19.03.19 04:56	21.03.19 08:24
Yes	revised	RP-190680	Draft LS on NG-RAN Network Sharing completion (to: RAN3;	Huawei	19.03.19 05:33	20.03.19 09:27
Yes	approved	RP-190681	Revised SID: Feasibility Study on 6 GHz for LTE and NR in Licensed	Ericsson	19.03.19 07:22	19.03.19 09:38

Yes	revised	RP-190682	New WID: introduction of NR band n259	Ericsson	19.03.19 07:23	21.03.19 05:45
Yes	noted	RP-190683	Status Report RAN WG4	RAN4 chairm	19.03.19 08:39	20.03.19 18:53
Yes	endorsed	RP-190684	RAN3 time unit planning	RAN3 chairman (Ericsson)	19.03.19 09:25	21.03.19 05:45
Yes	revised	RP-190685	Draft Reply LS to S2-1902908 = RP-190572 on EPS Additional RRM Policy Index (to: RAN3, SA2, SA; cc: RAN2, CT, CT4; contact:	RAN3 chairman (Ericsso	19.03.19 10:11	21.03.19 05:45
Yes	revised	RP-190686	Reply LS to ITU-R WP5D/TEMP/0706(Rev.1) = RP-190112 on Further Information	RAN	19.03.19 10:16	20.03.19 07:05
Yes	not	RP-	New Rel-16 WID: In-device	vivo	19.03.19 10:26	21.03.19 05:45
Yes	revised	RP-190688	CR on SRS frequency domain allocation	Qualcomm Incorporated	19.03.19 10:53	21.03.19 08:24
Yes	approved	RP-190689	Revised WID: Rel-16 NR intra band Carrier Aggregation for xCC	Ericsson	19.03.19 11:08	21.03.19 05:45

Yes	not	RP-	New WI: Uplink Data	CATT	19.03.19 11:54	21.03.19 08:24
No	withdrawn	RP-190691	Handling of Cat. B TEI in RAN for NR & LTE	RAN chairman (Nokia)	19.03.19 12:16	
Yes	approved	RP-190692	New WID: Rel-16 NR Inter-band Carrier Aggregation for 3 bands DL with 1 band bands UL	CATT	19.03.19 12:33	21.03.19 05:45
Yes	approved	RP-190693	New WID: Rel-16 NR Inter-band Carrier Aggregation/Dual Connectivity for 3 bands DL with 2 band bands UL	ZTE	19.03.19 12:34	21.03.19 05:45
Yes	approved	RP-190694	pCR to TR 38.807 v0.0.4 on Operational Requirements	Intel	20.03.19 01:25	20.03.19 07:05
Yes	rejected	RP-190695	Revised SID on Study on NR beyond 52.6 GHz	Intel	20.03.19 01:26	20.03.19 07:05
Yes	revised	RP-190696	Way forward on maximum uplink duty cycle for FR2	Nokia	20.03.19 01:51	21.03.19 08:24
Yes	agreed	RP-190697	TR 38.807 v0.1.0: Study on requirements for NR beyond 52.6	Intel Corpor	20.03.19 02:05	20.03.19 07:05
Yes	postponed	RP-190698	Draft TP to TR 38.807 – Use Cases and Deployment Scenarios	Intel Corpor	20.03.19 02:10	20.03.19 07:05
No	withdraw	RP-	Void	ETSI	20.03.19 03:15	
Yes	approved	RP-190700	Revised WID on Cross Link Interference (CLI) handling and	LG Electro	20.03.19 03:16	20.03.19 18:53
Yes	revised	RP-190701	New WID: Support of NR Industrial Internet of Things (IoT)	Nokia, Nokia Shangh	20.03.19 03:36	20.03.19 09:27
Yes	approved	RP-190702	New SID: Study on enhancement for disaggregated gNB architecture	China Telecommunications	20.03.19 03:36	20.03.19 07:05

Yes	noted	RP-190703	Status Report for WI: Further performance enhancement for	RAN4	20.03.19 03:44	20.03.19 07:05
Yes	endorsed	RP-190704	Update of RAN4 UE feature list for REL-15 NR	NTT DOCO	20.03.19 03:45	21.03.19 09:14
Yes	approved	RP-190705	Revised WID: Dual Connectivity (EN-DC) of 1 LTE band (1UL/1DL) and 1 NR band (1DL/1UL)	NTT DOCOMO INC.	20.03.19 03:47	20.03.19 07:05
Yes	approved	RP-190706	Revised WID for NR-based access to unlicensed spectrum	Qualcomm	20.03.19 04:14	21.03.19 05:45
Yes	postponed	RP-190707	New SI proposal: Study on introduction of NR band 6.425-7.125GHz	Huawei, HiSilicon	20.03.19 04:17	21.03.19 09:14
Yes	not	RP-	WID proposal: Add power class 5	Huawei	20.03.19 04:17	21.03.19 09:14
Yes	not treated	RP-190709	New WID: NR performance requirement enhancement	China Telecomunica	20.03.19 04:21	21.03.19 05:45
Yes	approved	RP-190710	Revised SID for Study on solutions for NR to support non-	Thales	20.03.19 04:29	20.03.19 09:27
Yes	approved	RP-190711	Revised work item proposal 2 step RACH for NR	ZTE Corpor	20.03.19 04:30	21.03.19 05:45
Yes	approved	RP-	Revised WID for Integrated access	Qualco	20.03.19 04:34	21.03.19 12:02
Yes	approved	RP-190713	Revised WID: Single Radio Voice Call Continuity from 5G to 3G	China Unicom	20.03.19 04:46	21.03.19 08:24
Yes	approved	RP-190714	WID revision: SA NR SUL, NSA NR SUL, NSA NR SUL with UL sharing from the UE perspective (ULSUP); rapporteur: Huawei	Huawei, HiSilicon	20.03.19 04:56	21.03.19 05:45
Yes	noted	RP-190715	On completion of Rel.16 NR bands and band combinations	CHTTL	20.03.19 05:08	21.03.19 11:07

Yes	noted	RP-190716	Time schedule for Release 17	SA chairman (Samsung)	20.03.19 06:08	20.03.19 18:53
Yes	endorsed	RP-190717	Way forward on 5G broadcast	Huawei, HiSilicon, Deutsche	20.03.19 06:18	20.03.19 18:53

Yes	noted	RP-190718	Decision on Rel-17 schedule	RAN chairman (Nokia), SA chairman (Samsung)	20.03.19 06:35	20.03.19 09:27
Yes	not treated	RP-190719	Reply LS to R3-191119 = RP-190053 on Completion of X2 TNL Address Discovery for EN-DC (CP-	CT	20.03.19 06:42	20.03.19 18:53
Yes	not treated	RP-190720	LS on NR V2X spectrum allocation (5GAA_S-1900056; to: RAN; cc: RAN1, RAN2, RAN4;	5GAA WG4	20.03.19 06:42	20.03.19 18:53

Yes	revised	RP-190721	New WID on 5G V2X with NR sidelink	LG Electronics	20.03.19 07:34	21.03.19 05:45
Yes	revised	RP-190722	Updates to maximum output power test cases	Ericsson	20.03.19 07:44	21.03.19 05:45
Yes	revised	RP-190723	New WID: NR positioning support	Intel Corporation	20.03.19 07:44	21.03.19 06:15
Yes	approved	RP-190724	TR 38.855 v2.1.0 on Study on NR positioning support; for approval	Ericsson	20.03.19 07:59	21.03.19 05:45

Yes	revised	RP-190725	Study on local NR positioning in RAN	CMCC	20.03.19 08:03	21.03.19 05:45
Yes	approved	RP-190726	New WI proposal: Physical layer enhancements for NR ultra-	Huawei,	20.03.19 08:17	20.03.19 09:27
Yes	approved	RP-190727	New WID: UE Power Saving in NR	CATT	20.03.19 08:25	21.03.19 05:45
Yes	approved	RP-190728	New WID: Support of NR Industrial Internet of Things (IoT)	Nokia, Nokia Shanghai Bell	20.03.19 08:34	20.03.19 09:27
Yes	approved	RP-190729	New WI: Private Network Support for NG-RAN	China Telecom,	20.03.19 09:41	20.03.19 18:53
Yes	approved	RP-190730	LS on NG-RAN Network Sharing completion (to: RAN3; cc: -;	RAN	20.03.19 09:47	21.03.19 05:45
Yes	revised	RP-	WID revision: Additional	Huawei	20.03.19 10:42	20.03.19 18:53
Yes	approved	RP-190732	WID proposal for LTE-based 5G terrestrial broadcast	Qualcomm Incorporated	20.03.19 11:03	21.03.19 05:45
Yes	revised	RP-190733	Response LS to R2-1902436 = RP-190049 and R3-191102 = RP-190117 on Completion of Study on Cellular IoT support and evolution for the 5G System and Signalling optimization for RRC Inactive N3 path switch (to: RAN2, RAN3, SA2, SA; cc: RAN1, CT; contact: Qualcomm)	Qualcomm	20.03.19 11:34	21.03.19 09:14

Yes	revised	RP-190734	Revised WID for Additional MTC enhancements for LTE	Ericsson	20.03.19 11:43	21.03.19 05:45
Yes	revised	RP-190735	WID revision: Additional enhancements for NB-IoT	Huawei	20.03.19 11:54	21.03.19 08:24
Yes	noted	RP-190736	Update of procedures relating to work items (TEI)	ETSI MCC, Nokia, Samsung, BT, Intel	20.03.19 12:00	20.03.19 18:53

Yes	revised	RP-190737	RAN2 TU allocation at RAN#83	RAN2 chairman (Intel)	20.03.19 16:27	21.03.19 05:45
Yes	revised	RP-190738	New WI proposal: NG interface usage for WWC (Wireless Wireline Convergence)	Huawei, HiSilicon	20.03.19 16:33	21.03.19 05:45
Yes	approved	RP-190739	Reply LS to ITU-R WP5D/TEMP/0706(Rev.1) = RP-190112 on Further Information on ITU-R Working Party 5D Workshop on IMT-2020 Terrestrial Radio Interfaces Evaluation (to: ITU-R WP5D; cc: SA, contact: ZTE)	RAN	21.03.19 01:24	21.03.19 05:45

Yes	revised	RP-190740	Way forward for NR RF requirement work continuation in Rel-16	Nokia	21.03.19 01:26	21.03.19 05:45
Yes	endorsed	RP-190741	Way forward for NR RF requirement work continuation in Rel-16	Nokia	21.03.19 01:58	21.03.19 05:45
Yes	revised	RP-190742	New WID: RF requirement for FR1	Huawei	21.03.19 02:02	21.03.19 08:24
Yes	revised	RP-190743	New WID: 256QAM for FR2	China Telecom	21.03.19 02:02	21.03.19 08:24

Yes	revised	RP-190744	New WID: RF requirments for FR2	Nokia	21.03.19 02:03	21.03.19 08:24
Yes	approved	RP-190745	Reply to IEEE_802.11_WG_LS190220 = RP-190040 on Invitation to Coexistence Workshop in Vienna in July 2019 (to: IEEE 802.11 WG;	RAN	21.03.19 02:53	21.03.19 05:45
Yes	approved	RP-190746	Updates to maximum output power test cases	Ericsson, Apple	21.03.19 03:23	21.03.19 05:45
Yes	approved	RP-190747	CR to TS 38.101-2: Implementation of endorsed draft CRs from RAN4#90 plus PC3 MPR changes to accommodate FR2 OBW	Qualcomm	21.03.19 03:45	21.03.19 08:24
Yes	endorsed	RP-190748	Way forward on cross-carrier scheduling scope in multi-RAT dual-connectivity and CA enhancement WID	Nokia, Nokia Shanghai Bell,	21.03.19 03:49	21.03.19 05:45

Yes	revised	RP-190749	Draft reply LS to IEEE_802.11_LS_180713b = RP-181524 in relation to certain channel combinations for LAA in 5GHz (to: IEEE 802.11 WG, IEEE-SA Board of Governors, IEEE 802 LMSC, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee; cc: RAN4, RAN2, RAN1; contact: Charter Communications)	Charter Communications, Inc	21.03.19 04:15	21.03.19 08:24
Yes	endorsed	RP-190750	RAN2 TU allocation at RAN#83	RAN2 chairm	21.03.19 05:12	21.03.19 08:24
Yes	endorsed	RP-190751	RAN4 TU allocation	RAN4 chairman	21.03.19 06:06	21.03.19 08:24
Yes	approved	RP-190752	New WID: NR positioning support	Intel Corporation	21.03.19 06:15	21.03.19 08:24
Yes	revised	RP-190753	New WID on 5G V2X with NR sidelink	LG Electronics	21.03.19 06:52	21.03.19 09:14
Yes	approved	RP-190754	Study on local NR positioning in NG RAN	CMCC	21.03.19 07:07	21.03.19 08:24
Yes	endorsed	RP-190755	Way forward on maximum uplink duty cycle for FR2	Nokia	21.03.19 07:26	21.03.19 08:24

Yes	revised	RP-190756	Reply LS to 5GAA_S-190040 = RP-190037 on V2X specification visibility in 3GPP (to: 5GAA, SA; cc: 5GAA WG4, CT; contact: NEC)	RAN	21.03.19 07:53	21.03.19 10:12
Yes	approved	RP-190757	WID revision: Additional enhancements for NB-IoT	Huawei	21.03.19 08:20	21.03.19 10:12
Yes	approved	RP-190758	Reply LS to IEEE_802.11_LS_180713b = RP-181524 in relation to certain channel combinations for LAA in 5GHz (to: IEEE 802.11 WG, IEEE-SA Board of Governors, IEEE 802 LMSC, IEEE 802.11 WLAN WG, IEEE 802.11 Coexistence Standing Committee; cc: RAN4, RAN2, RAN1; contact: Charter Communications)	RAN	21.03.19 08:21	21.03.19 09:14
Yes	approved	RP-190759	New WID: RF requirement for NR frequency range 1 (FR1)	Huawei	21.03.19 08:42	21.03.19 09:14
Yes	approved	RP-	New WID: Add support of NR DL	China	21.03.19 08:48	21.03.19 09:14
Yes	approved	RP-	New WID: RF requirements for	Nokia	21.03.19 08:53	21.03.19 09:14
Yes	approved	RP-190762	Reply LS to S2-1902908 = RP-190572 on EPS Additional RRM Policy Index (to: RAN3, SA2, SA; cc: RAN2, CT, CT4; contact:	RAN	21.03.19 08:57	21.03.19 09:14
Yes	revised	RP-	New WID on 5G V2X with NR	LG	21.03.19 09:04	21.03.19 10:12
Yes	agreed	RP-190764	Draft LTI reply to ITU_R_WP5A_TEMP_349rev1 = RP-182236 on the revision of Recommendation ITU-R M.2084-0 (to: SA; cc: -; contact: ZTE)	ZTE, Sanechips	21.03.19 09:09	21.03.19 12:02
Yes	approved	RP-	New WID: introduction of NR	Ericsso	21.03.19 09:18	21.03.19 10:12

Yes	approved	RP-190766	New WID on 5G V2X with NR sidelink	LG Electro	21.03.19 09:34	21.03.19 11:07
Yes	approved	RP-190767	Reply LS to 5GAA_S-190040 = RP-190037 on V2X specification visibility in 3GPP (to: 5GAA, SA; cc: 5GAA WG4, CT; contact: NEC)	RAN	21.03.19 09:35	21.03.19 11:07
Yes	approved	RP-190768	Response LS to R2-1902436 = RP-190049 and R3-191102 = RP-190117 on Completion of Study on Cellular IoT support and evolution for the 5G System and Signalling optimization for RRC Inactive N3 path switch (to: RAN2, RAN3, SA2, SA; cc: RAN1, CT; contact: Qualcomm)	RAN	21.03.19 10:04	21.03.19 11:07
No	withdraw	RP-	WID revision: Additional	Huawei	21.03.19 10:07	
Yes	approved	RP-190770	Revised WID for Additional MTC enhancements for LTE	Ericsson	21.03.19 10:08	21.03.19 11:07
Yes	approved	RP-190771	Rel-15 Work Item Exception for New Radio Access Technology -	NTT DOCO	21.03.19 10:21	21.03.19 11:07
Yes	approved	RP-190772	New WI proposal: NG interface usage for WWC (Wireless	Huawei,	21.03.19 10:38	21.03.19 11:07
Yes	approved	RP-190773	CR on SRS frequency domain allocation	Qualcomm	21.03.19 10:52	21.03.19 11:07

APPENDIX I

3GPP_TSG_RAN_WG2 Archives
January 2019, Week 2

New in LISTSERV 17.0 ×

3GPP_TSG_RAN_WG2@LIST.ETSI.ORG

Subject: RAN2 CR implementation status, post-RAN#82, (v10)
From: Juha Korhonen <Juha.Korhonen@ETSI.ORG>
Reply To: Juha Korhonen <Juha.Korhonen@ETSI.ORG>
Date: Sun, 13 Jan 2019 00:57:04 +0000
Content-Type: multipart/alternative
Parts/Attachments: text/plain (1873 bytes) , text/html (47 kB)

Dear All,

I have uploaded the following final spec versions to 3GU:
36305-f20
36306-da0
36321-f40
36355-f20

And I have also uploaded the following revised drafts for review:
Draft_36300-f40_v3
Draft_36306-e90_v2
Draft_36306-f30_v3
Draft_37340-f40_v4
Draft_38331-f40_v6

Note that I have not yet processed the comments received for 36.331. I will start that task later on Sunday.

The draft specifications are available here:
ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/Specifications/201812_draft_specs_after_RAN_82/

BR,
Juha

****

Overview of RAN2 CR implementation status after RAN#82 - 12.01.2019

Spec	REL-13	REL-14	REL-15	CRs	Rapporteur
36.300			15 (v2)	15	Tero Henttonen (Nokia)
36.302			2 (v2)	2	Chunli Wu (Nokia)
36.304			7 (v2) (OK)	7	Jarkko Koskela (Nokia)
36.305			1 (v2) (OK)	1	Masato Kitazoe (Qualcomm)
36.306	2 (OK)	3 (v2)	18 (v3)	23	Ravi Kuchibhotla (Motorola Mobility)
36.314			1 (OK)	1	Jun Chen (Huawei)
36.321		2 (v2) (OK)	22 (v2) (OK)	24	Mats Folke (Ericsson)
36.323			5 (v2) (OK)	5	SeungJune Yi (LGE)
36.331	4	11	125	140	Himke van der Velde (Samsung)
36.355			5 (v4) (OK)	5	Masato Kitazoe (Qualcomm)
37.340			9 (v4)	9	Sergio Parolari (ZTE)
38.300			37 (v3) (OK)	37	Benoist Sebire (Nokia)
38.304			22 (v4)	22	Ozcan Ozturk (Qualcomm)
38.305			2 (v2) (OK)	2	Sven Fischer (Qualcomm)
38.306			18	18	Kyeongin Jeong (Intel)
38.321			30 (v4) (OK)	30	Jaehyuk Jang (Samsung)
38.322			1 (v2) (OK)	1	Pavan Nuggehalli (MediaTek)
38.323			3 (OK)	3	SeungJune Yi (LGE)
38.331			201 (v4)	201	Håkan Palm (Ericsson)
total	**6**	**16**	**524**	**546**	

blue: draft spec is available for review
yellow: updated draft spec (based on review comments) is available for review
green: the final version is uploaded and available via 3GU and ftp.
OK = The rapporteur has approved this version.

The draft specifications for review will be available here:
ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/Specifications/201812_draft_specs_after_RAN_82/

All draft specs were implemented with revision marks.

Samsung Exhibit 1026, Page 896 of 900

APPENDIX J

3GPP_TSG_RAN_WG2 Archives
January 2019, Week 2

New in LISTSERV 17.0 ×

3GPP_TSG_RAN_WG2@LIST.ETSI.ORG

Subject: RAN2 CR implementation status, post-RAN#82, (v13)
From: Juha Korhonen <Juha.Korhonen@ETSI.ORG>
Reply To: Juha Korhonen <Juha.Korhonen@ETSI.ORG>
Date: Mon, 14 Jan 2019 21:29:49 +0000
Content-Type: multipart/alternative
Parts/Attachments: text/plain (1768 bytes) , text/html (50 kB)

Dear All,

I have uploaded the following final spec versions to 3GU:
36306-e90
36306-f30
37340-f40
38304-f20
38331-f40

I have also uploaded the following revised drafts for further review:
Draft_36300-f40_v4
Draft_36331-e90_v3

The draft specifications are available here:
ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/Specifications/201812_draft_specs_after_RAN_82/

BR,
Juha

****

Overview of RAN2 CR implementation status after RAN#82 - 14.01.2019

Spec	REL-13	REL-14	REL-15	CRs	Rapporteur
36.300			15 (v2)	15	Tero Henttonen (Nokia)
36.302			2 (v2)	2	Chunli Wu (Nokia)
36.304			7 (v2) (OK)	7	Jarkko Koskela (Nokia)
36.305			1 (v2) (OK)	1	Masato Kitazoe (Qualcomm)
36.306	2 (OK)	3 (v2) (OK)	18 (v3) (OK)	23	Ravi Kuchibhotla (Motorola Mobility)
36.314			1 (OK)	1	Jun Chen (Huawei)
36.321		2 (v2) (OK)	22 (v2) (OK)	24	Mats Folke (Ericsson)
36.323			5 (v2) (OK)	5	SeungJune Yi (LGE)
36.331	4 (v2)	11 (v3)	125 (v2)	140	Himke van der Velde (Samsung)
36.355			5 (v4) (OK)	5	Masato Kitazoe (Qualcomm)
37.340			9 (v4) (OK)	9	Sergio Parolari (ZTE)
38.300			37 (v3) (OK)	37	Benoist Sebire (Nokia)
38.304			22 (v4) (OK)	22	Ozcan Ozturk (Qualcomm)
38.305			2 (v2) (OK)	2	Sven Fischer (Qualcomm)
38.306			18 (v2)	18	Kyeongin Jeong (Intel)
38.321			30 (v4) (OK)	30	Jaehyuk Jang (Samsung)
38.322			1 (v2) (OK)	1	Pavan Nuggehalli (MediaTek)
38.323			3 (OK)	3	SeungJune Yi (LGE)
38.331			201 (v6) (OK)	201	Håkan Palm (Ericsson)
total	**6**	**16**	**524**	**546**	

blue: draft spec is available for review
yellow: updated draft spec (based on review comments) is available for review
green: the final version is uploaded and available via 3GU and ftp.
OK = The rapporteur has approved this version.

The draft specifications for review will be available here:
ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/Specifications/201812_draft_specs_after_RAN_82/

All draft specs were implemented with revision marks.

APPENDIX K

LISTSERV
friedhelm.rodermund@iotecc.com
Subscriber Options
LISTSERV Archives
Search Archives
Subscriptions
Preferences
Change Password
Log Out

3GPP_TSG_RAN_WG2@LIST.ETSI.ORG

Options: Use Proportional Font
Show Text Part by Default
Show All Mail Headers

Message: [<< First] [< Prev] [Next >] [Last >>]
Topic: [<< First] [< Prev] [Next >] [Last >>]
Author: [<< First] [< Prev] [Next >] [Last >>]

Subject: RAN2 CR implementation status, post-RAN#83, (v11)
From: Juha Korhonen <Juha.Korhonen@ETSI.ORG>
Reply To: Juha Korhonen <Juha.Korhonen@ETSI.ORG>
Date: Tue, 9 Apr 2019 16:24:43 +0000
Content-Type: multipart/alternative
Parts/Attachments: text/plain (2506 bytes) , text/html (71 kB)

Dear All,

I have uploaded the following updated draft specs for review:
Draft_36306-f40_v2
Draft_36321-f50_v2
Draft_38304-f30_v2
Draft_38306-f50_v2

Also, the final versions of the following specs are now available from 3GU, or from:
ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/Specifications/201903_final_specs_after_RAN_83/

36323-f30
36355-f30
37340-f50
38300-f50
38305-f30
38321-f50
38322-f50
38323-f50

BR,
Juha

****

Overview of RAN2 CR implementation status after RAN#83 - 09.04.2019

Spec	Rel-12	REL-13	REL-14	REL-15	CRs	Rapporteur
36.300		1 (OK)	1 (OK)	9 (v3)	11	Tero Henttonen (Nokia)
36.302			2 (OK)	3 (OK)	5	Chunli Wu (Nokia)
36.304				2 (OK)	2	Jarkko Koskela (Nokia)
36.305				1 (OK)	1	Masato Kitazoe (Qualcomm)
36.306		1	2	6 (v2)	9	Ravi Kuchibhotla (Motorola Mobility)
36.321			1 (OK)	12 (v2)	13	Mats Folke (Ericsson)
36.323				3 (OK)	3	SeungJune Yi (LGE)
36.331	1 (v2)(OK)	2 (3)(OK)	7 (v3)(OK)	50 (v3) (OK)	60	Himke van der Velde (Samsung)
36.355				1 (OK)	1	Masato Kitazoe (Qualcomm)
37.340				12 (v2) (OK)	12	Sergio Parolari (ZTE)
38.300				9 (v2) (OK)	9	Benoist Sebire (Nokia)
38.304				6 (v2)	6	Ozcan Ozturk (Qualcomm)
38.305				1 (OK)	1	Sven Fischer (Qualcomm)
38.306				11 (v2)	11	Kyeongin Jeong (Intel)
38.321				4 (v2) (OK)	4	Jaehyuk Jang (Samsung)
38.322				1 (OK)	1	Yuanyuan Zhang (MediaTek)
38.323				2 (v2) (OK)	2	SeungJune Yi (LGE)
38.331				68 (v5) (OK)	68	Håkan Palm (Ericsson)
total	**1**	**4**	**13**	**201**	**219**	

blue: draft spec is available for review
yellow: updated draft spec (based on review comments) is available for review
green: the final version is uploaded and available via 3GU and ftp.
OK = The rapporteur has approved this version.

The draft specifications for review will be available here:
ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/Specifications/201903_draft_specs_after_RAN_83/

All draft specs were implemented with revision marks.