**Third Generation Partnership Project (3GPP™)**

**Session Chair Meeting Notes  
for  
TSG RAN WG4  
meeting: 106**

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## 1 Opening of the meeting

The Chair Xizeng Dai (Huawei) opened the F2F meeting for RAN4#106 on 27/02/2023 at xxxx.

Intellectual Property Rights Declaration Policy

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

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

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

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

**Statement regarding competition law**

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

**Meeting arrangements**

The meeting was conducted in three parallel sessions: Main session, RRM session, and BS RF Test Demod session. The Main session was chaired by RAN4 Chair Xizeng Dai (Huawei), RRM session was chaired by RAN4 Vice Chair Andrey Chervyakov (Intel) and BS RF Test Demod session was chaired by RAN4 Vice Chair Haijie Qiu (Samsung). The sessions were further broken down into separate meeting rooms. Webinar sessions were made available for online particpants.

**F2F network usage conditions**

The PCG has laid down the following network usage conditions as provided below:

**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**.

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

Since the **network is a shared resource**, users should exercise some basic etiquette when using the 3GPP network at a meeting. It is understood that high bandwidth applications such as downloading large files or video streaming might be required for business purposes, but delegates should be strongly discouraged in performing these activities for personal use. Downloading a movie or doing something in an interactive environment for personal use essentially wastes bandwidth that others need to make the meeting effective. The meeting Chair 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)**

**Check-in for Registered Delegates**

The attention of the delegates to this meeting was drawn to the fact that it is not permitted to check in other delegates on their behalf. In the even of technical difficulties preventing check in, delegates are encouraged to contact in person MCC.

**Face-to-Face meeting with two-way remote participation**

When it is a face-to-face (ordinary) meeting with two-way remote participation.

- In a meeting designated as face to face (ordinary), those participating remotely are not to be counted toward quorum or attendance, and are not allowed to vote

**Recording of RAN4 Meeting**

Recording of the GoToWebinar sessions of the present meeting is strictly prohibited. No individual or entity – including the speakers and/or the authors – may electronically record any portion of the meeting without prior written consent of the Chair and all the RAN4 meeting participants.

**Number of contributions at the submitted by deadline for meeting**

The number of contributions in 3GU at the start of this meeting was **2758**.

## 2 Approval of the agenda

This agenda item is categorized for [106][100] Main Session topics.

This includes the agenda, the meeting arrangements and guidelines and also the report fro the previous meeting.

|  |  |  |  |
| --- | --- | --- | --- |
| TDoc | Title | Source | Decision |
| [R4-2300001](file:///D:\RAN4%23106\Docs\R4-2300001.zip) | RAN4#105 Meeting Report | ETSI MCC | Approved |
| [R4-2300002](file:///D:\RAN4%23106\Docs\R4-2300002.zip) | Agenda for RAN4 #106 | RAN4 Chair (Huawei) | Approved |
| [R4-2300003](file:///D:\RAN4%23106\Docs\R4-2300003.zip) | RAN4#106 Meeting Arrangements and Guidelines | RAN4 Chair (Huawei) | Approved |

## 3 Incoming LS

This agenda item is categorized for [106][100] Main Session topics.

The list of incoming LSs at the start of the meeting.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| TDoc | Title | Release | WI | Source | To/CC | Action | Decision |
| [R4-2300004](file:///D:\RAN4%23106\Docs\R4-2300004.zip) | LS to RAN4 and RAN2 on L3-RSSI measurement for NR up to 71GHz | Rel-17 | NR\_ext\_to\_71GHz-Core | RAN1 | To: RAN2, RAN4 | RAN4 sent an LS response with clarification of the following:  “When a UE has no serving cell in FR2-2, it is not clear if the explicit TCI state should be configured to the UE for FR2-2 RSSI measurement. If explicit TCI state should be configured, how does the UE use such explicit TCI?”  **Answer1:**  - When a UE has no serving cell in FR2-2, the UE does not expect that a TCI-state is provided in RMTC-Config for inter-frequency RSSI measurement on FR2-2.  - For a UE that has no serving cell in FR2-2 and configured with inter-frequency RSSI measurement in FR2-2, it is up to UE implementation how to determine the spatial domain filter for the inter-frequency RSSI measurement in FR2-2.  **Answer2:** For intra-frequency and inter-frequency RSSI measurements for FR2-2, when a UE has a serving cell in FR2-2, the UE does not expect to be configured with an explicit TCI-state in RMTC-Config with a reference serving cell in FR1 or FR2-1.  **ACTION:** RAN1 respectfully asks RAN4 and RAN2 to consider the above agreement and capture it in RAN4 and RAN2 spec. | noted |
| [R4-2300005](file:///D:\RAN4%23106\Docs\R4-2300005.zip) | LS on updated Rel-17 RAN1 UE features lists for NR after RAN1#111 | Rel-17 | NR\_FeMIMO, NR\_ext\_to\_71GHz, NR\_IIOT\_URLLC\_enh, NR\_NTN\_solutions, NR\_pos\_enh, NR\_redcap, NR\_UE\_pow\_sav\_enh, NR\_cov\_enh, NR\_IAB\_enh, NR\_SL\_enh, NR\_MBS, NR\_DSS, LTE\_NR\_DC\_enh2, NR\_DL1024QAM\_FR1, NR\_RF\_FR1\_enh, NR\_SmallData\_INACTIVE, TEI17, NR\_newRAT | RAN1 | To: RAN2  Cc: RAN4 | RAN1 has continued to discuss the Rel-17 RAN1 UE features list for NR and would like to share the latest version with RAN2 in the attachment R1-2212895.  **ACTION:** RAN1 kindly asks RAN2 to take into account the RAN1 NR UE features in the attachment for designing corresponding capability signalling in Rel.17. | noted |
| [R4-2300006](file:///D:\RAN4%23106\Docs\R4-2300006.zip) | Reply LS to RAN4 on NCR-MT transmission and Beam correspondence | Rel-18 | NR\_netcon\_repeater-Core | RAN1 | To: RAN4 | From RAN1’s perspective, NCR-MT supports UL transmissions. At least, PRACH, PUCCH, PUSCH, SRS and HARQ-ACK feedback transmissions for PDSCH are supported according to the agreements.  In addition, legacy uplink channels and signals are expected to be supported without NCR-specific enhancement.  From RAN1 perspective, the signaling design of beam indication mechanism can be applied to NCR FR1.  **ACTION:** RAN1 respectfully requests RAN4 to take the above responses into account in the future work. | noted |
| [R4-2300007](file:///D:\RAN4%23106\Docs\R4-2300007.zip) | LS to RAN4 for further information on RAN1 assumptions for LLS performance evaluation of MPR/PAR reduction solutions | Rel-18 | NR\_cov\_enh2 | RAN1 | To: RAN4 | RAN1 discussed assumptions for studying the LLS performance of MPR/PAR reduction solutions for Rel-18 power domain enhancements, in accordance with the work split principles provided in R1-2210674.  The following non-transparent solutions for MPR/PAR reduction are currently under discussion in RAN1.  - Frequency domain spectrum shaping w/ spectrum extension (FDSS-SE)  - Tone reservation w/ spectrum extension  Both DMRS and data symbols undergo spectrum shaping.  Results concerning the application of solutions for DFT-s-OFDM to CP-OFDM can be presented by companies in their contributions.  It is understood that minor TBS variations across different waveform configurations can occur and are acceptable.  Baseline parameterization is used for link-level performance evaluation of MPR-PAR reduction solutions in RAN1 for Rel-18  For any parameter that is not listed in the table, companies are encouraged to consider corresponding value from TR 38.830 (or TR 38.868, if the parameter is absent in TR 38.830).  **ACTION:** RAN1 kindly requests RAN4 to take the above information into consideration for their future work. | noted |
| [R4-2300008](file:///D:\RAN4%23106\Docs\R4-2300008.zip) | LS on NR support for dedicated spectrum less than 5MHz for FR1 | Rel-18 | NR\_FR1\_lessthan\_5MHz\_BW | RAN1 | To: RAN4 | RAN WG1 have started working on the WI NR support for dedicated spectrum less than 5MHz for FR1 at RAN1#111.  RAN1 have the following questions to RAN4:  **Question 1:** RAN1’s understanding is that in addition to reusing 5 MHz channel bandwidth, RAN1 suppose only 3 MHz channel bandwidth is supported, and would like to get RAN4 response on the maximum transmission bandwidth (the number of PRBs) for this channel BW.  **Question 2:** RAN1 have discussed aspects related to synch raster in the spectrum of interest. RAN1 would like to ask RAN4 if finer synch raster for the 3MHz and/or 5MHz channel bandwidth is feasible, as well as if RAN4 needs any input from RAN1.  **ACTION:** RAN1 kindly requests RAN4 to answer Question 1 and Question 2. | noted |
| [R4-2300009](file:///D:\RAN4%23106\Docs\R4-2300009.zip) | LS on RAN1 agreements for L1/L2-based inter-cell mobility | Rel-18 | NR\_mob\_enh2-Core | RAN1 | To: RAN2, RAN3, RAN4 | RAN1 would like to inform RAN2, RAN3 and RAN4 of the agreements achieved in RAN1#111.  **ACTION:** RAN1 respectfully asks RAN2, RAN3 and RAN4 to take the RAN1 agreements into consideration for their work. | noted |
| [R4-2300010](file:///D:\RAN4%23106\Docs\R4-2300010.zip) | LS on interference modelling for duplex evolution | Rel-18 | FS\_NR\_duplex\_evo | RAN1 | To: RAN4 | In RAN1#111, RAN1 made the following agreements.  **Question 1:** RAN4 to confirm RAN1 understanding and check whether ICS\_BS can be modelled depending on the value of the blocker interference  **Question 2:** RAN4 confirming the model and asking the value ranges for spatial isolation, and values of 10\*log\_10 (ACLR\_BS ) and 10\*log\_10 (ACS\_BS ).  **Question 3:** RAN4 to ask them whether it can be modelled as an equivalent frequency flat model (e.g., IBE\_(UE,ave)) based on RAN4 IBE requirement, and if possible, what is the value of IBE\_(UE,ave)  **ACTION:** RAN1 respectfully asks RAN4 to provide feedback on the questions above. | noted |
| [R4-2300011](file:///D:\RAN4%23106\Docs\R4-2300011.zip) | LS to RAN4 on low-power wake-up receiver architectures | Rel-18 | FS\_NR\_LPWUS | RAN1 | To: RAN4 | RAN1 kindly asks RAN4 to take RAN1 agreements into account, study at least the LP WUR architectures that RAN1 identifies and provide feedback, potentially considering the aspects including but not limited to:  - The reasonable assumption on adjacent channel selectivity (ACS) for the study and the impact on the LP WUR architectures and signal design  - The impact of adjacent subcarrier interference suppression/rejection on the LP WUR architectures if LP WUS is multiplexed with other signals/channels in frequency  - The feasible noise figure(s) for each type of LP WUR architectures  - Impact, if any, LP-WUS transmission on existing gNB emissions/compliance requirements  - The potential RF impairments to be considered include e.g. timing error, frequency error, image impact, LO leakage (DC offset) and flicker (1/f) noise  - Whether certain LP WUR architectures can support multi-band capability  - Note: RAN1 may or may not identify further architecture(s) for the study.  **ACTION:** RAN1 respectfully asks RAN4 to take the above into consideration, study at least the LP WUR architectures that RAN1 identifies and provide feedback. | noted |
| [R4-2300012](file:///D:\RAN4%23106\Docs\R4-2300012.zip) | Reply LS on RACH-less handover in NTN | Rel-18 | NR\_NTN\_enh-Core | RAN1 | To: RAN2, RAN4 | For scenario (1), from RAN1 perspective the RACH-less handover is possible, assuming the following notes can be satisfied, when UE UL transmission synchronization can be maintained by applying pre-compensation using the assistance information, e.g., epoch time, ephemeris, common TA, of the target cell.  For scenario (2)-(4), from RAN1 perspective the RACH-less handover may be possible, assuming the following notes can be satisfied, when UE UL transmission synchronization can be maintained by applying pre-compensation using the assistance information, e.g., epoch time, ephemeris, common TA, of the target cell.  **ACTION:** RAN1 respectfully asks RAN2 to take the above response into account in the future work. RAN1 respectfully asks RAN4 whether RAN1’s assumption in Note 1 is correct. | Noted |
| [R4-2300013](file:///D:\RAN4%23106\Docs\R4-2300013.zip) | Reply LS on L1 measurement and configurations for LTM | Rel-18 | NR\_mob\_enh2-Core | RAN2 | To: RAN1, RAN3  Cc: RAN4 | **Question 3** (to RAN2 and RAN3): RAN1 respectfully asks RAN2 and RAN3 if the serving DU knows the measurement RS configuration and TCI state configuration of cells served by another DU.  RAN2 assumes that LTM (intra DU and inter DU) is network-controlled mobility where the control is from the source, i.e., measurements (L1 measurements) are configured in the UE from the source Cell, and the decision to switch cell is by the source cell, and enhancements considered for LTM before cell switch, e.g. pre-synchronization, TA handling, target beam management (to the extent it is supported) may be made by the source cell.  **ACTION:** RAN2 kindly asks RAN1 and RAN3 to take the above feedback into consideration. | **Noted** |
| [R4-2300014](file:///D:\RAN4%23106\Docs\R4-2300014.zip) | Reply LS on information for neighbor/target cell in IoT NTN | Rel-18 | LTE\_NBIOT\_eMTC\_NTN\_req-Core | RAN2 | To: RAN4 | In case of handover to an NTN cell, the SIB31 of target NTN cell (which contains its satellite assistance information) is provided in RRCConnectionReconfiguration.  For neighbor cell measurements, RAN2 has agreed not to introduce the satellite assistance information of neighbour cells in system information in Rel-17 IoT NTN, but this will be supported in Rel-18.  **ACTION:** RAN2 respectfully asks RAN4 to take the above information into account in their work. | Noted |
| [R4-2300015](file:///D:\RAN4%23106\Docs\R4-2300015.zip) | Reply LS on reference SSB for s-MeasureConfig checking | Rel-17 | NR\_redcap-Core | RAN2 | To: RAN4 | RAN2 confirms the RAN4 understanding that the reference SSB used for threshold for s-MeasureConfig is the SSB defined in BWP-specific servingCellMO under BWP-DownlinkDedicated of active DL BWP, and if the field is absent, the reference SSB is the SSB defined in servingCellMO under ServingCellConfig.  RAN2 has the following field descriptions in TS38.331 for the usage of NCD-SSB for serving cell measurements and the corresponding note in TS38.300 which reflects the RAN4 understanding. RAN2 thinks that no changes are needed in specification.  **ACTION:** RAN2 respectfully asks RAN4 to take above information into consideration. | Noted |
| [R4-2300016](file:///D:\RAN4%23106\Docs\R4-2300016.zip) | Reply LS on configuring margin for 1 Rx RedCap UEs | Rel-17 | NR\_redcap-Core | RAN2 | To: RAN4 | RAN2 would also like to inform RAN4 that the following cell-specific RSRP thresholds should be included in the list to apply the offset.  - rsrp-ThresholdSSB-SUL  - rsrp-ThresholdMsg3  **ACTION:** RAN2 respectfully asks RAN4 to take above information into account. | Noted |
| [R4-2300017](file:///D:\RAN4%23106\Docs\R4-2300017.zip) | Reply LS on new contiguous BW classes for legacy networks | Rel-17 | NR\_RF\_FR2\_req\_enh2-Core | RAN2 | To: RAN4 | RAN2 discussed the feasibility and benefit of UE capability signalling solution where the UE indicates the “maximum aggregated BW limitation” as suggested by RAN4. In conclusion, RAN2 decided not to introduce the new signalling, due to the lack of consensus.  During the discussion, RAN2 identified a potential issue related to RAN4’s “Fallback Group” requirement for bandwidth class. This is explained using the following example of CA band combinations associated bandwidth classes of FBG3.  **ACTION:** RAN2 would like to ask RAN4 to look into the issue described in this LS and conclude if there is any problem. | Noted |
| [R4-2300018](file:///D:\RAN4%23106\Docs\R4-2300018.zip) | LS on support of per FR PRS gap | Rel-17 | NR\_MG\_enh-Core | RAN2 | To: RAN4 | There is no consensus whether the PRS measurement can be associated with per FR measurement gap when concurrent gaps are configured, as companies have different understanding whether RAN4 supports so.  Therefore RAN2 kindly requests RAN4 to provide feedback whether RAN4 supports PRS to be associated with per FR measurement gap in case of concurrent gaps.  **ACTION:** RAN2 kindly requests RAN4 to provide feedback whether RAN4 supports PRS to be associated with per FR measurement gap in case of concurrent gaps. | Noted |
| [R4-2300019](file:///D:\RAN4%23106\Docs\R4-2300019.zip) | Reply LS on L1 intra- and inter- frequency measurement and configurations for L1/L2-based inter-cell mobility | Rel-18 | NR\_mob\_enh2-Core | RAN3 | To: RAN1, RAN2  Cc: RAN4 | Regarding Q3 about L1 measurement and TCI state configurations in the LS, RAN3 agreed that based on the current specification, the serving DU cannot know the measurement RS configuration and TCI state configuration of cells served by another DU.  Any possible consideration for Rel-18 on the coordination over F1 among serving DU, target DU, and CU would need clearly identified requirements from other groups.  **ACTION:** RAN3 kindly asks RAN1 and RAN2 to take the above feedback into account. | Noted |
| [R4-2300020](file:///D:\RAN4%23106\Docs\R4-2300020.zip) | Response to RAN4 LS on feasibility of UE initiated SDT transmission in RRC\_INACTIVE for RRM requirements | Rel-17 | NR\_SmallData\_INACTIVE | RAN5 | To: RAN4 | Regarding the questions from RAN4, below are the answers to those questions.  **Answer1:** It is possible for TE to periodically send data packets to UE in RRC\_INACTIVE corresponding to multiple SDT sessions before sending a RRC release to end SDT session  **Answer2:** T\_delay\_modeB timer granularity is in units of 1sec. T\_delay\_modeB timer is only applicable for the very first SDT transmission after receiving RRC release with suspend config. For later SDT transmissions while UE is in RRC\_inactive does not depend on this T\_delay\_modeB timer  **Answer3:** T\_delay\_modeB only applicable for first SDT transmission. For subsequent SDT transmission, TE can send the IP PDU on SDT DRB ID when needed for the UE to respond with its SDT transmission (or no transmission due to thresholds not met). Once the various checkpoints for the RRM test (T1, T2, T3 etc) are known to RAN5, the test case procedure can be defined accordingly.  **ACTION:** RAN5 respectfully asks RAN4 to take the above-mentioned answers into considerations while coming up with the RRM requirements for this SDT WI. | Noted |
| [R4-2300021](file:///D:\RAN4%23106\Docs\R4-2300021.zip) | Clarity on 15dBm output power requirement for NS\_41 | Rel-15 |  | RAN5 | To: RAN4 | **Option 1:** The test system sends TPC commands with a target power such that Tx power is ensured to be below 15 dBm (within range [15 dBm … 15 dBm - power window1])  **Option 2:** The UE apply as much A-MPR as needed to ensure Tx power is max 15 dBm  **ACTION:**  RAN5 respectfully asks RAN4 to provide guidance on how to interpret the NS\_41 requirements so that correct testing can be performed.  Q1: Is option 1 or 2 above or any different interpretation the right one?  Q2: If option 1 is the correct one: Provide feedback on how to reach 15 dBm Tx power.  Q3: Provide feedback on whether RAN5 should include a test requirement that the UE Tx power shall not be more than 15 dBm when NS\_41 is signalled. | **Noted** |
| [R4-2300022](file:///D:\RAN4%23106\Docs\R4-2300022.zip) | LS on applicability of requirements for RedCap UE | Rel-17 | NR\_redcap | RAN5 | To: RAN4 | During RAN5#97 meeting, RAN5 has confirmed the RF transmitter requirements could be verified by RedCap UE on SUL band combinations. However, RAN5 could not reach consensus on whether receiver requirements could be verified, additional clarification is needed from RAN4 regarding this aspect.  Question 1: Are the requirements in clause 7.3C in 38.101-1 [3] valid for a RedCap UE, indicating SUL band combinations, to be verified with REFSENS specified in clause 7.3I?  Question 2: How could the requirements in 7.3I be applied to 7.3C in respect to Reference sensitivity side conditions (UL/DL configuration), sensitivity allowance, SUL band combination with HD-FDD band.  **ACTION:**  RAN5 respectfully requests RAN4 group to provide feedback on the question(s) raised above. | Noted |
| [R4-2300023](file:///D:\RAN4%23106\Docs\R4-2300023.zip) | Reply LS on FS\_VMR solutions review | Rel-18 | FS\_VMR | SA2 | To: RAN2, RAN3  Cc: RAN, RAN4 |  | Noted |
| [R4-2300024](file:///D:\RAN4%23106\Docs\R4-2300024.zip) | OTA LTE UE TRP and TRS Requirements |  |  | GSMA | To: RAN4, RAN5,RAN, CTIA, GCF SG, GCF CAG, GCF PAG | GSMA would like to inform you that in the latest version of TS.24 the 5G OTA antenna requirements have been defined.  Those requirements cover NSA (Non-Stand Alone) and SA (Stand Alone) modes. Furthermore, device power class 3 and power class 2 have been considered.  However, the current requirement is only covering 5G FR1 frequency range (410 MHz -7125 MHz). | Noted |
| [R4-2300027](file:///D:\RAN4%23106\Docs\R4-2300027.zip) | Formation of a new ETSI ISG for Terahertz Communications (THZ) |  |  | ETSI ISG THZ | To: RAN, RAN1, RAN4, Next G Channel Model Alliance, NGMN, One6G, TC ERM, ETSI ISG mWT, ETSI ISG RIS, ITU-R SG 3, ITU-R SG 5, IMT-2030 6G, COST INTERACT, 802 IEEE, CCSA TC5 |  | Noted |
| [R4-2300042](file:///D:\RAN4%23106\Docs\R4-2300042.zip) | LS to 3GPP RAN WG4 on NR TRP and TRS requirements |  |  | ETSI TC MSG/TFES | To: RAN4  Cc: ETSI TC ERM, 3GPP RAN, 3GPP RAN WG5, GSMA | ETSI TC MSG/ERM TFES is responsible to set TRP and TRS limits for LTE and NR in European markets as captured by EN 301 908-13 and EN 301 908-25, respectively.  Therefore, ETSI TC MSG/ERM TFES would like to know the schedule of 3GPP RAN WG4 for BHH NR TRP and TRS requirements, including VoNR (Voice over NR), for devices wider than 72 mm and narrower than 92 mm and would suggest to prioritize them if those requirements cannot be completed by the end of 2023.  ACTION:  ETSI TC MSG/TFES respectfully ask 3GPP TSG RAN to consider the above information, and to provide status of related standardization work and prioritize them if necessary. | Noted |
| [R4-2300092](file:///D:\RAN4%23106\Docs\R4-2300092.zip) | LS to 3GPP on ECC request for standardisation support related to ECC Decision (22)07 on “harmonised framework on aerial UE usage in MFCN harmonised bands” |  |  | ETSI TC MSG/TFES | To: RAN, SA, RAN2, RAN4, SA2  Cc: CT1, RAN5, GSMA | In relation to the above requirement in bullet a), TFES plans to implement the out-of-band emission limits applicable to aerial UEs, which differs from the OOB limits applicable to terrestrial UEs in the frequency bands 1710-1785 MHz, 2500-2570 MHz, 2570-2620 MHz, as defined by ECC Decision 22(07).  TFES would like to ask 3GPP TSG RAN and RAN WG4 to consider specifying such aerial UE emission limits in their specifications, and to provide related feedback to TFES.  ACTION: TFES respectfully asks RAN4 to consider the above information on the additional emission limits for aerial UE in their specifications, and to provide related feedback to TFES. | Noted |
| [R4-2303745](file:///D:\RAN4%23106\Docs\R4-2303745.zip) | LS on CTIA Certification OTA Performance Test Plan Version 5.0 Publication |  |  | CTIA Certification OTA Working Group | To: RAN4, RAN5, GCF SG, GCF PAG, GSMA TSGAP, CCSA |  | Noted |

The list of additional incoming LSs during the meeting.

## 3.1 Topic Summary (pre-meeting)

This agenda item is only for at-meeting-generated content related to topic summary.

### 3.1.1 Main session topic summaries

### 3.1.2 RRM session topic summaries3.1.3 BSRF\_Demod session4 Up to Rel-16 maintenance for LTE and NR

*For Rel-15/16 maintenance, please submit formal CRs. When you reserve the tdoc number, please use the correct WI code rather than simply using TEI and fill the column of “Related WIs” in your reservation spreadsheet. If you submit a CR with TEI as WI code, please inform session chair.*

### 4.1 UE RF requirements

**Topic #1: EVM measurement for shorter transient period capability (1)**

[**R4-2300034**](file:///D:\RAN4%23106\Docs\R4-2300034.zip) **FR1 EVM for shorter transient period capability**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-16)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

This paper is a re-submission of R5-230058 in which we observe that the RAN5 test procedure seems to imply that the EVM of a UE which supports the shorter transient period capability is verified using an OFF-to-ON-to-OFF test pattern. This is not aligned

**Decision: Noted.**

**Topic #2: PC1.5 for NS\_47 (1)**

[**R4-2300346**](file:///D:\RAN4%23106\Docs\R4-2300346.zip) **Considerations on PC1.5 for NS\_47**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

**Topic #3: Exceptional channel raster for n28 in 38.101-1 (2)**

[**R4-2300491**](file:///D:\RAN4%23106\Docs\R4-2300491.zip) **Views on operation with different channel BW for n28**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

[**R4-2301589**](file:///D:\RAN4%23106\Docs\R4-2301589.zip) **Discussion on UE specs impact from the BS exceptional channel raster point**

*Type: discussion For: Decision  
 Source: MediaTek Inc.*

**Decision: Noted.**

**Topic #4: Inter-band UL CA Pcmax and PHR (3)**

[**R4-2300739**](file:///D:\RAN4%23106\Docs\R4-2300739.zip) **On the PCMAX for inter-band UL CA and the PHR for the serving cells**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution we propose to modify the Pcmax,c per serving cell for inter-band CA such that the PHR becomes correct and to make the PCMAX for power prioritization consistent with 38.213.

**Decision: Noted.**

CR

[**R4-2302435**](file:///D:\RAN4%23106\Docs\R4-2302435.zip) **Corrections to configured maximum power for inter-band UL CA**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1428 rev Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

CR to correct the PCMAX for inter-band CA and the Pcmax,c for serving cells such that PHR becomes correct when the UE is configured with UL CA.

**Decision: Revised to** [**R4-2303637**](file:///D:\RAN4%23106\Docs\R4-2303637.zip) **(from** [**R4-2302435**](file:///D:\RAN4%23106\Docs\R4-2302435.zip)**).**

[**R4-2303637**](file:///D:\RAN4%23106\Docs\R4-2303637.zip) **Corrections to configured maximum power for inter-band UL CA**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1428 rev Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

CR to correct the PCMAX for inter-band CA and the Pcmax,c for serving cells such that PHR becomes correct when the UE is configured with UL CA.

Huawei: we have concern on the potential NBC issue. The issue is related to LS discussion on determing the power class. It is too early to agree this.

Ericsson: The changes are not the same. The changes are aimed to change power headroom. This is release 16 CR. UE may report incorrect PHR. Even there is a big issue in Rel-16. It accounts all the information elements. We remove all the texts related to Pcmax. We can only assume UE follows RAN1 spec.

Nokia: Pcmax total configuration power is kept without change. Is the Pcmax formula not changed?

Ericsson: no change for power configuration. We see no backward complitablity issue.

Huawei: it is related to how to apply per-band power classe when CA is configured.

Ericsson: there are not power class 2 specified in Rel-16. The important to make network be aware.

**Decision: Postponed.**

[**R4-2300740**](file:///D:\RAN4%23106\Docs\R4-2300740.zip) **Corrections to configured maximum power for inter-band UL CA**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1333 rev Cat: F (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

CR to correct the PCMAX for inter-band CA and the Pcmax,c for serving cells such that PHR becomes correct when the UE is configured with UL CA.

**Decision: Revised to** [**R4-2303638**](file:///D:\RAN4%23106\Docs\R4-2303638.zip) **(from** [**R4-2300740**](file:///D:\RAN4%23106\Docs\R4-2300740.zip)**).**

[**R4-2303638**](file:///D:\RAN4%23106\Docs\R4-2303638.zip) **Corrections to configured maximum power for inter-band UL CA**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1333 rev Cat: F (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

CR to correct the PCMAX for inter-band CA and the Pcmax,c for serving cells such that PHR becomes correct when the UE is configured with UL CA.

**Decision: Postponed.**

[**R4-2300741**](file:///D:\RAN4%23106\Docs\R4-2300741.zip) **Corrections to configured maximum power for inter-band UL CA**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1334 rev Cat: A (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

CR to correct the PCMAX for inter-band CA and the Pcmax,c for serving cells such that PHR becomes correct when the UE is configured with inter-band UL-CA and combiantions with intra-band UL CA.

**Decision: Withdrawn.**

**Topic #5: Inner region equation change (2)**

[**R4-2300826**](file:///D:\RAN4%23106\Docs\R4-2300826.zip) **Intra UL CA MPR Equation issue**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

CR

[**R4-2302672**](file:///D:\RAN4%23106\Docs\R4-2302672.zip) **CR to return he Eq1 for intra-band UL CA contiguous**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1452 rev Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Decision: Revised to** [**R4-2303650**](file:///D:\RAN4%23106\Docs\R4-2303650.zip) **(from** [**R4-2302672**](file:///D:\RAN4%23106\Docs\R4-2302672.zip)**).**

[**R4-2303650**](file:///D:\RAN4%23106\Docs\R4-2303650.zip) **CR to return he Eq1 for intra-band UL CA contiguous**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1452 rev Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Decision: Agreed.**

**R4-2303703 CR to return he Eq1 for intra-band UL CA contiguous**

*Type: CR For: Agreement  
 38.101-1 v CR- rev Cat: A (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Decision: Agreed.**

**R4-2303704 CR to return he Eq1 for intra-band UL CA contiguous**

*Type: CR For: Agreement  
 38.101-1 v CR- rev Cat: A (Rel-18)  
  
 Source: Qualcomm Incorporated*

**Decision: Agreed.**

**Topic #6: FR2 PRACH requirement in R15 (2)**

[**R4-2300990**](file:///D:\RAN4%23106\Docs\R4-2300990.zip) **Discussion on revisiting PRACH requirements since Rel-15**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision: Noted.**

CR

[**R4-2300991**](file:///D:\RAN4%23106\Docs\R4-2300991.zip) **Corrections on RF requirements for PRACH**

*Type: CR For: Agreement  
 38.101-2 v15.20.0 CR-0545 rev Cat: F (Rel-15)  
  
 Source: Samsung*

**Decision: Postponed.**

[**R4-2300992**](file:///D:\RAN4%23106\Docs\R4-2300992.zip) **Corrections on RF requirements for PRACH**

*Type: CR For: Agreement  
 38.101-2 v16.14.0 CR-0546 rev Cat: A (Rel-16)  
  
 Source: Samsung*

**Decision: Withdrawn.**

[**R4-2300993**](file:///D:\RAN4%23106\Docs\R4-2300993.zip) **Corrections on RF requirements for PRACH**

*Type: CR For: Agreement  
 38.101-2 v17.8.0 CR-0547 rev Cat: A (Rel-17)  
  
 Source: Samsung*

**Decision: Withdrawn.**

[**R4-2300994**](file:///D:\RAN4%23106\Docs\R4-2300994.zip) **Corrections on RF requirements for PRACH**

*Type: CR For: Agreement  
 38.101-2 v18.0.0 CR-0548 rev Cat: A (Rel-18)  
  
 Source: Samsung*

**Decision: Withdrawn.**

**Topic #7: DL interruption for Tx switching (2)**

[**R4-2301720**](file:///D:\RAN4%23106\Docs\R4-2301720.zip) **Revisit on the need of DL interruption for Tx switching**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-16)  
  
 Source: MediaTek Inc.*

**Decision: Noted.**

CR

[**R4-2301714**](file:///D:\RAN4%23106\Docs\R4-2301714.zip) **Draft CR for DL interruption note improvement-r16-F**

*Type: draftCR For: Endorsement  
 38.101-1 v16.14.0 CR- rev Cat: (Rel-16)  
  
 Source: MediaTek Inc.*

**Decision: Postponed.**

[**R4-2301715**](file:///D:\RAN4%23106\Docs\R4-2301715.zip) **Draft CR for DL interruption note improvement-r17-A**

*Type: draftCR For: Endorsement  
 38.101-1 v17.8.0 CR- rev Cat: (Rel-17)  
  
 Source: MediaTek Inc.*

**Decision: Withdrawn.**

[**R4-2301716**](file:///D:\RAN4%23106\Docs\R4-2301716.zip) **Draft CR for DL interruption note improvement-r18-A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: MediaTek Inc.*

**Decision: Withdrawn.**

**Topic #8: EVM measurement for UL MIMO (3)**

[**R4-2302297**](file:///D:\RAN4%23106\Docs\R4-2302297.zip) **EVM measurement for UL MIMO**

*Type: other For: Approval  
 Source: Keysight Technologies UK Ltd*

**Decision: Noted.**

CR

[**R4-2302298**](file:///D:\RAN4%23106\Docs\R4-2302298.zip) **Updates to FR1 UL MIMO EVM measurement procedure (Rel-15)**

*Type: CR For: Agreement  
 38.101-1 v15.20.0 CR-1422 rev Cat: F (Rel-15)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Postponed.**

[**R4-2302299**](file:///D:\RAN4%23106\Docs\R4-2302299.zip) **Updates to FR1 UL MIMO EVM measurement procedure (Rel-16)**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1423 rev Cat: A (Rel-16)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Withdrawn.**

[**R4-2302300**](file:///D:\RAN4%23106\Docs\R4-2302300.zip) **Updates to FR1 UL MIMO EVM measurement procedure (Rel-17)**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1424 rev Cat: A (Rel-17)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Withdrawn.**

[**R4-2302301**](file:///D:\RAN4%23106\Docs\R4-2302301.zip) **Updates to FR1 UL MIMO EVM measurement procedure (Rel-18)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1425 rev Cat: A (Rel-18)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Withdrawn.**

[**R4-2302302**](file:///D:\RAN4%23106\Docs\R4-2302302.zip) **Updates to FR2 UL MIMO EVM measurement procedure (Rel-15)**

*Type: CR For: Agreement  
 38.101-2 v15.20.0 CR-0583 rev Cat: F (Rel-15)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Postponed.**

[**R4-2302303**](file:///D:\RAN4%23106\Docs\R4-2302303.zip) **Updates to FR2 UL MIMO EVM measurement procedure (Rel-16)**

*Type: CR For: Agreement  
 38.101-2 v16.14.0 CR-0584 rev Cat: A (Rel-16)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Withdrawn.**

[**R4-2302304**](file:///D:\RAN4%23106\Docs\R4-2302304.zip) **Updates to FR2 UL MIMO EVM measurement procedure (Rel-17)**

*Type: CR For: Agreement  
 38.101-2 v17.8.0 CR-0585 rev Cat: A (Rel-17)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Withdrawn.**

[**R4-2302305**](file:///D:\RAN4%23106\Docs\R4-2302305.zip) **Updates to FR2 UL MIMO EVM measurement procedure (Rel-18)**

*Type: CR For: Agreement  
 38.101-2 v18.0.0 CR-0586 rev Cat: A (Rel-18)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Withdrawn.**

**Topic #9: CRs for 38.101-1 (29)**

[**R4-2301152**](file:///D:\RAN4%23106\Docs\R4-2301152.zip) **R15 Harmonic mixing MSD for CA\_n8A-n79A and DC\_8A\_n79A**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Noted.**

CR

[**R4-2300324**](file:///D:\RAN4%23106\Docs\R4-2300324.zip) **CR for TS 38.101-1 Rel-16: Correction for wrong reference in NS\_50**

*Type: CR For: Approval  
 38.101-1 v16.14.0 CR-1303 rev Cat: F (Rel-16)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300325**](file:///D:\RAN4%23106\Docs\R4-2300325.zip) **CR for TS 38.101-1 Rel-17: Correction for wrong reference in NS\_50**

*Type: CR For: Approval  
 38.101-1 v17.8.0 CR-1304 rev Cat: A (Rel-17)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300326**](file:///D:\RAN4%23106\Docs\R4-2300326.zip) **CR for TS 38.101-1 Rel-18: Correction for wrong reference in NS\_50**

*Type: CR For: Approval  
 38.101-1 v18.0.0 CR-1305 rev Cat: A (Rel-18)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2301161**](file:///D:\RAN4%23106\Docs\R4-2301161.zip) **38101-1 CR on clarification of UE coexistence frequency range (R15)**

*Type: CR For: Agreement  
 38.101-1 v15.20.0 CR-1367 rev Cat: F (Rel-15)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision: Postponed.**

[**R4-2301162**](file:///D:\RAN4%23106\Docs\R4-2301162.zip) **38101-1 CR on clarification of UE coexistence frequency range (R16)**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1368 rev Cat: F (Rel-16)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision: Postponed.**

[**R4-2301371**](file:///D:\RAN4%23106\Docs\R4-2301371.zip) **38101-1 CR on clarification of UE coexistence frequency range (R17 CAT-A)**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1382 rev Cat: A (Rel-17)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision: Withdrawn.**

[**R4-2301372**](file:///D:\RAN4%23106\Docs\R4-2301372.zip) **38101-1 CR on clarification of UE coexistence frequency range (R18 CAT-A)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1383 rev Cat: A (Rel-18)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision: Withdrawn.**

[**R4-2302575**](file:///D:\RAN4%23106\Docs\R4-2302575.zip) **CR for 38.101-1: Clarification of n5 protection of n26**

*Type: CR For: Agreement  
 38.101-1 v15.20.0 CR-1442 rev Cat: F (Rel-15)  
  
 Source: T-Mobile USA, Southern Linc*

**Decision: Postponed.**

[**R4-2302576**](file:///D:\RAN4%23106\Docs\R4-2302576.zip) **CR for 38.101-1: Clarification of n5 protection of n26 (Rel-16 Cat A)**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1443 rev Cat: A (Rel-16)  
  
 Source: T-Mobile USA*

**Decision: Withdrawn.**

[**R4-2302577**](file:///D:\RAN4%23106\Docs\R4-2302577.zip) **CR for 38.101-1: Clarification of n5 protection of n26 (Rel-16 Cat A)**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1444 rev Cat: A (Rel-17)  
  
 Source: T-Mobile USA*

**Decision: Withdrawn.**

[**R4-2302578**](file:///D:\RAN4%23106\Docs\R4-2302578.zip) **CR for 38.101-1: Clarification of n5 protection of n26 (Rel-16 Cat A)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1445 rev Cat: A (Rel-18)  
  
 Source: T-Mobile USA*

**Decision: Withdrawn.**

[**R4-2302579**](file:///D:\RAN4%23106\Docs\R4-2302579.zip) **CR for 38.101-1: Clarification of n26 protection of n26**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1446 rev Cat: F (Rel-16)  
  
 Source: T-Mobile USA, Southern Linc*

**Decision: Postponed.**

[**R4-2302580**](file:///D:\RAN4%23106\Docs\R4-2302580.zip) **CR for 38.101-1: Clarification of n26 protection of n26 (Rel-17 Cat A)**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1447 rev Cat: A (Rel-17)  
  
 Source: T-Mobile USA*

**Decision: Withdrawn.**

[**R4-2302581**](file:///D:\RAN4%23106\Docs\R4-2302581.zip) **CR for 38.101-1: Clarification of n26 protection of n26 (Rel-18 Cat A)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1448 rev Cat: A (Rel-18)  
  
 Source: T-Mobile USA*

**Decision: Withdrawn.**

[**R4-2302078**](file:///D:\RAN4%23106\Docs\R4-2302078.zip) **CR for TS 38.101-1 to clarify band n34 protection for band n1 and n65**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1412 rev Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

*Qualcomm had concern.*

**Decision: Agreed.**

[**R4-2302079**](file:///D:\RAN4%23106\Docs\R4-2302079.zip) **CR for TS 38.101-1 to clarify band n34 protection for band n1 and n65 (R17)**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1413 rev Cat: A (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Agreed.**

[**R4-2302080**](file:///D:\RAN4%23106\Docs\R4-2302080.zip) **CR for TS 38.101-1 to clarify band n34 protection for band n1 and n65 (R18)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1414 rev Cat: A (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Agreed.**

[**R4-2300327**](file:///D:\RAN4%23106\Docs\R4-2300327.zip) **CR for TS 38.101-1 Rel-16: Introducing missing MSD for harmonic mixing**

*Type: CR For: Approval  
 38.101-1 v16.14.0 CR-1306 rev Cat: F (Rel-16)  
  
 Source: Apple*

*Huawei has concern.*

**Decision: Postponed.**

[**R4-2300328**](file:///D:\RAN4%23106\Docs\R4-2300328.zip) **CR for TS 38.101-1 Rel-17: Introducing missing MSD for harmonic mixing**

*Type: CR For: Approval  
 38.101-1 v17.8.0 CR-1307 rev Cat: A (Rel-17)  
  
 Source: Apple*

**Decision: Withdrawn.**

[**R4-2300329**](file:///D:\RAN4%23106\Docs\R4-2300329.zip) **CR for TS 38.101-1 Rel-18: Introducing missing MSD for harmonic mixing**

*Type: CR For: Approval  
 38.101-1 v18.0.0 CR-1308 rev Cat: A (Rel-18)  
  
 Source: Apple*

**Decision: Withdrawn.**

[**R4-2301153**](file:///D:\RAN4%23106\Docs\R4-2301153.zip) **CR on Harmonic mixing MSD for CA\_n8A-n79A (R15)**

*Type: CR For: Agreement  
 38.101-1 v15.20.0 CR-1363 rev Cat: F (Rel-15)  
  
 Source: OPPO*

**Decision: Agreed.**

[**R4-2301365**](file:///D:\RAN4%23106\Docs\R4-2301365.zip) **CR on Harmonic mixing MSD for CA\_n8A-n79A (R16 CAT-A)**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1379 rev Cat: A (Rel-16)  
  
 Source: OPPO*

**Decision: Agreed.**

[**R4-2301366**](file:///D:\RAN4%23106\Docs\R4-2301366.zip) **CR on Harmonic mixing MSD for CA\_n8A-n79A (R17 CAT-A)**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1380 rev Cat: A (Rel-17)  
  
 Source: OPPO*

**Decision: Agreed.**

[**R4-2301367**](file:///D:\RAN4%23106\Docs\R4-2301367.zip) **CR on Harmonic mixing MSD for CA\_n8A-n79A (R18 CAT-A)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1381 rev Cat: A (Rel-18)  
  
 Source: OPPO*

**Decision: Agreed.**

[**R4-2300407**](file:///D:\RAN4%23106\Docs\R4-2300407.zip) **CR to 38.101-1: Correction of PC1 ACLR definition R17**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1312 rev Cat: F (Rel-17)  
  
 Source: Nokia*

**Decision: Agreed.**

[**R4-2300408**](file:///D:\RAN4%23106\Docs\R4-2300408.zip) **CR to 38.101-1: Correction of PC1 ACLR definition R18**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1313 rev Cat: A (Rel-18)  
  
 Source: Nokia*

**Decision: Agreed.**

[**R4-2300629**](file:///D:\RAN4%23106\Docs\R4-2300629.zip) **Addition of configuration for carrier aggregation RMCs**

*Type: CR For: Agreement  
 38.101-1 v15.20.0 CR-1321 rev Cat: F (Rel-15)  
  
 Source: Rohde & Schwarz*

**Decision: Revised to** [**R4-2303651**](file:///D:\RAN4%23106\Docs\R4-2303651.zip) **(from** [**R4-2300629**](file:///D:\RAN4%23106\Docs\R4-2300629.zip)**).**

[**R4-2303651**](file:///D:\RAN4%23106\Docs\R4-2303651.zip) **Addition of configuration for carrier aggregation RMCs**

*Type: CR For: Agreement  
 38.101-1 v15.20.0 CR-1321 rev Cat: F (Rel-15)  
  
 Source: Rohde & Schwarz*

**Decision: Agreed.**

[**R4-2300630**](file:///D:\RAN4%23106\Docs\R4-2300630.zip) **Addition of configuration for carrier aggregation RMCs**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1322 rev Cat: A (Rel-16)  
  
 Source: Rohde & Schwarz*

**Decision: Agreed.**

[**R4-2300631**](file:///D:\RAN4%23106\Docs\R4-2300631.zip) **Addition of configuration for carrier aggregation RMCs**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1323 rev Cat: A (Rel-17)  
  
 Source: Rohde & Schwarz*

**Decision: Agreed.**

[**R4-2300632**](file:///D:\RAN4%23106\Docs\R4-2300632.zip) **Addition of configuration for carrier aggregation RMCs**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1324 rev Cat: A (Rel-18)  
  
 Source: Rohde & Schwarz*

**Decision: Agreed.**

[**R4-2301117**](file:///D:\RAN4%23106\Docs\R4-2301117.zip) **Rel16 Cat F CR Correct the wrong table and clause that clause 6.2A.3.1.1 refer to**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1353 rev Cat: F (Rel-16)  
  
 Source: Samsung*

**Decision: Revised to** [**R4-2303652**](file:///D:\RAN4%23106\Docs\R4-2303652.zip) **(from** [**R4-2301117**](file:///D:\RAN4%23106\Docs\R4-2301117.zip)**).**

[**R4-2303652**](file:///D:\RAN4%23106\Docs\R4-2303652.zip) **Rel16 Cat F CR Correct the wrong table and clause that clause 6.2A.3.1.1 refer to**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1353 rev Cat: F (Rel-16)  
  
 Source: Samsung*

**Decision: Agreed.**

[**R4-2301118**](file:///D:\RAN4%23106\Docs\R4-2301118.zip) **Rel17 Cat A CR Correct the wrong table and clause that clause 6.2A.3.1.1 refer to**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1354 rev Cat: A (Rel-17)  
  
 Source: Samsung*

**Decision: Agreed.**

[**R4-2301119**](file:///D:\RAN4%23106\Docs\R4-2301119.zip) **Rel18 Cat A CR Correct the wrong table and clause that clause 6.2A.3.1.1 refer to**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1355 rev Cat: A (Rel-18)  
  
 Source: Samsung*

**Decision: Agreed.**

[**R4-2301140**](file:///D:\RAN4%23106\Docs\R4-2301140.zip) **CR to clarify duplex mode of SDL bands**

*Type: CR For: Agreement  
 38.101-1 v15.20.0 CR-1356 rev Cat: F (Rel-15)  
  
 Source: Anritsu Limited*

*Qualcomm, Huawei had concern.*

**Decision: Revised to** [**R4-2303662**](file:///D:\RAN4%23106\Docs\R4-2303662.zip) **(from** [**R4-2301140**](file:///D:\RAN4%23106\Docs\R4-2301140.zip)**).**

[**R4-2303662**](file:///D:\RAN4%23106\Docs\R4-2303662.zip) **CR to clarify duplex mode of SDL bands**

*Type: CR For: Agreement  
 38.101-1 v15.20.0 CR-1356 rev Cat: F (Rel-15)  
  
 Source: Anritsu Limited*

**Decision: Agreed.**

[**R4-2302674**](file:///D:\RAN4%23106\Docs\R4-2302674.zip) **CR to clarify duplex mode of SDL bands**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1453 rev Cat: F (Rel-16)  
  
 Source: Anritsu Limited*

*Qualcomm, Huawei had concern.*

**Decision: Revised to** [**R4-2303663**](file:///D:\RAN4%23106\Docs\R4-2303663.zip) **(from** [**R4-2302674**](file:///D:\RAN4%23106\Docs\R4-2302674.zip)**).**

[**R4-2303663**](file:///D:\RAN4%23106\Docs\R4-2303663.zip) **CR to clarify duplex mode of SDL bands**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1453 rev Cat: A (Rel-16)  
  
 Source: Anritsu Limited*

*Qualcomm, Huawei had concern.*

**Decision: Agreed.**

[**R4-2302712**](file:///D:\RAN4%23106\Docs\R4-2302712.zip) **CR to clarify duplex mode of SDL bands**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1460 rev Cat: F (Rel-17)  
  
 Source: Anritsu Limited*

*Qualcomm, Huawei had concern.*

**Decision: Revised to** [**R4-2303664**](file:///D:\RAN4%23106\Docs\R4-2303664.zip) **(from** [**R4-2302712**](file:///D:\RAN4%23106\Docs\R4-2302712.zip)**).**

[**R4-2303664**](file:///D:\RAN4%23106\Docs\R4-2303664.zip) **CR to clarify duplex mode of SDL bands**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1460 rev Cat: A (Rel-17)  
  
 Source: Anritsu Limited*

*Qualcomm, Huawei had concern.*

**Decision: Agreed.**

[**R4-2301143**](file:///D:\RAN4%23106\Docs\R4-2301143.zip) **CR to clarify duplex mode of SDL bands**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1359 rev Cat: A (Rel-18)  
  
 Source: Anritsu Limited*

**Decision: Revised to** [**R4-2303665**](file:///D:\RAN4%23106\Docs\R4-2303665.zip) **(from** [**R4-2301143**](file:///D:\RAN4%23106\Docs\R4-2301143.zip)**).**

[**R4-2303665**](file:///D:\RAN4%23106\Docs\R4-2303665.zip) **CR to clarify duplex mode of SDL bands**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1359 rev Cat: A (Rel-18)  
  
 Source: Anritsu Limited*

**Decision: Agreed.**

[**R4-2302676**](file:///D:\RAN4%23106\Docs\R4-2302676.zip) **CR to add band n29 to blocking requirements**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1455 rev Cat: F (Rel-16)  
  
 Source: Anritsu Limited*

**Decision: Agreed.**

[**R4-2301145**](file:///D:\RAN4%23106\Docs\R4-2301145.zip) **CR to add band n29 to blocking requirements**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1361 rev Cat: A (Rel-17)  
  
 Source: Anritsu Limited*

**Decision: Agreed.**

[**R4-2301146**](file:///D:\RAN4%23106\Docs\R4-2301146.zip) **CR to add band n29 to blocking requirements**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1362 rev Cat: A (Rel-18)  
  
 Source: Anritsu Limited*

**Decision: Agreed.**

[**R4-2301237**](file:///D:\RAN4%23106\Docs\R4-2301237.zip) **Correct the scaling number for MPR/A-MPR and NS\_04 SEM requirement**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1371 rev Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

*Skyworks/QC concerned.*

**Decision: Agreed.**

[**R4-2301238**](file:///D:\RAN4%23106\Docs\R4-2301238.zip) **Correct the scaling number for MPR/A-MPR and NS\_04 SEM requirement**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1372 rev Cat: F (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Agreed.**

[**R4-2301239**](file:///D:\RAN4%23106\Docs\R4-2301239.zip) **Correct the scaling number for MPR/A-MPR and NS\_04 SEM requirement**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1373 rev Cat: A (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Agreed.**

[**R4-2301547**](file:///D:\RAN4%23106\Docs\R4-2301547.zip) **Clarification on Time mask for Tx switching for SA (Rel-16)**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1391 rev Cat: F (Rel-16)  
  
 Source: vivo, [Qualcomm], …*

**Decision: Revised to** [**R4-2303526**](file:///D:\RAN4%23106\Docs\R4-2303526.zip) **(from** [**R4-2301547**](file:///D:\RAN4%23106\Docs\R4-2301547.zip)**).**

[**R4-2303526**](file:///D:\RAN4%23106\Docs\R4-2303526.zip) **Clarification on Time mask for Tx switching for SA (Rel-16)**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1391 rev Cat: F (Rel-16)  
  
 Source: vivo, [Qualcomm], …*

**Decision: Agreed.**

[**R4-2301548**](file:///D:\RAN4%23106\Docs\R4-2301548.zip) **Clarification on Time mask for Tx switching for SA (Rel-17)**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1392 rev Cat: F (Rel-17)  
  
 Source: vivo*

**Decision: Agreed.**

[**R4-2301549**](file:///D:\RAN4%23106\Docs\R4-2301549.zip) **Clarification on Time mask for Tx switching for SA (Rel-18)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1393 rev Cat: A (Rel-18)  
  
 Source: vivo*

**Decision: Agreed.**

[**R4-2301636**](file:///D:\RAN4%23106\Docs\R4-2301636.zip) **CR for Rel-16 38.101-1 to correct the configurations for CA\_n46M/N/O**

*Type: CR For: Approval  
 38.101-1 v16.14.0 CR-1398 rev Cat: F (Rel-16)  
  
 Source: Xiaomi*

**Decision: Revised to** [**R4-2303636**](file:///D:\RAN4%23106\Docs\R4-2303636.zip) **(from** [**R4-2301636**](file:///D:\RAN4%23106\Docs\R4-2301636.zip)**).**

[**R4-2303636**](file:///D:\RAN4%23106\Docs\R4-2303636.zip) **CR for Rel-16 38.101-1 to correct the configurations for CA\_n46M/N/O**

*Type: CR For: Approval  
 38.101-1 v16.14.0 CR-1398 rev Cat: F (Rel-16)  
  
 Source: Xiaomi, Nokia, Ericsson*

Nokia concerned.

**Decision: Agreed.**

[**R4-2301637**](file:///D:\RAN4%23106\Docs\R4-2301637.zip) **CR for Rel-17 38.101-1 to correct the configurations for CA\_n46M/N/O**

*Type: CR For: Approval  
 38.101-1 v17.8.0 CR-1399 rev Cat: A (Rel-17)  
  
 Source: Xiaomi*

**Decision: Agreed.**

[**R4-2301638**](file:///D:\RAN4%23106\Docs\R4-2301638.zip) **CR for Rel-18 38.101-1 to correct the configurations for CA\_n46M/N/O**

*Type: CR For: Approval  
 38.101-1 v18.0.0 CR-1400 rev Cat: A (Rel-18)  
  
 Source: Xiaomi*

**Decision: Agreed.**

[**R4-2301860**](file:///D:\RAN4%23106\Docs\R4-2301860.zip) **CR to 38.101-1: Corrections on reference section for A-MPR for CA\_NC\_NS\_04**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1402 rev Cat: F (Rel-16)  
  
 Source: Xiaomi*

**Decision: Agreed.**

[**R4-2302070**](file:///D:\RAN4%23106\Docs\R4-2302070.zip) **CR for TS 38.101-1 to clarify the inner outer condition for almost contiguous RB allocation**

*Type: CR For: Agreement  
 38.101-1 v15.20.0 CR-1408 rev Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

QC concerned.

**Decision: Revised to** [**R4-2303666**](file:///D:\RAN4%23106\Docs\R4-2303666.zip) **(from** [**R4-2302070**](file:///D:\RAN4%23106\Docs\R4-2302070.zip)**).**

[**R4-2303666**](file:///D:\RAN4%23106\Docs\R4-2303666.zip) **CR for TS 38.101-1 to clarify the inner outer condition for almost contiguous RB allocation**

*Type: CR For: Agreement  
 38.101-1 v15.20.0 CR-1408 rev Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

QC concerned.

**Decision: Agreed.**

[**R4-2302071**](file:///D:\RAN4%23106\Docs\R4-2302071.zip) **CR for TS 38.101-1 to clarify the inner outer condition for almost contiguous RB allocation (R16)**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1409 rev Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision: Agreed.**

[**R4-2302072**](file:///D:\RAN4%23106\Docs\R4-2302072.zip) **CR for TS 38.101-1 to clarify the inner outer condition for almost contiguous RB allocation (R17)**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1410 rev Cat: A (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Agreed.**

[**R4-2302073**](file:///D:\RAN4%23106\Docs\R4-2302073.zip) **CR for TS 38.101-1 to clarify the inner outer condition for almost contiguous RB allocation (R18)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1411 rev Cat: A (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Agreed.**

[**R4-2302081**](file:///D:\RAN4%23106\Docs\R4-2302081.zip) **CR for TS 38.101-1 to clarify Out-of-band blocking exception for band n20 and n28 (R16)**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1415 rev Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

QC concerned.

**Decision: Agreed.**

[**R4-2302082**](file:///D:\RAN4%23106\Docs\R4-2302082.zip) **CR for TS 38.101-1 to clarify Out-of-band blocking exception for band n20 and n28 (R17)**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1416 rev Cat: A (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Agreed.**

[**R4-2302083**](file:///D:\RAN4%23106\Docs\R4-2302083.zip) **CR for TS 38.101-1 to clarify Out-of-band blocking exception for band n20 and n28 (R18)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1417 rev Cat: A (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Agreed.**

[**R4-2302750**](file:///D:\RAN4%23106\Docs\R4-2302750.zip) **CR to TS 38.101-1\_Rel-16 4Rx for SUL**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1463 rev Cat: F (Rel-16)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Agreed.**

[**R4-2303658**](file:///D:\RAN4%23106\Docs\R4-2303658.zip) **CR to TS 38.101-1 Rel-17 4Rx for SUL**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR- rev Cat: A (Rel-17)  
  
 Source: Skyworks Solutions, Inc.*

**Decision: Agreed.**

[**R4-2303659**](file:///D:\RAN4%23106\Docs\R4-2303659.zip) **CR to TS 38.101-1 Rel-18 4Rx for SUL**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR- rev Cat: A (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Agreed.**

[**R4-2302745**](file:///D:\RAN4%23106\Docs\R4-2302745.zip) **CR to TS 38.101-1 Rel-17 4Rx for SUL and MSD corrections**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1462 rev Cat: F (Rel-17)  
  
 Source: Skyworks Solutions, Inc.*

**Decision: Postponed.**

[**R4-2302743**](file:///D:\RAN4%23106\Docs\R4-2302743.zip) **CR to TS 38.101-1 Rel-18 4Rx for SUL and MSD corrections**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1461 rev Cat: F (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Postponed.**

[**R4-2303542**](file:///D:\RAN4%23106\Docs\R4-2303542.zip) **CR to TS 38.101-1 Rel-16 Minimum guardband**

*Type: CR For: Agreement  
 38.101-1 v15.14.0 CR- rev Cat: F (Rel-15)  
  
 Source: Skyworks Solutions Inc.*.

**Decision: Agreed.**

[**R4-2302755**](file:///D:\RAN4%23106\Docs\R4-2302755.zip) **CR to TS 38.101-1 Rel-16 Minimum guardband and missing ULCA power class**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1466 rev Cat: F (Rel-16)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Revised to** [**R4-2303541**](file:///D:\RAN4%23106\Docs\R4-2303541.zip) **(from** [**R4-2302755**](file:///D:\RAN4%23106\Docs\R4-2302755.zip)**).**

[**R4-2303541**](file:///D:\RAN4%23106\Docs\R4-2303541.zip) **CR to TS 38.101-1 Rel-16 Minimum guardband and missing ULCA power class**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1466 rev Cat: F (Rel-16)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Agreed.**

[**R4-2302753**](file:///D:\RAN4%23106\Docs\R4-2302753.zip) **CR to TS 38.101-1 Rel-17 Minimum guardband and missing ULCA power class**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1465 rev Cat: F (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Revised to** [**R4-2303540**](file:///D:\RAN4%23106\Docs\R4-2303540.zip) **(from** [**R4-2302753**](file:///D:\RAN4%23106\Docs\R4-2302753.zip)**).**

[**R4-2303540**](file:///D:\RAN4%23106\Docs\R4-2303540.zip) **CR to TS 38.101-1 Rel-17 Minimum guardband and missing ULCA power class**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1465 rev Cat: F (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Agreed.**

[**R4-2302752**](file:///D:\RAN4%23106\Docs\R4-2302752.zip) **CR to TS 38.101-1 Rel-18 Minimum guardband and missing ULCA power class**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1464 rev Cat: F (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Revised to** [**R4-2303539**](file:///D:\RAN4%23106\Docs\R4-2303539.zip) **(from** [**R4-2302752**](file:///D:\RAN4%23106\Docs\R4-2302752.zip)**).**

[**R4-2303539**](file:///D:\RAN4%23106\Docs\R4-2303539.zip) **CR to TS 38.101-1 Rel-18 Minimum guardband and missing ULCA power class**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1464 rev Cat: A (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Agreed.**

**Topic #10: CRs for 38.101-2 (6)**

[**R4-2301165**](file:///D:\RAN4%23106\Docs\R4-2301165.zip) **38101-2 CR on clarification of UE coexistence frequency range (R15)**

*Type: CR For: Agreement  
 38.101-2 v15.20.0 CR-0558 rev Cat: F (Rel-15)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision: Postponed.**

[**R4-2301373**](file:///D:\RAN4%23106\Docs\R4-2301373.zip) **38101-2 CR on clarification of UE coexistence frequency range (R16 CAT-A)**

*Type: CR For: Agreement  
 38.101-2 v16.14.0 CR-0569 rev Cat: A (Rel-16)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision: Withdrawn.**

[**R4-2301374**](file:///D:\RAN4%23106\Docs\R4-2301374.zip) **38101-2 CR on clarification of UE coexistence frequency range (R17 CAT-A)**

*Type: CR For: Agreement  
 38.101-2 v17.8.0 CR-0570 rev Cat: A (Rel-17)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision: Withdrawn.**

[**R4-2301375**](file:///D:\RAN4%23106\Docs\R4-2301375.zip) **38101-2 CR on clarification of UE coexistence frequency range (R18 CAT-A)**

*Type: CR For: Agreement  
 38.101-2 v18.0.0 CR-0571 rev Cat: A (Rel-18)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision: Withdrawn.**

[**R4-2300625**](file:///D:\RAN4%23106\Docs\R4-2300625.zip) **Addition of FR2 UL MIMO EVM measurement description**

*Type: CR For: Agreement  
 38.101-2 v15.20.0 CR-0536 rev Cat: F (Rel-15)  
  
 Source: Rohde & Schwarz*

**Decision: Agreed.**

[**R4-2300626**](file:///D:\RAN4%23106\Docs\R4-2300626.zip) **Addition of FR2 UL MIMO EVM measurement description**

*Type: CR For: Agreement  
 38.101-2 v16.14.0 CR-0537 rev Cat: A (Rel-16)  
  
 Source: Rohde & Schwarz*

**Decision: Agreed.**

[**R4-2300627**](file:///D:\RAN4%23106\Docs\R4-2300627.zip) **Addition of FR2 UL MIMO EVM measurement description**

*Type: CR For: Agreement  
 38.101-2 v17.8.0 CR-0538 rev Cat: A (Rel-17)  
  
 Source: Rohde & Schwarz*

**Decision: Agreed.**

[**R4-2300628**](file:///D:\RAN4%23106\Docs\R4-2300628.zip) **Addition of FR2 UL MIMO EVM measurement description**

*Type: CR For: Agreement  
 38.101-2 v18.0.0 CR-0539 rev Cat: A (Rel-18)  
  
 Source: Rohde & Schwarz*

**Decision: Agreed.**

[**R4-2301136**](file:///D:\RAN4%23106\Docs\R4-2301136.zip) **CR to F\_Ioffset and F\_Interferer (offset) adjustment in ACS and IBB**

*Type: CR For: Agreement  
 38.101-2 v15.20.0 CR-0550 rev Cat: F (Rel-15)  
  
 Source: Anritsu Limited*

**Abstract:**

Excel file attached

**Decision: Agreed.**

[**R4-2301137**](file:///D:\RAN4%23106\Docs\R4-2301137.zip) **CR to F\_Ioffset and F\_Interferer (offset) adjustment in ACS and IBB**

*Type: CR For: Agreement  
 38.101-2 v16.14.0 CR-0551 rev Cat: A (Rel-16)  
  
 Source: Anritsu Limited*

**Abstract:**

Excel file attached

**Decision: Agreed.**

[**R4-2301138**](file:///D:\RAN4%23106\Docs\R4-2301138.zip) **CR to F\_Ioffset and F\_Interferer (offset) adjustment in ACS and IBB**

*Type: CR For: Agreement  
 38.101-2 v17.8.0 CR-0552 rev Cat: A (Rel-17)  
  
 Source: Anritsu Limited*

**Abstract:**

Excel file attached

**Decision: Agreed.**

[**R4-2301139**](file:///D:\RAN4%23106\Docs\R4-2301139.zip) **CR to F\_Ioffset and F\_Interferer (offset) adjustment in ACS and IBB**

*Type: CR For: Agreement  
 38.101-2 v18.0.0 CR-0553 rev Cat: A (Rel-18)  
  
 Source: Anritsu Limited*

**Abstract:**

Excel file attached

**Decision: Agreed.**

[**R4-2301148**](file:///D:\RAN4%23106\Docs\R4-2301148.zip) **CR on ‘Annex G Difference of relative phase and power errors’ for FR2 UL coherent MIMO**

*Type: CR For: Agreement  
 38.101-2 v15.20.0 CR-0554 rev Cat: F (Rel-15)  
  
 Source: Anritsu Limited*

**Decision: Revised to** [**R4-2303667**](file:///D:\RAN4%23106\Docs\R4-2303667.zip) **(from** [**R4-2301148**](file:///D:\RAN4%23106\Docs\R4-2301148.zip)**).**

[**R4-2303667**](file:///D:\RAN4%23106\Docs\R4-2303667.zip) **CR on ‘Annex G Difference of relative phase and power errors’ for FR2 UL coherent MIMO**

*Type: CR For: Agreement  
 38.101-2 v15.20.0 CR-0554 rev Cat: F (Rel-15)  
  
 Source: Anritsu Limited*

**Decision: Agreed.**

[**R4-2301149**](file:///D:\RAN4%23106\Docs\R4-2301149.zip) **CR on ‘Annex G Difference of relative phase and power errors’ for FR2 UL coherent MIMO**

*Type: CR For: Agreement  
 38.101-2 v16.14.0 CR-0555 rev Cat: A (Rel-16)  
  
 Source: Anritsu Limited*

**Decision: Agreed.**

[**R4-2301150**](file:///D:\RAN4%23106\Docs\R4-2301150.zip) **CR on ‘Annex G Difference of relative phase and power errors’ for FR2 UL coherent MIMO**

*Type: CR For: Agreement  
 38.101-2 v17.8.0 CR-0556 rev Cat: A (Rel-17)  
  
 Source: Anritsu Limited*

**Decision: Agreed.**

[**R4-2301151**](file:///D:\RAN4%23106\Docs\R4-2301151.zip) **CR on ‘Annex G Difference of relative phase and power errors’ for FR2 UL coherent MIMO**

*Type: CR For: Agreement  
 38.101-2 v18.0.0 CR-0557 rev Cat: A (Rel-18)  
  
 Source: Anritsu Limited*

**Decision: Agreed.**

[**R4-2301242**](file:///D:\RAN4%23106\Docs\R4-2301242.zip) **On handheld UE and FWA UE definitions**

*Type: CR For: Agreement  
 38.101-2 v15.20.0 CR-0562 rev Cat: F (Rel-15)  
  
 Source: ZTE Corporation, OPPO*

**Decision: Agreed.**

[**R4-2301243**](file:///D:\RAN4%23106\Docs\R4-2301243.zip) **On handheld UE and FWA UE definitions**

*Type: CR For: Agreement  
 38.101-2 v16.14.0 CR-0563 rev Cat: A (Rel-16)  
  
 Source: ZTE Corporation, OPPO*

**Decision: Agreed.**

[**R4-2301244**](file:///D:\RAN4%23106\Docs\R4-2301244.zip) **On handheld UE and FWA UE definitions**

*Type: CR For: Agreement  
 38.101-2 v17.8.0 CR-0564 rev Cat: A (Rel-17)  
  
 Source: ZTE Corporation, OPPO*

**Decision: Agreed.**

[**R4-2301245**](file:///D:\RAN4%23106\Docs\R4-2301245.zip) **On handheld UE and FWA UE definitions**

*Type: CR For: Agreement  
 38.101-2 v18.0.0 CR-0565 rev Cat: A (Rel-18)  
  
 Source: ZTE Corporation, OPPO*

**Decision: Agreed.**

[**R4-2301633**](file:///D:\RAN4%23106\Docs\R4-2301633.zip) **CR for Rel-16 38.101-2 to correct the UL configuration for CA\_n258C**

*Type: CR For: Approval  
 38.101-2 v16.14.0 CR-0580 rev Cat: F (Rel-16)  
  
 Source: Xiaomi*

**Decision: Agreed.**

[**R4-2301634**](file:///D:\RAN4%23106\Docs\R4-2301634.zip) **CR for Rel-17 38.101-2 to correct the UL configuration for CA\_n258C**

*Type: CR For: Approval  
 38.101-2 v17.8.0 CR-0581 rev Cat: A (Rel-17)  
  
 Source: Xiaomi*

**Decision: Agreed.**

[**R4-2301635**](file:///D:\RAN4%23106\Docs\R4-2301635.zip) **CR for Rel-18 38.101-2 to correct the UL configuration for CA\_n258C**

*Type: CR For: Approval  
 38.101-2 v18.0.0 CR-0582 rev Cat: A (Rel-18)  
  
 Source: Xiaomi*

**Decision: Agreed.**

**Topic #11: CRs for 38.101-3 (11)**

[**R4-2301169**](file:///D:\RAN4%23106\Docs\R4-2301169.zip) **38101-3 CR on clarification of UE coexistence frequency range (R15)**

*Type: CR For: Agreement  
 38.101-3 v15.20.0 CR-0832 rev Cat: F (Rel-15)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision: Postponed.**

[**R4-2301170**](file:///D:\RAN4%23106\Docs\R4-2301170.zip) **38101-3 CR on clarification of UE coexistence frequency range (R16)**

*Type: CR For: Agreement  
 38.101-3 v16.14.0 CR-0833 rev Cat: F (Rel-16)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision: Postponed.**

[**R4-2301376**](file:///D:\RAN4%23106\Docs\R4-2301376.zip) **38101-3 CR on clarification of UE coexistence frequency range (R17 CAT-A)**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0848 rev Cat: A (Rel-17)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision: Withdrawn.**

[**R4-2301377**](file:///D:\RAN4%23106\Docs\R4-2301377.zip) **38101-3 CR on clarification of UE coexistence frequency range (R18 CAT-A)**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0849 rev Cat: A (Rel-18)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision: Withdrawn.**

[**R4-2300330**](file:///D:\RAN4%23106\Docs\R4-2300330.zip) **CR for TS 38.101-3 Rel-16: Introducing missing MSD for harmonic mixing**

*Type: CR For: Approval  
 38.101-3 v16.14.0 CR-0813 rev Cat: F (Rel-16)  
  
 Source: Apple*

**Decision: Revised to** [**R4-2303668**](file:///D:\RAN4%23106\Docs\R4-2303668.zip) **(from** [**R4-2300330**](file:///D:\RAN4%23106\Docs\R4-2300330.zip)**).**

[**R4-2303668**](file:///D:\RAN4%23106\Docs\R4-2303668.zip) **CR for TS 38.101-3 Rel-16: Introducing missing MSD for harmonic mixing**

*Type: CR For: Approval  
 38.101-3 v16.14.0 CR-0813 rev Cat: F (Rel-16)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300331**](file:///D:\RAN4%23106\Docs\R4-2300331.zip) **CR for TS 38.101-3 Rel-17: Introducing missing MSD for harmonic mixing**

*Type: CR For: Approval  
 38.101-3 v17.8.0 CR-0814 rev Cat: A (Rel-17)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300332**](file:///D:\RAN4%23106\Docs\R4-2300332.zip) **CR for TS 38.101-3 Rel-18: Introducing missing MSD for harmonic mixing**

*Type: CR For: Approval  
 38.101-3 v18.0.0 CR-0815 rev Cat: A (Rel-18)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2301154**](file:///D:\RAN4%23106\Docs\R4-2301154.zip) **CR on Harmonic mixing MSD for DC\_8A-n79A (R15)**

*Type: CR For: Agreement  
 38.101-3 v15.20.0 CR-0828 rev Cat: F (Rel-15)  
  
 Source: OPPO*

**Decision: Agreed.**

[**R4-2301368**](file:///D:\RAN4%23106\Docs\R4-2301368.zip) **CR on Harmonic mixing MSD for DC\_8A-n79A (R16 CAT-A)**

*Type: CR For: Agreement  
 38.101-3 v16.14.0 CR-0845 rev Cat: A (Rel-16)  
  
 Source: OPPO*

**Decision: Agreed.**

[**R4-2301369**](file:///D:\RAN4%23106\Docs\R4-2301369.zip) **CR on Harmonic mixing MSD for DC\_8A-n79A (R17 CAT-A)**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0846 rev Cat: A (Rel-17)  
  
 Source: OPPO*

**Decision: Agreed.**

[**R4-2301370**](file:///D:\RAN4%23106\Docs\R4-2301370.zip) **CR on Harmonic mixing MSD for DC\_8A-n79A (R18 CAT-A)**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0847 rev Cat: A (Rel-18)  
  
 Source: OPPO*

**Decision: Agreed.**

[**R4-2300401**](file:///D:\RAN4%23106\Docs\R4-2300401.zip) **CR to 38.101-3 Corrections to ULSUP-TDM DC configurationsR16**

*Type: CR For: Agreement  
 38.101-3 v16.14.0 CR-0820 rev Cat: F (Rel-16)  
  
 Source: Nokia*

**Decision: Not pursued.**

[**R4-2303669**](file:///D:\RAN4%23106\Docs\R4-2303669.zip) **CR to 38.101-3 Corrections to ULSUP-TDM DC configurationsR16**

*Type: CR For: Agreement  
 38.101-3 v16.14.0 CR-0820 rev Cat: F (Rel-16)  
  
 Source: Nokia*

**Decision: Withdrawn.**

[**R4-2300402**](file:///D:\RAN4%23106\Docs\R4-2300402.zip) **CR to 38.101-3 Corrections to ULSUP-TDM DC configurationsR17**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1310 rev Cat: A (Rel-17)  
  
 Source: Nokia*

**Decision: Withdrawn.**

[**R4-2300403**](file:///D:\RAN4%23106\Docs\R4-2300403.zip) **CR to 38.101-3 Corrections to ULSUP-TDM DC configurationsR18**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1311 rev Cat: A (Rel-18)  
  
 Source: Nokia*

**Decision: Withdrawn.**

[**R4-2301314**](file:///D:\RAN4%23106\Docs\R4-2301314.zip) **CR to R15 TS38.101-3 maintenance for UE co-ex requirements for UL EN-DC**

*Type: CR For: Agreement  
 38.101-3 v15.20.0 CR-0839 rev Cat: F (Rel-15)  
  
 Source: NTT DOCOMO, INC.*

**Abstract:**

R15 Cat-F CR to correct some errors in the UE co-existence requirements for UL EN-DC. It is based on the intersection set rules, and some combinations operated in Japan are corrected.

**Decision: Agreed.**

[**R4-2301315**](file:///D:\RAN4%23106\Docs\R4-2301315.zip) **CR to R16 TS38.101-3 maintenance for UE co-ex requirements for UL EN-DC**

*Type: CR For: Agreement  
 38.101-3 v16.14.0 CR-0840 rev Cat: F (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Abstract:**

R16 Cat-F CR to correct some errors in the UE co-existence requirements for UL EN-DC. It is based on the intersection set rules, and some combinations operated in Japan are corrected.

**Decision: Agreed.**

[**R4-2301517**](file:///D:\RAN4%23106\Docs\R4-2301517.zip) **Correction on the powerClassNRPart IE**

*Type: CR For: Agreement  
 38.101-3 v16.14.0 CR-0852 rev Cat: F (Rel-16)  
  
 Source: vivo*

**Decision: Agreed.**

[**R4-2301518**](file:///D:\RAN4%23106\Docs\R4-2301518.zip) **Correction on the powerClassNRPart and HigherPowerLimitCADC IE**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0853 rev Cat: F (Rel-17)  
  
 Source: vivo*

**Decision: Revised to** [**R4-2303524**](file:///D:\RAN4%23106\Docs\R4-2303524.zip) **(from** [**R4-2301518**](file:///D:\RAN4%23106\Docs\R4-2301518.zip)**).**

[**R4-2303524**](file:///D:\RAN4%23106\Docs\R4-2303524.zip) **Correction on the powerClassNRPart IE**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0853 rev Cat: A (Rel-17)  
  
 Source: vivo*

**Decision: Agreed.**

[**R4-2301519**](file:///D:\RAN4%23106\Docs\R4-2301519.zip) **Correction on the powerClassNRPart and HigherPowerLimitCADC IE**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0854 rev Cat: A (Rel-18)  
  
 Source: vivo*

**Decision: Revised to** [**R4-2303525**](file:///D:\RAN4%23106\Docs\R4-2303525.zip) **(from** [**R4-2301519**](file:///D:\RAN4%23106\Docs\R4-2301519.zip)**).**

[**R4-2303525**](file:///D:\RAN4%23106\Docs\R4-2303525.zip) **Correction on the powerClassNRPart IE**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0854 rev Cat: A (Rel-18)  
  
 Source: vivo*

**Decision: Agreed.**

[**R4-2301550**](file:///D:\RAN4%23106\Docs\R4-2301550.zip) **Clarification on Time mask for Tx switching for NSA**

*Type: CR For: Agreement  
 38.101-3 v16.14.0 CR-0860 rev Cat: F (Rel-16)  
  
 Source: vivo, [Qualcomm], …*

**Decision: Revised to** [**R4-2303527**](file:///D:\RAN4%23106\Docs\R4-2303527.zip) **(from** [**R4-2301550**](file:///D:\RAN4%23106\Docs\R4-2301550.zip)**).**

[**R4-2303527**](file:///D:\RAN4%23106\Docs\R4-2303527.zip) **Clarification on Time mask for Tx switching for NSA**

*Type: CR For: Agreement  
 38.101-3 v16.14.0 CR-0860 rev Cat: F (Rel-16)  
  
 Source: vivo, [Qualcomm], …*

**Decision: Agreed.**

[**R4-2301551**](file:///D:\RAN4%23106\Docs\R4-2301551.zip) **Clarification on Time mask for Tx switching for NSA**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0861 rev Cat: A (Rel-17)  
  
 Source: vivo*

**Decision: Agreed.**

[**R4-2301552**](file:///D:\RAN4%23106\Docs\R4-2301552.zip) **Clarification on Time mask for Tx switching for NSA**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0862 rev Cat: A (Rel-18)  
  
 Source: vivo*

**Decision: Agreed.**

[**R4-2302074**](file:///D:\RAN4%23106\Docs\R4-2302074.zip) **CR for TS 38.101-3 to introduce DC\_20\_n28 general description**

*Type: CR For: Agreement  
 38.101-3 v15.20.0 CR-0870 rev Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Decision: Agreed.**

[**R4-2302075**](file:///D:\RAN4%23106\Docs\R4-2302075.zip) **CR for TS 38.101-3 to introduce DC\_20\_n28 general description(R16)**

*Type: CR For: Agreement  
 38.101-3 v16.14.0 CR-0871 rev Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision: Agreed.**

[**R4-2302076**](file:///D:\RAN4%23106\Docs\R4-2302076.zip) **CR for TS 38.101-3 to introduce DC\_20\_n28 general description(R17)**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0872 rev Cat: A (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Agreed.**

[**R4-2302077**](file:///D:\RAN4%23106\Docs\R4-2302077.zip) **CR for TS 38.101-3 to introduce DC\_20\_n28 general description(R18)**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0873 rev Cat: A (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Agreed.**

**Topic #12: CRs for 38.307 (2)**

[**R4-2300404**](file:///D:\RAN4%23106\Docs\R4-2300404.zip) **CR 38.307 Addition of FR2 overlapping bands into Annex-A R15**

*Type: CR For: Agreement  
 38.307 v15.10.0 CR-0113 rev Cat: F (Rel-15)  
  
 Source: Nokia*

**Decision: Agreed.**

[**R4-2300405**](file:///D:\RAN4%23106\Docs\R4-2300405.zip) **CR 38.307 Addition of FR2 overlapping bands into Annex-A R16**

*Type: CR For: Agreement  
 38.307 v16.12.0 CR-0114 rev Cat: F (Rel-16)  
  
 Source: Nokia*

**Decision: Agreed.**

[**R4-2300406**](file:///D:\RAN4%23106\Docs\R4-2300406.zip) **CR 38.307 Addition of FR2 overlapping bands into Annex-A R17**

*Type: CR For: Agreement  
 38.307 v17.8.0 CR-0115 rev Cat: A (Rel-17)  
  
 Source: Nokia*

**Decision: Agreed.**

**Topic #13: CRs for 36.101 (7)**

[**R4-2300340**](file:///D:\RAN4%23106\Docs\R4-2300340.zip) **On issues with edge channels for CA\_NS\_10**

*Type: other For: Approval  
 Source: Apple*

**Agreement:**

* To resolve the issue of channels located at upper band edge not receiving any A-MPR allowance it is proposed to update the equations for A-MPR regions to use ‘≤’ instead of ‘<’.

**Decision: Noted.**

CR

[**R4-2302264**](file:///D:\RAN4%23106\Docs\R4-2302264.zip) **CR for TS 36.101 Rel-15: Adding note 44 to B65 for spurious emission requirement**

*Type: CR For: Agreement  
 36.101 v15.20.0 CR-5929 rev Cat: F (Rel-15)  
  
 Source: Sony*

**Decision: Agreed.**

[**R4-2302280**](file:///D:\RAN4%23106\Docs\R4-2302280.zip) **CR for TS 36.101 Rel-16: Adding note 44 to B65 for spurious emission requirement**

*Type: CR For: Agreement  
 36.101 v16.15.0 CR-5930 rev Cat: A (Rel-16)  
  
 Source: Sony*

**Decision: Agreed.**

[**R4-2302284**](file:///D:\RAN4%23106\Docs\R4-2302284.zip) **CR for TS 36.101 Rel-17: Adding note 44 to B65 for spurious emission requirement**

*Type: CR For: Agreement  
 36.101 v17.8.0 CR-5931 rev Cat: A (Rel-17)  
  
 Source: Sony*

**Decision: Agreed.**

[**R4-2302285**](file:///D:\RAN4%23106\Docs\R4-2302285.zip) **CR for TS 36.101 Rel-18: Adding note 44 to B65 for spurious emission requirement**

*Type: CR For: Agreement  
 36.101 v18.0.0 CR-5932 rev Cat: A (Rel-18)  
  
 Source: Sony*

**Decision: Agreed.**

[**R4-2300398**](file:///D:\RAN4%23106\Docs\R4-2300398.zip) **LTE interband 2UL CA co-ex simplication R16**

*Type: CR For: Agreement  
 36.101 v16.15.0 CR-5912 rev Cat: F (Rel-16)  
  
 Source: Nokia*

**Decision: Revised to** [**R4-2303509**](file:///D:\RAN4%23106\Docs\R4-2303509.zip) **(from** [**R4-2300398**](file:///D:\RAN4%23106\Docs\R4-2300398.zip)**).**

[**R4-2303509**](file:///D:\RAN4%23106\Docs\R4-2303509.zip) **LTE interband 2UL CA co-ex simplication R16**

*Type: CR For: Agreement  
 36.101 v16.15.0 CR-5912 rev Cat: F (Rel-16)  
  
 Source: Nokia*

**Decision: Agreed.**

[**R4-2300399**](file:///D:\RAN4%23106\Docs\R4-2300399.zip) **LTE interband 2UL CA co-ex simplication R17**

*Type: CR For: Agreement  
 36.101 v17.8.0 CR-5913 rev Cat: F (Rel-17)  
  
 Source: Nokia*

**Decision: Revised to** [**R4-2303510**](file:///D:\RAN4%23106\Docs\R4-2303510.zip) **(from** [**R4-2300399**](file:///D:\RAN4%23106\Docs\R4-2300399.zip)**).**

[**R4-2303510**](file:///D:\RAN4%23106\Docs\R4-2303510.zip) **LTE interband 2UL CA co-ex simplication R17**

*Type: CR For: Agreement  
 36.101 v17.8.0 CR-5913 rev Cat: F (Rel-17)  
  
 Source: Nokia*

**Decision: Agreed.**

[**R4-2300400**](file:///D:\RAN4%23106\Docs\R4-2300400.zip) **LTE interband 2UL CA co-ex simplication R18**

*Type: CR For: Agreement  
 36.101 v18.0.0 CR-5914 rev Cat: F (Rel-18)  
  
 Source: Nokia*

**Decision: Revised to** [**R4-2303511**](file:///D:\RAN4%23106\Docs\R4-2303511.zip) **(from** [**R4-2300400**](file:///D:\RAN4%23106\Docs\R4-2300400.zip)**).**

[**R4-2303511**](file:///D:\RAN4%23106\Docs\R4-2303511.zip) **LTE interband 2UL CA co-ex simplication R18**

*Type: CR For: Agreement  
 36.101 v18.0.0 CR-5914 rev Cat: F (Rel-18)  
  
 Source: Nokia*

**Decision: Agreed.**

[**R4-2300333**](file:///D:\RAN4%23106\Docs\R4-2300333.zip) **CR for TS 36.101 Rel-16 CAT-F: Corrections on CA\_NS\_10**

*Type: CR For: Approval  
 36.101 v16.15.0 CR-5905 rev Cat: F (Rel-16)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300334**](file:///D:\RAN4%23106\Docs\R4-2300334.zip) **CR for TS 36.101 Rel-17 CAT-A: Corrections on CA\_NS\_10**

*Type: CR For: Approval  
 36.101 v17.8.0 CR-5906 rev Cat: A (Rel-17)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300335**](file:///D:\RAN4%23106\Docs\R4-2300335.zip) **CR for TS 36.101 Rel-18 CAT-A: Corrections on CA\_NS\_10**

*Type: CR For: Approval  
 36.101 v18.0.0 CR-5907 rev Cat: A (Rel-18)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300356**](file:///D:\RAN4%23106\Docs\R4-2300356.zip) **CR for TS 36.101: P-Max definition correction for Band 14**

*Type: CR For: Agreement  
 36.101 v15.20.0 CR-5908 rev Cat: F (Rel-15)  
  
 Source: Apple, AT&T*

**Decision: Agreed.**

[**R4-2300357**](file:///D:\RAN4%23106\Docs\R4-2300357.zip) **CR for TS 36.101: P-Max definition correction for Band 14**

*Type: CR For: Agreement  
 36.101 v16.15.0 CR-5909 rev Cat: A (Rel-16)  
  
 Source: Apple, AT&T*

**Decision: Agreed.**

[**R4-2300358**](file:///D:\RAN4%23106\Docs\R4-2300358.zip) **CR for TS 36.101: P-Max definition correction for Band 14**

*Type: CR For: Agreement  
 36.101 v17.8.0 CR-5910 rev Cat: A (Rel-17)  
  
 Source: Apple, AT&T*

**Decision: Agreed.**

[**R4-2300359**](file:///D:\RAN4%23106\Docs\R4-2300359.zip) **CR for TS 36.101: P-Max definition correction for Band 14**

*Type: CR For: Agreement  
 36.101 v18.0.0 CR-5911 rev Cat: A (Rel-18)  
  
 Source: Apple, AT&T*

**Decision: Agreed.**

**CRs related to irregular channel bandwidth [123]**

[**R4-2300731**](file:///D:\RAN4%23106\Docs\R4-2300731.zip) **Carrier resource grid mapping to channel raster and use of UE-specific bandwidth**

*Type: CR For: Agreement  
 38.101-1 v15.20.0 CR-1329 rev Cat: F (Rel-15)  
  
 Source: Ericsson, Verizon, China Telecom*

**Abstract:**

CR to clarify carrier resource grid mapping to the channel raster and the configuration of the UE-specific channel bandwidth

**Decision: Not pursued.**

[**R4-2300732**](file:///D:\RAN4%23106\Docs\R4-2300732.zip) **Carrier resource grid mapping to channel raster and use of UE-specific bandwidth**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1330 rev Cat: F (Rel-16)  
  
 Source: Ericsson, Verizon, China Telecom*

**Abstract:**

CR to clarify carrier resource grid mapping to the channel raster and the configuration of the UE-specific channel bandwidth. An exceptional raster point for n28 is also added.

**Decision: Not pursued.**

[**R4-2300733**](file:///D:\RAN4%23106\Docs\R4-2300733.zip) **Carrier resource grid mapping to channel raster and use of UE-specific bandwidth**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1331 rev Cat: F (Rel-17)  
  
 Source: Ericsson, Verizon, China Telecom*

**Abstract:**

CR to clarify carrier resource grid mapping to the channel raster and the configuration of the UE-specific channel bandwidth including changes for RedCap Rel-17

**Decision: Not pursued.**

[**R4-2300734**](file:///D:\RAN4%23106\Docs\R4-2300734.zip) **Carrier resource grid mapping to channel raster and use of UE-specific bandwidth**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1332 rev Cat: A (Rel-18)  
  
 Source: Ericsson, Verizon, China Telecom*

**Abstract:**

CR to clarify carrier resource grid mapping to the channel raster and the configuration of the UE-specific channel bandwidth including changes for RedCap Rel-17

**Decision: Not pursued.**

[**R4-2300735**](file:///D:\RAN4%23106\Docs\R4-2300735.zip) **Carrier resource grid mapping to channel raster and use of UE-specific bandwidth**

*Type: CR For: Agreement  
 38.101-2 v15.20.0 CR-0541 rev Cat: F (Rel-15)  
  
 Source: Ericsson, Verizon, China Telecom*

**Abstract:**

CR to clarify carrier resource grid mapping to the channel raster and the configuration of the UE-specific channel bandwidth

**Decision: Not pursued.**

[**R4-2300736**](file:///D:\RAN4%23106\Docs\R4-2300736.zip) **Carrier resource grid mapping to channel raster and use of UE-specific bandwidth**

*Type: CR For: Agreement  
 38.101-2 v16.14.0 CR-0542 rev Cat: A (Rel-16)  
  
 Source: Ericsson, Verizon, China Telecom*

**Abstract:**

CR to clarify carrier resource grid mapping to the channel raster and the configuration of the UE-specific channel bandwidth

**Decision: Not pursued.**

[**R4-2300737**](file:///D:\RAN4%23106\Docs\R4-2300737.zip) **Carrier resource grid mapping to channel raster and use of UE-specific bandwidth**

*Type: CR For: Agreement  
 38.101-2 v17.8.0 CR-0543 rev Cat: A (Rel-17)  
  
 Source: Ericsson, Verizon, China Telecom*

**Abstract:**

CR to clarify carrier resource grid mapping to the channel raster and the configuration of the UE-specific channel bandwidth

**Decision: Not pursued.**

[**R4-2300738**](file:///D:\RAN4%23106\Docs\R4-2300738.zip) **Carrier resource grid mapping to channel raster and use of UE-specific bandwidth**

*Type: CR For: Agreement  
 38.101-2 v18.0.0 CR-0544 rev Cat: A (Rel-18)  
  
 Source: Ericsson, Verizon, China Telecom*

**Abstract:**

CR to clarify carrier resource grid mapping to the channel raster and the configuration of the UE-specific channel bandwidth

**Decision: Not pursued.**

[**R4-2301597**](file:///D:\RAN4%23106\Docs\R4-2301597.zip) **CR to TS 38.101-1 on channel raster to RE mapping (Alt#1)**

*Type: CR For: Approval  
 38.101-1 v15.20.0 CR-1394 rev Cat: F (Rel-15)  
  
 Source: MediaTek Inc.*

**Decision:** The document was **revised to** [**R4-2302547**](file:///D:\RAN4%23106\Docs\R4-2302547.zip).

[**R4-2302547**](file:///D:\RAN4%23106\Docs\R4-2302547.zip) **CR to TS 38.101-1 on channel raster to RE mapping**

*Type: CR For: Approval  
 38.101-1 v15.20.0 CR-1394 rev 1 Cat: F (Rel-15)  
  
 Source: MediaTek*

(Replaces [R4-2301597](file:///D:\RAN4%23106\Docs\R4-2301597.zip))

**Decision: Not pursued.**

[**R4-2301598**](file:///D:\RAN4%23106\Docs\R4-2301598.zip) **CR to TS 38.101-1 on channel raster to RE mapping (Alt#2)**

*Type: CR For: Approval  
 38.101-1 v15.20.0 CR-1395 rev Cat: F (Rel-15)  
  
 Source: MediaTek Inc.*

**Decision: Not pursued.**

[**R4-2301599**](file:///D:\RAN4%23106\Docs\R4-2301599.zip) **CR to TS 38.101-1 on channel raster to RE mapping**

*Type: CR For: Approval  
 38.101-1 v16.14.0 CR-1396 rev Cat: A (Rel-16)  
  
 Source: MediaTek Inc.*

**Decision: Withdrawn.**

[**R4-2301600**](file:///D:\RAN4%23106\Docs\R4-2301600.zip) **CR to TS 38.101-1 on channel raster to RE mapping**

*Type: CR For: Approval  
 38.101-1 v17.8.0 CR-1397 rev Cat: A (Rel-17)  
  
 Source: MediaTek Inc.*

**Decision: Withdrawn.**

[**R4-2301601**](file:///D:\RAN4%23106\Docs\R4-2301601.zip) **CR to TS 38.101-2 on channel raster to RE mapping (Alt#1)**

*Type: CR For: Approval  
 38.101-2 v15.20.0 CR-0574 rev Cat: F (Rel-15)  
  
 Source: MediaTek Inc.*

**Decision:** The document was **revised to** [**R4-2302548**](file:///D:\RAN4%23106\Docs\R4-2302548.zip).

[**R4-2302548**](file:///D:\RAN4%23106\Docs\R4-2302548.zip) **CR to TS 38.101-2 on channel raster to RE mapping (Alt#1)**

*Type: CR For: Approval  
 38.101-2 v15.20.0 CR-0574 rev 1 Cat: F (Rel-15)  
  
 Source: MediaTek Inc.*

(Replaces [R4-2301601](file:///D:\RAN4%23106\Docs\R4-2301601.zip))

**Decision: Not pursued.**

[**R4-2301602**](file:///D:\RAN4%23106\Docs\R4-2301602.zip) **CR to TS 38.101-2 on channel raster to RE mapping (Alt#2)**

*Type: CR For: Approval  
 38.101-2 v15.20.0 CR-0575 rev Cat: F (Rel-15)  
  
 Source: MediaTek Inc.*

**Decision: Not pursued.**

[**R4-2302550**](file:///D:\RAN4%23106\Docs\R4-2302550.zip) **CR to TS 38.101-2 on channel raster to RE mapping (Alt#2)**

*Type: CR For: Approval  
 38.101-2 v15.20.0 CR-0575 rev 1 Cat: F (Rel-15)  
  
 Source: MediaTek Inc.*

(Replaces [R4-2301602](file:///D:\RAN4%23106\Docs\R4-2301602.zip))

**Decision: Not pursued.**

[**R4-2301603**](file:///D:\RAN4%23106\Docs\R4-2301603.zip) **CR to TS 38.101-2 on channel raster to RE mapping**

*Type: CR For: Approval  
 38.101-2 v16.14.0 CR-0576 rev Cat: A (Rel-16)  
  
 Source: MediaTek Inc.*

**Decision: Withdrawn.**

[**R4-2301604**](file:///D:\RAN4%23106\Docs\R4-2301604.zip) **CR to TS 38.101-2 on channel raster to RE mapping**

*Type: CR For: Approval  
 38.101-2 v17.8.0 CR-0577 rev Cat: A (Rel-17)  
  
 Source: MediaTek Inc.*

**Decision: Withdrawn.**

**Tdoc which were withdrawns**

[**R4-2301141**](file:///D:\RAN4%23106\Docs\R4-2301141.zip) **CR to clarify duplex mode of SDL bands**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1357 rev Cat: F (Rel-16)  
  
 Source: Anritsu Limited*

**Decision:** The document was **withdrawn**.

[**R4-2301142**](file:///D:\RAN4%23106\Docs\R4-2301142.zip) **CR to clarify duplex mode of SDL bands**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1358 rev Cat: F (Rel-17)  
  
 Source: Anritsu Limited*

**Decision:** The document was **withdrawn**.

[**R4-2301144**](file:///D:\RAN4%23106\Docs\R4-2301144.zip) **CR to add band n29 to blocking requirements**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1360 rev Cat: F (Rel-16)  
  
 Source: Anritsu Limited*

**Decision:** The document was **withdrawn**.

[**R4-2301155**](file:///D:\RAN4%23106\Docs\R4-2301155.zip) **CR on Harmonic mixing MSD for CA\_n8A-n79A (R16 CAT-A)**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1364 rev Cat: A (Rel-16)  
  
 Source: OPPO*

**Decision:** The document was **withdrawn**.

[**R4-2301156**](file:///D:\RAN4%23106\Docs\R4-2301156.zip) **CR on Harmonic mixing MSD for CA\_n8A-n79A (R17 CAT-A)**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1365 rev Cat: A (Rel-17)  
  
 Source: OPPO*

**Decision:** The document was **withdrawn**.

[**R4-2301157**](file:///D:\RAN4%23106\Docs\R4-2301157.zip) **CR on Harmonic mixing MSD for CA\_n8A-n79A (R18 CAT-A)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1366 rev Cat: A (Rel-18)  
  
 Source: OPPO*

**Decision:** The document was **withdrawn**.

[**R4-2301158**](file:///D:\RAN4%23106\Docs\R4-2301158.zip) **CR on Harmonic mixing MSD for DC\_8A-n79A (R16 CAT-A)**

*Type: CR For: Agreement  
 38.101-3 v16.14.0 CR-0829 rev Cat: A (Rel-16)  
  
 Source: OPPO*

**Decision:** The document was **withdrawn**.

[**R4-2301159**](file:///D:\RAN4%23106\Docs\R4-2301159.zip) **CR on Harmonic mixing MSD for DC\_8A-n79A (R17 CAT-A)**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0830 rev Cat: A (Rel-17)  
  
 Source: OPPO*

**Decision:** The document was **withdrawn**.

[**R4-2301160**](file:///D:\RAN4%23106\Docs\R4-2301160.zip) **CR on Harmonic mixing MSD for DC\_8A-n79A (R18 CAT-A)**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0831 rev Cat: A (Rel-18)  
  
 Source: OPPO*

**Decision:** The document was **withdrawn**.

[**R4-2301163**](file:///D:\RAN4%23106\Docs\R4-2301163.zip) **38101-1 CR on clarification of UE coexistence frequency range (R17 CAT-A)**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1369 rev Cat: A (Rel-17)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision:** The document was **withdrawn**.

[**R4-2301164**](file:///D:\RAN4%23106\Docs\R4-2301164.zip) **38101-1 CR on clarification of UE coexistence frequency range (R18 CAT-A)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1370 rev Cat: A (Rel-18)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision:** The document was **withdrawn**.

[**R4-2301166**](file:///D:\RAN4%23106\Docs\R4-2301166.zip) **38101-2 CR on clarification of UE coexistence frequency range (R16 CAT-A)**

*Type: CR For: Agreement  
 38.101-2 v16.14.0 CR-0559 rev Cat: A (Rel-16)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision:** The document was **withdrawn**.

[**R4-2301167**](file:///D:\RAN4%23106\Docs\R4-2301167.zip) **38101-2 CR on clarification of UE coexistence frequency range (R17 CAT-A)**

*Type: CR For: Agreement  
 38.101-2 v17.8.0 CR-0560 rev Cat: A (Rel-17)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision:** The document was **withdrawn**.

[**R4-2301168**](file:///D:\RAN4%23106\Docs\R4-2301168.zip) **38101-2 CR on clarification of UE coexistence frequency range (R18 CAT-A)**

*Type: CR For: Agreement  
 38.101-2 v18.0.0 CR-0561 rev Cat: A (Rel-18)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision:** The document was **withdrawn**.

[**R4-2301171**](file:///D:\RAN4%23106\Docs\R4-2301171.zip) **38101-3 CR on clarification of UE coexistence frequency range (R17 CAT-A)**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0834 rev Cat: A (Rel-17)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision:** The document was **withdrawn**.

[**R4-2301172**](file:///D:\RAN4%23106\Docs\R4-2301172.zip) **38101-3 CR on clarification of UE coexistence frequency range (R18 CAT-A)**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0835 rev Cat: A (Rel-18)  
  
 Source: OPPO; Anritsu; Keysight; Rohde & Schwarz*

**Decision:** The document was **withdrawn**.

[**R4-2302666**](file:///D:\RAN4%23106\Docs\R4-2302666.zip) **CR to clarify duplex mode of SDL bands**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1449 rev Cat: F (Rel-16)  
  
 Source: Anritsu Limited*

**Decision:** The document was **withdrawn**.

[**R4-2302667**](file:///D:\RAN4%23106\Docs\R4-2302667.zip) **CR to clarify duplex mode of SDL bands**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1450 rev Cat: F (Rel-17)  
  
 Source: Anritsu Limited*

**Decision:** The document was **withdrawn**.

[**R4-2302668**](file:///D:\RAN4%23106\Docs\R4-2302668.zip) **CR to add band n29 to blocking requirements**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1451 rev Cat: F (Rel-16)  
  
 Source: Anritsu Limited*

**Decision:** The document was **withdrawn**.

[**R4-2302675**](file:///D:\RAN4%23106\Docs\R4-2302675.zip) **CR to clarify duplex mode of SDL bands**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1454 rev Cat: F (Rel-17)  
  
 Source: Anritsu Limited*

**Decision:** The document was **withdrawn**.

### 4.2 BS RF requirements and BS conformance testing

**CRs related to irregular channel bandwidth [123]**

[**R4-2300742**](file:///D:\RAN4%23106\Docs\R4-2300742.zip) **Clarification of carrier resource grid mapping**

*Type: CR For: Agreement  
 38.104 v15.18.0 CR-0442 rev Cat: F (Rel-15)  
  
 Source: Ericsson, Verizon, China Telecom*

**Abstract:**

CR to clarify carrier resource grid mapping to the channel raster

**Decision: Not pursued.**

[**R4-2300743**](file:///D:\RAN4%23106\Docs\R4-2300743.zip) **Clarification of carrier resource grid mapping**

*Type: CR For: Agreement  
 38.104 v16.14.0 CR-0443 rev Cat: A (Rel-16)  
  
 Source: Ericsson, Verizon, China Telecom*

**Abstract:**

CR to clarify carrier resource grid mapping to the channel raster

**Decision: Withdrawn.**

[**R4-2300744**](file:///D:\RAN4%23106\Docs\R4-2300744.zip) **Clarification of carrier resource grid mapping**

*Type: CR For: Agreement  
 38.104 v17.8.0 CR-0444 rev Cat: A (Rel-17)  
  
 Source: Ericsson, Verizon, China Telecom*

**Abstract:**

CR to clarify carrier resource grid mapping to the channel raster

**Decision: Withdrawn.**

[**R4-2300745**](file:///D:\RAN4%23106\Docs\R4-2300745.zip) **Clarification of carrier resource grid mapping**

*Type: CR For: Agreement  
 38.104 v18.0.0 CR-0445 rev Cat: A (Rel-18)  
  
 Source: Ericsson, Verizon, China Telecom*

**Abstract:**

CR to clarify carrier resource grid mapping to the channel raster

**Decision: Withdrawn.**

### 4.3 UE/BS EMC requirements

### 4.4 RRM requirements

### 4.5 Demodulation and CSI requirements

### 4.6 NR MIMO OTA test methods (38.827)

### 4.7 Moderator summary and conclusions

**[106][101] Upto\_R16\_UERF\_maintenance, AI 4.1 – Jinqiang Xing (OPPO)**

[**R4-2302794**](file:///D:\RAN4%23106\Docs\R4-2302794.zip) **Topic summary for [106][101] Upto\_R16\_UERF\_maintenance**

*Type: other For: Information  
 Source: Moderator (OPPO)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303529**](file:///D:\RAN4%23106\Docs\R4-2303529.zip) **Ad hoc minutes for [106][101] Upto\_R16\_UERF\_maintenance**

*Type: other For: Information  
 Source: Moderator (OPPO)*

**Abstract:**

This contribution provides the ad hoc minutes.

**Decision: Approved.**

[**R4-2303653**](file:///D:\RAN4%23106\Docs\R4-2303653.zip) **WF on UL MIMO EVM update**

*Type: other For: Approval  
 Source: Rohde & Schwarz, Keysight Technologies, Anritsu*

**Decision: Approved.**

## 5 Rel-17 maintenance for LTE and NR

*For Rel-17 maintenance, at most two CRs per specification per company per lowest AI except for AI 5.1.1, AI 5.1.2 and AI 5.2.8. Contributions shall be limited by existing open issues or critical issues. For AI 5.1.1, AI 5.1.2 and AI 5.2.8, follow the approved guideline, i.e., maximum one discussion paper per WI/TEI topic per company/organization. If the similar changes are proposed for a number of specifications, those CRs will be counted as one CR for the quota. And Cat F and Cat A CRs for the same changes are counted as one CR for the quota. It is not expected to pack maintenance topics of multiple Rel-17 closed WIs into one CR or one discussion paper.*

*The contributions corresponding to incoming LS for Rel-17 are expected to be submitted in AI 10.2.*

*For Rel-17 maintenance, please submit formal CRs. When you reserve the tdoc number, please use the correct WI code rather than simply using TEI and fill the column of “Related WIs” in your reservation spreadsheet. If you submit a CR with TEI as WI code, please inform session chair.*

### 5.1 Rel-17 spectrum related WI maintenance

#### 5.1.1 Bands introduced in Rel-17 and related requirements

**B24/n24**

[**R4-2300062**](file:///D:\RAN4%23106\Docs\R4-2300062.zip) **Updates related to NB1/NB2/M1/M2 support for Band 24/n24**

*Type: CR For: Agreement  
 36.101 v17.8.0 CR-5897 rev Cat: F (Rel-17)  
  
 Source: Ligado Networks, Ericsson*

**Decision: Agreed.**

[**R4-2300063**](file:///D:\RAN4%23106\Docs\R4-2300063.zip) **Updates related to NB1/NB2/M1/M2 support for Band 24/n24**

*Type: CR For: Agreement  
 36.101 v18.0.0 CR-5898 rev Cat: A (Rel-18)  
  
 Source: Ligado Networks, Ericsson*

**Decision: Agreed.**

[**R4-2300182**](file:///D:\RAN4%23106\Docs\R4-2300182.zip) **Updates Band grouping for NB-IoT operation in Band 24 to include n24**

*Type: CR For: Agreement  
 36.133 v17.8.0 CR-7185 rev Cat: F (Rel-17)  
  
 Source: Ligado Networks*

**Decision: Agreed.**

[**R4-2300183**](file:///D:\RAN4%23106\Docs\R4-2300183.zip) **Updates Band grouping for NB-IoT operation in Band 24 to include n24**

*Type: CR For: Agreement  
 36.133 v18.0.0 CR-7186 rev Cat: A (Rel-18)  
  
 Source: Ligado Networks*

**Decision: Agreed.**

**CR for TR 38.853/38.852**

[**R4-2300503**](file:///D:\RAN4%23106\Docs\R4-2300503.zip) **Correction to TR 38.853**

*Type: CR For: Agreement  
 38.853 v17.0.0 CR-0001 rev Cat: F (Rel-17)  
  
 Source: Union Inter. Chemins de Fer*

**Abstract:**

Correction of spurious emission requirement to be in line with the TS 38.104 Table 6.6.5.2.3-13

**Decision: Agreed.**

[**R4-2300504**](file:///D:\RAN4%23106\Docs\R4-2300504.zip) **Correction to TR 38.852**

*Type: CR For: Agreement  
 38.852 v17.0.0 CR-0001 rev Cat: F (Rel-17)  
  
 Source: Union Inter. Chemins de Fer*

**Abstract:**

Correction of spurious emission requirement to be in line with the TS 38.104 Table 6.6.5.2.3-12

**Decision: Agreed.**

**6G lincensed band**

[**R4-2301583**](file:///D:\RAN4%23106\Docs\R4-2301583.zip) **CR to 38.104: BS Conformance, OBUE correction for 6G licensed band**

*Type: CR For: Agreement  
 38.104 v17.8.0 CR-0451 rev Cat: F (Rel-17)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Agreed.**

[**R4-2301584**](file:///D:\RAN4%23106\Docs\R4-2301584.zip) **CR to 38.104: BS Conformance, OBUE correction for 6G licensed band**

*Type: CR For: Agreement  
 38.104 v18.0.0 CR-0452 rev Cat: A (Rel-18)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Agreed.**

[**R4-2301585**](file:///D:\RAN4%23106\Docs\R4-2301585.zip) **CR to 38.141-2: BS Conformance, OBUE correction for 6G licensed band**

*Type: CR For: Agreement  
 38.141-2 v17.8.0 CR-0455 rev Cat: F (Rel-17)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Agreed.**

[**R4-2301586**](file:///D:\RAN4%23106\Docs\R4-2301586.zip) **CR to 38.141-2: BS Conformance, OBUE correction for 6G licensed band**

*Type: CR For: Agreement  
 38.141-2 v18.0.0 CR-0456 rev Cat: A (Rel-18)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Agreed.**

**47GHz**

[**R4-2301663**](file:///D:\RAN4%23106\Docs\R4-2301663.zip) **CR to 38.847: BS Conformance, removal of [] for 47GHz Rx test**

*Type: CR For: Agreement  
 38.847 v17.1.0 CR-0002 rev Cat: F (Rel-17)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Agreed.**

[**R4-2301664**](file:///D:\RAN4%23106\Docs\R4-2301664.zip) **CR to 38.141-2: BS Conformance, removal of [] for 47GHz Rx test**

*Type: CR For: Agreement  
 38.141-2 v17.8.0 CR-0457 rev Cat: F (Rel-17)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Agreed.**

[**R4-2301665**](file:///D:\RAN4%23106\Docs\R4-2301665.zip) **CR to 38.141-2: BS Conformance, removal of [] for 47GHz Rx test**

*Type: CR For: Agreement  
 38.141-2 v18.0.0 CR-0458 rev Cat: A (Rel-18)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Agreed.**

[**R4-2302455**](file:///D:\RAN4%23106\Docs\R4-2302455.zip) **CR to TS 38.141-2: removal of outstanding [] for n262 (47GHz) MU and TT values, Rel-17**

*Type: CR For: Agreement  
 38.141-2 v17.8.0 CR-0468 rev Cat: F (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Referring to the NR\_47GHz\_band-Perf discussions, it was difficult to reach consensus on the Rx requirements and related MU values. As a compromise, it was concluded that in order to close NR\_47GHz\_band WI it was agreeable to keep those requirements in [],

**Decision: Merged (with** [**R4-2301664**](file:///D:\RAN4%23106\Docs\R4-2301664.zip)**).**

[**R4-2302456**](file:///D:\RAN4%23106\Docs\R4-2302456.zip) **CR to TS 38.141-2: removal of outstanding [] for n262 (47GHz) MU and TT values, Rel-18**

*Type: CR For: Agreement  
 38.141-2 v18.0.0 CR-0469 rev Cat: A (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Referring to the NR\_47GHz\_band-Perf discussions, it was difficult to reach consensus on the Rx requirements and related MU values. As a compromise, it was concluded that in order to close NR\_47GHz\_band WI it was agreeable to keep those requirements in [],

**Decision: Withdrawn.**

**HPUE PC2/PC1.5**

[**R4-2302141**](file:///D:\RAN4%23106\Docs\R4-2302141.zip) **CR on R17 TS38.101-1 Modification on the PC2 and PC1.5 note on the CA configuration with UL single carrier**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1419 rev Cat: F (Rel-17)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

Based on the approved WF [R4-2217119](file:///D:\RAN4%23106\Docs\R4-2217119.zip),introduce CA\_n77C with UL PC2 n77 and remove the PC1.5 note on the higher order combinations containing CA\_n77C with UL n77.

**Decision:** The document was **revised to** [**R4-2302327**](file:///D:\RAN4%23106\Docs\R4-2302327.zip).

[**R4-2302327**](file:///D:\RAN4%23106\Docs\R4-2302327.zip) **CR on R17 TS38.101-1 Modification on the PC2 and PC1.5 note on the CA configuration with UL single carrier**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1419 rev 1 Cat: F (Rel-17)  
  
 Source: Huawei, HiSilicon*

(Replaces [R4-2302141](file:///D:\RAN4%23106\Docs\R4-2302141.zip))

**Abstract:**

Based on the approved WF [R4-2217119](file:///D:\RAN4%23106\Docs\R4-2217119.zip), introduce CA\_n77C with UL PC2 n77 and remove the PC1.5 note on the higher order combinations containing CA\_n77C with UL n77.

Ericsson: return to.

Huawei: this is decoupled with the discussion in WF.

**Decision: Revised to R4-2303706 (from R4-2302327).**

[**R4-2303706**](file:///D:\RAN4%23106\Docs\R4-2302327.zip) **CR on R17 TS38.101-1 Modification on the PC2 and PC1.5 note on the CA configuration with UL single carrier**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1419 rev 1 Cat: F (Rel-17)  
  
 Source: Huawei, HiSilicon*

(Replaces [R4-2302141](file:///D:\RAN4%23106\Docs\R4-2302141.zip))

**Abstract:**

**Decision: Agreed.**

**MPR for NS\_21**

[**R4-2302306**](file:///D:\RAN4%23106\Docs\R4-2302306.zip) **Additional maximum power reduction for NS\_21 (Rel-17)**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1426 rev Cat: F (Rel-17)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Agreed.**

[**R4-2302307**](file:///D:\RAN4%23106\Docs\R4-2302307.zip) **Additional maximum power reduction for NS\_21 (Rel-18)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1427 rev Cat: A (Rel-18)  
  
 Source: Keysight Technologies UK Ltd*

**Decision: Agreed.**

**RRM related (which needs be checked by RRM)**

[**R4-2302617**](file:///D:\RAN4%23106\Docs\R4-2302617.zip) **Correction to FR1 band groups in 38.133**

*Type: CR For: Agreement  
 38.133 v17.8.0 CR-3043 rev Cat: F (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

The CR adds missing band n102 and removing n96 from wrong band group

**Decision: Agreed.**

[**R4-2302618**](file:///D:\RAN4%23106\Docs\R4-2302618.zip) **Correction to FR1 band groups in 38.133**

*Type: CR For: Agreement  
 38.133 v18.0.0 CR-3044 rev Cat: A (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

The CR adds missing band n102 and removing n96 from wrong band group

**Decision: Agreed.**

[**R4-2302619**](file:///D:\RAN4%23106\Docs\R4-2302619.zip) **Conditions for missing FR2 band and power class for positioning in 38.133**

*Type: CR For: Agreement  
 38.133 v17.8.0 CR-3045 rev Cat: F (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

The CR defines conditions for missing FR2 band n262 and power class 5 for positioning

**Decision:** The document was **revised to** [**R4-2302669**](file:///D:\RAN4%23106\Docs\R4-2302669.zip).

[**R4-2302669**](file:///D:\RAN4%23106\Docs\R4-2302669.zip) **Conditions for missing FR2 band and power class for positioning in 38.133**

*Type: CR For: Agreement  
 38.133 v17.8.0 CR-3045 rev 1 Cat: F (Rel-17)  
  
 Source: Ericsson*

(Replaces [R4-2302619](file:///D:\RAN4%23106\Docs\R4-2302619.zip))

**Abstract:**

The CR defines conditions for missing FR2 band n262 and power class 5 for positioning

**Decision:** The document was **revised to** [**R4-2302673**](file:///D:\RAN4%23106\Docs\R4-2302673.zip).

[**R4-2302673**](file:///D:\RAN4%23106\Docs\R4-2302673.zip) **Conditions for missing FR2 band and power class for positioning in 38.133**

*Type: CR For: Agreement  
 38.133 v17.8.0 CR-3045 rev 2 Cat: F (Rel-17)  
  
 Source: Ericsson*

(Replaces [R4-2302669](file:///D:\RAN4%23106\Docs\R4-2302669.zip))

**Abstract:**

The CR defines conditions for missing FR2 band n262 and power class 5 for positioning

**Decision:** The document was **revised to** [**R4-2302692**](file:///D:\RAN4%23106\Docs\R4-2302692.zip).

[**R4-2302692**](file:///D:\RAN4%23106\Docs\R4-2302692.zip) **Conditions for missing FR2 band and power class for positioning in 38.133**

*Type: CR For: Agreement  
 38.133 v17.8.0 CR-3045 rev 3 Cat: F (Rel-17)  
  
 Source: Ericsson*

(Replaces [R4-2302673](file:///D:\RAN4%23106\Docs\R4-2302673.zip))

**Abstract:**

The CR defines conditions for missing FR2 band n262 and power class 5 for positioning

**Decision:** The document was **revised to** [**R4-2302713**](file:///D:\RAN4%23106\Docs\R4-2302713.zip).

[**R4-2302713**](file:///D:\RAN4%23106\Docs\R4-2302713.zip) **Conditions for missing FR2 band and power class for positioning in 38.133**

*Type: CR For: Agreement  
 38.133 v17.8.0 CR-3045 rev 4 Cat: F (Rel-17)  
  
 Source: Ericsson*

(Replaces [R4-2302692](file:///D:\RAN4%23106\Docs\R4-2302692.zip))

**Abstract:**

The CR defines conditions for missing FR2 band n262 and power class 5 for positioning

**Decision: Agreed.**

[**R4-2302620**](file:///D:\RAN4%23106\Docs\R4-2302620.zip) **Conditions for missing FR2 band and power class for positioning in 38.133**

*Type: CR For: Agreement  
 38.133 v18.0.0 CR-3046 rev Cat: A (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

The CR defines conditions for missing FR2 band n262 and power class 5 for positioning

**Decision: Agreed.**

#### 5.1.2 NR/LTE/MR-DC basket WIs

**Topic #1: Power class indications and related signalling (treated in [103])**

[**R4-2303670**](file:///D:\RAN4%23106\Docs\R4-2303670.zip) **WF on power Class indications in TS 38.101-1 and related signaling**

*Type: other For: Approval  
 Source: Qualcomm*

**Decision: Revised to R4-2303705 (from R4-2303670).**

[**R4-2303705**](file:///D:\RAN4%23106\Docs\R4-2303670.zip) **WF on power Class indications in TS 38.101-1 and related signaling**

*Type: other For: Approval  
 Source: Qualcomm*

**Decision: Approved.**

[**R4-2302277**](file:///D:\RAN4%23106\Docs\R4-2302277.zip) **Power Class indications in TS 38.101-1 and related signaling**

*Type: other For: Approval  
 Source: Qualcomm Inc.*

**Decision: Noted.**

[**R4-2302278**](file:///D:\RAN4%23106\Docs\R4-2302278.zip) **CR to 38.101-1 Rel-17 Cat F for HPUE corrections**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1420 rev Cat: F (Rel-17)  
  
 Source: Qualcomm Inc.*

Ericsson: disagree with such capability in two different clauses in the spec. Specify in clause 6 and allow them in clasue 5. Power classe should be specified in 6. We would like to see all the notes in clause 5 are removed. Everything specified in clause 6.

Mediatek: there are two discussion points. Should we put all the power class related information in section 6. It is general description part. We do not have enough time to discuss them.

CHTTL: CR is also related to comments to Huawei CR 2327. Secondly, the CR adds some back to spec. we do not disuss n40, n79 HPUE for CA from Rel-17. In clause 6, we can define the power class. The downlink CC and uplink CC information are different, which could not be covered by 6.

T-Mobile: we do not want to repeat information of DL and UL in clause 6. We cannot delete all the notes now. Feel sympathy to Ericsson when high order CA is configured. UE should not drop power and should follow the report power classes.

AT&T: further discuss the better way. We cannot delete the note to capture the uplink configuration allowed for DL. We should not impact RAN4 WF in this meeting.

Apple: Agree with Ericsson. Consider it in the future.

Ericsson: The issue is the major source of ambiguity. One way is to re-formulate the note in Clause 5 in different way. Another way is to capture it in the TR.

Samsung: regarding which band to add HPUE feature, in Rel-18 n40 and n79 has not been discussed. Regarding which clause, we prefer to clause 5 with note approach for DL with single UL. Ericsson approach may result in issue. Since band for HPUE is specified one by one and put information in clause 5, it means all the band combinations support high power.

Ericsson: clearly specify in clause 6.

**Decision: Not pursued.**

[**R4-2302279**](file:///D:\RAN4%23106\Docs\R4-2302279.zip) **CR to 38.101-1 Rel-18 Cat A for HPUE corrections**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1421 rev Cat: A (Rel-18)  
  
 Source: Qualcomm Inc.*

**Decision: Withdrawn.**

**HPUE EN-DC**

[**R4-2300028**](file:///D:\RAN4%23106\Docs\R4-2300028.zip) **CR for 38.101-3 to Identify Applicable HPUE EN-DC Combinations**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0806 rev Cat: F (Rel-17)  
  
 Source: AT&T, Verizon, T-Mobile USA*

*CHTTL: in this case, CR adds the case with the same DL and UL configurations. It can be covered by power class table.* [*R4-2302536*](file:///D:\RAN4%23106\Docs\R4-2302536.zip)*.*

*AT&T: many DL combo gets confirmed for UL.*

**Decision: Revised to** [**R4-2303671**](file:///D:\RAN4%23106\Docs\R4-2303671.zip) **(from** [**R4-2300028**](file:///D:\RAN4%23106\Docs\R4-2300028.zip)**).**

[**R4-2303671**](file:///D:\RAN4%23106\Docs\R4-2303671.zip) **CR for 38.101-3 to Identify Applicable HPUE EN-DC Combinations**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0806 rev Cat: F (Rel-17)  
  
 Source: AT&T, Verizon, T-Mobile USA*

**Decision: Agreed.**

[**R4-2300032**](file:///D:\RAN4%23106\Docs\R4-2300032.zip) **CR for 38.101-3 to Identify Applicable HPUE EN-DC Combinations**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0807 rev Cat: A (Rel-18)  
  
 Source: AT&T, Verizon, T-Mobile USA*

**Decision: Agreed.**

[**R4-2302536**](file:///D:\RAN4%23106\Docs\R4-2302536.zip) **CR for clarification on uplink power class 2 support of the EN-DC configurations**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0882 rev Cat: F (Rel-17)  
  
 Source: CHTTL, NTT DOCOMO, INC., Ericsson, SGS Wireless*

**Decision: Agreed.**

[**R4-2302537**](file:///D:\RAN4%23106\Docs\R4-2302537.zip) **CR for clarification on uplink power class 2 support of the EN-DC configurations**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0883 rev Cat: A (Rel-18)  
  
 Source: CHTTL, NTT DOCOMO, INC., Ericsson, SGS Wireless*

**Decision: Agreed.**

**NR CA/DC/EN-DC**

[**R4-2300409**](file:///D:\RAN4%23106\Docs\R4-2300409.zip) **NR CA corrections R17**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1314 rev Cat: F (Rel-17)  
  
 Source: Nokia*

**Decision: Agreed.**

[**R4-2300410**](file:///D:\RAN4%23106\Docs\R4-2300410.zip) **NR CA corrections R18**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1315 rev Cat: A (Rel-18)  
  
 Source: Nokia*

**Decision: Agreed.**

[**R4-2300728**](file:///D:\RAN4%23106\Docs\R4-2300728.zip) **CR to introduce emissions specifications for certain band combinations**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0821 rev Cat: F (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

CR to add spurious emissions specifications for certain LTE\_V2X band combinations in TS38.101-3\

**(Chair: related to discussion for** [**R4-2300730**](file:///D:\RAN4%23106\Docs\R4-2300730.zip) **in AI 8.15.2)**

**Decision: Revised to** [**R4-2303672**](file:///D:\RAN4%23106\Docs\R4-2303672.zip) **(from** [**R4-2300728**](file:///D:\RAN4%23106\Docs\R4-2300728.zip)**).**

[**R4-2303672**](file:///D:\RAN4%23106\Docs\R4-2303672.zip) **CR to introduce emissions specifications for certain band combinations**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0821 rev Cat: F (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

CR to add spurious emissions specifications for certain LTE\_V2X band combinations in TS38.101-3\

**(Chair: related to discussion for** [**R4-2300730**](file:///D:\RAN4%23106\Docs\R4-2300730.zip) **in AI 8.15.2)**

**Decision: Agreed.**

[**R4-2300729**](file:///D:\RAN4%23106\Docs\R4-2300729.zip) **CR to introduce emissions specifications for certain LTE\_V2X band combinations**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0822 rev Cat: A (Rel-18)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

This is a mirror CR to add spurious emissions specifications for certain LTE\_V2X band combinations in TS38.101-3

**(Chair: Cat seems wrong)**

**Decision: Agreed.**

[**R4-2302437**](file:///D:\RAN4%23106\Docs\R4-2302437.zip) **CR for 38.101-1: Band combination corrections**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1429 rev Cat: F (Rel-17)  
  
 Source: T-Mobile USA*

**Decision: Agreed.**

[**R4-2302438**](file:///D:\RAN4%23106\Docs\R4-2302438.zip) **CR for 38.101-1: Band combination corrections (Rel-18 Cat A)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1430 rev Cat: A (Rel-18)  
  
 Source: T-Mobile USA*

**Decision: Agreed.**

[**R4-2302558**](file:///D:\RAN4%23106\Docs\R4-2302558.zip) **CR for TS 38.101-3 on corrections to BCS in intra-band EN-DC and inter-band CA configurations**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0885 rev Cat: F (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Agreed.**

[**R4-2302559**](file:///D:\RAN4%23106\Docs\R4-2302559.zip) **CR for TS 38.101-3 on corrections to BCS in intra-band EN-DC and inter-band CA configurations (R18\_CAT\_A)**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0886 rev Cat: A (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Agreed.**

**Co-existenance for UL EN-DC**

[**R4-2301316**](file:///D:\RAN4%23106\Docs\R4-2301316.zip) **CR to R17 TS38.101-3 maintenance for UE co-ex requirements for UL EN-DC**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0841 rev Cat: F (Rel-17)  
  
 Source: NTT DOCOMO, INC.*

**Abstract:**

R17 Cat-F CR to correct some errors in the UE co-existence requirements for UL EN-DC. It is based on the intersection set rules, and some combinations operated in Japan are corrected.

**Decision: Agreed.**

[**R4-2301317**](file:///D:\RAN4%23106\Docs\R4-2301317.zip) **CR to R18 TS38.101-3 maintenance for UE co-ex requirements for EN-DC**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0842 rev Cat: A (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Abstract:**

Cat-A CR for R18

**Decision: Agreed.**

[**R4-2301318**](file:///D:\RAN4%23106\Docs\R4-2301318.zip) **CR to R17 TS38.101-3 modification of MSD test point for DC\_21\_n28-n79**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0843 rev Cat: F (Rel-17)  
  
 Source: NTT DOCOMO, INC.*

**Abstract:**

R17 Cat-F CR to modify the MSD test point for DC\_21A\_n28A-n79A to set within the restricted frequency range.

**Decision: Agreed.**

[**R4-2301319**](file:///D:\RAN4%23106\Docs\R4-2301319.zip) **CR to R18 TS38.101-3 modification of MSD test point for DC\_21\_n28-n79**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0844 rev Cat: A (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Abstract:**

Cat-A CR for R18

**Decision: Agreed.**

**Delta-MPR**

[**R4-2302068**](file:///D:\RAN4%23106\Docs\R4-2302068.zip) **CR for TS 38.101-1 to correct the delta MPR**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1406 rev Cat: F (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Agreed.**

[**R4-2302069**](file:///D:\RAN4%23106\Docs\R4-2302069.zip) **CR for TS 38.101-1 to correct the delta MPR (R18)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1407 rev Cat: A (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Agreed.**

**Triple-beat and Scell MSD**

[**R4-2302757**](file:///D:\RAN4%23106\Docs\R4-2302757.zip) **CR to TS 38.101-3 Rel-17 Introduction of triple-beat and Scell MSD**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0895 rev Cat: F (Rel-17)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Agreed.**

[**R4-2302756**](file:///D:\RAN4%23106\Docs\R4-2302756.zip) **CR to TS 38.101-3 Rel-18 Introduction of triple-beat and Scell MSD**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0894 rev Cat: F (Rel-18)  
  
 Source: Skyworks Solutions, Inc.*

**Decision: Agreed.**

**V2X**

[**R4-2300726**](file:///D:\RAN4%23106\Docs\R4-2300726.zip) **CR to introduce emissions specifications for certain LTE\_V2X band combinations**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1327 rev Cat: F (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

CR to add spurious emissions specifications for certain LTE\_V2X band combinations in TS38.101-1

**Decision: Revised to** [**R4-2303673**](file:///D:\RAN4%23106\Docs\R4-2303673.zip) **(from** [**R4-2300726**](file:///D:\RAN4%23106\Docs\R4-2300726.zip)**).**

[**R4-2303673**](file:///D:\RAN4%23106\Docs\R4-2303673.zip) **CR to introduce emissions specifications for certain LTE\_V2X band combinations**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1327 rev Cat: F (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

CR to add spurious emissions specifications for certain LTE\_V2X band combinations in TS38.101-1

**Decision: Agreed.**

[**R4-2300727**](file:///D:\RAN4%23106\Docs\R4-2300727.zip) **CR to introduce emissions specifications for certain LTE\_V2X band combinations**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1328 rev Cat: A (Rel-18)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

This is a mirror CR to add spurious emissions specifications for certain LTE\_V2X band combinations in TS38.101-1

**Decision: Agreed.**

[**R4-2302556**](file:///D:\RAN4%23106\Docs\R4-2302556.zip) **CR for TS 38.101-1 on cleanups for V2X operating bands and channel bandwidth**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1440 rev Cat: F (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Agreed.**

[**R4-2302557**](file:///D:\RAN4%23106\Docs\R4-2302557.zip) **CR for TS 38.101-1 on cleanups for V2X operating bands and channel bandwidth (R18\_CAT\_A)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1441 rev Cat: A (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Agreed.**

#### 5.1.3 Others

**Topic #2: NS\_50 PC2 A-MPR**

[**R4-2300724**](file:///D:\RAN4%23106\Docs\R4-2300724.zip) **Aligning NS\_50 PC2 A-MPR with PC3**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2300725**](file:///D:\RAN4%23106\Docs\R4-2300725.zip) **CR to update NS\_50 PC2 A-MPR**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1326 rev Cat: F (Rel-17)  
  
 Source: Huawei, HiSilicon*

Apple: support the intention. There might be some additional changes. We can align in this meeting.

Qualcomm: There is error. and need revision.

**Decision: Revised to** [**R4-2303674**](file:///D:\RAN4%23106\Docs\R4-2303674.zip) **(from** [**R4-2300725**](file:///D:\RAN4%23106\Docs\R4-2300725.zip)**).**

[**R4-2303674**](file:///D:\RAN4%23106\Docs\R4-2303674.zip) **CR to update NS\_50 PC2 A-MPR**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1326 rev Cat: F (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision: Agreed.**

[**R4-2303698**](file:///D:\RAN4%23106\Docs\R4-2303698.zip) **CR to update NS\_50 PC2 A-MPR**

*Type: CR For: Agreement  
 38.101-1 v CR- rev Cat: A (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Agreed.**

**A-MPR for NS\_24**

[**R4-2300411**](file:///D:\RAN4%23106\Docs\R4-2300411.zip) **CR 38.101-1 correction to A-MPR for NS\_24 R17**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1316 rev Cat: F (Rel-17)  
  
 Source: Nokia, Qualcomm Inc*

**Decision: Agreed.**

[**R4-2300412**](file:///D:\RAN4%23106\Docs\R4-2300412.zip) **CR 38.101-1 correction to A-MPR for NS\_24 R18**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1317 rev Cat: A (Rel-18)  
  
 Source: Nokia, Qualcomm Inc*

**Decision: Agreed.**

**CA/EN-DC**

[**R4-2302203**](file:///D:\RAN4%23106\Docs\R4-2302203.zip) **CR for corrections on Rel-17 band combinations in TS36.101**

*Type: CR For: (not specified)  
 36.101 v17.8.0 CR-5927 rev Cat: F (Rel-17)  
  
 Source: Google Inc.*

**Decision: Agreed.**

[**R4-2302204**](file:///D:\RAN4%23106\Docs\R4-2302204.zip) **CR for corrections on Rel-18 band combinations in TS36.101**

*Type: CR For: (not specified)  
 36.101 v18.0.0 CR-5928 rev Cat: A (Rel-18)  
  
 Source: Google Inc.*

**Decision: Agreed.**

[**R4-2302221**](file:///D:\RAN4%23106\Docs\R4-2302221.zip) **CR for corrections on Rel-17 inter-band CA band combinations in TS38.101-3**

*Type: CR For: (not specified)  
 38.101-3 v17.8.0 CR-0877 rev Cat: F (Rel-17)  
  
 Source: Google Inc.*

**Decision: Agreed.**

[**R4-2302222**](file:///D:\RAN4%23106\Docs\R4-2302222.zip) **CR for corrections on Rel-17 inter-band EN-DC band combination in TS38.101-3**

*Type: CR For: (not specified)  
 38.101-3 v17.8.0 CR-0878 rev Cat: F (Rel-17)  
  
 Source: Google Inc.*

**Decision: Agreed.**

[**R4-2302223**](file:///D:\RAN4%23106\Docs\R4-2302223.zip) **CR for corrections on Rel-18 inter-band EN-DC band combination in TS38.101-3**

*Type: CR For: (not specified)  
 38.101-3 v18.0.0 CR-0879 rev Cat: A (Rel-18)  
  
 Source: Google Inc.*

**Decision: Agreed.**

**MU values for OBW (checked by BS session)**

[**R4-2301903**](file:///D:\RAN4%23106\Docs\R4-2301903.zip) **CR to 38.141-1: MU values for OBW requirements (Rel-17)**

*Type: CR For: Agreement  
 38.141-1 v17.8.0 CR-0316 rev Cat: F (Rel-17)  
  
 Source: NEC*

**Decision: Agreed.**

[**R4-2301904**](file:///D:\RAN4%23106\Docs\R4-2301904.zip) **CR to 38.141-1: MU values for OBW requirements (Rel-18)**

*Type: CR For: Agreement  
 38.141-1 v18.0.0 CR-0317 rev Cat: A (Rel-18)  
  
 Source: NEC*

**Decision: Agreed.**

[**R4-2301905**](file:///D:\RAN4%23106\Docs\R4-2301905.zip) **CR to 38.141-2: MU values for OBW requirements (Rel-17)**

*Type: CR For: Agreement  
 38.141-2 v17.8.0 CR-0462 rev Cat: F (Rel-17)  
  
 Source: NEC*

**Decision: Agreed.**

[**R4-2301906**](file:///D:\RAN4%23106\Docs\R4-2301906.zip) **CR to 38.141-2: MU values for OBW requirements (Rel-18)**

*Type: CR For: Agreement  
 38.141-2 v18.0.0 CR-0463 rev Cat: A (Rel-18)  
  
 Source: NEC*

**Decision: Agreed.**

### 5.2 Rel-17 non-spectrum related WI maintenance

#### 5.2.1 NR repeater

#### 5.2.2 MIMO OTA and FR1 TRP TRS requirements

#### 5.2.3 Further enhancements on MIMO for NR

#### 5.2.4 NR coverage enhancements

##### 5.2.4.1 UE RF requirements

**Sub-topic 2-2: CA/DC core requirements maintenance**

[**R4-2300348**](file:///D:\RAN4%23106\Docs\R4-2300348.zip) **Draft CR to TS38.101-1 on corrections for DMRS bundling with Tx Switching**

*Type: draftCR For: Endorsement  
 38.101-1 v17.8.0 CR- rev Cat: F (Rel-17)  
  
 Source: Apple*

**Decision: Revised to** [**R4-2303690**](file:///D:\RAN4%23106\Docs\R4-2303690.zip) **(from** [**R4-2300348**](file:///D:\RAN4%23106\Docs\R4-2300348.zip)**).**

**[R4-2303690](D:\\RAN4#106\\Docs\\R4-2303690.zip) Draft CR to TS38.101-1 on corrections for DMRS bundling with Tx Switching**

*Type: draftCR For: Endorsement  
 38.101-1 v17.8.0 CR- rev Cat: F (Rel-17)  
  
 Source: Apple, Ericsson*

**Decision: Endorsed.**

##### 5.2.4.2 BS demodulation requirements

#### 5.2.5 Support of reduced capability NR devices

##### 5.2.5.1 UE RF requirements

[**R4-2301846**](file:///D:\RAN4%23106\Docs\R4-2301846.zip) **Discussion on applicability of requirements for RedCap UE**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

**LS**

[**R4-2302089**](file:///D:\RAN4%23106\Docs\R4-2302089.zip) **Clarification on RedCap UE LS from RAN5**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302090**](file:///D:\RAN4%23106\Docs\R4-2302090.zip) **Replied LS on applicability of requirements for RedCap UE**

*Type: LS out For: Approval  
 to RAN5  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302270**](file:///D:\RAN4%23106\Docs\R4-2302270.zip) **Draft reply LS on applicability of requirements for RedCap UE**

*Type: other For: Approval  
 Source: Qualcomm Inc.*

**Decision: Noted.**

[**R4-2302404**](file:///D:\RAN4%23106\Docs\R4-2302404.zip) **Reply LS on applicability of requirements for RedCap UE**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, the questions in by RAN5 is discussed and proposal of LS is followed.

**Decision: Noted.**

**CR**

[**R4-2302329**](file:///D:\RAN4%23106\Docs\R4-2302329.zip) **CR to TS38.101-2 on including Redcap descriptions for FR2 general receiver characteristics**

*Type: CR For: Agreement  
 38.101-2 v17.8.0 CR-0587 rev Cat: D (Rel-17)  
  
 Source: China Unicom*

*Qulacomm: this is not needed.*

*Ericsson: agree with Qualcomm.*

**Decision: Not pursued.**

[**R4-2302533**](file:///D:\RAN4%23106\Docs\R4-2302533.zip) **CR for clarification on applicability of RedCap FR1 Tx requirements**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1437 rev Cat: F (Rel-17)  
  
 Source: CHTTL*

**Discussions:**

Ericsson: there is a general limitation in Chapter 5.

Qualcomm: agree with Ericsson.

Nokia: no need.

Huawei: Support CHTTL CR.

**Decision: Not pursued.**

[**R4-2302534**](file:///D:\RAN4%23106\Docs\R4-2302534.zip) **CR for clarification on applicability of RedCap FR1 Tx requirements**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1438 rev Cat: A (Rel-18)  
  
 Source: CHTTL*

**Decision: Withdrawn.**

##### 5.2.5.2 RRM core requirements

##### 5.2.5.3 RRM performance requirements

##### 5.2.5.4 UE demodulation and CSI requirements

#### 5.2.6 Enhanced IIoT and URLLC support

#### 5.2.7 NR small data transmissions in INACTIVE state

#### 5.2.8 Other NR/LTE WIs

[**R4-2301699**](file:///D:\RAN4%23106\Docs\R4-2301699.zip) **Correction on SRS configurations for SRS antenna switching test cases in R17**

*Type: CR For: Agreement  
 38.133 v17.8.0 CR-2907 rev Cat: F (Rel-17)  
  
 Source: vivo*

*Moved to RRM session*

**Decision:** The document was **not treated**.

[**R4-2301700**](file:///D:\RAN4%23106\Docs\R4-2301700.zip) **Correction on SRS configurations for SRS antenna switching test cases in R18**

*Type: CR For: Agreement  
 38.133 v18.0.0 CR-2908 rev Cat: A (Rel-18)  
  
 Source: vivo*

*Moved to RRM session*

**Decision:** The document was **not treated**.

##### 5.2.8.1 BS RF requirements

##### 5.2.8.2 UE RF requirements

**Sub-topic#1-1 maximum aggregated bandwidth for FR1 CA**

[**R4-2300038**](file:///D:\RAN4%23106\Docs\R4-2300038.zip) **Maximum aggregated BW for intra-band CA and for inter-band CA for FR1**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discuss how to handle maximum aggregated BW based on an approved WF of [R4-2220819](file:///D:\RAN4%23106\Docs\R4-2220819.zip) as well as a RAN2 LS of [R4-2300017](file:///D:\RAN4%23106\Docs\R4-2300017.zip).

**Decision: Noted.**

[**R4-2301593**](file:///D:\RAN4%23106\Docs\R4-2301593.zip) **Further discussion on new IEs for maximum aggregated bandwidth for inter-band CA for FR1**

*Type: discussion For: Decision  
 Source: MediaTek Inc.*

**Decision: Noted.**

[**R4-2301924**](file:///D:\RAN4%23106\Docs\R4-2301924.zip) **Maximum aggregated channel bandwidth for FR1 CA**

*Type: other For: Approval  
 Source: Qualcomm, Verizon*

**Decision: Noted.**

[**R4-2302549**](file:///D:\RAN4%23106\Docs\R4-2302549.zip) **Views on the maximum aggregated channel bandwidth capability signalling for FR1 CA for BCS5**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

**Sub-topic 1-2: UE capability IE for Intra-NC CA gap class**

[**R4-2300148**](file:///D:\RAN4%23106\Docs\R4-2300148.zip) **Correction of UE capability IE for Intra-NC CA gap class (R17)**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1283 rev Cat: F (Rel-17)  
  
 Source: SoftBank Corp.*

**Abstract:**

The referenced IE is corrected.

**Decision: Endorsed.**

[**R4-2300149**](file:///D:\RAN4%23106\Docs\R4-2300149.zip) **Correction of UE capability IE for Intra-NC CA gap class(R18)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1284 rev Cat: A (Rel-18)  
  
 Source: SoftBank Corp.*

**Abstract:**

Mirror of R17 CR

**Decision: Endorsed.**

**Sub-topic 1-3: FR2 new CA bandwidth class**

[**R4-2300366**](file:///D:\RAN4%23106\Docs\R4-2300366.zip) **Signaling for FR2 new CA BW classes**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2300367**](file:///D:\RAN4%23106\Docs\R4-2300367.zip) **LS on signaling for FR2 FBG5 CA BW classes**

*Type: LS out For: Approval  
 to RAN2  
 Source: Apple*

**Decision: Revised to** [**R4-2303689**](file:///D:\RAN4%23106\Docs\R4-2303689.zip) **(from** [**R4-2300367**](file:///D:\RAN4%23106\Docs\R4-2300367.zip)**).**

[**R4-2303689**](file:///D:\RAN4%23106\Docs\R4-2303689.zip) **LS on signaling for FR2 FBG5 CA BW classes**

*Type: LS out For: Approval  
 to RAN2  
 Source: Apple*

**Decision: Approved.**

**Sub-topic 1-4: DC location reporting**

[**R4-2300368**](file:///D:\RAN4%23106\Docs\R4-2300368.zip) **Rel-17 DC location signaling enhancement**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2300369**](file:///D:\RAN4%23106\Docs\R4-2300369.zip) **LS on Rel-17 DC location signaling enhancement**

*Type: LS out For: Approval  
 to RAN2  
 Source: Apple*

**Decision: Revised to** [**R4-2303675**](file:///D:\RAN4%23106\Docs\R4-2303675.zip) **(from** [**R4-2300369**](file:///D:\RAN4%23106\Docs\R4-2300369.zip)**).**

[**R4-2303675**](file:///D:\RAN4%23106\Docs\R4-2303675.zip) **LS on Rel-17 DC location signaling enhancement**

*Type: LS out For: Approval  
 to RAN2  
 Source: Apple*

OPPO: prefer to further discussion. Rel-17 can already support it.

Huawei: want to further check.

**Decision: Noted.**

CR

[**R4-2300712**](file:///D:\RAN4%23106\Docs\R4-2300712.zip) **CR on FR1 CA DC-location reporting**

*Type: CR For: Approval  
 38.101-1 v17.8.0 CR-1325 rev Cat: F (Rel-17)  
  
 Source: Qualcomm, Oppo, Huawei*

**Abstract:**

Removing ambiguity

Nokia: we need further discussion. FR1, image does not apply. FR2, it is said configured carrier. Where are the differences from?

Nokia: after checking, it does not change the exiting issue. It is OK to agree CR. But there is still open issue to be addressed.

Mediatek: we are not ready to agree with the first change.

**Decision: Revised to R4-2303714 (from R4-2300712).**

[**R4-2303714**](file:///D:\RAN4%23106\Docs\R4-2300712.zip) **CR on FR1 CA DC-location reporting**

*Type: CR For: Approval  
 38.101-1 v17.8.0 CR-1325 rev Cat: F (Rel-17)  
  
 Source: Qualcomm, Oppo, Huawei*

**Abstract:**

**Decision: Postponed.**

**R4-2303710 CR on FR1 CA DC-location reporting**

*Type: CR For: Aggreement  
 38.101-1 v CR-1325 rev Cat: A (Rel-18)  
  
 Source: Qualcomm, Oppo, Huawei*

**Decision: Withdrawn.**

[**R4-2300713**](file:///D:\RAN4%23106\Docs\R4-2300713.zip) **CR on FR2 CA DC-location reporting**

*Type: CR For: Approval  
 38.101-2 v17.8.0 CR-0540 rev Cat: F (Rel-17)  
  
 Source: Qualcomm, Oppo, Huawei*

**Abstract:**

Correcttion of errors, removing ambiguity

**Decision: Revised to R4-2303715 (from R4-2300713).**

[**R4-2303715**](file:///D:\RAN4%23106\Docs\R4-2300713.zip) **CR on FR2 CA DC-location reporting**

*Type: CR For: Approval  
 38.101-2 v17.8.0 CR-0540 rev Cat: F (Rel-17)  
  
 Source: Qualcomm, Oppo, Huawei*

**Abstract:**

Correcttion of errors, removing ambiguity

**Decision: Postponed.**

**R4-2303707 CR on FR2 CA DC-location reporting**

*Type: CR For: Approval  
 38.101-2 v CR- rev Cat: A (Rel-18)  
  
 Source: Qualcomm, Oppo, Huawei*

**Decision: Withdrawn.**

**Sub-topic 1-5: miscellaneous**

[**R4-2300261**](file:///D:\RAN4%23106\Docs\R4-2300261.zip) **CR on updating the name of UE capability for UL gap**

*Type: CR For: Agreement  
 38.101-2 v17.8.0 CR-0531 rev Cat: F (Rel-17)  
  
 Source: Apple, Qualcomm*

**Decision: Agreed.**

[**R4-2300262**](file:///D:\RAN4%23106\Docs\R4-2300262.zip) **CR on updating the name of UE capability for UL gap**

*Type: CR For: Agreement  
 38.101-2 v18.0.0 CR-0532 rev Cat: A (Rel-18)  
  
 Source: Apple, Qualcomm*

**Decision: Agreed.**

[**R4-2301248**](file:///D:\RAN4%23106\Docs\R4-2301248.zip) **Correction on the HigherPowerLimitCADC IE name**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0836 rev Cat: F (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Agreed.**

[**R4-2301249**](file:///D:\RAN4%23106\Docs\R4-2301249.zip) **Correction on the HigherPowerLimitCADC IE name**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0837 rev Cat: A (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Agreed.**

**Sub-topic 2-1: co-existence requirements and spectrum emission mask for a single band**

[**R4-2300308**](file:///D:\RAN4%23106\Docs\R4-2300308.zip) **36.101 Rel17 CAT-F: Correction to co-existence requirements of band n8 and n100**

*Type: CR For: Approval  
 36.101 v17.8.0 CR-5901 rev Cat: F (Rel-17)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300309**](file:///D:\RAN4%23106\Docs\R4-2300309.zip) **36.101 Rel18 CAT-A: Correction to co-existence requirements of band n8 and n100**

*Type: CR For: Approval  
 36.101 v18.0.0 CR-5902 rev Cat: A (Rel-18)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300312**](file:///D:\RAN4%23106\Docs\R4-2300312.zip) **TS 38.101-1 Rel-17 CAT-F: Correction to co-existence requirements of band n8 and n100**

*Type: CR For: Approval  
 38.101-1 v17.8.0 CR-1297 rev Cat: F (Rel-17)  
  
 Source: Apple*

**Decision: Revised to** [**R4-2303676**](file:///D:\RAN4%23106\Docs\R4-2303676.zip) **(from** [**R4-2300312**](file:///D:\RAN4%23106\Docs\R4-2300312.zip)**).**

[**R4-2303676**](file:///D:\RAN4%23106\Docs\R4-2303676.zip) **TS 38.101-1 Rel-17 CAT-F: Correction to co-existence requirements of band n8 and n100**

*Type: CR For: Approval  
 38.101-1 v17.8.0 CR-1297 rev Cat: F (Rel-17)  
  
 Source: Apple, Mediatek*

**Decision: Agreed.**

[**R4-2300313**](file:///D:\RAN4%23106\Docs\R4-2300313.zip) **TS 38.101-1 Rel-18 CAT-A: Correction to co-existence requirements of band n8 and n100**

*Type: CR For: Approval  
 38.101-1 v18.0.0 CR-1298 rev Cat: A (Rel-18)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300314**](file:///D:\RAN4%23106\Docs\R4-2300314.zip) **TS 38.101-3 Rel-17 CAT-F: Correction to co-existence requirements of band n8 and n100**

*Type: CR For: Approval  
 38.101-3 v17.8.0 CR-0809 rev Cat: F (Rel-17)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300315**](file:///D:\RAN4%23106\Docs\R4-2300315.zip) **TS 38.101-3 Rel-18 CAT-A: Correction to co-existence requirements of band n8 and n100**

*Type: CR For: Approval  
 38.101-3 v18.0.0 CR-0810 rev Cat: A (Rel-18)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300322**](file:///D:\RAN4%23106\Docs\R4-2300322.zip) **CR for TS 38.101-1 Rel-17 CAT-F: Correction to NRU spectrum emission mask**

*Type: CR For: Approval  
 38.101-1 v17.8.0 CR-1301 rev Cat: F (Rel-17)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300323**](file:///D:\RAN4%23106\Docs\R4-2300323.zip) **CR for TS 38.101-1 Rel-18 CAT-A: Correction to NRU spectrum emission mask**

*Type: CR For: Approval  
 38.101-1 v18.0.0 CR-1302 rev Cat: A (Rel-18)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2301717**](file:///D:\RAN4%23106\Docs\R4-2301717.zip) **Draft CR for UE coexistence correction-r17-F**

*Type: draftCR For: Endorsement  
 38.101-1 v17.8.0 CR- rev Cat: (Rel-17)  
  
 Source: MediaTek Inc.*

**Decision: Merged (with R4-23xxxxx).**

[**R4-2301718**](file:///D:\RAN4%23106\Docs\R4-2301718.zip) **Draft CR for UE coexistence correction-r18-A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: MediaTek Inc.*

**Decision: Withdrawn.**

**Sub-topic 2-2: CA/DC core requirements maintenance**

[**R4-2300310**](file:///D:\RAN4%23106\Docs\R4-2300310.zip) **CR for TS 38.101-1 Rel-17: Adding missing harmonic mixing MSD for CA\_n25-n71**

*Type: CR For: Approval  
 38.101-1 v17.8.0 CR-1295 rev Cat: F (Rel-17)  
  
 Source: Apple*

**Decision: Revised to** [**R4-2303682**](file:///D:\RAN4%23106\Docs\R4-2303682.zip) **(from** [**R4-2300310**](file:///D:\RAN4%23106\Docs\R4-2300310.zip)**).**

[**R4-2303682**](file:///D:\RAN4%23106\Docs\R4-2303682.zip) **CR for TS 38.101-1 Rel-17: Adding missing harmonic mixing MSD for CA\_n25-n71**

*Type: CR For: Approval  
 38.101-1 v17.8.0 CR-1295 rev Cat: F (Rel-17)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300311**](file:///D:\RAN4%23106\Docs\R4-2300311.zip) **CR for TS 38.101-1 Rel-18: Adding missing harmonic mixing MSD for CA\_n25-n71**

*Type: CR For: Approval  
 38.101-1 v18.0.0 CR-1296 rev Cat: A (Rel-18)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300316**](file:///D:\RAN4%23106\Docs\R4-2300316.zip) **CR for TS 36.101 Rel-17 CAT-F: Corrections on band combinations for UE co-existence**

*Type: CR For: Approval  
 36.101 v17.8.0 CR-5903 rev Cat: F (Rel-17)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300317**](file:///D:\RAN4%23106\Docs\R4-2300317.zip) **CR for TS 36.101 Rel-18 CAT-A: Corrections on band combinations for UE co-existence**

*Type: CR For: Approval  
 36.101 v18.0.0 CR-5904 rev Cat: A (Rel-18)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300318**](file:///D:\RAN4%23106\Docs\R4-2300318.zip) **CR for TS 38.101-1 Rel-17 CAT-F: Corrections on band combinations for UE co-existence**

*Type: CR For: Approval  
 38.101-1 v17.8.0 CR-1299 rev Cat: F (Rel-17)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300319**](file:///D:\RAN4%23106\Docs\R4-2300319.zip) **CR for TS 38.101-1 Rel-18 CAT-A: Corrections on band combinations for UE co-existence**

*Type: CR For: Approval  
 38.101-1 v18.0.0 CR-1300 rev Cat: A (Rel-18)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300320**](file:///D:\RAN4%23106\Docs\R4-2300320.zip) **CR for TS 38.101-3 Rel-17 CAT-F: Corrections on band combinations for UE co-existence**

*Type: CR For: Approval  
 38.101-3 v17.8.0 CR-0811 rev Cat: F (Rel-17)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300321**](file:///D:\RAN4%23106\Docs\R4-2300321.zip) **CR for TS 38.101-3 Rel-18 CAT-A: Corrections on band combinations for UE co-existence**

*Type: CR For: Approval  
 38.101-3 v18.0.0 CR-0812 rev Cat: A (Rel-18)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2301102**](file:///D:\RAN4%23106\Docs\R4-2301102.zip) **CR to 38.101-1: Corrections on A-MPR for CA\_NC\_NS\_04**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1347 rev Cat: F (Rel-17)  
  
 Source: Xiaomi*

**Decision: Agreed.**

[**R4-2301320**](file:///D:\RAN4%23106\Docs\R4-2301320.zip) **CR to 38.101-1 R18 corrections on A-MPR for CA\_NC\_NS\_04**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1378 rev Cat: A (Rel-18)  
  
 Source: Xiaomi*

**Decision: Agreed.**

**Sub-topic 2-4: maintenance for power class (with** [**R4-2302277**](file:///D:\RAN4%23106\Docs\R4-2302277.zip)**,** [**R4-2302278**](file:///D:\RAN4%23106\Docs\R4-2302278.zip)**,**

[**R4-2300823**](file:///D:\RAN4%23106\Docs\R4-2300823.zip) **Corrections to the section 6.2D**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2303677**](file:///D:\RAN4%23106\Docs\R4-2303677.zip) **WF on Corrections to the section 6.2D**

*Type: other For: Approval  
 Source: Qualcomm*

**Decision: Noted.**

CR

[**R4-2300746**](file:///D:\RAN4%23106\Docs\R4-2300746.zip) **Correction to UE power classes for CA configurations for HPUE**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1335 rev Cat: F (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

CR to correct the inconsistence between CA power class requirements in clause 5.5A and 6.2A and amendment of requirements in 6.2A

**Decision: Postponed.**

[**R4-2303678**](file:///D:\RAN4%23106\Docs\R4-2303678.zip) **Correction to UE power classes for CA configurations for HPUE**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1335 rev Cat: F (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

CR to correct the inconsistence between CA power class requirements in clause 5.5A and 6.2A and amendment of requirements in 6.2A

**Decision: Postponed.**

[**R4-2300747**](file:///D:\RAN4%23106\Docs\R4-2300747.zip) **Correction to UE power classes for CA configurations for HPUE**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1336 rev Cat: A (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

CR to correct the inconsistence between CA power class requirements in clause 5.5A and 6.2A and amendment of requirements in 6.2A

**Decision: Withdrawn.**

[**R4-2300824**](file:///D:\RAN4%23106\Docs\R4-2300824.zip) **CR for 38.101-1 Corrections to the section 6.2D**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1340 rev Cat: F (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Decision: Agreed.**

[**R4-2300825**](file:///D:\RAN4%23106\Docs\R4-2300825.zip) **CR for 38.101-1 Corrections to the section 6.2D**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1341 rev Cat: A (Rel-18)  
  
 Source: Qualcomm Incorporated*

**Decision: Agreed.**

[**R4-2302439**](file:///D:\RAN4%23106\Docs\R4-2302439.zip) **CR for 38.101-1: Clarification of PC1.5 requirements**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1431 rev Cat: F (Rel-17)  
  
 Source: T-Mobile USA*

*CHTTL had comments.*

**Decision: Revised to** [**R4-2303679**](file:///D:\RAN4%23106\Docs\R4-2303679.zip) **(from** [**R4-2302439**](file:///D:\RAN4%23106\Docs\R4-2302439.zip)**).**

[**R4-2303679**](file:///D:\RAN4%23106\Docs\R4-2303679.zip) **CR for 38.101-1: Clarification of PC1.5 requirements**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1431 rev Cat: F (Rel-17)  
  
 Source: T-Mobile USA*

*CHTTL had comments.*

**Decision: Agreed.**

[**R4-2302440**](file:///D:\RAN4%23106\Docs\R4-2302440.zip) **CR for 38.101-1: Clarification of PC1.5 requirements (Rel-18 Cat A)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1432 rev Cat: A (Rel-18)  
  
 Source: T-Mobile USA*

**Decision: Agreed.**

[**R4-2301113**](file:///D:\RAN4%23106\Docs\R4-2301113.zip) **Rel17 Cat F CR Introduce the missing Pcmax tolerance requirement for PC2 intra-band NC UL CA**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1349 rev Cat: F (Rel-17)  
  
 Source: Samsung, Huawei*

**Decision: Revised to** [**R4-2303680**](file:///D:\RAN4%23106\Docs\R4-2303680.zip) **(from** [**R4-2301113**](file:///D:\RAN4%23106\Docs\R4-2301113.zip)**).**

[**R4-2303680**](file:///D:\RAN4%23106\Docs\R4-2303680.zip) **Rel17 Cat F CR Introduce the missing Pcmax tolerance requirement for PC2 intra-band NC UL CA**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1349 rev Cat: F (Rel-17)  
  
 Source: Samsung, Huawei*

*Coverage issue.*

**Decision: Agreed.**

[**R4-2301114**](file:///D:\RAN4%23106\Docs\R4-2301114.zip) **Rel18 Cat A CR Introduce the missing Pcmax tolerance requirement for PC2 intra-band NC UL CA**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1350 rev Cat: A (Rel-18)  
  
 Source: Samsung, Huawei*

**Decision: Agreed.**

[**R4-2301115**](file:///D:\RAN4%23106\Docs\R4-2301115.zip) **Rel17 Cat F CR Add verification clarification for OOB emission and SE emission for intra-band NC UL CA**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1351 rev Cat: F (Rel-17)  
  
 Source: Samsung, Huawei*

**Decision: Revised to** [**R4-2303681**](file:///D:\RAN4%23106\Docs\R4-2303681.zip) **(from** [**R4-2301115**](file:///D:\RAN4%23106\Docs\R4-2301115.zip)**).**

[**R4-2303681**](file:///D:\RAN4%23106\Docs\R4-2303681.zip) **Rel17 Cat F CR Add verification clarification for OOB emission and SE emission for intra-band NC UL CA**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1351 rev Cat: F (Rel-17)  
  
 Source: Samsung, Huawei*

*Coverage issue.*

**Decision: Agreed.**

[**R4-2301116**](file:///D:\RAN4%23106\Docs\R4-2301116.zip) **Rel18 Cat A CR Add verification clarification for OOB emission and SE emission for intra-band NC UL CA**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1352 rev Cat: A (Rel-18)  
  
 Source: Samsung, Huawei*

**Decision: Agreed.**

[**R4-2301240**](file:///D:\RAN4%23106\Docs\R4-2301240.zip) **Correct the Pcmax for intra-band non-contiguous CA to support HPUE**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1374 rev Cat: F (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Agreed.**

[**R4-2301241**](file:///D:\RAN4%23106\Docs\R4-2301241.zip) **Correct the Pcmax for intra-band non-contiguous CA to support HPUE**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1375 rev Cat: A (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Agreed.**

[**R4-2301246**](file:///D:\RAN4%23106\Docs\R4-2301246.zip) **Apply NOTE1 for n263 intra-band CA**

*Type: CR For: Agreement  
 38.101-2 v17.8.0 CR-0566 rev Cat: F (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Agreed.**

[**R4-2301247**](file:///D:\RAN4%23106\Docs\R4-2301247.zip) **Apply NOTE1 for n263 intra-band CA**

*Type: CR For: Agreement  
 38.101-2 v18.0.0 CR-0567 rev Cat: A (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Agreed.**

**Sub-topic 2-5: V2X/Sidelink**

[**R4-2300939**](file:///D:\RAN4%23106\Docs\R4-2300939.zip) **CR for TS 38.101-1, Correction of minor errors in suffix E (NR V2X/Sidelink) requirements**

*Type: CR For: Approval  
 38.101-1 v17.8.0 CR-1343 rev Cat: F (Rel-17)  
  
 Source: LG Electronics*

**Decision: Agreed.**

[**R4-2303683**](file:///D:\RAN4%23106\Docs\R4-2303683.zip) **CR for TS 38.101-1, Correction of minor errors in suffix E (NR V2X/Sidelink) requirements**

*Type: CR For: Approval  
 38.101-1 v CR- rev Cat: A (Rel-18)  
  
 Source: LG Electronics*

**Decision: Agreed.**

[**R4-2300208**](file:///D:\RAN4%23106\Docs\R4-2300208.zip) **CR TS 38.101-1: Correction on NR V2X requirements in Rel-17**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1288 rev Cat: F (Rel-17)  
  
 Source: Meta Ireland*

**Abstract:**

In NR V2X RF requirements, the uplink terminology is used for NR V2X operatin in single carrier. Also, the uncleared sentence and some typos are fixed in Rx requirmeents for NR V2X UE

**Decision: Revised to** [**R4-2303660**](file:///D:\RAN4%23106\Docs\R4-2303660.zip) **(from** [**R4-2300208**](file:///D:\RAN4%23106\Docs\R4-2300208.zip)**).**

[**R4-2303660**](file:///D:\RAN4%23106\Docs\R4-2303660.zip) **CR TS 38.101-1: Correction on NR V2X requirements in Rel-17**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1288 rev Cat: F (Rel-17)  
  
 Source: Meta Ireland*

**Abstract:**

In NR V2X RF requirements, the uplink terminology is used for NR V2X operatin in single carrier. Also, the uncleared sentence and some typos are fixed in Rx requirmeents for NR V2X UE

**Decision: Agreed.**

[**R4-2300209**](file:///D:\RAN4%23106\Docs\R4-2300209.zip) **CR TS 38.101-1: Correction on NR V2X requirements in Rel-18**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1289 rev Cat: A (Rel-18)  
  
 Source: Meta Ireland*

**Abstract:**

this is mirror CR from [R4-2300208](file:///D:\RAN4%23106\Docs\R4-2300208.zip)

**Decision: Agreed.**

[**R4-2301103**](file:///D:\RAN4%23106\Docs\R4-2301103.zip) **CR to 38.101-1 R18 corrections on A-MPR for CA\_NC\_NS\_04**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1348 rev Cat: A (Rel-17)  
  
 Source: Xiaomi*

**Decision:** The document was **withdrawn**.

##### 5.2.8.3 RRM requirements

##### 5.2.8.4 Demodulation and CSI requirements

### 5.3 Rel-17 TEI

**CRs related to irregular channel bandwidth [123]**

[**R4-2300488**](file:///D:\RAN4%23106\Docs\R4-2300488.zip) **Clarification of the 100kHz channel raster for bands below 3GHz**

*Type: draftCR For: Endorsement  
 38.104 v17.8.0 CR- rev Cat: (Rel-17)  
  
 Source: Intel Corporation*

**Decision: Not pursued.**

[**R4-2300489**](file:///D:\RAN4%23106\Docs\R4-2300489.zip) **Clarification of the 100kHz channel raster for bands below 3GHz**

*Type: draftCR For: Endorsement  
 38.101-1 v17.8.0 CR- rev Cat: (Rel-17)  
  
 Source: Intel Corporation*

**Decision: Not pursued.**

[**R4-2300490**](file:///D:\RAN4%23106\Docs\R4-2300490.zip) **Clarification of the 100kHz channel raster for bands below 3GHz**

*Type: draftCR For: Endorsement  
 38.101-2 v17.8.0 CR- rev Cat: (Rel-17)  
  
 Source: Intel Corporation*

**Decision: Not pursued.**

### 5.4 Moderator summary and conclusions

**[106][102] R17\_spectrum\_maintenance, AI 5.1 – Dominique Evereare (Ericsson)**

[**R4-2302795**](file:///D:\RAN4%23106\Docs\R4-2302795.zip) **Topic summary for [106][102] R17\_spectrum\_maintenance**

*Type: other For: Information  
 Source: Moderator (Ericsson)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**[106][103] R17\_nonspectrumUERF\_maintenance, AI 5.2.4, 5.2.4.1, 5.2.5.1, 5.2.8, 5.2.8.2, 5.3, 6.2.1 – Aijun Cao (Mediatek)**

[**R4-2302796**](file:///D:\RAN4%23106\Docs\R4-2302796.zip) **Topic summary for [106][103] R17\_nonspectrumUERF\_maintenance**

*Type: other For: Information  
 Source: Moderator (Mediatek)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303548**](file:///D:\RAN4%23106\Docs\R4-2303548.zip) **Ad hoc minutes for R17\_nonspectrumUERF\_maintenance**

*Type: other For: Approval  
 Source: Moderator (Mediatek)*

**Decision: Approved.**

[**R4-2303685**](file:///D:\RAN4%23106\Docs\R4-2303685.zip) **LS on UE signalling for the maximum aggregated bandwidth for FR1 CA**

*Type: other For: Approval  
 Source: Qualcomm*

**Decision: Approved.**

## 6 Rel-17 non-spectrum related on-going work items for NR and LTE

This agenda item is for Rel-17 non-spectrum related on-going WIs for NR and LTE that are led by other working group.

### 6.1 Solutions for NR to support non-terrestrial networks (NTN)

#### 6.1.1 System parameters and SAN RF requirement maintenance

#### 6.1.2 SAN RF conformance testing

#### 6.1.3 UE RF requirement maintenance

**[142] Topic #2: Maintenance CR for TS38.101-5**

[**R4-2300298**](file:///D:\RAN4%23106\Docs\R4-2300298.zip) **Correction of the out-of-band blocking requirements**

*Type: CR For: Approval  
 38.101-5 v17.2.0 CR-0017 rev Cat: F (Rel-17)  
  
 Source: Apple*

*Cover page error.*

**Decision: Revised to** [**R4-2303532**](file:///D:\RAN4%23106\Docs\R4-2303532.zip) **(from** [**R4-2300298**](file:///D:\RAN4%23106\Docs\R4-2300298.zip)**).**

[**R4-2303532**](file:///D:\RAN4%23106\Docs\R4-2303532.zip) **Correction of the out-of-band blocking requirements**

*Type: CR For: Approval  
 38.101-5 v17.2.0 CR-0017 rev Cat: F (Rel-17)  
  
 Source: Apple*

*Cover page error.*

**Decision: Agreed.**

[**R4-2300299**](file:///D:\RAN4%23106\Docs\R4-2300299.zip) **Correction of the out-of-band blocking requirements**

*Type: CR For: Approval  
 38.101-5 v18.0.0 CR-0018 rev Cat: A (Rel-18)  
  
 Source: Apple*

**Decision: Revised to** [**R4-2303661**](file:///D:\RAN4%23106\Docs\R4-2303661.zip) **(from** [**R4-2300299**](file:///D:\RAN4%23106\Docs\R4-2300299.zip)**).**

**[R4-2303661](D:\\RAN4#106\\Docs\\R4-2303661.zip) Correction of the out-of-band blocking requirements**

*Type: CR For: Approval  
 38.101-5 v18.0.0 CR-0018 rev Cat: A (Rel-18)  
  
 Source: Apple*

**Decision: Agreed.**

#### 6.1.4 RRM core requirement maintenance

#### 6.1.5 RRM performance requirements

#### 6.1.6 Demodulation requirements

#### 6.1.7 Moderator summary and conclusions

### 6.2 Extending current NR operation to 71GHz

#### 6.2.1 Operation bands, system parameter and UE RF maintenance

**[103] Sub-topic 2-3: maintenance for system parameters**

[**R4-2301520**](file:///D:\RAN4%23106\Docs\R4-2301520.zip) **Frequency range definition update for TS 38.101-3 (Rel-15)**

*Type: CR For: Agreement  
 38.101-3 v15.20.0 CR-0855 rev Cat: F (Rel-15)  
  
 Source: vivo*

**Decision: Not pursued.**

[**R4-2301521**](file:///D:\RAN4%23106\Docs\R4-2301521.zip) **Frequency range definition update for TS 38.101-3 (Rel-16)**

*Type: CR For: Agreement  
 38.101-3 v16.14.0 CR-0856 rev Cat: A (Rel-16)  
  
 Source: vivo*

**Decision: Withdrawn.**

[**R4-2301522**](file:///D:\RAN4%23106\Docs\R4-2301522.zip) **Frequency range definition update for TS 38.101-3 (Rel-17)**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0857 rev Cat: F (Rel-17)  
  
 Source: vivo*

**Decision: Agreed.**

[**R4-2301523**](file:///D:\RAN4%23106\Docs\R4-2301523.zip) **Frequency range definition update for TS 38.101-3 (Rel-18)**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0858 rev Cat: A (Rel-18)  
  
 Source: vivo*

**Decision: Agreed.**

[**R4-2301525**](file:///D:\RAN4%23106\Docs\R4-2301525.zip) **Frequency range definition update for TS 38.101-1 (Rel-17)**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1387 rev Cat: F (Rel-17)  
  
 Source: vivo*

**Decision: Agreed.**

[**R4-2301524**](file:///D:\RAN4%23106\Docs\R4-2301524.zip) **Frequency range definition update for TS 38.101-1 (Rel-18)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1386 rev Cat: A (Rel-18)  
  
 Source: vivo*

**Decision: Agreed.**

[**R4-2301526**](file:///D:\RAN4%23106\Docs\R4-2301526.zip) **Frequency range definition update for TS 38.101-1 (Rel-16)**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1388 rev Cat: A (Rel-16)  
  
 Source: vivo*

**Decision: Withdrawn.**

[**R4-2301527**](file:///D:\RAN4%23106\Docs\R4-2301527.zip) **Frequency range definition update for TS 38.101-1 (Rel-15)**

*Type: CR For: Agreement  
 38.101-1 v15.20.0 CR-1389 rev Cat: F (Rel-15)  
  
 Source: vivo*

**Decision: Withdrawn.**

[**R4-2301528**](file:///D:\RAN4%23106\Docs\R4-2301528.zip) **Frequency range definition update for TS 38.101-2 (Rel-16)**

*Type: CR For: Agreement  
 38.101-2 v16.14.0 CR-0572 rev Cat: A (Rel-16)  
  
 Source: vivo*

**Decision: Withdrawn.**

[**R4-2301529**](file:///D:\RAN4%23106\Docs\R4-2301529.zip) **Frequency range definition update for TS 38.101-2 (Rel-15)**

*Type: CR For: Agreement  
 38.101-2 v15.20.0 CR-0573 rev Cat: F (Rel-15)  
  
 Source: vivo*

**Decision: Withdrawn.**

[**R4-2301530**](file:///D:\RAN4%23106\Docs\R4-2301530.zip) **Discussion on frequency range definition update for TS 38.101-1/2/3**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301675**](file:///D:\RAN4%23106\Docs\R4-2301675.zip) **draftCR to include FR2-2 range to 38.101-1 (Rel-17)**

*Type: draftCR For: Endorsement  
 38.101-1 v17.8.0 CR- rev Cat: F (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Not pursued.**

[**R4-2301674**](file:///D:\RAN4%23106\Docs\R4-2301674.zip) **draftCR to include FR2-2 range to 38.101-1 (Rel-18)**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: A (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Withdrawn.**

**Sub-topic 2-4: maintenance for power class**

[**R4-2300493**](file:///D:\RAN4%23106\Docs\R4-2300493.zip) **FR2-2 maintenance – power class aspects**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

[**R4-2300494**](file:///D:\RAN4%23106\Docs\R4-2300494.zip) **CR to 38.101-2: FR2-2 power class content**

*Type: CR For: Agreement  
 38.101-2 v17.8.0 CR-0534 rev Cat: F (Rel-17)  
  
 Source: Intel Corporation*

**Decision: Agreed.**

[**R4-2300495**](file:///D:\RAN4%23106\Docs\R4-2300495.zip) **CR for TS 38.101-2: FR2-2 power class content**

*Type: CR For: Agreement  
 38.101-2 v18.0.0 CR-0535 rev Cat: A (Rel-18)  
  
 Source: Intel Corporation*

**Decision: Agreed.**

#### 6.2.2 BS RF requirements maintenance

#### 6.2.3 BS RF conformance testing

#### 6.2.4 RRM core requirement maintenance

#### 6.2.5 RRM performance requirement maintenance

#### 6.2.6 Demodulation and CSI requirements

#### 6.2.7 Moderator summary and conclusions

## 7 Rel-18 maintenance for LTE and NR

**[106][104] R18\_spectrum\_maintenance, AI 7, 7.1, 7.2 – Suhwan Lim (Meta)**

[**R4-2302797**](file:///D:\RAN4%23106\Docs\R4-2302797.zip) **Topic summary for [106][104] R18\_spectrum\_maintenance**

*Type: other For: Information  
 Source: Moderator (Meta)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

-----------------------------------------------------------------------------------------------------------------

This is for Rel-18 maintenance for LTE and NR as LTE\_CA\_intra\_B8 and LTE\_TDD\_1670\_1675MHz were both completedi n Dec 2022.

There are three TEI18 CRs related to the following specifications:

- 38.101-1

- 38.101-2

- 38.101-3

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| TDoc | Title | Source | Type | For | Agenda item | TDoc Status | Rel | Spec | Ver | Related WIs | CR | CR rev | CR cat |
| [**R4-2300372**](file:///D:\RAN4%23106\Docs\R4-2300372.zip) | CR 38.101-1: Rel-18 Band combinations bug fixing and adding missing fallbacks | Apple | CR | Agreement | 7 | available | [**Rel-18**](https://portal.3gpp.org/desktopmodules/Release/ReleaseDetails.aspx?releaseId=193) | [**38.101-1**](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3283) | 18.0.0 | [**TEI18**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=920042) | 1309 |  | F |
| [**R4-2300373**](file:///D:\RAN4%23106\Docs\R4-2300373.zip) | CR 38.101-2: Rel-18 Band combinations bug fixing | Apple | CR | Agreement | 7 | available | [**Rel-18**](https://portal.3gpp.org/desktopmodules/Release/ReleaseDetails.aspx?releaseId=193) | [**38.101-2**](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3284) | 18.0.0 | [**TEI18**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=920042) | 0533 |  | F |
| [**R4-2300374**](file:///D:\RAN4%23106\Docs\R4-2300374.zip) | CR 38.101-3: Rel-18 Band combinations bug fixing and adding missing fallbacks | Apple | CR | Agreement | 7 | available | [**Rel-18**](https://portal.3gpp.org/desktopmodules/Release/ReleaseDetails.aspx?releaseId=193) | [**38.101-3**](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3285) | 18.0.0 | [**TEI18**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=920042) | 0816 |  | F |

**Topic #2: Maintenance of NR band combination**

[**R4-2300372**](file:///D:\RAN4%23106\Docs\R4-2300372.zip) **CR 38.101-1: Rel-18 Band combinations bug fixing and adding missing fallbacks**

*Type: CR For: Agreement  
 36.101-1 v18.0.0 CR-1309 rev Cat: F (Rel-18)  
  
 Source: Apple*

**Decision: Revised to** [**R4-2303554**](file:///D:\RAN4%23106\Docs\R4-2303554.zip) **(from** [**R4-2300372**](file:///D:\RAN4%23106\Docs\R4-2300372.zip)**).**

[**R4-2303554**](file:///D:\RAN4%23106\Docs\R4-2303554.zip) **CR 38.101-1: Rel-18 Band combinations bug fixing and adding missing fallbacks**

*Type: CR For: Agreement  
 36.101-1 v18.0.0 CR-1309 rev Cat: F (Rel-18)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300373**](file:///D:\RAN4%23106\Docs\R4-2300373.zip) **CR 38.101-2: Rel-18 Band combinations bug fixing**

*Type: CR For: Agreement  
 36.101-2 v18.0.0 CR-0533 rev Cat: F (Rel-18)  
  
 Source: Apple*

**Decision: Revised to** [**R4-2303555**](file:///D:\RAN4%23106\Docs\R4-2303555.zip) **(from** [**R4-2300373**](file:///D:\RAN4%23106\Docs\R4-2300373.zip)**).**

[**R4-2303555**](file:///D:\RAN4%23106\Docs\R4-2303555.zip) **CR 38.101-2: Rel-18 Band combinations bug fixing**

*Type: CR For: Agreement  
 36.101-2 v18.0.0 CR-0533 rev Cat: F (Rel-18)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300374**](file:///D:\RAN4%23106\Docs\R4-2300374.zip) **CR 38.101-3: Rel-18 Band combinations bug fixing and adding missing fallbacks**

*Type: CR For: Agreement  
 36.101-3 v18.0.0 CR-0816 rev Cat: F (Rel-18)  
  
 Source: Apple*

**Decision: Revised to** [**R4-2303556**](file:///D:\RAN4%23106\Docs\R4-2303556.zip) **(from** [**R4-2300374**](file:///D:\RAN4%23106\Docs\R4-2300374.zip)**).**

**[R4-2303556](D:\\RAN4#106\\Docs\\R4-2303556.zip) CR 38.101-3: Rel-18 Band combinations bug fixing and adding missing fallbacks**

*Type: CR For: Agreement  
 36.101-3 v18.0.0 CR-0816 rev Cat: F (Rel-18)  
  
 Source: Apple*

**Decision: Agreed.**

### 7.1 LTE intra-band contiguous CA for band 8

### 7.2 Introduction of LTE TDD band in 1670-1675 MHz

**Topic #1: Maintenance of LTE TDD band in 1670 -1675 MHz (Band 54)**

[**R4-2300064**](file:///D:\RAN4%23106\Docs\R4-2300064.zip) **Adds reference for additional spurious emission levels for Band 54**

*Type: CR For: Agreement  
 36.104 v18.0.0 CR-4964 rev Cat: F (Rel-18)  
  
 Source: Ligado Networks, Nokia, Nokia Shanghai Bell*

**Decision: Agreed.**

[**R4-2300065**](file:///D:\RAN4%23106\Docs\R4-2300065.zip) **Adds reference for additional spurious emission levels for Band 54**

*Type: CR For: Agreement  
 36.141 v18.0.0 CR-1345 rev Cat: F (Rel-18)  
  
 Source: Ligado Networks, Nokia, Nokia Shanghai Bell*

**Decision: Agreed.**

[**R4-2300066**](file:///D:\RAN4%23106\Docs\R4-2300066.zip) **Adds reference for additional spurious emission levels for Band 54**

*Type: CR For: Agreement  
 37.104 v18.0.0 CR-0975 rev Cat: F (Rel-18)  
  
 Source: Ligado Networks, Nokia, Nokia Shanghai Bell*

**Decision: Agreed.**

[**R4-2300067**](file:///D:\RAN4%23106\Docs\R4-2300067.zip) **Adds reference for additional spurious emission levels for Band 54**

*Type: CR For: Agreement  
 37.141 v18.0.0 CR-1028 rev Cat: F (Rel-18)  
  
 Source: Ligado Networks, Nokia, Nokia Shanghai Bell*

**Decision: Agreed.**

[**R4-2302281**](file:///D:\RAN4%23106\Docs\R4-2302281.zip) **CR to TS 37.105: Band 54 additional spurious clarification**

*Type: CR For: Agreement  
 37.105 v18.0.0 CR-0274 rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 37.105, it clarifies the additional spurious requirement for LTE TDD band 54

**Decision: Agreed.**

[**R4-2302282**](file:///D:\RAN4%23106\Docs\R4-2302282.zip) **CR to TS 37.145-1: LTE TDD band 54 additional spurious clarification**

*Type: CR For: Agreement  
 37.145-1 v18.0.0 CR-0307 rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 37.145-1, it clarifies the additional spurious requirement for LTE TDD band 54

**Decision: Revised to** [**R4-2303585**](file:///D:\RAN4%23106\Docs\R4-2303585.zip) **(from** [**R4-2302282**](file:///D:\RAN4%23106\Docs\R4-2302282.zip)**).**

[**R4-2303585**](file:///D:\RAN4%23106\Docs\R4-2303585.zip) **CR to TS 37.145-1: LTE TDD band 54 additional spurious clarification**

*Type: CR For: Agreement  
 37.145-1 v18.0.0 CR-0307 rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 37.145-1, it clarifies the additional spurious requirement for LTE TDD band 54

**Decision: Agreed.**

[**R4-2302283**](file:///D:\RAN4%23106\Docs\R4-2302283.zip) **CR to TS 37.145-2: LTE TDD band 54 additional spurious clarification**

*Type: CR For: Agreement  
 37.145-2 v18.0.0 CR-0347 rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 37.145-2, it clarifies the additional spurious requirement for LTE TDD band 54

**Decision: Revised to** [**R4-2303586**](file:///D:\RAN4%23106\Docs\R4-2303586.zip) **(from** [**R4-2302283**](file:///D:\RAN4%23106\Docs\R4-2302283.zip)**).**

[**R4-2303586**](file:///D:\RAN4%23106\Docs\R4-2303586.zip) **CR to TS 37.145-2: LTE TDD band 54 additional spurious clarification**

*Type: CR For: Agreement  
 37.145-2 v18.0.0 CR-0347 rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 37.145-2, it clarifies the additional spurious requirement for LTE TDD band 54

**Decision: Agreed.**

[**R4-2300068**](file:///D:\RAN4%23106\Docs\R4-2300068.zip) **Updates to spurious emissions UE coexistence table**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1281 rev Cat: F (Rel-18)  
  
 Source: Ligado Networks*

**Decision: Agreed.**

[**R4-2300069**](file:///D:\RAN4%23106\Docs\R4-2300069.zip) **Updates to spurious emissions UE coexistence table**

*Type: CR For: Agreement  
 36.101 v18.0.0 CR-5899 rev Cat: F (Rel-18)  
  
 Source: Ligado Networks*

**Decision: Agreed.**

**Withdrawn CRs**

[**R4-2301471**](file:///D:\RAN4%23106\Docs\R4-2301471.zip) **CR to TS 37.105: LTE TDD band 54 additional spurious clarification**

*Type: CR For: Agreement  
 37.105 v18.0.0 CR-0267 rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 37.105, it clarifies the additional spurious requirement for LTE TDD band 54

**Decision:** The document was **withdrawn**.

[**R4-2301472**](file:///D:\RAN4%23106\Docs\R4-2301472.zip) **CR to TS 37.145-1: LTE TDD band 54 additional spurious clarification**

*Type: CR For: Agreement  
 37.145-1 v18.0.0 CR-0304 rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 37.145-1, it clarifies the additional spurious requirement for LTE TDD band 54

**Decision:** The document was **withdrawn**.

[**R4-2301473**](file:///D:\RAN4%23106\Docs\R4-2301473.zip) **CR to TS 37.145-2: LTE TDD band 54 additional spurious clarification**

*Type: CR For: Agreement  
 37.145-2 v18.0.0 CR-0343 rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 37.145-2, it clarifies the additional spurious requirement for LTE TDD band 54

**Decision:** The document was **withdrawn**.

[**R4-2302261**](file:///D:\RAN4%23106\Docs\R4-2302261.zip) **CR to TS 37.105: LTE TDD band 54 additional spurious clarification**

*Type: CR For: Agreement  
 37.105 v18.0.0 CR-0273 rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 37.105, it clarifies the additional spurious requirement for LTE TDD band 54

**Decision:** The document was **withdrawn**.

[**R4-2302262**](file:///D:\RAN4%23106\Docs\R4-2302262.zip) **CR to TS 37.145-1: LTE TDD band 54 additional spurious clarification**

*Type: CR For: Agreement  
 37.145-1 v18.0.0 CR-0306 rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 37.145-1, it clarifies the additional spurious requirement for LTE TDD band 54

**Decision:** The document was **withdrawn**.

[**R4-2302263**](file:///D:\RAN4%23106\Docs\R4-2302263.zip) **CR to TS 37.145-2: LTE TDD band 54 additional spurious clarification**

*Type: CR For: Agreement  
 37.145-2 v18.0.0 CR-0346 rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 37.145-2, it clarifies the additional spurious requirement for LTE TDD band 54

**Decision:** The document was **withdrawn**.

## 8 Rel-18 on-going spectrum related WIs for NR

*All the rapporteurs of basket WIs are expected to reserve tdoc numbers for big CR(s), draftTR (if needed), and revised WID before the meeting.*

*- Baskets for new band combinations are related to agenda item 8.1 – 8.15.*

*- Baskets for high power UE are related to agenda item 8.16 – 8.23*

*- Baskets for other aspects are arelated to agenda item 8.24 – 8.29.*

*- New bands are related to agenda item 8.30 – 8.34.*

### 8.1 Issues arising from basket WIs but not subject to block approval

#### 8.1.1 UE RF requirements

##### 8.1.1.1 band combinations with UL configurations including intra-band ULCA with IMD or triple beat issues

**Topic #1: UL Intra-band CA/DC MSD and A-MPR**

[**R4-2300413**](file:///D:\RAN4%23106\Docs\R4-2300413.zip) **IMD analysis of NC intra-band CA in uplink**

*Type: other For: Approval  
 Source: Nokia*

**Agreement:**

* Proposal 1, proposal 2 and proposal 3 are agreed.

**Decision: Noted.**

[**R4-2302526**](file:///D:\RAN4%23106\Docs\R4-2302526.zip) **Discussion on the configured output power requirement for intra-band contiguous NE-DC in Rel.18**

*Type: discussion For: (not specified)  
 Source: CHTTL*

**Decision: Noted.**

TP

[**R4-2301073**](file:///D:\RAN4%23106\Docs\R4-2301073.zip) **TP for 38.718-01-01 to include CA\_n26(2A)**

*Type: pCR For: Approval  
 38.718-01-01 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, Telstra*

**Abstract:**

TP for 38.718-01-01 to include CA\_n26(2A)

**Decision: Revised to** [**R4-2303574**](file:///D:\RAN4%23106\Docs\R4-2303574.zip) **(from** [**R4-2301073**](file:///D:\RAN4%23106\Docs\R4-2301073.zip)**).**

[**R4-2303574**](file:///D:\RAN4%23106\Docs\R4-2303574.zip) **TP for 38.718-01-01 to include CA\_n26(2A)**

*Type: pCR For: Approval  
 38.718-01-01 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, Telstra*

**Abstract:**

TP for 38.718-01-01 to include CA\_n26(2A)

**Decision: Approved.**

[**R4-2303575**](file:///D:\RAN4%23106\Docs\R4-2303575.zip) **TP for IMD analysis of NC intra-band CA in uplink**

*Type: pCR For: Approval  
 38.718-01-01 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia*

**Decision: Withdrawn.**

CR

[**R4-2300938**](file:///D:\RAN4%23106\Docs\R4-2300938.zip) **CA\_n26(2A) MSD analysis for TR 38.718-01-01**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Noted.**

[**R4-2302616**](file:///D:\RAN4%23106\Docs\R4-2302616.zip) **CA\_n26(2A) ?RIBNC**

*Type: other For: Approval  
 Source: Murata Manufacturing Co Ltd.*

**Decision: Noted.**

[**R4-2302528**](file:///D:\RAN4%23106\Docs\R4-2302528.zip) **draft CR for configured output power requirement for intra-band contiguous NE-DC**

*Type: draftCR For: Approval  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: CHTTL, SGS Wireless*

**Decision: Postponed.**

**Topic #2: Inter band combinations including intra-band ULCA in their UL configurations**

[**R4-2302043**](file:///D:\RAN4%23106\Docs\R4-2302043.zip) **Discussion on Band combinations related to UL configuration DC\_3C\_n28A**

*Type: other For: Approval  
 Source: Huawei, HiSilicon DT*

**Decision: Noted.**

[**R4-2300364**](file:///D:\RAN4%23106\Docs\R4-2300364.zip) **MSD requirements for n5\_n77 (2A)**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

CR

[**R4-2302044**](file:///D:\RAN4%23106\Docs\R4-2302044.zip) **CR for TS 38.101-3 to introduce band combinations back with UL configuration DC\_3C\_n28A**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0869 rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon DT*

**Decision: Endorsed.**

[**R4-2302338**](file:///D:\RAN4%23106\Docs\R4-2302338.zip) **CR for TS 38.101-3 to introduce band combinations back with UL configuration DC\_3C\_n28A**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0869 rev 1 Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon, DT*

(Replaces [R4-2302044](file:///D:\RAN4%23106\Docs\R4-2302044.zip))

Ad hoc Chari: Proponent need to check whether these 3 band cases (requested in R17 but removed due to TB) have been re-requested in R18, but there are no technical objection to the CR

**Decision: Withdrawn.**

##### 8.1.1.2 Others

**Topic #3: 1UL LB-LB combinations**

[**R4-2302238**](file:///D:\RAN4%23106\Docs\R4-2302238.zip) **Analysis for CA\_n71A-n85A**

*Type: other For: Approval  
 Source: Qualcomm Finland RFFE Oy*

**Abstract:**

Analysis and proposals on CA\_n71A-n85A are provided in this contribution.

**Decision: Noted.**

[**R4-2302631**](file:///D:\RAN4%23106\Docs\R4-2302631.zip) **CA\_n71-n85 LB-LB 1UL/2DLCA MSD**

*Type: other For: Approval  
 Source: Murata Manufacturing Co Ltd.*

**Decision: Noted.**

[**R4-2300758**](file:///D:\RAN4%23106\Docs\R4-2300758.zip) **1UL cross band MSDs for CA\_n71-n85 and DC\_12\_n71**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution we provide cross band MSD evaluation for CA\_n71-n85 and DC\_12\_n71.

**Decision: Noted.**

TP/CR

[**R4-2300414**](file:///D:\RAN4%23106\Docs\R4-2300414.zip) **TP to TR 38.717-02-01: Addition of CA\_n71-n85**

*Type: pCR For: Approval  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia, T-Mobile USA*

**Decision: Postponed.**

**Topic #4: Band combinations requiring experts’ review**

[**R4-2302739**](file:///D:\RAN4%23106\Docs\R4-2302739.zip) **CA\_n8-n3 and related combination n8 H2 MSD in n3**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution we review this exception in the light of the use of band n8 and n3 by many operators across the world and in comparison to similar cases and would like to check with the group how this should be handled for CA\_n8-n3 and related LTE CA

**Further discuss the following issues in the future meeting**

* Further discuss whether and how to update the MSD value for CA\_n3-n8
  + FFS on whether to change MR-DC with band 3/n3 and band 8/n8.

**Decision: Noted.**

[**R4-2300936**](file:///D:\RAN4%23106\Docs\R4-2300936.zip) **Further Corrections to NR-CA Cross-band Isolation MSD**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

Medaitek: need more time to check requirements for SUL\_n41A-n97A.

**Decision: Noted.**

#### 8.1.2 Moderator summary and conclusions

**[106][105] NR\_Baskets\_Part\_1, AI 8.1 – Dominique Brunel (Skyworks)**

[**R4-2302798**](file:///D:\RAN4%23106\Docs\R4-2302798.zip) **Topic summary for [106][105] NR\_Baskets\_Part\_1**

*Type: other For: Information  
 Source: Moderator (Skyworks)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303547**](file:///D:\RAN4%23106\Docs\R4-2303547.zip) **Ad hoc minutes for NR\_Basket\_Part\_1**

*Type: other For: Approval  
 Source: Skyworks*

**Decision: Withdrawn.**

[**R4-2303649**](file:///D:\RAN4%23106\Docs\R4-2303649.zip) **WF on the configured output power requirement for intra-band contiguous NE-DC in Rel.18**

*Type: other For: Approval  
 Source: CHTTL, Huawei, Samsung*

**Decision: Approved.**

### 8.2 Moderator summary and conclusions (for basket WI AI 7.3 to AI 7.26)

**[106][106] NR\_Baskets\_Part\_2, AI 8.3, 8.4, 8.5, 8.6, 8.7, 8.8 – Iwo Angelow (Nokia)**

[**R4-2302799**](file:///D:\RAN4%23106\Docs\R4-2302799.zip) **Topic summary for [106][106] NR\_Baskets\_Part\_2**

*Type: other For: Information  
 Source: Moderator (Nokia)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**[106][107] NR\_Baskets\_Part\_3, AI 8.9, 8.13 – Per Lindell (Ericsson)**

[**R4-2302800**](file:///D:\RAN4%23106\Docs\R4-2302800.zip) **Topic summary for [106][107] NR\_Baskets\_Part\_3**

*Type: other For: Information  
 Source: Moderator (Ericsson)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**[106][108] NR\_Baskets\_Part\_4, AI 8.10, 8.11, 8.12 – Johannes Hejselbaek (Nokia)**

[**R4-2302801**](file:///D:\RAN4%23106\Docs\R4-2302801.zip) **Topic summary for [106][108] NR\_Baskets\_Part\_4**

*Type: other For: Information  
 Source: Moderator (Nokia)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**[106][110] LTE\_NR\_HPUE\_FWVM, AI 8.16, 8.17 – Petri J. Vasenkari (Nokia)**

[**R4-2302803**](file:///D:\RAN4%23106\Docs\R4-2302803.zip) **Topic summary for [106][110] LTE\_NR\_HPUE\_FWVM**

*Type: other For: Information  
 Source: Moderator (Nokia)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

**Issue 2-1: Is it necessary to define NS-value for n101**

**Discussions:**

Huawei: We would like to check it.

**Issue 2-2: UE to UE co-ex between bands n8 and n100**

**Discussions:**

Moderator: Apple had CRs for this previously.

Skyworks: Do we need have study depending on the bandwidth for PC1. It is better to cover PC3 and PC1.5 in the same AI.

Nokia: This is for Rel-18.

CHTTL: We do not impact our band n8.

Mediatek: have maintenance CR [R4-2301717](file:///D:\RAN4%23106\Docs\R4-2301717.zip) for this issue. Our proposal is to remove B100 from n8.

Apple: We have rel-17 CRs to remove the protection.

Qualcomm: we prefer the proposal from Mediatek and Apple.

**Agreement:**

* Place B100 and n100 protection level in brackets for band 8/n8 and study correct level.

**[106][111] HPUE\_Basket\_EN-DC, AI 8.18 – Per Lindell (Ericsson)**

[**R4-2302804**](file:///D:\RAN4%23106\Docs\R4-2302804.zip) **Topic summary for [106][111] HPUE\_Basket\_EN-DC**

*Type: other For: Information  
 Source: Moderator (Ericsson)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**[106][112] HPUE\_Basket\_Intra-CA\_TDD, AI 8.19, 8.22 – Lingyu Kong (Huawei)**

[**R4-2302805**](file:///D:\RAN4%23106\Docs\R4-2302805.zip) **Topic summary for [106][112] HPUE\_Basket\_Intra-CA\_TDD**

*Type: other For: Information  
 Source: Moderator (Huawei)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

**Issue 1-1: CA\_n77(3A) with UL n77**

**Discussion:**

Samsung: There is no explicit rule whether PC2 and PC1.5 could be proposed together. In last meeting, we triggered the discussion whether PC2 and PC1.5 could be proposed together or PC2 proposed before PC1.5. But there was no conclusion.

**Agreement:**

* Introduce CA\_n77(3A) with UL PC2 and PC 1.5 n77 into TS38.101-1.

**[106][113] HPUE\_Basket\_inter-CA\_SUL, AI 8.20 – Lei Gao (China Telecom)**

[**R4-2302806**](file:///D:\RAN4%23106\Docs\R4-2302806.zip) **Topic summary for [106][113] HPUE\_Basket\_inter-CA\_SUL**

*Type: other For: Information  
 Source: Moderator (China Telecom)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**[106][114] HPUE\_Basket\_FDD, AI 8.21, 8.23 – Basaier Jialade (China Unicom)**

[**R4-2302807**](file:///D:\RAN4%23106\Docs\R4-2302807.zip) **Topic summary for [106][114] HPUE\_Basket\_FDD**

*Type: other For: Information  
 Source: Moderator (China Unicom)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303458**](file:///D:\RAN4%23106\Docs\R4-2303458.zip) **WF on FDD PC2 HPUE**

*Type: other For: Information  
 Source: China Unicom*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Approved.**

**Sub-topic 2-2 RF requirements, Issue 1-2:**

**Discussions:**

Apple: We would like to include our MSD proposals in [R4-2215660](file:///D:\RAN4%23106\Docs\R4-2215660.zip) which were submitted meetings ago.

Huawei: In terms of MSD for 1Tx, we can accept one from Proposal 1. For 2Tx, we need consider the proposal from Apple.

Skyworks: Do we intend to have both 1Tx and 2Tx in the spec? We need a lot of MSD analysis.

Huawei: it is OK to capture the TP for TR. But we need consider whether to include the requirement in the TS.

**Issue 2-1-1: 1Tx sensitivity degradation**

**Discussions:**

Huawei: we have concern on the averaging approach. It may not be proper to do averaging. We prefer to further checking to resolve the larger difference.

Mediatek: we think we can use averaged values as the starting point.

**Agreement:**

* Take averaged value for 1Tx and 2Tx REFSENS degradations.

**Issue 2-2-1: PC2 A-MPR for band n8 and Issue 2-2-2: PC2 A-MPR for band n28**

**Discussions:**

Murata: Further check the table for A2.

Skyworks: 25MHz can be added. PC3 has some asymmetric bandwidth. We need WF how to handle PC2.

Huawei: we use PC3 region definition. We find it would be OK to reuse the old region. But there would be some corner case to expand.

**Issue 2-2-3: General issues for A-MPR**

**Discussions:**

Skyworks: We suggest to first have WF on which bandwidth will be considered. We should first need finalize MPR.

**[106][115] LTE\_NR\_Other\_WI, AI 8.14, 8.15, 8.24, 8.25, 8.26, 8.27, 10.2 – Jin Wang (Huawei)**

[**R4-2302808**](file:///D:\RAN4%23106\Docs\R4-2302808.zip) **Topic summary for [106][115] LTE\_NR\_Other\_WI**

*Type: other For: Information  
 Source: Moderator (Huawei)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303459**](file:///D:\RAN4%23106\Docs\R4-2303459.zip) **WF on the notation for band combiantions with two SUL**

*Type: other For: Information  
 Source: CMCC*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Approved.**

[**R4-2303469**](file:///D:\RAN4%23106\Docs\R4-2303469.zip) **WF on the simultaneous Rx-Tx**

*Type: other For: Information  
 Source: Huawei, HiSilicon, Skyworks Solutions,Inc*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2303691**](file:///D:\RAN4%23106\Docs\R4-2303691.zip) **(from** [**R4-2303469**](file:///D:\RAN4%23106\Docs\R4-2303469.zip)**).**

[**R4-2303691**](file:///D:\RAN4%23106\Docs\R4-2303691.zip) **WF on the simultaneous Rx-Tx**

*Type: other For: Information  
 Source: Huawei, HiSilicon, Skyworks Solutions,Inc, Mediatek Inc*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Approved.**

**Issue 1-1-1: Notation for CA having both SUL\_n78A-n81A and SUL\_n78A-n84A when DL is contiguous**

**Issue 1-1-2: Notation for CA having both SUL\_n78A-n81A and SUL\_n78A-n84A when DL is non-contiguous**

**Discussions:**

Nokia: A-A means the non-contiguous. C is contiguous for UL. We would like to discuss the DL configuration and also optimize the notation for SUL.

Huawei: there will be some contiguous carriers for n78. The second alternative from Nokia is acceptable to us.

Nokia: there is no possibility to configure UL without downlink.

Apple: We have similar view as Nokia in terms of combination notation. Some improvement can be considered.

Mediatek: share the similar view as Nokia. We need know which band corresponds to SUL 1 and which to SUL 2.

Nokia: whether the DL is contiguous or non-contiguous.

**Issue 5-1-1: REFSENS requirement for 25MHz CBW for band n8**

**Discussions**

Skyworks: for PC3, we have the same band for PC2. Is this bandwidth applied to PC2 also?

Mediatek: we are OK with the WF. We share the similar view. The value is for PC3.

**Agreement:**

* For PC3, the values below are agreed.

| Operating band / SCS / Channel bandwidth | | |
| --- | --- | --- |
| Operating Band | SCS kHz | 25  MHz (dBm) |
| n8 | 15 | -83.6 |
| 30 | -84.1 |

**Issue 6-1-1: Cross band isolation in support of simultaneous Rx/Tx for CA\_n34-n41**

**Discussions**

Huawei: we can modify values based on the first table with uplink bandwidth changed to 5MHz and delete the bottom line.

Skyworks: two tests for bandwidth. Second test point is not needed. The template is too complexity. There is no justification.

Nokia: We supports Skyworks to minimize the test points. One test point should be feasible.

Huawei: we can keep the second line.

CHTTL: there was agreement before to allow the second test point.

Skyworks: nothing is changed for PA linearity. the same similarity and same isolation.

**Issue 6-2-1: Cross band isolation in support of simultaneous Rx/Tx for CA\_n7-n40**

**Discussions:**

Skyworks: the first table is in the spec. For option 2, we would like to collect companies’ view. It would be fine to average.

Huawei: Averaging is OK.

**Agreement:**

* The averaging values of Option 1 and Option 2 are agreeable.

**Issue 6-3-1: MSD for cross-band isolation of CA\_n40-n41**

**Discussions:**

Skyworks: we propose to have agreement for side condition of UL and DL first.

Murata: agree with Skyworks

Apple: We have further discussion.

**Issue 6-3-2: Delta Tib and delta Rib in support of simultaneous Rx/Tx for CA\_n40-n41**

**Discussions;**

CMCC: there is no delta-RIB value. We asked for justification for delta-RIB value last meeting.

Apple: there is more inssertion.

**Agreement:**

* For the delta-TIB the follow table is agreeable.

|  |  |  |
| --- | --- | --- |
| **Inter-band CA combination** | **ΔTIB,c for NR bands (dB)** | |
| **Component band in order of bands in configuration** | |
| CA\_n40-n41 | 0.5 | 0.5 |
|  | | |

**Issue 6-4-1: The relaxation on the 4Rx requirement for n41**

**Discussions:**

CMCC: we understand the difficulty of implementation. How to implement it in the spec needs more consideration. In current spec, 4Rx is mandatory. We should not open the door to more flexibility to implement 4Rx. To proposal 2, it is upto UE capability. There is nothing to do in the spec.

Mediatek: although it is UE implementation-specific, UE needs to report and network will configure. Network may configure more than what UE supports.

Skyworks: share the same concern as Mediatek.

Nokia: Regarding proposal from Apple, we need clarification about “if”.

Apple: If UEs is not configured simultaneous Rx-Tx, it can use more antennas to transmit. If UE wants to increase the isolation, it could use different antennas rather than sharing the antennas. If UE does not share, there would be more antennas needed.

Huawei: UE can report the capability.

Mediatek: capability is controversial.

### 8.3 Rel-18 Dual Connectivity (DC) of 1 band LTE (1DL/1UL) and 1 NR band (1DL/1UL)

#### 8.3.1 Rapporteur input (WID/TR/CR)

[**R4-2300827**](file:///D:\RAN4%23106\Docs\R4-2300827.zip) **TR 37.718-11-11 v0.4.0 Rel-18 Dual Connectivity (DC) of 1 LTE band (1DL/1UL) and 1 NR band (1DL/1UL)**

*Type: draft TR For: Agreement  
 37.718-11-11 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: CHTTL*

**Decision:** The document was **for email approval**.

[**R4-2300828**](file:///D:\RAN4%23106\Docs\R4-2300828.zip) **Big CR for Rel-18 Dual Connectivity (DC) of 1 LTE band (1DL/1UL) and 1 NR band (1DL/1UL)**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0825 rev Cat: B (Rel-18)  
  
 Source: CHTTL*

**Decision:** The document was **for email approval**.

[**R4-2300829**](file:///D:\RAN4%23106\Docs\R4-2300829.zip) **Revised WID for Rel-18 Dual Connectivity (DC) of 1 LTE band (1DL/1UL) and 1 NR band (1DL/1UL)**

*Type: WID revised For: Endorsement  
 Source: CHTTL*

**Decision:** The document was **for email approval**.

#### 8.3.2 UE RF requirements without FR2 band

[**R4-2300531**](file:///D:\RAN4%23106\Docs\R4-2300531.zip) **Draft CR 38.101-3 to add DC\_26A\_n78(2A)**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Telstra*

**Abstract:**

Adding DC\_26A\_n78(2A)

**Decision: Revised to** [**R4-2303607**](file:///D:\RAN4%23106\Docs\R4-2303607.zip) **(from** [**R4-2300531**](file:///D:\RAN4%23106\Docs\R4-2300531.zip)**).**

[**R4-2303607**](file:///D:\RAN4%23106\Docs\R4-2303607.zip) **Draft CR 38.101-3 to add DC\_26A\_n78(2A)**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Telstra*

**Abstract:**

Adding DC\_26A\_n78(2A)

**Decision: Endorsed.**

[**R4-2301064**](file:///D:\RAN4%23106\Docs\R4-2301064.zip) **draft CR 38.101-3 for corrections EN-DC 1 LTE + 1 NR**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

draft CR 38.101-3 for corrections EN-DC 1 LTE + 1 NR

**Decision: Revised to** [**R4-2303608**](file:///D:\RAN4%23106\Docs\R4-2303608.zip) **(from** [**R4-2301064**](file:///D:\RAN4%23106\Docs\R4-2301064.zip)**).**

[**R4-2303608**](file:///D:\RAN4%23106\Docs\R4-2303608.zip) **draft CR 38.101-3 for corrections EN-DC 1 LTE + 1 NR**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

draft CR 38.101-3 for corrections EN-DC 1 LTE + 1 NR

**Decision: Endorsed.**

[**R4-2301501**](file:///D:\RAN4%23106\Docs\R4-2301501.zip) **TP for TR 37.718-11-11 to include DC\_5A-n25A**

*Type: pCR For: Approval  
 37.718-11-11 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.718-11-11 to include DC\_5A-n25A

**Decision: Revised to** [**R4-2303623**](file:///D:\RAN4%23106\Docs\R4-2303623.zip) **(from** [**R4-2301501**](file:///D:\RAN4%23106\Docs\R4-2301501.zip)**).**

[**R4-2303623**](file:///D:\RAN4%23106\Docs\R4-2303623.zip) **TP for TR 37.718-11-11 to include DC\_5A-n25A**

*Type: pCR For: Approval  
 37.718-11-11 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.718-11-11 to include DC\_5A-n25A

**Decision: Approved.**

[**R4-2301502**](file:///D:\RAN4%23106\Docs\R4-2301502.zip) **TP for TR 37.718-11-11 to include DC\_5A-n41A**

*Type: pCR For: Approval  
 37.718-11-11 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.718-11-11 to include DC\_5A-n41A

**Decision: Revised to** [**R4-2303624**](file:///D:\RAN4%23106\Docs\R4-2303624.zip) **(from** [**R4-2301502**](file:///D:\RAN4%23106\Docs\R4-2301502.zip)**).**

[**R4-2303624**](file:///D:\RAN4%23106\Docs\R4-2303624.zip) **TP for TR 37.718-11-11 to include DC\_5A-n41A**

*Type: pCR For: Approval  
 37.718-11-11 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.718-11-11 to include DC\_5A-n41A

**Decision: Approved.**

[**R4-2301503**](file:///D:\RAN4%23106\Docs\R4-2301503.zip) **TP for TR 37.718-11-11 to include DC\_7A-n12A**

*Type: pCR For: Approval  
 37.718-11-11 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.718-11-11 to include DC\_7A-n12A

**Decision: Revised to** [**R4-2303625**](file:///D:\RAN4%23106\Docs\R4-2303625.zip) **(from** [**R4-2301503**](file:///D:\RAN4%23106\Docs\R4-2301503.zip)**).**

[**R4-2303625**](file:///D:\RAN4%23106\Docs\R4-2303625.zip) **TP for TR 37.718-11-11 to include DC\_7A-n12A**

*Type: pCR For: Approval  
 37.718-11-11 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.718-11-11 to include DC\_7A-n12A

**Decision: Approved.**

[**R4-2301504**](file:///D:\RAN4%23106\Docs\R4-2301504.zip) **TP for TR 37.718-11-11 to include DC\_71A-n7A**

*Type: pCR For: Approval  
 37.718-11-11 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.718-11-11 to include DC\_71A-n7A

**Decision: Revised to** [**R4-2303626**](file:///D:\RAN4%23106\Docs\R4-2303626.zip) **(from** [**R4-2301504**](file:///D:\RAN4%23106\Docs\R4-2301504.zip)**).**

[**R4-2303626**](file:///D:\RAN4%23106\Docs\R4-2303626.zip) **TP for TR 37.718-11-11 to include DC\_71A-n7A**

*Type: pCR For: Approval  
 37.718-11-11 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.718-11-11 to include DC\_71A-n7A

**Decision: Approved.**

[**R4-2301505**](file:///D:\RAN4%23106\Docs\R4-2301505.zip) **TP for TR 37.718-11-11 to include DC\_71A-n12A**

*Type: pCR For: Approval  
 37.718-11-11 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.718-11-11 to include DC\_71A-n12A

Chair: be treated in topic#3 of [105]

**Decision: Postponed.**

[**R4-2301506**](file:///D:\RAN4%23106\Docs\R4-2301506.zip) **TP for TR 37.718-11-11 to include DC\_7A-n25A**

*Type: pCR For: Approval  
 37.718-11-11 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.718-11-11 to include DC\_7A-n25A

**Decision: Revised to** [**R4-2303627**](file:///D:\RAN4%23106\Docs\R4-2303627.zip) **(from** [**R4-2301506**](file:///D:\RAN4%23106\Docs\R4-2301506.zip)**).**

[**R4-2303627**](file:///D:\RAN4%23106\Docs\R4-2303627.zip) **TP for TR 37.718-11-11 to include DC\_7A-n25A**

*Type: pCR For: Approval  
 37.718-11-11 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, Rogers*

**Abstract:**

TP for TR 37.718-11-11 to include DC\_7A-n25A

**Decision: Approved.**

[**R4-2301507**](file:///D:\RAN4%23106\Docs\R4-2301507.zip) **draft CR 38.101-3 to add new 2DL DC configurations**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Rogers*

**Abstract:**

draft CR 38.101-3 to add new 2DL DC configurations

**Decision: Revised to** [**R4-2303628**](file:///D:\RAN4%23106\Docs\R4-2303628.zip) **(from** [**R4-2301507**](file:///D:\RAN4%23106\Docs\R4-2301507.zip)**).**

**[R4-2303628](D:\\RAN4#106\\Docs\\R4-2303628.zip) draft CR 38.101-3 to add new 2DL DC configurations**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Rogers*

**Abstract:**

draft CR 38.101-3 to add new 2DL DC configurations

**Decision: Approved.**

#### 8.3.3 UE RF requirements with FR2 band

[**R4-2301070**](file:///D:\RAN4%23106\Docs\R4-2301070.zip) **draft CR 38.101-3 to add new EN-DC FR2 configurations**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Rogers*

**Abstract:**

draft CR 38.101-3 to add new EN-DC FR2 configurations

**Decision: Endorsed.**

### 8.4 Rel-18 Dual Connectivity (DC) of 2 bands LTE inter-band CA (2DL/1UL) and 1 NR band (1DL/1UL)

#### 8.4.1 Rapporteur input (WID/TR/CR)

[**R4-2301454**](file:///D:\RAN4%23106\Docs\R4-2301454.zip) **TR 37.718-21-11 V0.4.0 for DC of 2 LTE band and 1 NR band**

*Type: draft TR For: Approval  
 37.718-21-11 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **for email approval**.

[**R4-2301455**](file:///D:\RAN4%23106\Docs\R4-2301455.zip) **CR on introduction of completed DC of 2 bands LTE and 1 band NR from RAN4#106 into TS 38.101-3**

*Type: CR For: Endorsement  
 38.101-3 v18.0.0 CR-0850 rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **for email approval**.

[**R4-2301456**](file:///D:\RAN4%23106\Docs\R4-2301456.zip) **Rel-18 WID: Dual Connectivity (DC) of 2 bands LTE inter-band CA (2DL/1UL) and 1 NR band (1DL/1UL)**

*Type: WID revised For: Endorsement  
 Source: Huawei, HiSilicon*

**Decision:** The document was **for email approval**.

#### 8.4.2 UE RF requirements without FR2 band

[**R4-2300180**](file:///D:\RAN4%23106\Docs\R4-2300180.zip) **TP for TR 37.718-21-11 to include DC\_5-7\_n40**

*Type: pCR For: Approval  
 37.718-21-11 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: SK Telecom, Murata Manufacturing Co. Ltd*

**Decision: Approved.**

[**R4-2300532**](file:///D:\RAN4%23106\Docs\R4-2300532.zip) **Draft CR 38.101-3 to add DC\_1A/3A/7A-26A/28A\_n78(2A)**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Telstra*

**Abstract:**

Adding

DC\_1A-26A\_n78(2A)

DC\_1A-28A\_n78(2A)

DC\_3A-26A\_n78(2A)

DC\_3C-26A\_n78(2A)

DC\_3A-28A\_n78(2A)

DC\_3C-28A\_n78(2A)

DC\_7A-26A\_n78(2A)

DC\_7C-26A\_n78(2A)

DC\_7A-28A\_n78(2A)

DC\_7C-28A\_n78(2A)

**Decision: Revised to** [**R4-2303609**](file:///D:\RAN4%23106\Docs\R4-2303609.zip) **(from** [**R4-2300532**](file:///D:\RAN4%23106\Docs\R4-2300532.zip)**).**

[**R4-2303609**](file:///D:\RAN4%23106\Docs\R4-2303609.zip) **Draft CR 38.101-3 to add DC\_1A/3A/7A-26A/28A\_n78(2A)**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Telstra*

**Abstract:**

Adding

**Decision: Endorsed.**

[**R4-2301065**](file:///D:\RAN4%23106\Docs\R4-2301065.zip) **draft CR 38.101-3 for corrections EN-DC 2 LTE + 1 NR**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

draft CR 38.101-3 for corrections EN-DC 2 LTE + 1 NR

**Decision: Endorsed.**

[**R4-2301086**](file:///D:\RAN4%23106\Docs\R4-2301086.zip) **TP for 37.718-21-11 to include DC\_20-(n)3**

*Type: pCR For: Approval  
 37.718-21-11 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for 37.718-21-11 to include DC\_20-(n)3

**Decision: Revised to** [**R4-2303610**](file:///D:\RAN4%23106\Docs\R4-2303610.zip) **(from** [**R4-2301086**](file:///D:\RAN4%23106\Docs\R4-2301086.zip)**).**

[**R4-2303610**](file:///D:\RAN4%23106\Docs\R4-2303610.zip) **TP for 37.718-21-11 to include DC\_20-(n)3**

*Type: pCR For: Approval  
 37.718-21-11 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for 37.718-21-11 to include DC\_20-(n)3

**Decision: Approved.**

[**R4-2301457**](file:///D:\RAN4%23106\Docs\R4-2301457.zip) **draft CR to include DC\_3-7\_n26 and DC\_3-(n)7 into 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

Moderator: MULTIPLE draftCRs for same AI

**Decision: Revised to** [**R4-2303622**](file:///D:\RAN4%23106\Docs\R4-2303622.zip) **(from** [**R4-2301457**](file:///D:\RAN4%23106\Docs\R4-2301457.zip)**).**

[**R4-2303622**](file:///D:\RAN4%23106\Docs\R4-2303622.zip) **draft CR to include DC\_3-7\_n26 and DC\_3-(n)7 into 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Endorsed.**

[**R4-2301768**](file:///D:\RAN4%23106\Docs\R4-2301768.zip) **TP for TR 37.718-21-11 DC\_3A-7A-8A\_n7A**

*Type: pCR For: Approval  
 37.718-21-11 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2301769**](file:///D:\RAN4%23106\Docs\R4-2301769.zip) **TP for TR 37.718-21-11 DC\_3A-8A\_n7A**

*Type: pCR For: Approval  
 37.718-21-11 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2302035**](file:///D:\RAN4%23106\Docs\R4-2302035.zip) **Draft CR for 38.101-3 to add configuration DC\_1A-20A\_n78C DC\_3A-20A\_n78C DC\_7A-20A\_n78C**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

Moderator: MULTIPLE draftCRs for same AI

**Decision: Merged (with** [**R4-2301457**](file:///D:\RAN4%23106\Docs\R4-2301457.zip)**).**

#### 8.4.3 UE RF requirements with FR2 band

### 8.5 Rel-18 WID on DC of x bands LTE inter-band CA (x=3,4,5) and 1 NR band

#### 8.5.1 Rapporteur input (WID/TR/CR)

[**R4-2301666**](file:///D:\RAN4%23106\Docs\R4-2301666.zip) **Revised Rel-18 WID on DC of x bands LTE inter-band CA (x=3,4,5) and 1 NR band**

*Type: WID revised For: Endorsement  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Inclusion of requests provided for RAN4#104

**Decision:** The document was **for email approval**.

[**R4-2301667**](file:///D:\RAN4%23106\Docs\R4-2301667.zip) **draft Big CR to introduce new combinations DC of x bands LTE inter-band CA (x345) and 1 NR band**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0868 rev Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

To capture the agreed combinations at RAN4#104 for later inclusion on Rel18 draft specification

**Decision:** The document was **for email approval**.

#### 8.5.2 UE RF requirements without FR2 band

[**R4-2300533**](file:///D:\RAN4%23106\Docs\R4-2300533.zip) **Draft CR 38.101-3 to add DC\_1A-3A/3C-26A/28A\_n78(2A), DC\_3C-7A/7C-26A/28A\_n78(2A) and DC\_1A-3C-7A/7C-26A/28A\_n78(2A)**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Telstra*

**Abstract:**

Adding

DC\_1A-3A-26A\_n78(2A)

DC\_1A-3C-26A\_n78(2A)

DC\_1A-3A-28A\_n78(2A)

DC\_1A-3C-28A\_n78(2A)

DC\_3C-7A-26A\_n78(2A)

DC\_3C-7C-26A\_n78(2A)

DC\_3C-7A-28A\_n78(2A)

DC\_3C-7C-28A\_n78(2A)

DC\_1A-3C-7A-26A\_n78(2A)

DC\_1A-3C-7C-26A\_n78(2A)

DC\_1A-3C-7A-28A\_n78(2A)

DC\_1A-3

**Decision: Endorsed.**

[**R4-2300650**](file:///D:\RAN4%23106\Docs\R4-2300650.zip) **draft CR to TS38.101-3: DC\_1A-8A-(n)3AA**

*Type: draftCR For: Agreement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei Technologies France*

*Chair: should it be merged to other?*

**Decision: Revised to** [**R4-2303611**](file:///D:\RAN4%23106\Docs\R4-2303611.zip) **(from** [**R4-2300650**](file:///D:\RAN4%23106\Docs\R4-2300650.zip)**).**

[**R4-2303611**](file:///D:\RAN4%23106\Docs\R4-2303611.zip) **draft CR to TS38.101-3: DC\_1A-8A-(n)3AA**

*Type: draftCR For: Agreement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei Technologies France*

**Decision: Endorsed.**

[**R4-2300956**](file:///D:\RAN4%23106\Docs\R4-2300956.zip) **Draft CR for 38.101-3 to add DC\_3A-8A-20A\_n28A and DC\_3C-8A-20A\_n28A**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, Hisilicon*

Moderator: MULTIPLE draftCRs for same AI

**Decision: Merged (with R4-23xxxxx).**

[**R4-2300958**](file:///D:\RAN4%23106\Docs\R4-2300958.zip) **Draft CR for 38.101-3 to add DC\_1A-3C-38A\_n78A**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, Hisilicon*

Moderator: MULTIPLE draftCRs for same AI

**Decision: Merged (with R4-23xxxxx).**

[**R4-2301770**](file:///D:\RAN4%23106\Docs\R4-2301770.zip) **Draft CR for 38.101-3 to add DC\_1A-7A-7A-8A\_n78A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

Moderator: MULTIPLE draftCRs for same AI

**Decision: Revised to** [**R4-2303621**](file:///D:\RAN4%23106\Docs\R4-2303621.zip) **(from** [**R4-2301770**](file:///D:\RAN4%23106\Docs\R4-2301770.zip)**)**

[**R4-2303621**](file:///D:\RAN4%23106\Docs\R4-2303621.zip) **Draft CR for 38.101-3 to add DC\_1A-7A-7A-8A\_n78A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

Moderator: MULTIPLE draftCRs for same AI

**Decision: Endorsed.**

[**R4-2301771**](file:///D:\RAN4%23106\Docs\R4-2301771.zip) **Draft CR for 38.101-3 to add DC\_1A-7A-8A\_n7A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

Moderator: MULTIPLE draftCRs for same AI

**Decision: Merged (with R4-23xxxxx).**

[**R4-2302036**](file:///D:\RAN4%23106\Docs\R4-2302036.zip) **Draft CR for 38.101-3 to add configuration DC\_1A-3A-20A\_n78C DC\_1A-7A-20A\_n78C DC\_3A-7A-20A\_n78C DC\_1A-3A-7A\_n78C**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

Moderator: MULTIPLE draftCRs for same AI

**Decision: Merged (with R4-23xxxxx).**

[**R4-2302037**](file:///D:\RAN4%23106\Docs\R4-2302037.zip) **Draft CR for 38.101-3 to add configuration DC\_1A-3A-7A-20A\_n78C**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

Moderator: MULTIPLE draftCRs for same AI

**Decision: Merged (with R4-23xxxxx).**

#### 8.5.3 UE RF requirements with FR2 band

### 8.6 Rel-18 WID: DC of x bands (x=1,2,3,4) LTE inter-band CA (xDL/1UL) and 2 bands NR inter-band CA (2DL/1UL)

#### 8.6.1 Rapporteur input (WID/TR/CR)

[**R4-2300760**](file:///D:\RAN4%23106\Docs\R4-2300760.zip) **TR 37.718-11-21 v0.4.0 TR Update for DC\_R18\_xBLTE\_2BNR\_yDL2UL**

*Type: draft TR For: Agreement  
 37.718-11-21 v0.4.0 CR- rev Cat: (Rel-18)  
  
 Source: LG Electronics Deutschland*

**Abstract:**

TR 37.718-11-21 v0.4.0 TR Update for DC\_R18\_xBLTE\_2BNR\_yDL2UL

**Decision:** The document was **for email approval**.

[**R4-2300761**](file:///D:\RAN4%23106\Docs\R4-2300761.zip) **Revised WID on Rel-18 Dual Connectivity (DC) of x bands (x=1,2,3,4) LTE inter-band CA (xDL/1UL) and 2 bands NR inter-band CA (2DL/1UL)**

*Type: WID revised For: Endorsement  
 Source: LG Electronics Deutschland*

**Abstract:**

Revised WID on Rel-18 Dual Connectivity (DC) of x bands (x=1,2,3,4) LTE inter-band CA (xDL/1UL) and 2 bands NR inter-band CA (2DL/1UL)

**Decision:** The document was **for email approval**.

[**R4-2300762**](file:///D:\RAN4%23106\Docs\R4-2300762.zip) **Introduction CR on new band combinations in DC\_R18\_xBLTE\_2BNR\_yDL2UL**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0824 rev Cat: B (Rel-18)  
  
 Source: LG Electronics Deutschland*

**Abstract:**

Introduction CR on new band combinations in DC\_R18\_xBLTE\_2BNR\_yDL2UL in RAN4#106

**Decision:** The document was **for email approval**.

#### 8.6.2 UE RF requirements without FR2 band

[**R4-2300175**](file:///D:\RAN4%23106\Docs\R4-2300175.zip) **TP for TR 37.718-11-21 to include DC\_1\_n40-n77**

*Type: pCR For: Approval  
 37.718-11-21 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: SK Telecom, Murata Manufacturing Co. Ltd*

**Decision: Approved.**

[**R4-2300176**](file:///D:\RAN4%23106\Docs\R4-2300176.zip) **TP for TR 37.718-11-21 to include DC\_3\_n40-n77**

*Type: pCR For: Approval  
 37.718-11-21 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: SK Telecom, Murata Manufacturing Co. Ltd*

**Decision: Approved.**

[**R4-2300177**](file:///D:\RAN4%23106\Docs\R4-2300177.zip) **TP for TR 37.718-11-21 to include DC\_5\_n40-n77**

*Type: pCR For: Approval  
 37.718-11-21 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: SK Telecom, Murata Manufacturing Co. Ltd*

**Decision: Approved.**

[**R4-2300178**](file:///D:\RAN4%23106\Docs\R4-2300178.zip) **TP for TR 37.718-11-21 to include DC\_7\_n40-n77**

*Type: pCR For: Approval  
 37.718-11-21 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: SK Telecom, Murata Manufacturing Co. Ltd*

**Decision: Approved.**

[**R4-2300179**](file:///D:\RAN4%23106\Docs\R4-2300179.zip) **TP for TR 37.718-11-21 to include DC\_5\_n40-n78**

*Type: pCR For: Approval  
 37.718-11-21 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: SK Telecom, Murata Manufacturing Co. Ltd*

**Decision: Approved.**

[**R4-2300181**](file:///D:\RAN4%23106\Docs\R4-2300181.zip) **Draft CR on TS 38.101-3: Support of n78C in DC\_1\_n40-n78, DC\_3\_n40-n78, and DC\_7\_n40-n78**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: SK Telecom, Murata Manufacturing Co. Ltd*

**Decision: Approved.**

[**R4-2300534**](file:///D:\RAN4%23106\Docs\R4-2300534.zip) **TP for 37.718-11-21 to include DC\_7\_n1-n28**

*Type: pCR For: Approval  
 37.718-11-21 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT*

**Abstract:**

This contribution is a text proposal for TR 37.718-03-01 to include DC\_7A\_n1A-n28A, DC\_7C\_n1A-n28A

**Decision: Approved.**

[**R4-2300535**](file:///D:\RAN4%23106\Docs\R4-2300535.zip) **Draft CR 38.101-3 to add DC\_1A/7A/7C\_n1A/n3A-n78(2A), DC\_1A/3A/3C-7A/7C\_n3A-n78(2A), DC\_3A/3C-7A/7C\_n1A-n28A and DC\_20A-(n)3AA-n67A**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, BT*

**Abstract:**

Adding

DC\_1A\_n3A-n78(2A)

DC\_7A\_n1A-n78(2A)

DC\_7C\_n1A-n78(2A)

DC\_7A\_n3A-n78(2A)

DC\_7C\_n3A-n78(2A)

DC\_1A-7A\_n3A-n78(2A)

DC\_1A-7C\_n3A-n78(2A)

DC\_3A-7A\_n1A-n78(2A)

DC\_3A-7C\_n1A-n78(2A)

DC\_3C-7A\_n1A-n78(2A)

DC\_3C-7C\_n1A-n78(2A)

DC\_3A-7A\_n1A-n28A

DC\_3C-7A\_n1A-

**Decision: Revised to** [**R4-2303612**](file:///D:\RAN4%23106\Docs\R4-2303612.zip) **(from** [**R4-2300535**](file:///D:\RAN4%23106\Docs\R4-2300535.zip)**).**

[**R4-2303612**](file:///D:\RAN4%23106\Docs\R4-2303612.zip) **Draft CR 38.101-3 to add DC\_1A/7A/7C\_n1A/n3A-n78(2A), DC\_1A/3A/3C-7A/7C\_n3A-n78(2A), DC\_3A/3C-7A/7C\_n1A-n28A and DC\_20A-(n)3AA-n67A**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, BT*

**Abstract:**

Adding

DC\_1A\_n3A-n78(2A)

DC\_7A\_n1A-n78(2A)

DC\_7C\_n1A-n78(2A)

DC\_7A\_n3A-n78(2A)

DC\_7C\_n3A-n78(2A)

DC\_1A-7A\_n3A-n78(2A)

DC\_1A-7C\_n3A-n78(2A)

DC\_3A-7A\_n1A-n78(2A)

DC\_3A-7C\_n1A-n78(2A)

DC\_3C-7A\_n1A-n78(2A)

DC\_3C-7C\_n1A-n78(2A)

DC\_3A-7A\_n1A-n28A

DC\_3C-7A\_n1A-

Moderator: revision available, ok to Huawei

**Decision: Endorsed.**

[**R4-2300536**](file:///D:\RAN4%23106\Docs\R4-2300536.zip) **TP for TR 37.718-11-21: DC\_(n)3AA-n78A and DC\_(n)3AA-n78(2A)**

*Type: pCR For: Approval  
 37.718-11-21 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT*

**Abstract:**

This contribution is a text proposal for TR 37.718-11-21 to include DC\_(n)3AA-n78A and DC\_(n)3AA-n78(2A)

**Decision: Revised to** [**R4-2303613**](file:///D:\RAN4%23106\Docs\R4-2303613.zip) **(from** [**R4-2300536**](file:///D:\RAN4%23106\Docs\R4-2300536.zip)**).**

[**R4-2303613**](file:///D:\RAN4%23106\Docs\R4-2303613.zip) **TP for TR 37.718-11-21: DC\_(n)3AA-n78A and DC\_(n)3AA-n78(2A)**

*Type: pCR For: Approval  
 37.718-11-21 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT*

**Abstract:**

This contribution is a text proposal for TR 37.718-11-21 to include DC\_(n)3AA-n78A and DC\_(n)3AA-n78(2A)

**Decision: Approved.**

[**R4-2300957**](file:///D:\RAN4%23106\Docs\R4-2300957.zip) **Draft CR for 38.101-3 to add DC\_3C-7A-32A\_n1A-n78A**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, Hisilicon*

**Decision: Endorsed.**

[**R4-2301066**](file:///D:\RAN4%23106\Docs\R4-2301066.zip) **draft CR 38.101-3 for corrections EN-DC xLTE + 2NR**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

draft CR 38.101-3 for corrections EN-DC xLTE + 2NR

**Decision: Endorsed.**

[**R4-2301087**](file:///D:\RAN4%23106\Docs\R4-2301087.zip) **TP for 37.718-11-21 to include DC\_(n)3-n7**

*Type: pCR For: Approval  
 37.718-11-21 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for 37.718-11-21 to include DC\_(n)3-n7

**Decision: Revised to** [**R4-2303614**](file:///D:\RAN4%23106\Docs\R4-2303614.zip) **(from** [**R4-2301087**](file:///D:\RAN4%23106\Docs\R4-2301087.zip)**).**

[**R4-2303614**](file:///D:\RAN4%23106\Docs\R4-2303614.zip) **TP for 37.718-11-21 to include DC\_(n)3-n7**

*Type: pCR For: Approval  
 37.718-11-21 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for 37.718-11-21 to include DC\_(n)3-n7

**Decision: Approved.**

[**R4-2301088**](file:///D:\RAN4%23106\Docs\R4-2301088.zip) **TP for 37.718-11-21 to include DC\_(n)3-n28**

*Type: pCR For: Approval  
 37.718-11-21 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for 37.718-11-21 to include DC\_(n)3-n28

**Decision: Revised to** [**R4-2303615**](file:///D:\RAN4%23106\Docs\R4-2303615.zip) **(from** [**R4-2301088**](file:///D:\RAN4%23106\Docs\R4-2301088.zip)**).**

[**R4-2303615**](file:///D:\RAN4%23106\Docs\R4-2303615.zip) **TP for 37.718-11-21 to include DC\_(n)3-n28**

*Type: pCR For: Approval  
 37.718-11-21 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for 37.718-11-21 to include DC\_(n)3-n28

**Decision: Approved.**

[**R4-2301089**](file:///D:\RAN4%23106\Docs\R4-2301089.zip) **TP for 37.718-11-21 to include DC\_(n)3-n67**

*Type: pCR For: Approval  
 37.718-11-21 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for 37.718-11-21 to include DC\_(n)3-n67

**Decision: Revised to** [**R4-2303616**](file:///D:\RAN4%23106\Docs\R4-2303616.zip) **(from** [**R4-2301089**](file:///D:\RAN4%23106\Docs\R4-2301089.zip)**).**

[**R4-2303616**](file:///D:\RAN4%23106\Docs\R4-2303616.zip) **TP for 37.718-11-21 to include DC\_(n)3-n67**

*Type: pCR For: Approval  
 37.718-11-21 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for 37.718-11-21 to include DC\_(n)3-n67

**Decision: Approved.**

[**R4-2301090**](file:///D:\RAN4%23106\Docs\R4-2301090.zip) **TP for 37.718-11-21 to include DC\_66\_n71-n77**

*Type: pCR For: Approval  
 37.718-11-21 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

TP for 37.718-11-21 to include DC\_66\_n71-n77

**Decision: Approved.**

[**R4-2301091**](file:///D:\RAN4%23106\Docs\R4-2301091.zip) **TP for 37.718-11-21 to include DC\_2\_n71-n77**

*Type: pCR For: Approval  
 37.718-11-21 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

TP for 37.718-11-21 to include DC\_2\_n71-n77

flagged by Skyworks and Apple

**Decision: Revised to** [**R4-2303629**](file:///D:\RAN4%23106\Docs\R4-2303629.zip) **(from** [**R4-2301091**](file:///D:\RAN4%23106\Docs\R4-2301091.zip)**).**

[**R4-2303629**](file:///D:\RAN4%23106\Docs\R4-2303629.zip) **TP for 37.718-11-21 to include DC\_2\_n71-n77**

*Type: pCR For: Approval  
 37.718-11-21 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

TP for 37.718-11-21 to include DC\_2\_n71-n77

flagged by Skyworks and Apple

**Decision: Approved.**

[**R4-2301120**](file:///D:\RAN4%23106\Docs\R4-2301120.zip) **Draft CR for 38.101-3 to introduce new configurations for ENDC combos with 2 NR bands**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Samsung, Spark*

**Decision: Endorsed.**

[**R4-2301121**](file:///D:\RAN4%23106\Docs\R4-2301121.zip) **TP for TR 37.718-11-21 DC\_1A\_n5A-n40A**

*Type: pCR For: Approval  
 37.718-11-21 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Samsung, Spark*

**Decision: Approved.**

[**R4-2301122**](file:///D:\RAN4%23106\Docs\R4-2301122.zip) **TP for TR 37.718-11-21 DC\_7A\_n5A-n40A**

*Type: pCR For: Approval  
 37.718-11-21 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Samsung, Spark*

**Decision: Approved.**

[**R4-2301123**](file:///D:\RAN4%23106\Docs\R4-2301123.zip) **TP for TR 37.718-11-21 DC\_28A\_n5A-n40A**

*Type: pCR For: Approval  
 37.718-11-21 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Samsung, Spark*

**Decision: Approved.**

[**R4-2301268**](file:///D:\RAN4%23106\Docs\R4-2301268.zip) **TP for TR 37.718-11-21 DC\_3A\_n8A-n41A**

*Type: pCR For: Approval  
 37.718-11-21 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Revised to** [**R4-2303617**](file:///D:\RAN4%23106\Docs\R4-2303617.zip) **(from** [**R4-2301268**](file:///D:\RAN4%23106\Docs\R4-2301268.zip)**).**

**[R4-2303617](D:\\RAN4#106\\Docs\\R4-2303617.zip) TP for TR 37.718-11-21 DC\_3A\_n8A-n41A**

*Type: pCR For: Approval  
 37.718-11-21 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Approved.**

#### 8.6.3 UE RF requirements with FR2 band

[**R4-2300647**](file:///D:\RAN4%23106\Docs\R4-2300647.zip) **draft CR to TS38.101-3 DC\_1A-3A\_n8A-n257AGHIJKLM**

*Type: draftCR For: Agreement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei Technologies France*

**Decision: Endorsed.**

### 8.7 Rel-18 Dual Connectivity (DC) of x bands (x=1,2,3) LTE inter-band CA (xDL/1UL) and y bands NR inter-band CA (yDL/1UL)

[**R4-2300664**](file:///D:\RAN4%23106\Docs\R4-2300664.zip) **draft CR to TS38.101-3: clarify the difference between section 5.5b.5 and 5.5b.6**

*Type: draftCR For: Agreement  
 38.101-3 v18.0.0 CR- rev Cat: F (Rel-18)  
  
 Source: Huawei Technologies France*

Chair: be treated in Topic#4 of [105].

Chair: in [106] it seems suggested to be merged.

**Decision: Not pursued.**

#### 8.7.1 Rapporteur input (WID/TR/CR)

[**R4-2301275**](file:///D:\RAN4%23106\Docs\R4-2301275.zip) **Revised WID: Rel-18 Dual Connectivity (DC) of x bands (x=1,2,3) LTE inter-band CA (xDL/1UL) and y bands NR inter-band CA (yDL/1UL)**

*Type: WID revised For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **for email approval**.

[**R4-2301276**](file:///D:\RAN4%23106\Docs\R4-2301276.zip) **Big CR to reflect the completed DC combinations of x bands (x=1,2,3) LTE inter-band CA (xDL/1UL) and y bands NR inter-band CA (yDL/1UL)**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision:** The document was **for email approval**.

#### 8.7.2 UE RF requirements without FR2 band

[**R4-2300651**](file:///D:\RAN4%23106\Docs\R4-2300651.zip) **draft CR to TS38.101-3: DC\_1A-8A-(n)3AA-n77A, DC\_1A-8A-(n)3AA-n77A(2A)**

*Type: draftCR For: Agreement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei Technologies France*

Moderator: MULTIPLE draftCRs for same AI, revision available

Merged 0650, 0664, 0651, 0649, 0653, 0658, 0656

**Decision: Revised to** [**R4-2303618**](file:///D:\RAN4%23106\Docs\R4-2303618.zip) **(from** [**R4-2300651**](file:///D:\RAN4%23106\Docs\R4-2300651.zip)**).**

[**R4-2303618**](file:///D:\RAN4%23106\Docs\R4-2303618.zip) **draft CR to TS38.101-3: DC\_1A-8A-(n)3AA-n77A, DC\_1A-8A-(n)3AA-n77A(2A)**

*Type: draftCR For: Agreement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei Technologies France*

**Decision: Endorsed.**

[**R4-2300656**](file:///D:\RAN4%23106\Docs\R4-2300656.zip) **draft CR to TS38.101-3: DC\_1A-3A\_n8A-n77A, DC\_1A-3A\_n8A-n77(2A)**

*Type: draftCR For: Agreement  
 38.101-3 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei Technologies France*

**Decision: Merged (with** [**R4-2303618**](file:///D:\RAN4%23106\Docs\R4-2303618.zip)**).**

[**R4-2300660**](file:///D:\RAN4%23106\Docs\R4-2300660.zip) **TP for TR 37.718-11-21: DC\_1A-(n)3AA-n77A, DC\_1A-(n)3AA-n77(2A)**

*Type: pCR For: Approval  
 37.718-11-21 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei Technologies France*

**Decision: Approved.**

[**R4-2300662**](file:///D:\RAN4%23106\Docs\R4-2300662.zip) **TP for TR 37.718-11-21: DC\_8A-(n)3AA-n77A DC\_8A-(n)3AA-n77(2A)**

*Type: pCR For: Approval  
 37.718-11-21 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei Technologies France*

**Decision: Approved.**

[**R4-2301124**](file:///D:\RAN4%23106\Docs\R4-2301124.zip) **Draft CR for 38.101-3 to introduce new configurations for ENDC combos with 3 NR bands**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Samsung, Spark*

**Decision: Endorsed.**

[**R4-2302064**](file:///D:\RAN4%23106\Docs\R4-2302064.zip) **CR to TS38.101-3 DC\_3A\_n1A-n75A-n78A and DC\_3A\_n1A-n28A-n75A**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0880 rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Endorsed.**

[**R4-2302065**](file:///D:\RAN4%23106\Docs\R4-2302065.zip) **CR to TS38.101-3 DC\_3A-20A\_n1A-n28A-n75A**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0881 rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Endorsed.**

#### 8.7.3 UE RF requirements with FR2 band

[**R4-2300649**](file:///D:\RAN4%23106\Docs\R4-2300649.zip) **draft CR to TS38.101-3: DC\_1A-8A-(n)3AA-n77A-n257AGHIJKLM, DC\_1A-8A-(n)3AA-n77(2A)-n257AGHIJKLM**

*Type: draftCR For: Agreement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei Technologies France*

*Moderator: MULTIPLE draftCRs for same AI, revision available*

*Chair: should it be merged to other?*

**Decision: Revised to** [**R4-2303692**](file:///D:\RAN4%23106\Docs\R4-2303692.zip) **(from** [**R4-2300649**](file:///D:\RAN4%23106\Docs\R4-2300649.zip)**).**

[**R4-2303692**](file:///D:\RAN4%23106\Docs\R4-2303692.zip) **draft CR to TS38.101-3: DC\_1A-8A-(n)3AA-n77A-n257AGHIJKLM, DC\_1A-8A-(n)3AA-n77(2A)-n257AGHIJKLM**

*Type: draftCR For: Agreement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei Technologies France*

*Moderator: MULTIPLE draftCRs for same AI, revision available*

*Chair: should it be merged to other?*

**Decision: Endorsed.**

[**R4-2303619**](file:///D:\RAN4%23106\Docs\R4-2303619.zip) **draft CR to TS38.101-3: DC\_1A-8A-(n)3AA-n77A-n257AGHIJKLM, DC\_1A-8A-(n)3AA-n77(2A)-n257AGHIJKLM**

*Type: draftCR For: Agreement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei Technologies France*

*Moderator: MULTIPLE draftCRs for same AI, revision available*

**Decision: Withdrawn.**

[**R4-2300653**](file:///D:\RAN4%23106\Docs\R4-2300653.zip) **draft CR to TS38.101-3: DC\_1A-8A-(n)3AA-n257AGHIJKLM**

*Type: draftCR For: Discussion  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei Technologies France*

*Chair: should it will be merged to other?*

**Decision: Merged (with** [**R4-2303692**](file:///D:\RAN4%23106\Docs\R4-2303692.zip)**).**

[**R4-2303620**](file:///D:\RAN4%23106\Docs\R4-2303620.zip) **draft CR to TS38.101-3: DC\_1A-8A-(n)3AA-n257AGHIJKLM**

*Type: draftCR For: Discussion  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei Technologies France*

**Decision: Merged (with R4-23xxxxx).**

[**R4-2300658**](file:///D:\RAN4%23106\Docs\R4-2300658.zip) **draft CR to TS38.101-3: DC\_1A-3A\_n8A-n77A-n257AGHIJKLM, DC\_1A-3A\_n8A-n77(2A)-n257AGHIJKLM**

*Type: draftCR For: Agreement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei Technologies France*

**Decision: Merged (with** [**R4-2303692**](file:///D:\RAN4%23106\Docs\R4-2303692.zip)**).**

[**R4-2301261**](file:///D:\RAN4%23106\Docs\R4-2301261.zip) **draft CR to TS38.101-3\_DC\_8A\_n40A-n41A-n258A**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Endorsed.**

### 8.8 Rel-18 WID: DC of x LTE bands and y NR bands with z bands DL and 3 bands UL (x=1, 2, 3, 4, y=1, 2; 3<=z<=6)

#### 8.8.1 Rapporteur input (WID/TR/CR)

[**R4-2301111**](file:///D:\RAN4%23106\Docs\R4-2301111.zip) **Revised Rel-18 WID on DC of x LTE bands and y NR bands with z bands DL and 3 bands UL**

*Type: WID revised For: Information  
 Source: Samsung*

**Decision:** The document was **for email approval**.

[**R4-2301112**](file:///D:\RAN4%23106\Docs\R4-2301112.zip) **Big CR on introduction of completed DC of x LTE bands and y NR bands with z bands DL and 3 bands UL**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0827 rev Cat: B (Rel-18)  
  
 Source: Samsung*

**Abstract:**

Big CR

**Decision:** The document was **for email approval**.

#### 8.8.2 UE RF requirements without FR2 band

#### 8.8.3 UE RF requirements with FR2 band

[**R4-2301262**](file:///D:\RAN4%23106\Docs\R4-2301262.zip) **draft CR to TS38.101-3\_DC\_40A\_n79A-n258A**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Endorsed.**

### 8.9 Rel-18 NR intra band Carrier Aggregation for xCC DL/yCC UL including contiguous and non-contiguous spectrum (x>=y)

#### 8.9.1 Rapporteur input (WID/TR/CR)

[**R4-2301056**](file:///D:\RAN4%23106\Docs\R4-2301056.zip) **Revised WID NR Intra-band Rel-18**

*Type: WID revised For: Endorsement  
 Source: Ericsson*

**Abstract:**

Revised WID NR Intra-band Rel-18

**Decision:** The document was **for email approval**.

[**R4-2301057**](file:///D:\RAN4%23106\Docs\R4-2301057.zip) **big CR 38.101-1 new combinations Rel-18 NR Intra-band**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1346 rev Cat: B (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

big CR 38.101-1 new combinations Rel-18 NR Intra-band

**Decision:** The document was **for email approval**.

[**R4-2301058**](file:///D:\RAN4%23106\Docs\R4-2301058.zip) **big CR 38.101-2 new combinations Rel-18 NR Intra-band**

*Type: CR For: Agreement  
 38.101-2 v18.0.0 CR-0549 rev Cat: B (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

big CR 38.101-2 new combinations Rel-18 NR Intra-band

**Decision:** The document was **for email approval**.

[**R4-2301059**](file:///D:\RAN4%23106\Docs\R4-2301059.zip) **TR 38.718-01-01 v0.2.0 Rel-18 NR Intra-band**

*Type: draft TR For: Endorsement  
 38.718-01-01 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

TR 38.718-01-01 v0.2.0 Rel-18 NR Intra-band

**Decision:** The document was **for email approval**.

#### 8.9.2 UE RF requirements for FR1

[**R4-2301063**](file:///D:\RAN4%23106\Docs\R4-2301063.zip) **draft CR 38.101-1 for correction NR Intra-band CA**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

Correction based on a comment in RAN2 reply LS R2-2213312

**Decision: Not pursued.**

[**R4-2301692**](file:///D:\RAN4%23106\Docs\R4-2301692.zip) **TP to TR 38.718.01-01 addition of CA\_n102B and CA\_n102C uplink**

*Type: pCR For: Approval  
 38.718-01-01 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia, BT*

Chair: to be treated in Topic#5 NR-U ULCA and A-MPR requirements of [105].

**Decision: Postponed.**

[**R4-2301693**](file:///D:\RAN4%23106\Docs\R4-2301693.zip) **TP to TR 38.718.01-01 addition of CA\_n46C uplink**

*Type: pCR For: Approval  
 38.718-01-01 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia, BT*

Chair: to be treated in Topic#5 NR-U ULCA and A-MPR requirements of [105].

**Decision: Postponed.**

#### 8.9.3 UE RF requirements for FR2

### 8.10 Rel-18 NR Inter-band Carrier Aggregation/Dual Connectivity for 2 bands DL with x bands UL (x=1,2)

#### 8.10.1 Rapporteur input (WID/TR/CR)

[**R4-2301270**](file:///D:\RAN4%23106\Docs\R4-2301270.zip) **Revised WID:Rel-18 NR Inter-band Carrier Aggregation/Dual Connectivity for 2 bands DL with x bands UL (x=1,2)**

*Type: WID revised For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **for email approval**.

[**R4-2301271**](file:///D:\RAN4%23106\Docs\R4-2301271.zip) **TR38.718-02-01 v0.4.0: Rel-18 NR Inter-band Carrier Aggregation/Dual Connectivity for 2 bands DL with x bands UL (x=1,2)**

*Type: draft TR For: Approval  
 38.718-02-01 v0.4.0 CR- rev Cat: (Rel-18)  
  
 Source: ZTE Corporation*

**Decision:** The document was **for email approval**.

[**R4-2301272**](file:///D:\RAN4%23106\Docs\R4-2301272.zip) **Big CR to reflect the completed NR inter band CA DC combinations for 2 bands DL with up to 2 bands UL into TS 38.101-1**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1376 rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision:** The document was **for email approval**.

[**R4-2301273**](file:///D:\RAN4%23106\Docs\R4-2301273.zip) **Big CR to reflect the completed NR inter band CA DC combinations for 2 bands DL with up to 2 bands UL into TS 38.101-2**

*Type: CR For: Agreement  
 38.101-2 v18.0.0 CR-0568 rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision:** The document was **for email approval**.

[**R4-2301274**](file:///D:\RAN4%23106\Docs\R4-2301274.zip) **Big CR to reflect the completed NR inter band CA DC combinations for 2 bands DL with up to 2 bands UL into TS 38.101-3**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0838 rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision:** The document was **for email approval**.

#### 8.10.2 UE RF requirements without FR2 band

**To be treated in Topic #2 of [105]**

[**R4-2300537**](file:///D:\RAN4%23106\Docs\R4-2300537.zip) **Draft CR 38.101-1 to add CA\_n3B-n7B, CA\_n1A/n3A/n3B/n7A-n26(2A), CA\_n26A/n26(2A)-n78A/n78(2A) and CA\_n26A-n28A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Telstra*

**Abstract:**

Adding

CA\_n1A-n26(2A)

CA\_n3A-n26(2A)

CA\_n3B-n7B,

CA\_n3B-n26A

CA\_n3B-n26(2A)

CA\_n7A-n26(2A)

CA\_n7B-n26(2A)

CA\_n26A-n28A

CA\_n26(2A)-n78A

CA\_n26A-n78(2A)

CA\_n26(2A)-n78(2A)

This draft CR is depending on approval for fallback in “TP for 38.718-01-01 to inclu

Ad hoc chair: This could not be covered in the AdHoc. A triple beat issue with n26UL+n7B UL was identified but could not be solved. The proponent is fine to remove this UL configuration for now and look at solving next meeting. A revision is needed to remove the n26UL+n7B UL cofiguration. A draft has been circulated.

**Decision: Revised to** [**R4-2303657**](file:///D:\RAN4%23106\Docs\R4-2303657.zip) **(from** [**R4-2300537**](file:///D:\RAN4%23106\Docs\R4-2300537.zip)**).**

[**R4-2303657**](file:///D:\RAN4%23106\Docs\R4-2303657.zip) **Draft CR 38.101-1 to add CA\_n3B-n7B, CA\_n1A/n3A/n3B/n7A-n26(2A), CA\_n26A/n26(2A)-n78A/n78(2A) and CA\_n26A-n28A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Telstra*

**Abstract:**

**Decision: Endorsed.**

[**R4-2300648**](file:///D:\RAN4%23106\Docs\R4-2300648.zip) **DraftCR for 38.101-1: NR inter-band CA DC combinations for 2 bands DL with single band UL**

*Type: draftCR For: Approval  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Verizon, Ericsson, Samsung*

**Abstract:**

The configuration of uplink CA\_n48B is one of fallback combos of high-order combinations. This draftCR is to add configuration based on the Rel-18 WID and operator requires.

**Decision: Endorsed.**

[**R4-2300721**](file:///D:\RAN4%23106\Docs\R4-2300721.zip) **DraftCR Add intraband CA to the existing two bands DL CA combinations**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon, BT plc*

Chair: to be treated in Topic#5 NR-U ULCA and A-MPR requirements of [105].

**Decision: Revised to** [**R4-2303577**](file:///D:\RAN4%23106\Docs\R4-2303577.zip) **(from** [**R4-2300721**](file:///D:\RAN4%23106\Docs\R4-2300721.zip)**).**

[**R4-2303577**](file:///D:\RAN4%23106\Docs\R4-2303577.zip) **DraftCR Add intraband CA to the existing two bands DL CA combinations**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon, BT plc*

Chair: to be treated in Topic#5 NR-U ULCA and A-MPR requirements of [105].

**Decision: Endorsed.**

[**R4-2300722**](file:///D:\RAN4%23106\Docs\R4-2300722.zip) **TP to TR 38.718-02-01 for CA\_n46-n78 and DC\_n46-n78**

*Type: pCR For: Approval  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon, BT plc*

Chair: to be treated in Topic#5 NR-U ULCA and A-MPR requirements of [105].

**Decision: Revised to** [**R4-2303578**](file:///D:\RAN4%23106\Docs\R4-2303578.zip) **(from** [**R4-2300722**](file:///D:\RAN4%23106\Docs\R4-2300722.zip)**).**

[**R4-2303578**](file:///D:\RAN4%23106\Docs\R4-2303578.zip) **TP to TR 38.718-02-01 for CA\_n46-n78 and DC\_n46-n78**

*Type: pCR For: Approval  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon, BT plc*

Chair: to be treated in Topic#5 NR-U ULCA and A-MPR requirements of [105].

**Decision: Approved.**

[**R4-2300723**](file:///D:\RAN4%23106\Docs\R4-2300723.zip) **TP to TR 38.718-02-01 for CA\_n1-n46 and DC\_n1-n46**

*Type: pCR For: Approval  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon, BT plc*

Chair: to be treated in Topic#5 NR-U ULCA and A-MPR requirements of [105].

**Decision: Revised to** [**R4-2303579**](file:///D:\RAN4%23106\Docs\R4-2303579.zip) **(from** [**R4-2300723**](file:///D:\RAN4%23106\Docs\R4-2300723.zip)**).**

[**R4-2303579**](file:///D:\RAN4%23106\Docs\R4-2303579.zip) **TP to TR 38.718-02-01 for CA\_n1-n46 and DC\_n1-n46**

*Type: pCR For: Approval  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon, BT plc*

Chair: to be treated in Topic#5 NR-U ULCA and A-MPR requirements of [105].

**Decision: Approved.**

[**R4-2300959**](file:///D:\RAN4%23106\Docs\R4-2300959.zip) **Draft CR for 38.101-1 for additons to CA\_n8A-n75A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, Hisilicon*

**Decision: Revised to** [**R4-2303591**](file:///D:\RAN4%23106\Docs\R4-2303591.zip) **(from** [**R4-2300959**](file:///D:\RAN4%23106\Docs\R4-2300959.zip)**).**

[**R4-2303591**](file:///D:\RAN4%23106\Docs\R4-2303591.zip) **Draft CR for 38.101-1 for additons to CA\_n8A-n75A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, Hisilicon*

**Decision: Endorsed.**

[**R4-2300960**](file:///D:\RAN4%23106\Docs\R4-2300960.zip) **Draft CR for 38.101-1 for additons to CA\_n20A-n75A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, Hisilicon*

**Decision: Merged (with** [**R4-2303591**](file:///D:\RAN4%23106\Docs\R4-2303591.zip)**).**

[**R4-2300961**](file:///D:\RAN4%23106\Docs\R4-2300961.zip) **Draft CR for 38.101-1 for additons to CA\_n1A-n3A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, Hisilicon*

**Decision: Merged (with** [**R4-2303591**](file:///D:\RAN4%23106\Docs\R4-2303591.zip)**).**

[**R4-2300962**](file:///D:\RAN4%23106\Docs\R4-2300962.zip) **Draft CR for 38.101-1 for additons to CA\_n1A-n7A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, Hisilicon*

**Decision: Merged (with** [**R4-2303591**](file:///D:\RAN4%23106\Docs\R4-2303591.zip)**).**

[**R4-2300963**](file:///D:\RAN4%23106\Docs\R4-2300963.zip) **Draft CR for 38.101-1 for additons to CA\_n1A-n75A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, Hisilicon*

**Decision: Merged (with** [**R4-2303591**](file:///D:\RAN4%23106\Docs\R4-2303591.zip)**).**

[**R4-2300964**](file:///D:\RAN4%23106\Docs\R4-2300964.zip) **Draft CR for 38.101-1 t for additons to CA\_n1A-n78A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, Hisilicon*

**Decision: Merged (with** [**R4-2303591**](file:///D:\RAN4%23106\Docs\R4-2303591.zip)**).**

[**R4-2300965**](file:///D:\RAN4%23106\Docs\R4-2300965.zip) **Draft CR for 38.101-1 for additons to CA\_n3A-n7A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, Hisilicon*

**Decision: Postponed.**

[**R4-2300966**](file:///D:\RAN4%23106\Docs\R4-2300966.zip) **Draft CR for 38.101-1 for additons to CA\_n3A-n75A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, Hisilicon*

**Decision: Postponed.**

[**R4-2300967**](file:///D:\RAN4%23106\Docs\R4-2300967.zip) **Draft CR for 38.101-1 to add CA\_n3A-n78A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, Hisilicon*

**Decision: Merged (with** [**R4-2303591**](file:///D:\RAN4%23106\Docs\R4-2303591.zip)**).**

[**R4-2300968**](file:///D:\RAN4%23106\Docs\R4-2300968.zip) **Draft CR for 38.101-1 for additons to CA\_n7A-n75A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, Hisilicon*

**Decision: Merged (with** [**R4-2303591**](file:///D:\RAN4%23106\Docs\R4-2303591.zip)**).**

[**R4-2300969**](file:///D:\RAN4%23106\Docs\R4-2300969.zip) **Draft CR for 38.101-1 for additons to CA\_n7A-n78A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, Hisilicon*

**Decision: Merged (with** [**R4-2303591**](file:///D:\RAN4%23106\Docs\R4-2303591.zip)**).**

[**R4-2301071**](file:///D:\RAN4%23106\Docs\R4-2301071.zip) **draft CR 38.101-1 to add new 2DL configurations using n78**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Huawei*

**Abstract:**

draft CR 38.101-1 to add new 2DL configurations using n78

**Decision: Endorsed.**

[**R4-2301081**](file:///D:\RAN4%23106\Docs\R4-2301081.zip) **TP for 38.718-02-01 to include CA\_n7-n67**

*Type: pCR For: Approval  
 38.718-02-01 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for 38.718-02-01 to include CA\_n7-n67

**Decision: Approved.**

[**R4-2301082**](file:///D:\RAN4%23106\Docs\R4-2301082.zip) **TP for 38.718-02-01 to include CA\_n67-n78**

*Type: pCR For: Approval  
 38.718-02-01 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for 38.718-02-01 to include CA\_n67-n78

**Decision: Revised to** [**R4-2303592**](file:///D:\RAN4%23106\Docs\R4-2303592.zip) **(from** [**R4-2301082**](file:///D:\RAN4%23106\Docs\R4-2301082.zip)**).**

[**R4-2303592**](file:///D:\RAN4%23106\Docs\R4-2303592.zip) **TP for 38.718-02-01 to include CA\_n67-n78**

*Type: pCR For: Approval  
 38.718-02-01 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for 38.718-02-01 to include CA\_n67-n78

**Decision: Approved.**

[**R4-2301125**](file:///D:\RAN4%23106\Docs\R4-2301125.zip) **Draft CR for 38.101-1 to introduce BCS1 for CA\_n2-n48, CA\_n5-n48 and n48-n66**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Samsung, Verizon*

**Decision: Endorsed.**

[**R4-2301128**](file:///D:\RAN4%23106\Docs\R4-2301128.zip) **TP for TR 38.718-02-01 CA\_n18A-n40A**

*Type: pCR For: Approval  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2301256**](file:///D:\RAN4%23106\Docs\R4-2301256.zip) **draft CR to TS38.101-1: Add missing DC configurations in UE maximum output power for NR DC**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Revised to** [**R4-2303593**](file:///D:\RAN4%23106\Docs\R4-2303593.zip) **(from** [**R4-2301256**](file:///D:\RAN4%23106\Docs\R4-2301256.zip)**).**

[**R4-2303593**](file:///D:\RAN4%23106\Docs\R4-2303593.zip) **draft CR to TS38.101-1: Add missing DC configurations in UE maximum output power for NR DC**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Endorsed.**

[**R4-2301257**](file:///D:\RAN4%23106\Docs\R4-2301257.zip) **draft CR to TS38.101-1\_CA\_n3-n41 BCS4 and 5**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Merged (with** [**R4-2303593**](file:///D:\RAN4%23106\Docs\R4-2303593.zip)**).**

[**R4-2301258**](file:///D:\RAN4%23106\Docs\R4-2301258.zip) **draft CR to TS38.101-1\_CA\_n8-n41 BCS4 and 5**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Merged (with** [**R4-2303593**](file:///D:\RAN4%23106\Docs\R4-2303593.zip)**).**

[**R4-2301259**](file:///D:\RAN4%23106\Docs\R4-2301259.zip) **draft CR to TS38.101-1\_CA\_n39-n41 BCS4 and 5**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Merged (with** [**R4-2303593**](file:///D:\RAN4%23106\Docs\R4-2303593.zip)**).**

[**R4-2301510**](file:///D:\RAN4%23106\Docs\R4-2301510.zip) **draft CR 38.101-1 to add new 2DL CA configurations**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, STC*

**Abstract:**

draft CR 38.101-1 to add new 2DL CA configurations

**Decision: Revised to** [**R4-2303594**](file:///D:\RAN4%23106\Docs\R4-2303594.zip) **(from** [**R4-2301510**](file:///D:\RAN4%23106\Docs\R4-2301510.zip)**).**

[**R4-2303594**](file:///D:\RAN4%23106\Docs\R4-2303594.zip) **draft CR 38.101-1 to add new 2DL CA configurations**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, STC*

**Abstract:**

draft CR 38.101-1 to add new 2DL CA configurations

**Decision: Endorsed.**

[**R4-2301689**](file:///D:\RAN4%23106\Docs\R4-2301689.zip) **TP to TR 38.718-02-01 Addition of CA\_n7-n102 and DC\_n7-n102**

*Type: pCR For: Approval  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia, BT*

Chair: to be treated in Topic#5 NR-U ULCA and A-MPR requirements of [105].

**Decision: Revised to** [**R4-2303580**](file:///D:\RAN4%23106\Docs\R4-2303580.zip) **(from** [**R4-2301689**](file:///D:\RAN4%23106\Docs\R4-2301689.zip)**).**

[**R4-2303580**](file:///D:\RAN4%23106\Docs\R4-2303580.zip) **TP to TR 38.718-02-01 Addition of CA\_n7-n102 and DC\_n7-n102**

*Type: pCR For: Approval  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia, BT*

Chair: to be treated in Topic#5 NR-U ULCA and A-MPR requirements of [105].

**Decision: Approved.**

[**R4-2301690**](file:///D:\RAN4%23106\Docs\R4-2301690.zip) **TP to TR 38.718-02-01 Addition of CA\_n28-n102 and DC\_n28-n102**

*Type: pCR For: Approval  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia, BT*

Chair: to be treated in Topic#5 NR-U ULCA and A-MPR requirements of [105].

**Decision: Revised to** [**R4-2303581**](file:///D:\RAN4%23106\Docs\R4-2303581.zip) **(from** [**R4-2301690**](file:///D:\RAN4%23106\Docs\R4-2301690.zip)**).**

[**R4-2303581**](file:///D:\RAN4%23106\Docs\R4-2303581.zip) **TP to TR 38.718-02-01 Addition of CA\_n28-n102 and DC\_n28-n102**

*Type: pCR For: Approval  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia, BT*

Chair: to be treated in Topic#5 NR-U ULCA and A-MPR requirements of [105].

**Decision: Approved.**

[**R4-2301691**](file:///D:\RAN4%23106\Docs\R4-2301691.zip) **TP to TR 38.718-02-01 Addition of CA\_n1-n102 and DC\_n1-n102**

*Type: pCR For: Approval  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia, BT*

Chair: to be treated in Topic#5 NR-U ULCA and A-MPR requirements of [105].

**Decision: Revised to** [**R4-2303582**](file:///D:\RAN4%23106\Docs\R4-2303582.zip) **(from** [**R4-2301691**](file:///D:\RAN4%23106\Docs\R4-2301691.zip)**).**

[**R4-2303582**](file:///D:\RAN4%23106\Docs\R4-2303582.zip) **TP to TR 38.718-02-01 Addition of CA\_n1-n102 and DC\_n1-n102**

*Type: pCR For: Approval  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia, BT*

Chair: to be treated in Topic#5 NR-U ULCA and A-MPR requirements of [105].

**Decision: Approved.**

[**R4-2301694**](file:///D:\RAN4%23106\Docs\R4-2301694.zip) **TP to TR 38.718-02-01 Addition of CA\_n78-n102 and DC\_n78-n102**

*Type: pCR For: Approval  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia, BT*

Chair: to be treated in Topic#5 NR-U ULCA and A-MPR requirements of [105].

**Decision: Revised to** [**R4-2303583**](file:///D:\RAN4%23106\Docs\R4-2303583.zip) **(from** [**R4-2301694**](file:///D:\RAN4%23106\Docs\R4-2301694.zip)**).**

[**R4-2303583**](file:///D:\RAN4%23106\Docs\R4-2303583.zip) **TP to TR 38.718-02-01 Addition of CA\_n78-n102 and DC\_n78-n102**

*Type: pCR For: Approval  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia, BT*

Chair: to be treated in Topic#5 NR-U ULCA and A-MPR requirements of [105].

**Decision: Approved.**

[**R4-2301721**](file:///D:\RAN4%23106\Docs\R4-2301721.zip) **TP for TR 38.718-02-01 to include CA\_n26-n28**

*Type: pCR For: Approval  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: MediaTek Inc.*

Chair: be treated in Topic#3 of [105].

**Decision: Revised to** [**R4-2303576**](file:///D:\RAN4%23106\Docs\R4-2303576.zip) **(from** [**R4-2301721**](file:///D:\RAN4%23106\Docs\R4-2301721.zip)**).**

[**R4-2303576**](file:///D:\RAN4%23106\Docs\R4-2303576.zip) **TP for TR 38.718-02-01 to include CA\_n26-n28**

*Type: pCR For: Approval  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: MediaTek Inc.*

Chair: be treated in Topic#3 of [105].

**Decision: Approved.**

[**R4-2302038**](file:///D:\RAN4%23106\Docs\R4-2302038.zip) **Draft CR for TS 38.101-1 to introduce CA\_n20A-n78C\_BCS0 and CA\_n3A-n78C\_BCS2**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Endorsed.**

[**R4-2302441**](file:///D:\RAN4%23106\Docs\R4-2302441.zip) **Draft CR for 38.101-1: 2BDL/xBUL NR CA corrections**

*Type: draftCR For: Approval  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: T-Mobile USA*

**Decision: Revised to** [**R4-2303595**](file:///D:\RAN4%23106\Docs\R4-2303595.zip) **(from** [**R4-2302441**](file:///D:\RAN4%23106\Docs\R4-2302441.zip)**).**

[**R4-2303595**](file:///D:\RAN4%23106\Docs\R4-2303595.zip) **Draft CR for 38.101-1: 2BDL/xBUL NR CA corrections**

*Type: draftCR For: Approval  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: T-Mobile USA*

**Decision: Endorsed.**

[**R4-2302483**](file:///D:\RAN4%23106\Docs\R4-2302483.zip) **TP for TR 38.718-02-01: support of dual uplink CA\_n7A-n8A**

*Type: pCR For: (not specified)  
 38.718-02-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: CHTTL*

**Decision: Approved.**

#### 8.10.3 UE RF requirements with FR2 band

[**R4-2300035**](file:///D:\RAN4%23106\Docs\R4-2300035.zip) **Adding missing combinations with n48 and n263**

*Type: CR For: Approval  
 38.101-3 v18.0.0 CR-0808 rev Cat: B (Rel-18)  
  
 Source: Charter Communications, Inc*

**Decision: Withdrawn.**

[**R4-2300154**](file:///D:\RAN4%23106\Docs\R4-2300154.zip) **Support of DL n77(3A) in CA\_n77-n258A/G/H/I/J**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: SoftBank Corp.*

**Decision: Revised to** [**R4-2303596**](file:///D:\RAN4%23106\Docs\R4-2303596.zip) **(from** [**R4-2300154**](file:///D:\RAN4%23106\Docs\R4-2300154.zip)**).**

[**R4-2303596**](file:///D:\RAN4%23106\Docs\R4-2303596.zip) **Support of DL n77(3A) in CA\_n77-n258A/G/H/I/J**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: SoftBank Corp.*

**Decision: Endorsed.**

[**R4-2300161**](file:///D:\RAN4%23106\Docs\R4-2300161.zip) **Support of 2B DC\_n77(3A)-n258A/D/G/H/I/J**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: SoftBank Corp.*

**Abstract:**

This DCR needs an adavnced agreement/endorsement of corresponding 2B CA in [R4-2300154](file:///D:\RAN4%23106\Docs\R4-2300154.zip).

**Decision: Merged (with** [**R4-2303596**](file:///D:\RAN4%23106\Docs\R4-2303596.zip)**).**

[**R4-2300538**](file:///D:\RAN4%23106\Docs\R4-2300538.zip) **Draft CR 38.101-3 to add CA\_n26(2A)-n258A/B/C/D/E/F/G/H/I/J/K/L/M and DC\_n26(2A)-n258A/B/C/D/E/F/G/H/I/J/K/L/M**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Telstra*

**Abstract:**

Adding

CA\_n26(2A)-n258A/B/C/D/E/F/G/H/I/J/K/L/M

DC\_n26(2A)-n258A/B/C/D/E/F/G/H/I/J/K/L/M

This draft CR is depending on approval for fallback in “TP for 38.718-01-01 to include CA\_n26(2A)” agenda item 8.1.1.1

**Decision: Endorsed.**

[**R4-2300655**](file:///D:\RAN4%23106\Docs\R4-2300655.zip) **DraftCR for 38.101-3: NR FR1 and FR2 inter-band CA DC combinations for 2 bands DL with single and 2 bands UL**

*Type: draftCR For: Approval  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Verizon, Ericsson, Samsung*

**Abstract:**

Adding new Inter-band FR1 and CA n260 NR CA configurations

**Decision: Revised to** [**R4-2303597**](file:///D:\RAN4%23106\Docs\R4-2303597.zip) **(from** [**R4-2300655**](file:///D:\RAN4%23106\Docs\R4-2300655.zip)**).**

[**R4-2303597**](file:///D:\RAN4%23106\Docs\R4-2303597.zip) **DraftCR for 38.101-3: NR FR1 and FR2 inter-band CA DC combinations for 2 bands DL with single and 2 bands UL**

*Type: draftCR For: Approval  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Verizon, Ericsson, Samsung*

**Abstract:**

Adding new Inter-band FR1 and CA n260 NR CA configurations

**Decision: Endorsed.**

[**R4-2301127**](file:///D:\RAN4%23106\Docs\R4-2301127.zip) **Draft CR for 38.101-3 to introduce CA\_n7-n257 and CA\_n25-n257 with BCS4 BCS5**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Samsung, Telus, Bell Mobility*

**Decision: Endorsed.**

[**R4-2301511**](file:///D:\RAN4%23106\Docs\R4-2301511.zip) **draft CR 38.101-3 to add new BCS class and new UL configurations**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, T-Mobile US*

**Abstract:**

draft CR 38.101-3 to add new BCS class and new UL configurations

**Decision: Endorsed.**

[**R4-2301686**](file:///D:\RAN4%23106\Docs\R4-2301686.zip) **draftCR additions to CA\_n7-n257I and CA\_n71-n257AGHI and CA\_n66-n257AGHI w BCS 4 and 5**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Nokia, Bell, Telus*

**Decision: Endorsed.**

[**R4-2302442**](file:///D:\RAN4%23106\Docs\R4-2302442.zip) **Draft CR for 38.101-2: 2BDL/xBUL NR CA correction**

*Type: draftCR For: Approval  
 38.101-2 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: T-Mobile USA*

**Decision: Endorsed.**

[**R4-2302443**](file:///D:\RAN4%23106\Docs\R4-2302443.zip) **Draft CR for 38.101-3: 2BDL/xBUL NR CA correction**

*Type: draftCR For: Approval  
 38.101-3 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: T-Mobile USA*

**Decision: Endorsed.**

[**R4-2302492**](file:///D:\RAN4%23106\Docs\R4-2302492.zip) **draft CR for UL support up to CA\_n78A-n257K**

*Type: draftCR For: (not specified)  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: CHTTL*

**Decision: Endorsed.**

### 8.11 Rel-18 NR Inter-band Carrier Aggregation/Dual Connectivity for 3 bands DL with x bands UL (x=1,2)

#### 8.11.1 Rapporteur input (WID/TR/CR)

[**R4-2302552**](file:///D:\RAN4%23106\Docs\R4-2302552.zip) **TR38.718-03-01 v0.4.0 on Rel-18 NR Inter-band Carrier Aggregation/Dual Connectivity for 3 bands DL with x bands UL (x=1,2)**

*Type: draft TR For: Agreement  
 38.718-03-01 v0.4.0 CR- rev Cat: (Rel-18)  
  
 Source: ZTE Corporation*

**Decision:** The document was **for email approval**.

[**R4-2302553**](file:///D:\RAN4%23106\Docs\R4-2302553.zip) **Big CR to reflect the completed NR inter-band CA DC combinations for 3 bands DL with x bands UL (x=1,2) into TS 38.101-1**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1439 rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision:** The document was **for email approval**.

[**R4-2302554**](file:///D:\RAN4%23106\Docs\R4-2302554.zip) **Big CR to reflect the completed NR inter-band CA DC combinations for 3 bands DL with x bands UL (x=1,2) into TS 38.101-3**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0884 rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision:** The document was **for email approval**.

[**R4-2302555**](file:///D:\RAN4%23106\Docs\R4-2302555.zip) **Revised WID:Rel-18 NR Inter-band Carrier Aggregation/Dual Connectivity for 3 bands DL with x bands UL (x=1,2)**

*Type: WID revised For: Endorsement  
 Source: ZTE Corporation*

**Decision:** The document was **for email approval**.

#### 8.11.2 UE RF requirements without FR2 band

[**R4-2300151**](file:///D:\RAN4%23106\Docs\R4-2300151.zip) **Support of DL n77(3A) in 3BDL CA\_n1/n3/n28/n41-n77-n79**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: SoftBank Corp.*

**Decision: Endorsed.**

[**R4-2300416**](file:///D:\RAN4%23106\Docs\R4-2300416.zip) **Draft CR for TS 38.101-1 Support of CA\_n25-n41-n71 CA\_n25-n71-n77 CA\_n41-n66-n71 CA\_n66-n71-n77**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Nokia, T-Mobile USA*

**Decision: Endorsed.**

[**R4-2300539**](file:///D:\RAN4%23106\Docs\R4-2300539.zip) **Draft CR 38.101-1 to add CA\_n1A/n3A/n7A/n7B-n26A/26(2A)-n78(2A)**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Telstra*

**Abstract:**

Adding

CA\_n1A-n3B-n7B,

CA\_n1A-n3A-n26(2A)

CA\_n1A-n3B-n26A

CA\_n1A-n3B-n26(2A)

CA\_n1A-n3B-n78A

CA\_n1A-n3B-n78(2A)

CA\_n1A-n7A-n26(2A)

CA\_n1A-n7B-n26(2A)

CA\_n1A-n7B-n78(2A)

CA\_n1A-n26A-n78(2A)

CA\_n1A-n26(2A)-n78A

CA\_n1A-n26(2A)-n78(2A)

CA\_n3A-n7A-n26(2A)

CA\_

**Decision: Revised to** [**R4-2303598**](file:///D:\RAN4%23106\Docs\R4-2303598.zip) **(from** [**R4-2300539**](file:///D:\RAN4%23106\Docs\R4-2300539.zip)**).**

[**R4-2303598**](file:///D:\RAN4%23106\Docs\R4-2303598.zip) **Draft CR 38.101-1 to add CA\_n1A/n3A/n7A/n7B-n26A/26(2A)-n78(2A)**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Telstra*

**Abstract:**

Adding

CA\_n1A-n3B-n7B,

CA\_n1A-n3A-n26(2A)

CA\_n1A-n3B-n26A

CA\_n1A-n3B-n26(2A)

CA\_n1A-n3B-n78A

CA\_n1A-n3B-n78(2A)

CA\_n1A-n7A-n26(2A)

CA\_n1A-n7B-n26(2A)

CA\_n1A-n7B-n78(2A)

CA\_n1A-n26A-n78(2A)

CA\_n1A-n26(2A)-n78A

CA\_n1A-n26(2A)-n78(2A)

CA\_n3A-n7A-n26(2A)

CA\_

**Decision: Endorsed.**

[**R4-2300540**](file:///D:\RAN4%23106\Docs\R4-2300540.zip) **Draft CR 38.101-1 to add DC\_n1A-n3A-n67A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, BT*

**Abstract:**

Adding DC\_n1A-n3A-n67A

**Decision: Endorsed.**

[**R4-2300541**](file:///D:\RAN4%23106\Docs\R4-2300541.zip) **TP for 38.718-03-01 to include CA\_n3-n7-n67 and DC\_n3-n7-n67**

*Type: pCR For: Approval  
 38.718-03-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT*

**Abstract:**

This contribution is a text proposal for TR 38.718-03-01 to include CA\_n3-n7-n67

**Decision: Revised to** [**R4-2303599**](file:///D:\RAN4%23106\Docs\R4-2303599.zip) **(from** [**R4-2300541**](file:///D:\RAN4%23106\Docs\R4-2300541.zip)**).**

[**R4-2303599**](file:///D:\RAN4%23106\Docs\R4-2303599.zip) **TP for 38.718-03-01 to include CA\_n3-n7-n67 and DC\_n3-n7-n67**

*Type: pCR For: Approval  
 38.718-03-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT*

**Abstract:**

This contribution is a text proposal for TR 38.718-03-01 to include CA\_n3-n7-n67

**Decision: Approved.**

[**R4-2300542**](file:///D:\RAN4%23106\Docs\R4-2300542.zip) **TP for 38.718-03-01 to include CA\_n3-n67-n78 and DC\_n3-n67-n78**

*Type: pCR For: Approval  
 38.718-03-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT*

**Abstract:**

This contribution is a text proposal for TR 38.718-03-01 to include CA\_n3-n67-n78 and DC\_n3-n67-n78

**Decision: Revised to** [**R4-2303600**](file:///D:\RAN4%23106\Docs\R4-2303600.zip) **(from** [**R4-2300542**](file:///D:\RAN4%23106\Docs\R4-2300542.zip)**).**

[**R4-2303600**](file:///D:\RAN4%23106\Docs\R4-2303600.zip) **TP for 38.718-03-01 to include CA\_n3-n67-n78 and DC\_n3-n67-n78**

*Type: pCR For: Approval  
 38.718-03-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT*

**Abstract:**

This contribution is a text proposal for TR 38.718-03-01 to include CA\_n3-n67-n78 and DC\_n3-n67-n78

**Decision: Approved.**

[**R4-2300543**](file:///D:\RAN4%23106\Docs\R4-2300543.zip) **TP for 38.718-03-01 to include CA\_n3A-n20A-n28A**

*Type: pCR For: Approval  
 38.718-03-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT*

**Abstract:**

This contribution is a text proposal for TR 38.718-03-01 to include CA\_n3A-n20A-n28A

**Decision: Revised to** [**R4-2303601**](file:///D:\RAN4%23106\Docs\R4-2303601.zip) **(from** [**R4-2300543**](file:///D:\RAN4%23106\Docs\R4-2300543.zip)**).**

[**R4-2303601**](file:///D:\RAN4%23106\Docs\R4-2303601.zip) **TP for 38.718-03-01 to include CA\_n3A-n20A-n28A**

*Type: pCR For: Approval  
 38.718-03-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT*

**Abstract:**

This contribution is a text proposal for TR 38.718-03-01 to include CA\_n3A-n20A-n28A

**Decision: Approved.**

[**R4-2300666**](file:///D:\RAN4%23106\Docs\R4-2300666.zip) **DraftCR for 38.101-1: NR inter-band CA DC combinations for 3 bands DL with 2 bands UL**

*Type: draftCR For: Approval  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Verizon, Ericsson, Samsung*

**Abstract:**

Introduce the configuration of uplink CA\_n48B based on 38.101-1 18.0.0

**Decision: Endorsed.**

[**R4-2301067**](file:///D:\RAN4%23106\Docs\R4-2301067.zip) **draft CR 38.101-1 for corrections NR CA 3DL**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

draft CR 38.101-1 for corrections NR CA 3DL

**Decision: Endorsed.**

[**R4-2301072**](file:///D:\RAN4%23106\Docs\R4-2301072.zip) **draft CR 38.101-1 to add new 3DL configurations using n78**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Huawei*

**Abstract:**

draft CR 38.101-1 to add new 3DL configurations using n78

**Decision: Endorsed.**

[**R4-2301075**](file:///D:\RAN4%23106\Docs\R4-2301075.zip) **TP for 38.718-03-01 to include CA\_n1-n3-n40**

*Type: pCR For: Approval  
 38.718-03-01 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

TP for 38.718-03-01 to include CA\_n1-n3-n40

**Decision: Approved.**

[**R4-2303602**](file:///D:\RAN4%23106\Docs\R4-2303602.zip) **TP for 38.718-03-01 to include CA\_n1-n3-n40**

*Type: pCR For: Approval  
 38.718-03-01 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

TP for 38.718-03-01 to include CA\_n1-n3-n40

**Decision: Withdrawn.**

[**R4-2301076**](file:///D:\RAN4%23106\Docs\R4-2301076.zip) **draft CR to add new 3DL BCS’s**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

draft CR to add new 3DL BCS’s

**Decision: Endorsed.**

[**R4-2301077**](file:///D:\RAN4%23106\Docs\R4-2301077.zip) **TP for 38.718-03-01 to include CA\_n1-n40-n77**

*Type: pCR For: Approval  
 38.718-03-01 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

TP for 38.718-03-01 to include CA\_n1-n40-n77

**Decision: Approved.**

[**R4-2301078**](file:///D:\RAN4%23106\Docs\R4-2301078.zip) **TP for 38.718-03-01 to include CA\_n3-n40-n77**

*Type: pCR For: Approval  
 38.718-03-01 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

TP for 38.718-03-01 to include CA\_n3-n40-n77

**Decision: Approved.**

[**R4-2301079**](file:///D:\RAN4%23106\Docs\R4-2301079.zip) **TP for 38.718-03-01 to include CA\_n28-n40-n77**

*Type: pCR For: Approval  
 38.718-03-01 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

TP for 38.718-03-01 to include CA\_n28-n40-n77

**Decision: Approved.**

[**R4-2301260**](file:///D:\RAN4%23106\Docs\R4-2301260.zip) **draft CR to TS38.101-3\_CA\_n40A-n79A-n258A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Endorsed.**

[**R4-2301508**](file:///D:\RAN4%23106\Docs\R4-2301508.zip) **draft CR 38.101-1 to add new 3DL CA configurations**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, AT&T*

**Abstract:**

draft CR 38.101-1 to add new 3DL CA configurations

**Decision: Endorsed.**

[**R4-2301687**](file:///D:\RAN4%23106\Docs\R4-2301687.zip) **draftCR additions to 3CA combinations of n2 n29 n66 n77**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Nokia, AT&T*

**Decision: Endorsed.**

[**R4-2302039**](file:///D:\RAN4%23106\Docs\R4-2302039.zip) **Draft CR for TS 38.101-1 to introduce CA\_n3A-n28A-n78C CA\_n3A-n7A-n78C CA\_n7A-n28A-n78C**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Endorsed.**

[**R4-2302040**](file:///D:\RAN4%23106\Docs\R4-2302040.zip) **TP for TR 38.718-03-01 to introduce CA\_n3A-n7A-n79A\_BCS0**

*Type: pCR For: Approval  
 38.718-03-01 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2303603**](file:///D:\RAN4%23106\Docs\R4-2303603.zip) **(from** [**R4-2302040**](file:///D:\RAN4%23106\Docs\R4-2302040.zip)**).**

[**R4-2303603**](file:///D:\RAN4%23106\Docs\R4-2303603.zip) **TP for TR 38.718-03-01 to introduce CA\_n3A-n7A-n79A\_BCS0**

*Type: pCR For: Approval  
 38.718-03-01 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2302444**](file:///D:\RAN4%23106\Docs\R4-2302444.zip) **Draft CR for 38.101-1: 3BDL/xBUL NR CA corrections**

*Type: draftCR For: Approval  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: T-Mobile USA*

**Decision: Endorsed.**

[**R4-2302499**](file:///D:\RAN4%23106\Docs\R4-2302499.zip) **TP for TR 38.718-03-01: support of CA\_n1-n3-n8 2UL/3DL**

*Type: pCR For: Approval  
 38.718-03-01 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: CHTTL*

**Decision: Approved.**

[**R4-2302512**](file:///D:\RAN4%23106\Docs\R4-2302512.zip) **draft CR for CA\_n1A-n3A-n7A, CA\_n3A-n7A-n78A 3DL/2UL**

*Type: draftCR For: Approval  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: CHTTL*

**Decision: Endorsed.**

#### 8.11.3 UE RF requirements with FR2 band

[**R4-2300155**](file:///D:\RAN4%23106\Docs\R4-2300155.zip) **Support of UL Intra-CA of CA\_n257G-I in CA\_n41A-n77A-n257G/H/I**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: SoftBank Corp.*

**Decision: Revised to** [**R4-2303604**](file:///D:\RAN4%23106\Docs\R4-2303604.zip) **(from** [**R4-2300155**](file:///D:\RAN4%23106\Docs\R4-2300155.zip)**).**

[**R4-2303604**](file:///D:\RAN4%23106\Docs\R4-2303604.zip) **Support of UL Intra-CA of CA\_n257G-I in CA\_n41A-n77A-n257G/H/I**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: SoftBank Corp.*

**Decision: Endorsed.**

[**R4-2300156**](file:///D:\RAN4%23106\Docs\R4-2300156.zip) **Support of DL n77(3A) in CA\_n1-n77-n257, n41-n77-n257 and n77-n79-n257**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: SoftBank Corp.*

**Decision: Merged (with** [**R4-2303604**](file:///D:\RAN4%23106\Docs\R4-2303604.zip)**).**

[**R4-2300667**](file:///D:\RAN4%23106\Docs\R4-2300667.zip) **DraftCR for 38.101-3: NR FR1 and FR2 inter-band CA DC combinations for 3 bands DL with single and 2 bands UL**

*Type: draftCR For: Approval  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Verizon, Ericsson, Samsung*

**Decision: Endorsed.**

[**R4-2301068**](file:///D:\RAN4%23106\Docs\R4-2301068.zip) **draft CR 38.101-3 for corrections NR CA 3DL**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

draft CR 38.101-3 for corrections NR CA 3DL

**Decision: Endorsed.**

[**R4-2301126**](file:///D:\RAN4%23106\Docs\R4-2301126.zip) **Draft CR for 38.101-3 to introduce CA\_n7-n25-n257 with BCS4 BCS5**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Samsung, Telus, Bell Mobility*

**Decision: Endorsed.**

[**R4-2301685**](file:///D:\RAN4%23106\Docs\R4-2301685.zip) **draftCR additions to CA\_n7A-n66A-n257AIGH and CA\_n7A-n66A-n257AIGH w BCS 4 and 5 combinations**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Nokia, Bell, Telus*

**Decision: Endorsed.**

[**R4-2302515**](file:///D:\RAN4%23106\Docs\R4-2302515.zip) **draft CR for UL support up to n257K for CA\_n1A-n78A-n257J, CA\_n1A-n78A-n257K**

*Type: draftCR For: Approval  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: CHTTL*

**Decision: Endorsed.**

### 8.12 Rel-18 NR Inter-band Carrier Aggregation/Dual Connectivity for y bands DL with x bands UL (y=4,5,6, x=1,2)

#### 8.12.1 Rapporteur input (WID/TR/CR)

[**R4-2301498**](file:///D:\RAN4%23106\Docs\R4-2301498.zip) **Revised WID NR Inter-band CA/DC for y bands DL (y=4, 5, 6) with x bands UL (x=1, 2)**

*Type: WID revised For: Endorsement  
 Source: Ericsson*

**Abstract:**

Revised WID NR Inter-band CA/DC for y bands DL (y=4, 5, 6) with x bands UL (x=1, 2)

**Decision:** The document was **for email approval**.

[**R4-2301499**](file:///D:\RAN4%23106\Docs\R4-2301499.zip) **big CR 38.101-1 NR Inter-band CA/DC for y bands DL (y=4, 5, 6) with x bands UL (x=1, 2)**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1385 rev Cat: B (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

big CR 38.101-1 NR Inter-band CA/DC for y bands DL (y=4, 5, 6) with x bands UL (x=1, 2)

**Decision:** The document was **for email approval**.

[**R4-2301500**](file:///D:\RAN4%23106\Docs\R4-2301500.zip) **big CR 38.101-3 NR Inter-band CA/DC for y bands DL (y=4, 5, 6) with x bands UL (x=1, 2)**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0851 rev Cat: B (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

big CR 38.101-3 NR Inter-band CA/DC for y bands DL (y=4, 5, 6) with x bands UL (x=1, 2)

**Decision:** The document was **for email approval**.

#### 8.12.2 UE RF requirements without FR2 band

[**R4-2300152**](file:///D:\RAN4%23106\Docs\R4-2300152.zip) **Support of DL n77(2A) in 4BDL CA\_n1/n3/n28-n41A-n77-n79A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: SoftBank Corp.*

**Decision: Revised to** [**R4-2303605**](file:///D:\RAN4%23106\Docs\R4-2303605.zip) **(from** [**R4-2300152**](file:///D:\RAN4%23106\Docs\R4-2300152.zip)**).**

[**R4-2303605**](file:///D:\RAN4%23106\Docs\R4-2303605.zip) **Support of DL n77(2A) in 4BDL CA\_n1/n3/n28-n41A-n77-n79A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: SoftBank Corp.*

**Decision: Endorsed.**

[**R4-2300153**](file:///D:\RAN4%23106\Docs\R4-2300153.zip) **Support of 5BDL/2BUL CA\_n3A-n28A-n41A-n77A-n79A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: SoftBank Corp.*

**Decision: Merged (with** [**R4-2303605**](file:///D:\RAN4%23106\Docs\R4-2303605.zip)**).**

[**R4-2300159**](file:///D:\RAN4%23106\Docs\R4-2300159.zip) **Support of 4BDL 2BUL DC\_n1A-n3A-n41A-n79A, DC\_n3A-n28A-n41A-n79A and DC\_n3A-n41A-n77A-n79A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: SoftBank Corp.*

**Decision: Merged (with** [**R4-2303605**](file:///D:\RAN4%23106\Docs\R4-2303605.zip)**).**

[**R4-2300160**](file:///D:\RAN4%23106\Docs\R4-2300160.zip) **Support of 5B DC\_n1A-n3A-n28A-n41A-n77A, DC\_n1A-n3A-n28A-n41A-n79A, DC\_n1A-n3A-n28A-n77A-n79A, DC\_n1A-n3A-n41A-n77A-n79A, DC\_n1A-n28A-n41A-n77A-n79A, DC\_n3A-n28A-n41A-n77A-n79A**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: SoftBank Corp.*

**Decision: Merged (with** [**R4-2303605**](file:///D:\RAN4%23106\Docs\R4-2303605.zip)**).**

[**R4-2300415**](file:///D:\RAN4%23106\Docs\R4-2300415.zip) **Draft CR for TS 38.101-1 Support of CA\_n25-n41-n71\_n77 CA\_n41-n66-n71-n77**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Nokia, T-Mobile USA*

**Decision: Endorsed.**

[**R4-2301069**](file:///D:\RAN4%23106\Docs\R4-2301069.zip) **draft CR 38.101-1 for corrections NR CA 4DL and 5DL**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

draft CR 38.101-1 for corrections NR CA 4DL and 5DL

**Decision: Endorsed.**

[**R4-2301074**](file:///D:\RAN4%23106\Docs\R4-2301074.zip) **draft CR 38.101-1 to add new 4DL configurations**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Telstra*

**Abstract:**

This draft CR is depending on approval for fallback in TP for 38.718-01-01 to include CA\_n26(2A) submitted in agenda item 8.1.1.1

**Decision: Endorsed.**

[**R4-2301080**](file:///D:\RAN4%23106\Docs\R4-2301080.zip) **draft CR 38.101-1 to add new 4DL combinations**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

draft CR 38.101-1 to add new 4DL combinations

**Decision: Endorsed.**

[**R4-2301509**](file:///D:\RAN4%23106\Docs\R4-2301509.zip) **draft CR 38.101-1 to add new 4DL CA configurations**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, AT&T*

**Abstract:**

draft CR 38.101-1 to add new 4DL CA configurations

**Decision: Endorsed.**

[**R4-2301688**](file:///D:\RAN4%23106\Docs\R4-2301688.zip) **draftCR additions to 4CA and 5CA combinations of n2 n29 n30 n66 n77**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Nokia, AT&T*

**Decision: Endorsed.**

[**R4-2302445**](file:///D:\RAN4%23106\Docs\R4-2302445.zip) **Draft CR for 38.101-1: yBDL/xBUL NR CA corrections**

*Type: draftCR For: Approval  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: T-Mobile USA*

**Decision: Endorsed.**

#### 8.12.3 UE RF requirements with FR2 band

[**R4-2300150**](file:///D:\RAN4%23106\Docs\R4-2300150.zip) **Correction of UL configuration/CBW in CA\_n1A-n3A-n28A-n77A-n257A (R18)**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: F (Rel-18)  
  
 Source: SoftBank Corp.*

**Abstract:**

The corrections of proposing wrong bands(n79A instead of n257A)are made.

**Decision: Endorsed.**

[**R4-2300157**](file:///D:\RAN4%23106\Docs\R4-2300157.zip) **Support of DL n77(2A) in CA\_n3-n41-n77-n257, n28-n41-n77-n257 and n41-n77-n79-n257**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: SoftBank Corp.*

**Decision: Revised to** [**R4-2303606**](file:///D:\RAN4%23106\Docs\R4-2303606.zip) **(from** [**R4-2300157**](file:///D:\RAN4%23106\Docs\R4-2300157.zip)**).**

[**R4-2303606**](file:///D:\RAN4%23106\Docs\R4-2303606.zip) **Support of DL n77(2A) in CA\_n3-n41-n77-n257, n28-n41-n77-n257 and n41-n77-n79-n257**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: SoftBank Corp.*

**Decision: Endorsed.**

[**R4-2300158**](file:///D:\RAN4%23106\Docs\R4-2300158.zip) **Support of 5BDL and 2BUL of CA\_n1A-n3A-n41A-n79A-n257A/G/H/I, CA\_n3A-n28A-n41A-n79A-n257A/G/H/I, CA\_n3A-n41A-n77A-n79A-n257A/G/H/I, CA\_n28A-n41A-n77A-n79A-n257A/G/H/I**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: SoftBank Corp.*

**Decision: Merged (with** [**R4-2303606**](file:///D:\RAN4%23106\Docs\R4-2303606.zip)**).**

[**R4-2301512**](file:///D:\RAN4%23106\Docs\R4-2301512.zip) **draft CR 38.101-3 to add new CADC 4DL configurations**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, Verizon*

**Abstract:**

draft CR 38.101-3 to add new CADC 4DL configurations

**Decision: Endorsed.**

### 8.13 Rel-18 Band combinations for SA NR supplementary uplink (SUL), NSA NR SUL, NSA NR SUL with UL sharing from the UE perspective (ULSUP)

#### 8.13.1 Rapporteur input (WID/TR/CR)

[**R4-2302032**](file:///D:\RAN4%23106\Docs\R4-2302032.zip) **Revised WID on Band combinations for SA NR Supplementary uplink (SUL), NSA NR SUL, NSA NR SUL with UL sharing from the UE perspective (ULSUP)**

*Type: WID revised For: Endorsement  
 Source: Huawei, HiSilicon*

**Decision:** The document was **for email approval**.

[**R4-2302033**](file:///D:\RAN4%23106\Docs\R4-2302033.zip) **Draft TR 37.718-00-00 v0.3.0**

*Type: draft TR For: Approval  
 37.718-00-00 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **for email approval**.

[**R4-2302034**](file:///D:\RAN4%23106\Docs\R4-2302034.zip) **Big CR on Introduction of completed SUL band combinations into TS 38.101-1**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1403 rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **for email approval**.

#### 8.13.2 UE RF requirements

[**R4-2302041**](file:///D:\RAN4%23106\Docs\R4-2302041.zip) **TP for TR 37.718-00-00 to introduce CA\_n8A\_SUL\_n78A-n81A**

*Type: pCR For: Approval  
 37.718-00-00 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2303571**](file:///D:\RAN4%23106\Docs\R4-2303571.zip) **(from** [**R4-2302041**](file:///D:\RAN4%23106\Docs\R4-2302041.zip)**).**

[**R4-2303571**](file:///D:\RAN4%23106\Docs\R4-2303571.zip) **TP for TR 37.718-00-00 to introduce CA\_n8A\_SUL\_n78A-n81A**

*Type: pCR For: Approval  
 37.718-00-00 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2302042**](file:///D:\RAN4%23106\Docs\R4-2302042.zip) **TP for TR 37.718-00-00 to improve wording in Tib and Rib tables**

*Type: pCR For: Approval  
 37.718-00-00 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2302055**](file:///D:\RAN4%23106\Docs\R4-2302055.zip) **SUL\_n1A-n81A**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, China Telecom*

**Decision: Approved.**

[**R4-2302056**](file:///D:\RAN4%23106\Docs\R4-2302056.zip) **SUL\_n3A-n84A**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, China Telecom*

**Decision: Revised to** [**R4-2303587**](file:///D:\RAN4%23106\Docs\R4-2303587.zip) **(from** [**R4-2302056**](file:///D:\RAN4%23106\Docs\R4-2302056.zip)**).**

[**R4-2303587**](file:///D:\RAN4%23106\Docs\R4-2303587.zip) **SUL\_n3A-n84A**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, China Telecom*

**Decision: Approved.**

[**R4-2302057**](file:///D:\RAN4%23106\Docs\R4-2302057.zip) **SUL\_n1A-n89A**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, China Telecom*

**Decision: Approved.**

[**R4-2302058**](file:///D:\RAN4%23106\Docs\R4-2302058.zip) **SUL\_n1A-n80A**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, China Telecom*

**Decision: Revised to** [**R4-2303588**](file:///D:\RAN4%23106\Docs\R4-2303588.zip) **(from** [**R4-2302058**](file:///D:\RAN4%23106\Docs\R4-2302058.zip)**).**

[**R4-2303588**](file:///D:\RAN4%23106\Docs\R4-2303588.zip) **SUL\_n1A-n80A**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, China Telecom*

**Decision: Approved.**

[**R4-2302059**](file:///D:\RAN4%23106\Docs\R4-2302059.zip) **SUL\_n78A-n89A**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, China Telecom*

**Decision: Approved.**

[**R4-2302060**](file:///D:\RAN4%23106\Docs\R4-2302060.zip) **CA\_n78A\_SUL\_n1A-n81A**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, China Telecom*

**Decision: Approved.**

[**R4-2302061**](file:///D:\RAN4%23106\Docs\R4-2302061.zip) **CA\_n78A\_SUL\_n3A-n84A**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, China Telecom*

**Decision: Revised to** [**R4-2303589**](file:///D:\RAN4%23106\Docs\R4-2303589.zip) **(from** [**R4-2302061**](file:///D:\RAN4%23106\Docs\R4-2302061.zip)**).**

[**R4-2303589**](file:///D:\RAN4%23106\Docs\R4-2303589.zip) **CA\_n78A\_SUL\_n3A-n84A**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, China Telecom*

**Decision: Approved.**

[**R4-2302062**](file:///D:\RAN4%23106\Docs\R4-2302062.zip) **CA\_n78A\_SUL\_n1A-n89A**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, China Telecom*

**Decision: Approved.**

[**R4-2302063**](file:///D:\RAN4%23106\Docs\R4-2302063.zip) **CA\_n78A\_SUL\_n1A-n80A**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, China Telecom*

**Decision: Revised to** [**R4-2303590**](file:///D:\RAN4%23106\Docs\R4-2303590.zip) **(from** [**R4-2302063**](file:///D:\RAN4%23106\Docs\R4-2302063.zip)**).**

**[R4-2303590](D:\\RAN4#106\\Docs\\R4-2303590.zip) CA\_n78A\_SUL\_n1A-n80A**

*Type: other For: Approval  
 Source: Huawei, HiSilicon, China Telecom*

**Decision: Approved.**

### 8.14 NR CA band combinations with two SUL cells in Rel-18

#### 8.14.1 Rapporteur input (WID/TR/CR)

[**R4-2300809**](file:///D:\RAN4%23106\Docs\R4-2300809.zip) **TR skeleton for TR 38.718-00-02: NR Carrier Aggregation band combinations with two SUL cells**

*Type: draft TR For: Approval  
 38.718-00-02 v0.0.1 CR- rev Cat: (Rel-18)  
  
 Source: CMCC*

**Decision:** The document was **for email approval**.

[**R4-2300810**](file:///D:\RAN4%23106\Docs\R4-2300810.zip) **Revised WID: NR CA band combinations with two SUL cells in Rel-18**

*Type: other For: Endorsement  
 Source: CMCC*

**Decision:** The document was **for email approval**.

[**R4-2300811**](file:///D:\RAN4%23106\Docs\R4-2300811.zip) **Big CR for NR CA band combinations with two SUL cells in Rel-18**

*Type: CR For: Approval  
 38.101-1 v18.0.0 CR-1339 rev Cat: B (Rel-18)  
  
 Source: CMCC*

**Decision:** The document was **for email approval**.

#### 8.14.2 UE RF requirements

**[115] Topic #1: NR CA band combinations with two SUL cells in Rel-18**

[**R4-2300417**](file:///D:\RAN4%23106\Docs\R4-2300417.zip) **Double SUL Acronymn**

*Type: discussion For: Discussion  
 Source: Nokia*

**Decision: Noted.**

[**R4-2302066**](file:///D:\RAN4%23106\Docs\R4-2302066.zip) **On the notation of two SUL cells**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

TP/draft CR

[**R4-2300812**](file:///D:\RAN4%23106\Docs\R4-2300812.zip) **TP for CA\_SUL\_n41A-n83A\_SUL\_n79A-n95A for TR 38.718-00-02**

*Type: other For: Approval  
 Source: CMCC*

*CMCC: capturing MTK comment, we can replace Note2.*

**Decision: Revised to** [**R4-2303460**](file:///D:\RAN4%23106\Docs\R4-2303460.zip) **(from** [**R4-2300812**](file:///D:\RAN4%23106\Docs\R4-2300812.zip)**).**

[**R4-2303460**](file:///D:\RAN4%23106\Docs\R4-2303460.zip) **TP for CA\_SUL\_n41A-n83A\_SUL\_n79A-n95A for TR 38.718-00-02**

*Type: other For: Approval  
 Source: CMCC*

**Decision: Approved.**

[**R4-2300813**](file:///D:\RAN4%23106\Docs\R4-2300813.zip) **TP for CA\_SUL\_n41A-n83A\_SUL\_n79A-n98A for TR 38.718-00-02**

*Type: other For: Approval  
 Source: CMCC*

*CMCC: capturing MTK comment, we can replace Note2.*

**Decision: Revised to** [**R4-2303461**](file:///D:\RAN4%23106\Docs\R4-2303461.zip) **(from** [**R4-2300813**](file:///D:\RAN4%23106\Docs\R4-2300813.zip)**).**

[**R4-2303461**](file:///D:\RAN4%23106\Docs\R4-2303461.zip) **TP for CA\_SUL\_n41A-n83A\_SUL\_n79A-n98A for TR 38.718-00-02**

*Type: other For: Approval  
 Source: CMCC*

*CMCC: capturing MTK comment, we can replace Note2.*

**Decision: Approved.**

[**R4-2300814**](file:///D:\RAN4%23106\Docs\R4-2300814.zip) **TP for CA\_SUL\_n41A-n95A\_SUL\_n79A-n98A for TR 38.718-00-02**

*Type: other For: Approval  
 Source: CMCC*

**Decision: Revised to** [**R4-2303462**](file:///D:\RAN4%23106\Docs\R4-2303462.zip) **(from** [**R4-2300814**](file:///D:\RAN4%23106\Docs\R4-2300814.zip)**).**

[**R4-2303462**](file:///D:\RAN4%23106\Docs\R4-2303462.zip) **TP for CA\_SUL\_n41A-n95A\_SUL\_n79A-n98A for TR 38.718-00-02**

*Type: other For: Approval  
 Source: CMCC*

**Decision: Approved.**

[**R4-2300815**](file:///D:\RAN4%23106\Docs\R4-2300815.zip) **TP for CA\_SUL\_n41A-n98A\_SUL\_n79A-n95A for TR 38.718-00-02**

*Type: other For: Approval  
 Source: CMCC*

**Decision: Revised to** [**R4-2303463**](file:///D:\RAN4%23106\Docs\R4-2303463.zip) **(from** [**R4-2300815**](file:///D:\RAN4%23106\Docs\R4-2300815.zip)**).**

[**R4-2303463**](file:///D:\RAN4%23106\Docs\R4-2303463.zip) **TP for CA\_SUL\_n41A-n98A\_SUL\_n79A-n95A for TR 38.718-00-02**

*Type: other For: Approval  
 Source: CMCC*

**Decision: Approved.**

[**R4-2301379**](file:///D:\RAN4%23106\Docs\R4-2301379.zip) **Draft CR for 38.101-1 to add NR CA configuration CA\_SUL\_n78A-n80A\_SUL\_n78A-n84A and CA\_SUL\_n78A-n81A\_SUL\_n78A-n84A.**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: China Telecom*

**Decision: Revised to** [**R4-2303466**](file:///D:\RAN4%23106\Docs\R4-2303466.zip) **(from** [**R4-2301379**](file:///D:\RAN4%23106\Docs\R4-2301379.zip)**).**

[**R4-2303466**](file:///D:\RAN4%23106\Docs\R4-2303466.zip) **Draft CR for 38.101-1 to add NR CA configuration CA\_SUL\_n78A-n80A\_SUL\_n78A-n84A and CA\_SUL\_n78A-n81A\_SUL\_n78A-n84A.**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: China Telecom*

**Decision: Endorsed.**

[**R4-2301380**](file:///D:\RAN4%23106\Docs\R4-2301380.zip) **TP for TR 37.718-00-02 to introduce SUL configuration CA\_ SUL\_n78A-n80A\_SUL\_n78A-n84A**

*Type: pCR For: Approval  
 38.718-00-02 v0.0.0 CR- rev Cat: (Rel-18)  
  
 Source: China Telecom*

**Discussions:**

Mediatek: we have concern on 0us switching time in Table 5.X.1-1: SUL band combination. 0us switching time cannot be maintained.

CMCC: we need consider the potential change on the notation.

**Decision: Revised to** [**R4-2303464**](file:///D:\RAN4%23106\Docs\R4-2303464.zip) **(from** [**R4-2301380**](file:///D:\RAN4%23106\Docs\R4-2301380.zip)**).**

[**R4-2303464**](file:///D:\RAN4%23106\Docs\R4-2303464.zip) **TP for TR 37.718-00-02 to introduce SUL configuration CA\_ SUL\_n78A-n80A\_SUL\_n78A-n84A**

*Type: pCR For: Approval  
 38.718-00-02 v0.0.0 CR- rev Cat: (Rel-18)  
  
 Source: China Telecom*

**Decision: Approved.**

[**R4-2301381**](file:///D:\RAN4%23106\Docs\R4-2301381.zip) **TP for TR 38.718-00-02 to introduce SUL configuration CA\_ SUL\_n78A-n81A\_SUL\_n78A-n84A**

*Type: pCR For: Approval  
 38.718-00-02 v0.0.0 CR- rev Cat: (Rel-18)  
  
 Source: China Telecom*

**Discussions:**

Mediatek: we have concern on 0us switching time in Table 5.X.1-1: SUL band combination. 0us switching time cannot be maintained.

CMCC: we need consider the potential change on the notation.

**Decision: Revised to** [**R4-2303465**](file:///D:\RAN4%23106\Docs\R4-2303465.zip) **(from** [**R4-2301381**](file:///D:\RAN4%23106\Docs\R4-2301381.zip)**).**

**[R4-2303465](D:\\RAN4#106\\Docs\\R4-2303465.zip) TP for TR 38.718-00-02 to introduce SUL configuration CA\_ SUL\_n78A-n81A\_SUL\_n78A-n84A**

*Type: pCR For: Approval  
 38.718-00-02 v0.0.0 CR- rev Cat: (Rel-18)  
  
 Source: China Telecom*

**Decision: Approved.**

### 8.15 Rel-18 band combinations for concurrent operation of NR/LTE Uu bands/band combinations and one NR/LTE V2X PC5 band

#### 8.15.1 Rapporteur input (WID/TR/CR)

#### 8.15.2 UE RF requirements

**[115] Topic #2: Rel-18 band combinations for concurrent operation of NR/LTE Uu bands/band combinations and one NR/LTE V2X PC5 band**

[**R4-2300730**](file:///D:\RAN4%23106\Docs\R4-2300730.zip) **CR to introduce emissions specifications for certain band combinations**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0823 rev Cat: F (Rel-18)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

CR to add spurious emissions specifications for certain LTE\_V2X band combinations in TS38.101-3

**Decision: Withdrawn.**

### 8.16 High-power UE operation for fixed-wireless/vehicle-mounted use cases in LTE bands and NR bands

#### 8.16.1 Rapporteur input (WID/TR/CR)

[**R4-2300418**](file:///D:\RAN4%23106\Docs\R4-2300418.zip) **Revised WID: High-power UE operation for fixed-wireless/vehicle-mounted use cases in LTE bands and NR bands**

*Type: WID revised For: Information  
 Source: Nokia*

**Decision:** The document was **for email approval**.

[**R4-2300419**](file:///D:\RAN4%23106\Docs\R4-2300419.zip) **TR 37.829 v0.4.0**

*Type: draft TR For: Agreement  
 37.829 v0.4.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia*

**Decision:** The document was **for email approval**.

[**R4-2300420**](file:///D:\RAN4%23106\Docs\R4-2300420.zip) **Big CR for High-power UE operation for fixed-wireless/vehicle-mounted use cases in LTE bands and NR bands**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1318 rev Cat: B (Rel-18)  
  
 Source: Nokia*

**Decision:** The document was **for email approval**.

#### 8.16.2 UE RF requirements

**[110] Topic #1: coexistence study**

[**R4-2300190**](file:///D:\RAN4%23106\Docs\R4-2300190.zip) **System level simulation results for coexistence study on 31dBm UE Power Class for LTE Band 41 and NR Band n41**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides the system level simulation results according to the system level simulation methodology and assumptions for coexistence study on 31 dBm UE Power Class for LTE Band 41 and NR Band n41.

**Decision: Noted.**

CR

[**R4-2300189**](file:///D:\RAN4%23106\Docs\R4-2300189.zip) **TP to TR 37.829: System level simulation methodology and assumptions for coexistence study on 31dBm UE Power Class for LTE Band 41 and NR Band n41**

*Type: pCR For: Approval  
 37.829 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution proposes the system level simulation methodology and assumptions for coexistence study on 31 dBm UE Power Class for LTE Band 41 and NR Band n41, and provides a text proposal to record the simulation methodology and assumptions into a new

**Decision: Revised to** [**R4-2303445**](file:///D:\RAN4%23106\Docs\R4-2303445.zip) **(from** [**R4-2300189**](file:///D:\RAN4%23106\Docs\R4-2300189.zip)**).**

[**R4-2303445**](file:///D:\RAN4%23106\Docs\R4-2303445.zip) **TP to TR 37.829: System level simulation methodology and assumptions for coexistence study on 31dBm UE Power Class for LTE Band 41 and NR Band n41**

*Type: pCR For: Approval  
 37.829 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution proposes the system level simulation methodology and assumptions for coexistence study on 31 dBm UE Power Class for LTE Band 41 and NR Band n41, and provides a text proposal to record the simulation methodology and assumptions into a new

**Discussion:**

Qualcomm: there are some typo.

**Decision: Approved.**

**[110] Topic #2: UE RF requirements**

TP/CR/draft

[**R4-2300421**](file:///D:\RAN4%23106\Docs\R4-2300421.zip) **draftCR 38.101-1 FWA addition of bands n100 and n101**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Nokia*

**Decision: Endorsed.**

[**R4-2300422**](file:///D:\RAN4%23106\Docs\R4-2300422.zip) **TP to TR 37.829: ECC Decision (20)02 analysis for n100 and n101 for PC1 operation.**

*Type: pCR For: Approval  
 37.829 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia, UIC*

**Decision: Approved.**

[**R4-2300423**](file:///D:\RAN4%23106\Docs\R4-2300423.zip) **CR to 38.101-1: Corection to PC1 UTRA ACLR for bands n71 and n85.**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1319 rev Cat: F (Rel-17)  
  
 Source: Nokia*

**Decision: Agreed.**

[**R4-2300424**](file:///D:\RAN4%23106\Docs\R4-2300424.zip) **CR to 38.101-1: Corection to PC1 UTRA ACLR for bands n71 and n85.**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1320 rev Cat: A (Rel-18)  
  
 Source: Nokia*

**Decision: Agreed.**

### 8.17 CAB-radio - High Power UE support for band n100 and n101 for Rail Mobile Radio (RMR) in Europe

#### 8.17.1 Rapporteur input (WID/TR/CR)

#### 8.17.2 UE RF requirements

**[110] Topic #2: UE RF requirements**

[**R4-2302471**](file:///D:\RAN4%23106\Docs\R4-2302471.zip) **Initial discussion on the regulatory requirements for cab-radio operating in RMR bands n100 and n101**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

In this contribution we provide initial discussion on the regulatory requirements cab-radio operating in RMR n100/n101 bands.

**Decision: Noted.**

[**R4-2302633**](file:///D:\RAN4%23106\Docs\R4-2302633.zip) **Band n100 protection by band n8**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

For the PC3 band n100 case, the TS 38.101-1 grants a -50dBm/MHz protection by band 8. In this contribution we show that this is not feasible.

**Decision: Noted.**

### 8.18 High power for FR1 for DC\_R18\_xBLTE\_yBNR\_zDLnUL with power class PC2 and PC1.5

#### 8.18.1 Rapporteur input (WID/TR/CR)

[**R4-2301060**](file:///D:\RAN4%23106\Docs\R4-2301060.zip) **Revised WID on PC1.5 and PC2 EN-DC combinations with xLTE bands + yNR bands**

*Type: WID revised For: Endorsement  
 Source: Ericsson*

**Abstract:**

Revised WID on PC1.5 and PC2 EN-DC combinations with xLTE bands + yNR bands

**Decision:** The document was **for email approval**.

[**R4-2301061**](file:///D:\RAN4%23106\Docs\R4-2301061.zip) **big CR 38.101-3 new combinations Rel-18 EN-DC HPUE**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0826 rev Cat: B (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

big CR 38.101-3 new combinations Rel-18 EN-DC HPUE

**Decision:** The document was **for email approval**.

[**R4-2301062**](file:///D:\RAN4%23106\Docs\R4-2301062.zip) **TR 38.898 v0.2.0 Rel-18 High power UE for FR1 for DC\_R18\_xBLTE\_yBNR\_zDLnUL**

*Type: draft TR For: Endorsement  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

TR 38.898 v0.2.0 Rel-18 High power UE for FR1 for DC\_R18\_xBLTE\_yBNR\_zDLnUL

**Decision:** The document was **for email approval**.

#### 8.18.2 UE RF requirements

**[111] HPUE\_Basket\_EN-DC**

[**R4-2300026**](file:///D:\RAN4%23106\Docs\R4-2300026.zip) **DraftCR 38.101-3 Addition of PC2 EN-DC Combinations**

*Type: draftCR For: Endorsement  
 38.101-3 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: AT&T*

**Decision: Endorsed.**

[**R4-2301298**](file:///D:\RAN4%23106\Docs\R4-2301298.zip) **TP for PC2 DC\_1\_n77 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

*CHTTL: is there any reason to skip IMD4 for PC2? PC3 has IMD4 in the spec.*

*NTT DOCOMO: we are OK to add it.*

**Decision: Revised to** [**R4-2303446**](file:///D:\RAN4%23106\Docs\R4-2303446.zip) **(from** [**R4-2301298**](file:///D:\RAN4%23106\Docs\R4-2301298.zip)**).**

[**R4-2303446**](file:///D:\RAN4%23106\Docs\R4-2303446.zip) **TP for PC2 DC\_1\_n77 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Approved.**

[**R4-2301299**](file:///D:\RAN4%23106\Docs\R4-2301299.zip) **TP for PC2 DC\_3\_n77 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

*CHTT: the same comment as for the above one.*

**Decision: Revised to** [**R4-2303447**](file:///D:\RAN4%23106\Docs\R4-2303447.zip) **(from** [**R4-2301299**](file:///D:\RAN4%23106\Docs\R4-2301299.zip)**).**

[**R4-2303447**](file:///D:\RAN4%23106\Docs\R4-2303447.zip) **TP for PC2 DC\_3\_n77 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

*CHTT: the same comment as for the above one.*

**Decision: Approved.**

[**R4-2301300**](file:///D:\RAN4%23106\Docs\R4-2301300.zip) **TP for PC2 DC\_21\_n77 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

*CHTTL: typo in the MSD analysis. This paper does not have IMD issue.*

**Decision: Revised to** [**R4-2303448**](file:///D:\RAN4%23106\Docs\R4-2303448.zip) **(from** [**R4-2301300**](file:///D:\RAN4%23106\Docs\R4-2301300.zip)**).**

[**R4-2303448**](file:///D:\RAN4%23106\Docs\R4-2303448.zip) **TP for PC2 DC\_21\_n77 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Approved.**

[**R4-2301301**](file:///D:\RAN4%23106\Docs\R4-2301301.zip) **TP for PC2 DC\_21\_n78 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

*CHTTL: the same typo as above one.*

**Decision: Revised to** [**R4-2303449**](file:///D:\RAN4%23106\Docs\R4-2303449.zip) **(from** [**R4-2301301**](file:///D:\RAN4%23106\Docs\R4-2301301.zip)**).**

[**R4-2303449**](file:///D:\RAN4%23106\Docs\R4-2303449.zip) **TP for PC2 DC\_21\_n78 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

*CHTTL: the same typo as above one.*

**Decision: Approved.**

[**R4-2301302**](file:///D:\RAN4%23106\Docs\R4-2301302.zip) **TP for PC2 DC\_1\_n77-n79 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Discussions:**

CHTTL: does Note X apply for PC3?

NTT DOCOMO: it can apply for PC3.

CHTTL: NTT DOCOMO needs another CR for PC3 and change should be from Rel-17.

**Decision: Approved.**

[**R4-2301303**](file:///D:\RAN4%23106\Docs\R4-2301303.zip) **TP for PC2 DC\_3\_n77-n79 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Approved.**

[**R4-2301304**](file:///D:\RAN4%23106\Docs\R4-2301304.zip) **TP for PC2 DC\_21\_n77-n79 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Approved.**

[**R4-2301305**](file:///D:\RAN4%23106\Docs\R4-2301305.zip) **TP for PC2 DC\_1\_n78-n79 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Approved.**

[**R4-2301306**](file:///D:\RAN4%23106\Docs\R4-2301306.zip) **TP for PC2 DC\_3\_n78-n79 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Approved.**

[**R4-2301307**](file:///D:\RAN4%23106\Docs\R4-2301307.zip) **TP for PC2 DC\_21\_n78-n79 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Approved.**

[**R4-2301308**](file:///D:\RAN4%23106\Docs\R4-2301308.zip) **TP for PC2 DC\_1-3\_n77 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Discussions:**

CHTTL: IMD4 should be specified.

**Decision: Revised to** [**R4-2303450**](file:///D:\RAN4%23106\Docs\R4-2303450.zip) **(from** [**R4-2301308**](file:///D:\RAN4%23106\Docs\R4-2301308.zip)**).**

[**R4-2303450**](file:///D:\RAN4%23106\Docs\R4-2303450.zip) **TP for PC2 DC\_1-3\_n77 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Discussions:**

CHTTL: IMD4 should be specified.

**Decision: Approved.**

[**R4-2301309**](file:///D:\RAN4%23106\Docs\R4-2301309.zip) **TP for PC2 DC\_1-21\_n77 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Approved.**

[**R4-2301310**](file:///D:\RAN4%23106\Docs\R4-2301310.zip) **TP for PC2 DC\_1-42\_n77 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Approved.**

[**R4-2301311**](file:///D:\RAN4%23106\Docs\R4-2301311.zip) **TP for PC2 DC\_3-21\_n77 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Approved.**

[**R4-2301312**](file:///D:\RAN4%23106\Docs\R4-2301312.zip) **TP for PC2 DC\_3-42\_n77 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Approved.**

[**R4-2301313**](file:///D:\RAN4%23106\Docs\R4-2301313.zip) **TP for PC2 DC\_21-42\_n77 for TR 38.898**

*Type: pCR For: Approval  
 38.898 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: NTT DOCOMO, INC.*

**Decision: Approved.**

### 8.19 High power UE for FR1 for NR\_CA\_R18\_intra with power class 2 and 1.5 on TDD band(s)

#### 8.19.1 Rapporteur input (WID/TR/CR)

[**R4-2302140**](file:///D:\RAN4%23106\Docs\R4-2302140.zip) **Big CR on TS38.101-1 Addition of intra-band CA Combinations with PC2**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1418 rev Cat: B (Rel-18)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

Agreed combinations at RAN4#106

**Decision:** The document was **for email approval**.

[**R4-2302146**](file:///D:\RAN4%23106\Docs\R4-2302146.zip) **TR 38.897-010**

*Type: draft TR For: Agreement  
 38.897 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei,HiSilicon*

**Decision:** The document was **for email approval**.

[**R4-2302147**](file:///D:\RAN4%23106\Docs\R4-2302147.zip) **WID on HPUE\_NR\_FR1\_TDD\_intra\_CA\_R18**

*Type: WID revised For: Endorsement  
 Source: Huawei,HiSilicon*

**Abstract:**

Inclusion of requests provided for RAN4#106

**Discussions:**

Skyworks: for CA\_n77C, PC1.5 can be achieved on the condition of equal PSD.

**Decision:** The document was **for email approval**.

TP/CR

[**R4-2302142**](file:///D:\RAN4%23106\Docs\R4-2302142.zip) **TP on TR 38.897 for DL CA\_n77(2A) with UL PC2 CA\_n77(2A)**

*Type: pCR For: Approval  
 38.897 v0.0.1 CR- rev Cat: (Rel-18)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

Agreed combinations at RAN4#105

**Decision: Approved.**

[**R4-2302143**](file:///D:\RAN4%23106\Docs\R4-2302143.zip) **TP on TR 38.897 for DL CA\_n78(2A) with UL PC2 and PC1.5 n78**

*Type: pCR For: Approval  
 38.897 v0.0.1 CR- rev Cat: (Rel-18)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

Agreed combinations at RAN4#105

**Decision: Approved.**

[**R4-2302145**](file:///D:\RAN4%23106\Docs\R4-2302145.zip) **Draft CR on TS38.101-1 Addition of CA\_n77C with UL PC2 n77**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

Following the agreement that CA\_n77C with UL PC2 n77 can be introduced into Rel-17 spec ([R4-2220464](file:///D:\RAN4%23106\Docs\R4-2220464.zip))

**Decision: Endorsed.**

[**R4-2303451**](file:///D:\RAN4%23106\Docs\R4-2303451.zip) **Draft CR on intra-band HPUE combinations**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: T-Mobile USA*

**Decision: Endorsed.**

#### 8.19.2 UE RF requirements with PC2 and PC1.5

**[112] Topic #1: HPUE\_NR\_FR1\_TDD\_intra\_CA\_R18 (8.19)**

[**R4-2302144**](file:///D:\RAN4%23106\Docs\R4-2302144.zip) **Draft CR on TS38.101-1 Addition of CA\_n77(3A) with UL PC2 n77**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

CA\_n77(3A) with UL PC2 n77 can be directly introduced without the impact on UE maximum output power and A-MPR in the current spec.

**Decision: Not pursued.**

[**R4-2301129**](file:///D:\RAN4%23106\Docs\R4-2301129.zip) **Draft CR for TS38.101-1 Addition of intra-band CA Combinations with PC2 and PC1.5**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Samsung, KDDI*

**Decision: Endorsed.**

### 8.20 High power UE for FR1 NR inter-band CA/DC or SUL band combination with y DL-x UL and PCm (m<3) and high power on TDD

#### 8.20.1 Rapporteur input (WID/TR/CR)

[**R4-2300720**](file:///D:\RAN4%23106\Docs\R4-2300720.zip) **TR for High power UE for FR1 NR inter-band CA/DC or NR SUL band combination with y (1<y<=6) bands DL and x (x=1, 2) bands UL and power class m (m<3) and high power on TDD band(s)**

*Type: draft TR For: Agreement  
 38.899 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon, China Telecom*

**Decision:** The document was **for email approval**.

[**R4-2301378**](file:///D:\RAN4%23106\Docs\R4-2301378.zip) **Revised WID: Rel-18 High power UE (power class 1,5 and 2) for a single FR1 NR TDD band in UL of NR inter-band CA/DC combinations with/without NR SUL (supplementary uplink) with y bands downlink (y=2,3,4,5,6) and x bands uplink (x=1,2)**

*Type: WID revised For: Endorsement  
 Source: China Telecom*

**Decision: Endorsed.**

**[R4-2303452](D:\\RAN4#106\\Docs\\R4-2303452.zip) Revised WID: Rel-18 High power UE (power class 1,5 and 2) for a single FR1 NR TDD band in UL of NR inter-band CA/DC combinations with/without NR SUL (supplementary uplink) with y bands downlink (y=2,3,4,5,6) and x bands uplink (x=1,2)**

*Type: WID revised For: Endorsement  
 Source: China Telecom*

**Decision: Withdrawn.**

#### 8.20.2 UE RF requirements with PC2 and PC1.5

**[113] Topic #1: HPUE\_FR1\_TDD\_NR\_CADC\_SUL\_R18**

draft CR/CR/TP

[**R4-2300025**](file:///D:\RAN4%23106\Docs\R4-2300025.zip) **DraftCR 38.101-1 Addition of PC2 CA Combinations**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: AT&T*

**Decision: Endorsed.**

[**R4-2300665**](file:///D:\RAN4%23106\Docs\R4-2300665.zip) **DraftCR for 38.101-1: NR single UL n77 configuration for HPUE inter-band CA**

*Type: draftCR For: Approval  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Verizon, Ericsson, Samsung*

**Decision: Endorsed.**

[**R4-2301130**](file:///D:\RAN4%23106\Docs\R4-2301130.zip) **TP for HPUE CA\_n3-n28-n41 with 2UL for TR 38.899**

*Type: pCR For: Approval  
 38.899 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2301131**](file:///D:\RAN4%23106\Docs\R4-2301131.zip) **TP for HPUE CA\_n3-n41 with 1UL for TR 38.899**

*Type: pCR For: Approval  
 38.899 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Samsung, KDDI*

**Discussions:**

Qualcomm: isolation needs be increased.

Skyworks: same comment as Qualcomm.

Need more time to check

**Decision: Revised to** [**R4-2303453**](file:///D:\RAN4%23106\Docs\R4-2303453.zip) **(from** [**R4-2301131**](file:///D:\RAN4%23106\Docs\R4-2301131.zip)**).**

[**R4-2303453**](file:///D:\RAN4%23106\Docs\R4-2303453.zip) **TP for HPUE CA\_n3-n41 with 1UL for TR 38.899**

*Type: pCR For: Approval  
 38.899 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2301132**](file:///D:\RAN4%23106\Docs\R4-2301132.zip) **TP for HPUE CA\_n3-n41-n77 with 2UL for TR 38.899**

*Type: pCR For: Approval  
 38.899 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2301133**](file:///D:\RAN4%23106\Docs\R4-2301133.zip) **TP for HPUE CA\_n3-n77 with 1UL and 2UL for TR 38.899**

*Type: pCR For: Approval  
 38.899 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Samsung, KDDI*

**Discussions:**

ZTE: There is TP from NTT DOCOMO. For harmonic MSD, the different values are proposed. The MSD issues are the same for those two.

Apple: PC2 needs be revised to PC1.5.

**Decision: Revised to** [**R4-2303456**](file:///D:\RAN4%23106\Docs\R4-2303456.zip) **(from** [**R4-2301133**](file:///D:\RAN4%23106\Docs\R4-2301133.zip)**).**

[**R4-2303456**](file:///D:\RAN4%23106\Docs\R4-2303456.zip) **TP for HPUE CA\_n3-n77 with 1UL and 2UL for TR 38.899**

*Type: pCR For: Approval  
 38.899 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Samsung, KDDI*

**Discussions:**

ZTE: There is TP from NTT DOCOMO. For harmonic MSD, the different values are proposed. The MSD issues are the same for those two.

Apple: PC2 needs be revised to PC1.5.

**Decision: Approved.**

[**R4-2301134**](file:///D:\RAN4%23106\Docs\R4-2301134.zip) **TP for HPUE CA\_n40-n77 with 1UL for TR 38.899**

*Type: pCR For: Approval  
 38.899 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Samsung, KDDI*

**Decision: Revised to** [**R4-2303454**](file:///D:\RAN4%23106\Docs\R4-2303454.zip) **(from** [**R4-2301134**](file:///D:\RAN4%23106\Docs\R4-2301134.zip)**).**

[**R4-2303454**](file:///D:\RAN4%23106\Docs\R4-2303454.zip) **TP for HPUE CA\_n40-n77 with 1UL for TR 38.899**

*Type: pCR For: Approval  
 38.899 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Samsung, KDDI*

**Decision: Approved.**

[**R4-2302446**](file:///D:\RAN4%23106\Docs\R4-2302446.zip) **Draft CR for 38.101-1: T-Mobile HPUE band combinations**

*Type: draftCR For: Approval  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: T-Mobile USA*

**Decision: Revised to** [**R4-2303455**](file:///D:\RAN4%23106\Docs\R4-2303455.zip) **(from** [**R4-2302446**](file:///D:\RAN4%23106\Docs\R4-2302446.zip)**).**

[**R4-2303455**](file:///D:\RAN4%23106\Docs\R4-2303455.zip) **Draft CR for 38.101-1: T-Mobile HPUE band combinations**

*Type: draftCR For: Approval  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: T-Mobile USA*

**Decision: Endorsed.**

[**R4-2301269**](file:///D:\RAN4%23106\Docs\R4-2301269.zip) **TP for TR38.899\_PC2 CA\_n8A-n78A**

*Type: pCR For: Approval  
 38.899 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Revised to** [**R4-2303528**](file:///D:\RAN4%23106\Docs\R4-2303528.zip) **(from** [**R4-2301269**](file:///D:\RAN4%23106\Docs\R4-2301269.zip)**).**

**[R4-2303528](D:\\RAN4#106\\Docs\\R4-2303528.zip) TP for TR38.899\_PC2 CA\_n8A-n78A**

*Type: pCR For: Approval  
 38.899 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: ZTE Corporation, China Unicom, CHTTL*

**Decision: Approved.**

### 8.21 High power UE for FR1 for inter-band NR\_CADC\_R18\_yBDL\_xBUL with power class 2 on single carrier uplink on FDD band

#### 8.21.1 Rapporteur input (WID/TR/CR)

**Post-meeting process**

[**R4-2300171**](file:///D:\RAN4%23106\Docs\R4-2300171.zip) **Revised WID Rel-18 High power UE (power class 2) for FR1 NR FDD band in UL of NR inter-band CADC combinations with y bands downlink (y=2,3,4,5,6) and x bands uplink (x=1)**

*Type: WID revised For: Approval  
 Source: China Unicom*

**Decision:** The document was **for email approval**.

[**R4-2300173**](file:///D:\RAN4%23106\Docs\R4-2300173.zip) **BigCR for High power UE for inter-band CA with power class 2 on single carrier uplink on FDD band**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1287 rev Cat: B (Rel-18)  
  
 Source: China Unicom*

**Decision:** The document was **for email approval**.

[**R4-2300954**](file:///D:\RAN4%23106\Docs\R4-2300954.zip) **TR 38.850 v0.1.0 HPUE\_FR1\_FDD\_NR\_CADC\_R18**

*Type: draft TR For: Agreement  
 38.850 v0.0.1 CR- rev Cat: (Rel-18)  
  
 Source: China Unicom*

**Decision:** The document was **for email approval**.

#### 8.21.2 UE RF requirements

**[114] Topic #1: HPUE for CA with PC2 on FDD carrier**

[**R4-2302731**](file:///D:\RAN4%23106\Docs\R4-2302731.zip) **MSD for CA\_n3-n78 with PC2 n3 UL**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

TP/TR

[**R4-2300172**](file:///D:\RAN4%23106\Docs\R4-2300172.zip) **TR skeleton for TR 38.850 v0.0.1 HPUE\_FR1\_FDD\_NR\_CADC\_R18**

*Type: draft TR For: Agreement  
 38.850 v0.0.1 CR- rev Cat: (Rel-18)  
  
 Source: China Unicom*

**Decision: Agreed.**

[**R4-2300502**](file:///D:\RAN4%23106\Docs\R4-2300502.zip) **TP for TR 38.850 Addition of PC2 CA\_n1A-n78A and CA\_n3A-n78A with PC2 on FDD carrier**

*Type: pCR For: Approval  
 38.850 v0.0.1 CR- rev Cat: (Rel-18)  
  
 Source: China Unicom*

**Decision: Revised to** [**R4-2303457**](file:///D:\RAN4%23106\Docs\R4-2303457.zip) **(from** [**R4-2300502**](file:///D:\RAN4%23106\Docs\R4-2300502.zip)**).**

**[R4-2303457](D:\\RAN4#106\\Docs\\R4-2303457.zip) TP for TR 38.850 Addition of PC2 CA\_n1A-n78A and CA\_n3A-n78A with PC2 on FDD carrier**

*Type: pCR For: Approval  
 38.850 v0.0.1 CR- rev Cat: (Rel-18)  
  
 Source: China Unicom*

**Decision: Approved.**

### 8.22 High power UE (power class 1.5) for NR TDD bands

#### 8.22.1 Rapporteur input (WID/TR/CR)

[**R4-2301577**](file:///D:\RAN4%23106\Docs\R4-2301577.zip) **TR 38.895 v0.1.0 TDD PC1\_5 HPUE**

*Type: draft TR For: (not specified)  
 38.895 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: CMCC*

**Decision:** The document was **for email approval**.

#### 8.22.2 UE RF requirements

**[112] Topic #2: HPUE\_NR\_FR1\_TDD\_R18 (8.22)**

[**R4-2302275**](file:///D:\RAN4%23106\Docs\R4-2302275.zip) **NS\_50 measurements and A-MPR**

*Type: other For: Approval  
 Source: Qualcomm Inc.*

**Decision: Noted.**

### 8.23 High power UE for FR1 for FDD single band(s) with PC2

#### 8.23.1 Rapporteur input (WID/TR/CR)

[**R4-2300168**](file:///D:\RAN4%23106\Docs\R4-2300168.zip) **Revised WID High power UE (power class 2) for NR FR1 FDD single band**

*Type: WID revised For: Approval  
 Source: China Unicom*

**Decision:** The document was **for email approval**.

[**R4-2300169**](file:///D:\RAN4%23106\Docs\R4-2300169.zip) **TR 38.896 v0.2.0 HPUE\_NR\_FR1\_FDD\_R18**

*Type: draft TR For: Agreement  
 38.896 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: China Unicom*

**Decision:** The document was **for email approval.**

[**R4-2300170**](file:///D:\RAN4%23106\Docs\R4-2300170.zip) **BigCR for High power UE for FDD single band PC2**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1286 rev Cat: B (Rel-18)  
  
 Source: China Unicom*

**Decision:** The document was **for email approval**.

#### 8.23.2 UE RF requirements

**[114] Topic #2: HPUE for FDD single band**

[**R4-2300362**](file:///D:\RAN4%23106\Docs\R4-2300362.zip) **PC2 FDD bands MSD with 1Tx**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2300652**](file:///D:\RAN4%23106\Docs\R4-2300652.zip) **PC2 FDD bands RSD evaluation and NS requirement**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution, we have gathered new measurements with lower noise floor and refined further the RSD calculations for all the PC2 FDD bands in the WI

**Decision: Noted.**

[**R4-2300715**](file:///D:\RAN4%23106\Docs\R4-2300715.zip) **MSD for PC2 FDD bands**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302031**](file:///D:\RAN4%23106\Docs\R4-2302031.zip) **PC2 FDD bands RSD**

*Type: other For: Approval  
 Source: Murata Manufacturing Co Ltd.*

**Decision: Noted.**

[**R4-2302353**](file:///D:\RAN4%23106\Docs\R4-2302353.zip) **Discussion on PC2 FDD bands Reference Sensitivity Degradation**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Mediatek India Technology Pvt.*

**Decision: Noted.**

[**R4-2302709**](file:///D:\RAN4%23106\Docs\R4-2302709.zip) **PC2 FDD requirements for Band n8 and n28**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2300716**](file:///D:\RAN4%23106\Docs\R4-2300716.zip) **PC2 A-MPR for band n8**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2300717**](file:///D:\RAN4%23106\Docs\R4-2300717.zip) **PC2 A-MPR for band n28**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

Withdrawn

[**R4-2300718**](file:///D:\RAN4%23106\Docs\R4-2300718.zip) **MSD for CA\_n3-n78 with PC2 n3 UL**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision:** The document was **withdrawn**.

### 8.24 Rel-18 downlink interruption for NR and EN-DC band combinations at dynamic Tx switching

#### 8.24.1 Rapporteur input (WID/TR/CR)

**[115] Topic #3: Rel-18 downlink interruption for NR and EN-DC band combinations at dynamic Tx switching**

[**R4-2300861**](file:///D:\RAN4%23106\Docs\R4-2300861.zip) **Big CR to 38.101-1 Introduce DL interruption clarification for CA conduting Tx Switching**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1342 rev Cat: B (Rel-18)  
  
 Source: China Telecom*

**Abstract:**

Big CR to capature the finished combos in previous two meetings

**Decision: Agreed.**

#### 8.24.2 UE RF requirements

### 8.25 Additional NR bands for UL-MIMO in Rel-18

#### 8.25.1 Rapporteur Input (WID/TR/CR)

[**R4-2301767**](file:///D:\RAN4%23106\Docs\R4-2301767.zip) **Big CR for 38.101-1 introduce UL MIMO configurations for Rel-18**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1401 rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **for email approval**.

#### 8.25.2 UE RF requirements

**[115] Topic #4: Additional NR bands for UL-MIMO in Rel-18**

[**R4-2300132**](file:///D:\RAN4%23106\Docs\R4-2300132.zip) **Draft CR on removing form factor limitation for n8 UL MIMO**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: China Unicom*

**Discussions:**

Skyworks: PC2 work is not completed. We cannot remove it now.

Apple: Share the same view.

CHTTL: support draft CR. Draft CR is for PC3.

Skyworks: this table applies to all power classes.

Mediatek: this table is generic. We cannot say this band is just for PC3.

OPPO: in the current spec, there is only PC3 included.

CHTTL: once PC2 is completed, we can address the potential ambiguity.

Skyworks: n1 and n3 has PC2. We need somewhere to have clarification.

**Decision: Merged (with R4-23xxxxx).**

[**R4-2300816**](file:///D:\RAN4%23106\Docs\R4-2300816.zip) **Draft CR to support n8 and n28 with PC3 UL MIMO for handheld UE**

*Type: draftCR For: Approval  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: CMCC*

**Decision: Revised to** [**R4-2303688**](file:///D:\RAN4%23106\Docs\R4-2303688.zip) **(from** [**R4-2300816**](file:///D:\RAN4%23106\Docs\R4-2300816.zip)**).**

[**R4-2303688**](file:///D:\RAN4%23106\Docs\R4-2303688.zip) **Draft CR to support n8, n28 and n71 with PC3 UL MIMO for handheld UE**

*Type: draftCR For: Approval  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: CMCC*

*add sourcing companies.*

**Decision: Revised to R4-2303716 (from R4-2303688).**

[**R4-2303716**](file:///D:\RAN4%23106\Docs\R4-2303688.zip) **Draft CR to support n8, n28 and n71 with PC3 UL MIMO for handheld UE**

*Type: draftCR For: Approval  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: CMCC*

**Decision: Endorsed.**

[**R4-2301766**](file:///D:\RAN4%23106\Docs\R4-2301766.zip) **draft CR for 38.101-1 introduce PC2 UL MIMO configurations for band n1, n3 and corresponding SUL band n84, n80**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Endorsed.**

### 8.26 Adding new channel bandwidth(s) support to existing NR bands

#### 8.26.1 Rapporteur input (WID/TR/CR)

[**R4-2301487**](file:///D:\RAN4%23106\Docs\R4-2301487.zip) **Revised Basket WID on adding channel bandwidth support to existing NR bands**

*Type: WID revised For: Endorsement  
 Source: Ericsson*

**Abstract:**

This contribution is a revision of the Rel-18 basket WI for adding new channel BW in existing NR bands

**Discussions:**

Skyworks: are those requests applied to PC2.

Ericsson: the requests are for PC3.

Skwyworks: we need have agreement whether this applies to PC2 since there will be discussions for band combinations.

T-Mobile: we are interested with the other power classes.

Moderator: the WID is only for PC3. For PC2, the proponent needs to have additional requests in HPUE basket WI.

**Decision: Revised to** [**R4-2303584**](file:///D:\RAN4%23106\Docs\R4-2303584.zip) **(from** [**R4-2301487**](file:///D:\RAN4%23106\Docs\R4-2301487.zip)**).**

[**R4-2303584**](file:///D:\RAN4%23106\Docs\R4-2303584.zip) **Revised Basket WID on adding channel bandwidth support to existing NR bands**

*Type: WID revised For: Endorsement  
 Source: Ericsson*

**Abstract:**

This contribution is a revision of the Rel-18 basket WI for adding new channel BW in existing NR bands

**Discussions:**

**Decision: Endorsed.**

[**R4-2301488**](file:///D:\RAN4%23106\Docs\R4-2301488.zip) **Big CR to TS 38.104: Adding channel BW support in existing NR bands**

*Type: CR For: Agreement  
 38.104 v18.0.0 CR-0450 rev Cat: B (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This big CR will capture all draft CRs endorsed in RAN4#106 meeting

**Decision:** The document was **for email approval**.

[**R4-2301489**](file:///D:\RAN4%23106\Docs\R4-2301489.zip) **Big CR to TS 38.101-1: Adding channel BW support in existing NR bands**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1384 rev Cat: B (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This big CR will capture all draft CRs endorsed in RAN4#106 meeting

**Decision:** The document was **for email approval**

#### 8.26.2 UE RF requirements

**[115] Topic #5: Adding new channel bandwidths support to existing NR bands**

[**R4-2301670**](file:///D:\RAN4%23106\Docs\R4-2301670.zip) **Addition of 25 MHz channel BW for n8**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Nokia*

**Decision: Noted.**

[**R4-2302383**](file:///D:\RAN4%23106\Docs\R4-2302383.zip) **Discussion on 25MHz CBW REFSENS for band n8**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Mediatek India Technology Pvt.*

**Decision: Noted.**

Draft CR

[**R4-2300801**](file:///D:\RAN4%23106\Docs\R4-2300801.zip) **Draft CR for 38.101-1: Addition of 35 MHz for n39 and n98**

*Type: draftCR For: Agreement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: CMCC*

**Discussions:**

Qualcomm: NS value and othere aspects are missing.

**Decision: Postponed.**

[**R4-2303468**](file:///D:\RAN4%23106\Docs\R4-2303468.zip) **Draft CR for 38.101-1: Addition of 35 MHz for n39 and n98**

*Type: draftCR For: Agreement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: CMCC*

**Discussions:**

Qualcomm: NS value and othere aspects are missing.

**Decision: Withdrawn.**

[**R4-2301668**](file:///D:\RAN4%23106\Docs\R4-2301668.zip) **draftCR for 38.101-1 - Addition of 25 MHz channel BW for n8**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia*

**Decision: Revised to** [**R4-2303467**](file:///D:\RAN4%23106\Docs\R4-2303467.zip) **(from** [**R4-2301668**](file:///D:\RAN4%23106\Docs\R4-2301668.zip)**).**

[**R4-2303467**](file:///D:\RAN4%23106\Docs\R4-2303467.zip) **draftCR for 38.101-1 - Addition of 25 MHz channel BW for n8**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia*

**Decision: Endorsed.**

[**R4-2300802**](file:///D:\RAN4%23106\Docs\R4-2300802.zip) **Discussion on REFSENS for band n39 supporting 35MHz**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision:** The document was **withdrawn**.

#### 8.26.3 BS RF requirements

**[115] Topic #5: Adding new channel bandwidths support to existing NR bands**

[**R4-2300803**](file:///D:\RAN4%23106\Docs\R4-2300803.zip) **Draft CR for 38.104: Addition of 35 MHz for n39 and n98**

*Type: draftCR For: Agreement  
 38.104 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: CMCC*

**Decision: Postponed.**

[**R4-2301669**](file:///D:\RAN4%23106\Docs\R4-2301669.zip) **draftCR for 38.104 - Addition of 25 MHz channel BW for n8**

*Type: draftCR For: Endorsement  
 38.104 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia*

**Decision: Endorsed.**

### 8.27 Simultaneous Rx/Tx inter-band combinations for NR CA/DC, NR SUL and LTE/NR DC in Rel-18

#### 8.27.1 Rapporteur input (WID/TR/CR)

[**R4-2302051**](file:///D:\RAN4%23106\Docs\R4-2302051.zip) **Big CR for Rel-18 Simultaneous Rx/Tx inter-band combinations**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1405 rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **for email approval**.

[**R4-2302052**](file:///D:\RAN4%23106\Docs\R4-2302052.zip) **TR 38.894 v0.2.0**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision:** The document was **for email approval**.

#### 8.27.2 Identification of simultaneous Rx/Tx capability for band combinations and UE RF requirements

**[115] Topic #6: Simultaneous Rx/Tx inter-band combinations in Rel-18**

[**R4-2300347**](file:///D:\RAN4%23106\Docs\R4-2300347.zip) **On simultaneous Rx-Tx for NR inter-band combinations**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2300916**](file:///D:\RAN4%23106\Docs\R4-2300916.zip) **CA\_n40-n41 non-simultaneous RxTx PC3 PC2 MSD**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Noted.**

[**R4-2301710**](file:///D:\RAN4%23106\Docs\R4-2301710.zip) **Continue discussion on simultaneous RxTx**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: MediaTek Inc.*

**Decision: Noted.**

[**R4-2302053**](file:///D:\RAN4%23106\Docs\R4-2302053.zip) **Cross band isolation MSD analysis forCA\_n40A-n41A**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302054**](file:///D:\RAN4%23106\Docs\R4-2302054.zip) **Cross band isolation MSD analysis for CA\_n34-n41**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302378**](file:///D:\RAN4%23106\Docs\R4-2302378.zip) **Cross band isolation MSD analysis for CA\_n7-n40**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

Draft CR

[**R4-2300804**](file:///D:\RAN4%23106\Docs\R4-2300804.zip) **Draft CR for updating simultaneous Rx/Tx requirements for CA\_n39-n41**

*Type: draftCR For: Agreement  
 38.101-1 v18.0.0 CR- rev Cat: F (Rel-18)  
  
 Source: CMCC*

**Decision: Endorsed.**

### 8.28 4Rx support for NR FR1 bands (<2.6GHz) in Rel-18

#### 8.28.1 Rapporteur input (WID/TR/CR)

**Post-meeting process**

[**R4-2301277**](file:///D:\RAN4%23106\Docs\R4-2301277.zip) **Revised WID: 4Rx support for NR FR1 bands (<2.6GHz) in Rel-18**

*Type: WID revised For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **for email approval**.

[**R4-2301278**](file:///D:\RAN4%23106\Docs\R4-2301278.zip) **Big CR to reflect the completed 4Rx support for NR FR1 bands (<2.6GHz) into TS 38.101-1**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1377 rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision:** The document was **for email approval**.

#### 8.28.2 UE RF requirements

**[116] Topic #1: 4Rx support for NR FR1 bands (<2.6GHz) in Rel-18**

[**R4-2301255**](file:///D:\RAN4%23106\Docs\R4-2301255.zip) **draft CR to TS38.101-1: 4Rx for n5**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation, China Telecom*

**Decision: Endorsed.**

[**R4-2302447**](file:///D:\RAN4%23106\Docs\R4-2302447.zip) **Draft CR for 38.101-1: 4Rx for n25 and n85**

*Type: draftCR For: Approval  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: T-Mobile USA*

**Decision: Endorsed.**

### 8.29 Low NR band 4Rx for handheld UE and 3Tx for inter-band UL CA and EN-DC

#### 8.29.1 General and work plan

[**R4-2301185**](file:///D:\RAN4%23106\Docs\R4-2301185.zip) **R18 workplan for low band 4Rx and 3Tx with inter-band UL CA and EN-DC WI**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Revised to** [**R4-2303521**](file:///D:\RAN4%23106\Docs\R4-2303521.zip) **(from** [**R4-2301185**](file:///D:\RAN4%23106\Docs\R4-2301185.zip)**).**

**[R4-2303521](D:\\RAN4#106\\Docs\\R4-2303521.zip) R18 workplan for low band 4Rx and 3Tx with inter-band UL CA and EN-DC WI**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Approved.**

#### 8.29.2 Enhancements for 4Rx at low frequency band (<1GHz)

**[116] Topic #2: 4Rx at low frequency band (<1GHz)**

[**R4-2300363**](file:///D:\RAN4%23106\Docs\R4-2300363.zip) **Views on low band 4Rx for handheld UE**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2301095**](file:///D:\RAN4%23106\Docs\R4-2301095.zip) **Discussion on Enhancements for 4Rx at low frequency band**

*Type: other For: Discussion  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2301186**](file:///D:\RAN4%23106\Docs\R4-2301186.zip) **R18 low band 4Rx**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2301251**](file:///D:\RAN4%23106\Docs\R4-2301251.zip) **Discussion on 4Rx low band (<1GHz) for handheld UE**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301542**](file:///D:\RAN4%23106\Docs\R4-2301542.zip) **Discussion on enhancements for 4Rx at low frequency band**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2302236**](file:///D:\RAN4%23106\Docs\R4-2302236.zip) **Discussion on enhancement for 4Rx at low frequency band**

*Type: discussion For: (not specified)  
 Source: Google Inc.*

**Decision: Noted.**

[**R4-2302373**](file:///D:\RAN4%23106\Docs\R4-2302373.zip) **On 4Rx requirements for low operating bands**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

#### 8.29.3 Enhancements of 3Tx for band combinations with two bands

**[116] Topic #3: 3Tx with inter-band UL CA/EN-DC**

[**R4-2300360**](file:///D:\RAN4%23106\Docs\R4-2300360.zip) **Enabling simultaneous 3Tx for inter-band UL CA/DC**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2300361**](file:///D:\RAN4%23106\Docs\R4-2300361.zip) **PC1.5 for inter-band UL CA/DC and MSD framework**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2301094**](file:///D:\RAN4%23106\Docs\R4-2301094.zip) **Discussion on 3Tx for inter-band UL CA and EN-DC**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2301109**](file:///D:\RAN4%23106\Docs\R4-2301109.zip) **Views on 3Tx for band combinations with 2 band**

*Type: discussion For: Discussion  
 Source: Samsung, Telus, Bell Mobility, KT corporation*

**Decision: Noted.**

[**R4-2301187**](file:///D:\RAN4%23106\Docs\R4-2301187.zip) **R18 3Tx for inter-band combinations**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2301250**](file:///D:\RAN4%23106\Docs\R4-2301250.zip) **Discussion on 3Tx inter-band UL CA/ENDC within two bands**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301543**](file:///D:\RAN4%23106\Docs\R4-2301543.zip) **Discussion on enhancements of 3Tx for band combinations with two bands**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301719**](file:///D:\RAN4%23106\Docs\R4-2301719.zip) **R18 3TX discussion**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: MediaTek Inc.*

**Decision: Noted.**

[**R4-2302372**](file:///D:\RAN4%23106\Docs\R4-2302372.zip) **On UE RF requirements for FWA UE supporting 3Tx for two bands**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

#### 8.29.4 Moderator summary and conclusions

**[106][116] NR\_3Tx-4Rx\_WI, AI 8.28, 8.29 – Jinqiang Xing (OPPO)**

[**R4-2302809**](file:///D:\RAN4%23106\Docs\R4-2302809.zip) **Topic summary for [106][116] NR\_3Tx-4Rx\_WI**

*Type: other For: Information  
 Source: Moderator (OPPO)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303522**](file:///D:\RAN4%23106\Docs\R4-2303522.zip) **WF on 4Rx requirements for low operating bands**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Approved.**

[**R4-2303523**](file:///D:\RAN4%23106\Docs\R4-2303523.zip) **WF on 3Tx requirements**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Approved.**

**Issue 2-1-1: Feasibility of supporting 4Rx in low bands (<1GHz)**

**Discussions:**

Google: in our view from antenna it is hard to have low antenna correlation. We need more time to evaluate. We can compromise to moderator recommendation.

Apple: Option 1d is not our conclusion.

CHTTL: we need add handheld to WF.

Qualcomm: we soften the wording the first bullet.

Vivo: we share Qualcomm view. We need soften the wording.

Verizon: we agree and support the WF at least from FWA perspective.

**Agreement:**

* Supporting 4Rx in low bands may be feasible at least for some handheld UE and complexity might be high or gain might be low for some other UE which is UE implementation dependent.
* Supporting 4Rx in low bands is an optional feature.
* Interested companies are encouraged to provide more simulation or measurement data.

**Issue 2-2-2: delta TRxSRS**

**Discussinos:**

Qualcomm: RAN4 does not distinguish TDD and FDD.

Vivo: we also think it is pre-mature to draw conclusion.

**Issue 3-1-1: Tx Requirement for 3Tx inter-band UL CA+UL MIMO**

**Discussions:**

Vivo: These are not band specific requirements.

Skyworks: we have just point to the session with requirement and there is no new requirements.

**Agreement:**

* Reuse the single CC requirements for corresponding sessions.

**Issue 3-2-4: MSD re-evaluation of example band combinations**

**Discussions:**

Samsung: we prefer to study based on some example band combination. there are too many BCs. We cannot evaluate all the values for all the band combinations and need to select the example band combinations.

Apple: if these combinations are going to support 3Tx, the 2Tx counter part needs be specified first.

Qualcomm: follow Apple comment, what does 2Tx counterpart mean?

Apple: for inter-band combination, we only specify up to PC2. We do not have any BC to support PC1.5.

**Issue 3-3-1:** **How to specify 3Tx requirements with inter-band UL CA or ENDC+UL MIMO**

**Discussions:**

Skyworks: there is difference from intra-band.

Samsung: we support the recommended WF. To Skyworks, new MOP should be considered.

Mediatek: in addtion to this, this is still two bands. When we specify inter-band operation, how to capture 3Tx in the system parameter part.

Apple: support the WF. To Skyworks and Mediatek, we have TP example.

### 8.30 APT 600 MHz NR band

**[117] Topic #1: Text proposals for the TR**

TR/TP

[**R4-2300029**](file:///D:\RAN4%23106\Docs\R4-2300029.zip) **APT 600 MHz NR band**

*Type: draft TR For: Information  
 38.892 v0.4.0 CR- rev Cat: (Rel-18)  
  
 Source: Spark NZ Ltd*

**Abstract:**

This contribution provides contents of TR 38 892 approved thus far. This is the new base line for any additional contents in RAN4 106

**Decision: Agreed.**

[**R4-2300030**](file:///D:\RAN4%23106\Docs\R4-2300030.zip) **TR 38.892**

*Type: draft TR For: Agreement  
 38.892 v0.5.0 CR- rev Cat: (Rel-18)  
  
 Source: Spark NZ Ltd*

**Abstract:**

This contribution will capture all content to TR 38 892 in RAN4 and then to be submitted to RAN as final outcome

**Decision:** The document was **for email approval**.

[**R4-2300031**](file:///D:\RAN4%23106\Docs\R4-2300031.zip) **Text proposals for TR 38 892**

*Type: discussion For: Approval  
 Source: Spark NZ Ltd*

**Abstract:**

This contribution provides contents for section 6 of TR 38 892- compatibility between B71/n71

**Discussions:**

Qualcomm: question what is expected to be support.

Spark: in last meeting, we agreed that new generation of n105 and n71 UE can have common modem. There was a Qualcomm tdoc.

**Decision: Merged (with** [**R4-2303472**](file:///D:\RAN4%23106\Docs\R4-2303472.zip)**).**

[**R4-2302457**](file:///D:\RAN4%23106\Docs\R4-2302457.zip) **TP to TR 38.892: n71 and n105 compatibility (section 6)**

*Type: pCR For: Approval  
 38.892 v0.5.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

TP to TR 38.892, on the n105 compatibility with band 71/n71.

**Decision: Merged (with** [**R4-2303472**](file:///D:\RAN4%23106\Docs\R4-2303472.zip)**).**

[**R4-2302708**](file:///D:\RAN4%23106\Docs\R4-2302708.zip) **TP for TR 38.892: Compatibility with Band 71/n71**

*Type: pCR For: Approval  
 38.892 v0.4.0 CR- rev Cat: (Rel-18)  
  
 Source: Qualcomm Incorporated*

**Decision: Revised to** [**R4-2303472**](file:///D:\RAN4%23106\Docs\R4-2303472.zip) **(from** [**R4-2302708**](file:///D:\RAN4%23106\Docs\R4-2302708.zip)**).**

[**R4-2303472**](file:///D:\RAN4%23106\Docs\R4-2303472.zip) **TP for TR 38.892: Compatibility with Band 71/n71**

*Type: pCR For: Approval  
 38.892 v0.4.0 CR- rev Cat: (Rel-18)  
  
 Source: Qualcomm Incorporated, Huawei, HiSilicon, Spark NZ, Nokia, T-Mobile USA*

**Decision: Revised to** [**R4-2303697**](file:///D:\RAN4%23106\Docs\R4-2303697.zip) **(from** [**R4-2303472**](file:///D:\RAN4%23106\Docs\R4-2303472.zip)**).**

[**R4-2303697**](file:///D:\RAN4%23106\Docs\R4-2303697.zip) **TP for TR 38.892: Compatibility with Band 71/n71**

*Type: pCR For: Approval  
 38.892 v0.4.0 CR- rev Cat: (Rel-18)  
  
 Source: Qualcomm Incorporated, Huawei, HiSilicon, Spark NZ, Nokia*

**Decision: Approved.**

[**R4-2302707**](file:///D:\RAN4%23106\Docs\R4-2302707.zip) **TP for TR 38.892: UE requirements**

*Type: pCR For: Approval  
 38.892 v0.4.0 CR- rev Cat: (Rel-18)  
  
 Source: Qualcomm Incorporated*

**Decision: Approved.**

[**R4-2302458**](file:///D:\RAN4%23106\Docs\R4-2302458.zip) **TP to TR 38.892: BS RF requirements (section 7.2)**

*Type: pCR For: Approval  
 38.892 v0.5.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

TP to TR 38.892, on the BS requirements corrections.

**Decision: Approved.**

#### 8.30.1 Band parameters and UE RF requirements

**[117] Topic #1: Text proposals for the TR**

TP

[**R4-2300748**](file:///D:\RAN4%23106\Docs\R4-2300748.zip) **TP to 38.892: the method of using asymmetric bandwidth sets for n105 for compatibility with n71**

*Type: pCR For: Approval  
 38.892 v0.5.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

In this text proposal we add the method of using asymmetric bandwidth sets for n105 for compatibility with n71

**Decision: Withdrawn.**

#### 8.30.2 BS RF requirements and conformance testing

**[117] Topic #2: Maintenance of TS and CRs for outstanding affected specifications**

[**R4-2301724**](file:///D:\RAN4%23106\Docs\R4-2301724.zip) **Discussion on the impact of APT60MHz on TS38.115-2**

*Type: discussion For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2302352**](file:///D:\RAN4%23106\Docs\R4-2302352.zip) **Needed corrections for n105 related band protection**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution we address some of the corrections needed but also look for clarification on which regions apply for n105 band protection aspects.

**Decision: Noted.**

CR

[**R4-2301478**](file:///D:\RAN4%23106\Docs\R4-2301478.zip) **CR to TS 38.174: Addition of band n105**

*Type: CR For: Agreement  
 38.174 v17.2.0 CR-0041 rev Cat: B (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 38.174, introducing new NR band n105

**Decision: Agreed.**

[**R4-2303475**](file:///D:\RAN4%23106\Docs\R4-2303475.zip) **CR to TS 38.174: Addition of band n105**

*Type: CR For: Agreement  
 38.174 v17.2.0 CR-0041 rev Cat: B (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 38.174, introducing new NR band n105

**Decision: Withdrawn.**

[**R4-2301479**](file:///D:\RAN4%23106\Docs\R4-2301479.zip) **CR to TS 37.176-1: Introduction of NR band n105**

*Type: CR For: Agreement  
 38.176-1 v17.3.0 CR-0017 rev Cat: B (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 37.176-1, introducing new NR band n105

**Decision: Agreed.**

[**R4-2303476**](file:///D:\RAN4%23106\Docs\R4-2303476.zip) **CR to TS 37.176-1: Introduction of NR band n105**

*Type: CR For: Agreement  
 38.176-1 v17.3.0 CR-0017 rev Cat: B (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 37.176-1, introducing new NR band n105

**Decision: Withdrawn.**

[**R4-2301480**](file:///D:\RAN4%23106\Docs\R4-2301480.zip) **CR to TS 38.176-2: Introduction of NR band n105**

*Type: CR For: Agreement  
 38.176-2 v17.3.0 CR-0019 rev Cat: B (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 38.176-2, introducing new NR band n105

**Decision: Agreed.**

[**R4-2303477**](file:///D:\RAN4%23106\Docs\R4-2303477.zip) **CR to TS 38.176-2: Introduction of NR band n105**

*Type: CR For: Agreement  
 38.176-2 v17.3.0 CR-0019 rev Cat: B (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

This contribution is a CR to TS 38.176-2, introducing new NR band n105

**Decision: Withdrawn.**

[**R4-2301725**](file:///D:\RAN4%23106\Docs\R4-2301725.zip) **CR to TS38.115-1 the introduction of APT600MHz**

*Type: CR For: Agreement  
 38.115-1 v17.0.0 CR-0004 rev Cat: B (Rel-18)  
  
 Source: ZTE*

**Decision: Agreed.**

[**R4-2303478**](file:///D:\RAN4%23106\Docs\R4-2303478.zip) **CR to TS38.115-1 the introduction of APT600MHz**

*Type: CR For: Agreement  
 38.115-1 v17.0.0 CR-0004 rev Cat: B (Rel-18)  
  
 Source: ZTE*

**Decision: Withdrawn.**

[**R4-2301726**](file:///D:\RAN4%23106\Docs\R4-2301726.zip) **CR to TS38.106 the introduction of APT600MHz**

*Type: CR For: Agreement  
 38.106 v17.3.0 CR-0032 rev Cat: B (Rel-18)  
  
 Source: ZTE*

**Decision: Agreed.**

[**R4-2303479**](file:///D:\RAN4%23106\Docs\R4-2303479.zip) **CR to TS38.106 the introduction of APT600MHz**

*Type: CR For: Agreement  
 38.106 v17.3.0 CR-0032 rev Cat: B (Rel-18)  
  
 Source: ZTE*

**Decision: Withdrawn.**

[**R4-2302459**](file:///D:\RAN4%23106\Docs\R4-2302459.zip) **CR to TS 36.104: Introduction of NR band n105, Rel-18**

*Type: CR For: Agreement  
 36.104 v18.0.0 CR-4967 rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of NR band n105 to TS 36.104.

**Decision: Agreed.**

[**R4-2303480**](file:///D:\RAN4%23106\Docs\R4-2303480.zip) **CR to TS 36.104: Introduction of NR band n105, Rel-18**

*Type: CR For: Agreement  
 36.104 v18.0.0 CR-4967 rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of NR band n105 to TS 36.104.

**Decision: Withdrawn.**

[**R4-2302460**](file:///D:\RAN4%23106\Docs\R4-2302460.zip) **CR to TS 36.141: Introduction of NR band n105, Rel-18**

*Type: CR For: Agreement  
 36.141 v18.0.0 CR-1352 rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of NR band n105 to TS 36.141.

**Decision: Agreed.**

**[R4-2303481](D:\\RAN4#106\\Docs\\R4-2303481.zip) CR to TS 36.141: Introduction of NR band n105, Rel-18**

*Type: CR For: Agreement  
 36.141 v18.0.0 CR-1352 rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of NR band n105 to TS 36.141.

**Decision: Withdrawn.**

#### 8.30.3 RRM requirements

#### 8.30.4 Moderator summary and conclusions

**[106][117] NR\_600MHz\_APT, AI 8.30 – Christian Bergljung (Ericsson)**

[**R4-2302810**](file:///D:\RAN4%23106\Docs\R4-2302810.zip) **Topic summary for [106][117] NR\_600MHz\_APT**

*Type: other For: Information  
 Source: Moderator (Ericsson)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303473**](file:///D:\RAN4%23106\Docs\R4-2303473.zip) **CR on correction to band protection for n105**

*Type: CR For: Aggreement  
 38.101-1 v CR- rev Cat-B: (Rel-18)  
  
 Source: Skyworks Solutions Inc., Qualcomm*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Agreed.**

[**R4-2303474**](file:///D:\RAN4%23106\Docs\R4-2303474.zip) **CR on correction for n105**

*Type: CR For: Aggreement  
 36.101 CR- rev Cat-B: (Rel-18)  
  
 Source: Skyworks Solutions Inc., Qualcomm*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Agreed.**

**Issue 2-1: Handling of the affected spec 38.115-2**

**Agreement:**

* Option 1.

**Issue 2-2-1: band 7 and n78 protection**

Qualcomm: For UE-UE coexistence, we propose

Spark: can we do it as maintenance issue?

Skyworks: in our view, proposal 1 should be treated in this meeting. We need the common view on it. We need CRs.

Huawei: support to close this in this meeting. I am sure if to split the issue depending on the region is the way we did before. Need some clarification.

Spark: we need to close this work. We are reluctant to have additional CRs.

**Agreement:**

* Focus on proposal 1 in this meeting. Discuss proposal 2 and 3 as maintenance in the future.

### 8.31 Introduction of evolved shared spectrum bands

#### 8.31.1 General and work plan

**[118] Topic #3: Network Signalling Extension**

[**R4-2300336**](file:///D:\RAN4%23106\Docs\R4-2300336.zip) **Update of the regulatory requirements and summary of NS values**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

[**R4-2300339**](file:///D:\RAN4%23106\Docs\R4-2300339.zip) **Further considerations on extending the maximum range for NS values**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

**[118] Topic #1: General**

[**R4-2302665**](file:///D:\RAN4%23106\Docs\R4-2302665.zip) **Discussion on the work needed for A-MPR evaluation for NR-U contiguous ULCA**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

Since the initial work on NR-U ULCA MPR in Release 17, the work on evaluating required back-off for all waveform types and mode of operation has been overwhelming for RAN4 and supported by only a few companies. Since then although, as a company we have wo

**Decision: Noted.**

Draft CR/TP

[**R4-2300337**](file:///D:\RAN4%23106\Docs\R4-2300337.zip) **draft CR: Rolling CR covering the agreed changes for NR-U enhacement**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Apple*

**Decision: Revised to** [**R4-2303482**](file:///D:\RAN4%23106\Docs\R4-2303482.zip) **(from** [**R4-2300337**](file:///D:\RAN4%23106\Docs\R4-2300337.zip)**).**

[**R4-2303482**](file:///D:\RAN4%23106\Docs\R4-2303482.zip) **draft CR: Rolling CR covering the agreed changes for NR-U enhacement**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Apple*

**Decision: Endorsed.**

[**R4-2300338**](file:///D:\RAN4%23106\Docs\R4-2300338.zip) **Introduction of new countries with associated NS values and A-MPR back-off**

*Type: draftCR For: Endorsement  
 38.849 v17.1.0 CR- rev Cat: F (Rel-18)  
  
 Source: Apple*

**Decision: Revised to** [**R4-2303483**](file:///D:\RAN4%23106\Docs\R4-2303483.zip) **(from** [**R4-2300338**](file:///D:\RAN4%23106\Docs\R4-2300338.zip)**).**

[**R4-2303483**](file:///D:\RAN4%23106\Docs\R4-2303483.zip) **Introduction of new countries with associated NS values and A-MPR back-off**

*Type: draftCR For: Endorsement  
 38.849 v17.1.0 CR- rev Cat: F (Rel-18)  
  
 Source: Apple*

**Decision: Endorsed.**

[**R4-2300985**](file:///D:\RAN4%23106\Docs\R4-2300985.zip) **TP for TR38.849 on NR-U PC3 A-MPR in South Korea**

*Type: draftCR For: Endorsement  
 38.849 v17.1.0 CR- rev Cat: (Rel-17)  
  
 Source: LG Electronics*

**Abstract:**

It is a TP of TR38.849 on Rel-18 NR-U PC3 A-MPR for South Korea .

**Decision: Noted.**

#### 8.31.2 Common requirements (channel raster, A-MPR for 100MHz CBW)

**[118] Topic #3: Network Signalling Extension**

[**R4-2301673**](file:///D:\RAN4%23106\Docs\R4-2301673.zip) **Discussion on NS extension for NR-U**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

#### 8.31.3 UE RF requirements for SP and LPI

**[118] Topic #2: MPR and A-MPR**

[**R4-2300059**](file:///D:\RAN4%23106\Docs\R4-2300059.zip) **Simulation results on UE RF MPR and A-MPR for PC3**

*Type: discussion For: Approval  
 Source: Charter Communications, Inc*

**Decision: Noted.**

[**R4-2300951**](file:///D:\RAN4%23106\Docs\R4-2300951.zip) **NR-U PC3 UE RF requirements**

*Type: discussion For: Discussion  
 Source: LG Electronics*

**Abstract:**

It discusses NR-U PC3 UE RF requirements (MPR, A-MPR in South Korea).

**Decision: Noted.**

[**R4-2300344**](file:///D:\RAN4%23106\Docs\R4-2300344.zip) **NR-U MPR for Wideband and A-MPR for LPI**

*Type: other For: Approval  
 Source: Apple*

Chair: it seems not be included in summary.

**Decision: Noted.**

CR

[**R4-2300952**](file:///D:\RAN4%23106\Docs\R4-2300952.zip) **CR on NR-U PC3 A-MPR in NS\_60**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1344 rev Cat: B (Rel-18)  
  
 Source: LG Electronics*

**Abstract:**

It is a CR for NR-U PC3 A-MPR in NS\_60.

**Decision: Not pursued.**

[**R4-2300953**](file:///D:\RAN4%23106\Docs\R4-2300953.zip) **CR on NR-U A-MPR for PC5 VLP in NS\_61**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1345 rev Cat: F (Rel-18)  
  
 Source: LG Electronics*

**Abstract:**

It is a Rel-18 CR on NR-U A-MPR for PC5 VLP to align with Rel-17.

**Decision: Agreed.**

#### 8.31.4 UE RF requirements for VLP

[**R4-2300345**](file:///D:\RAN4%23106\Docs\R4-2300345.zip) **NR-U A-MPR for VLP**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

#### 8.31.5 BS conformance testing and UE release independency

#### 8.31.6 Moderator summary and conclusions

**[106][118] NR\_unlic\_enh, AI 8.31 – Daniel Popp (Apple)**

[**R4-2302811**](file:///D:\RAN4%23106\Docs\R4-2302811.zip) **Topic summary for [106][118] NR\_unlic\_enh**

*Type: other For: Information  
 Source: Moderator (Apple)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303484**](file:///D:\RAN4%23106\Docs\R4-2303484.zip) **WF on NR-U enhancement**

*Type: other For: Approval  
 Source: Apple*

**Decision: Approved.**

**Issue 2-1-1: MPR proposals**

**Discussions**

LGE: We prefer to Option 1.

Skyworks: support the consensus on 1Tx.

Charter: Prefer to Option1.

**Issue 2-1-2: Quantising MPR values to 0.5dB steps**

**Agreement:**

* Option 1.

**Issue 2-1-3: 2Tx MPR**

**Discussions**

Skyworks: MPR is based on one contribution only. Is it OK to put all the values in [].

LGE: It is last meeting to close. Suggest other companies to check.

**Agreement:**

* Agree the values with [ ] in the table below.

|  |  |  |  |
| --- | --- | --- | --- |
| **Pre-coding** | **Modulation** | **RB Allocation** | |
|  |  | **Full2 (dB)** | **Partial3 (dB)** |
| DFT-s-ODFM | Pi/2 BPSK4 | ≤ 2.0 | ≤ 3.0 |
|  | QPSK | ≤ 2.0 | ≤ 3.0 |
|  | 16 QAM | ≤ 2.5 | ≤ 3.0 |
|  | 64 QAM | ≤ 2.5 | ≤ 3.5 |
|  | 256 QAM | ≤ 4.0 | ≤ 4.5 |
| CP-OFDM | QPSK | ≤ 3.5 | ≤ 4.0 |
|  | 16 QAM | ≤ 3.5 | ≤ 4.0 |
|  | 64 QAM | ≤ 4.5 | ≤ 4.5 |
|  | 256 QAM | ≤ 6.0 | ≤ 6.0 |
| NOTE 1: The MPR shall apply to all SCS in all active 20 MHz sub-bands contiguously allocated in the channel. The MPR applies to interlaced allocations with uplink resource allocation type 2 as specified in TS 38.214.  NOTE 2: Full RB allocation MPR applies when all RB’s in a 20 MHz channel or all RB’s in all sub-bands for wideband operation are fully allocated and sub-bands are transmitted according to configuration A in Table 6.2F.2-2.  NOTE 3: Partial RB allocation MPR applies when one or more RB’s in one or more sub-bands are not allocated or when the transmitted sub-bands for wideband operation are transmitted according to configuration B in Table 6.2F.2-2.  NOTE 4: Applicable to Pi/2-BPSK modulation when IE powerBoostPi2BPSK is set to 0. | | | |

**Issue 2-2: A-MPR proposal**

Skyworks: we can agree the values. The question is we do not see the 100MHz channel. We need A-MPR for it. It would be added later on.

**Agreement:**

* Agree the values in the table below.
* For 100MHz channel bandwidth, the A-MPR would be added in future.

**A-MPR for NS\_30 power class 3**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pre-coding** | **Modulation** | **RB Allocation (Note 2)** | | **RB Allocation (Note 3)** | | **RB Allocation (Note 4)** |
|  |  | **Full (dB)** | **Partial (dB)** | **Full (dB)** | **Partial (dB)** | **Full/Partial** |
| DFT-s-OFDM | PI/2 BPSK | ≤ 12.0 | ≤ 15.5 | ≤ 3.5 | ≤ 5.5 | See Table MPR table for PC3 |
| QPSK | ≤ 12.5 | ≤ 16.0 | ≤ 4.0 | ≤ 6.5 |
| 16 QAM | ≤ 12.5 | ≤ 16.0 | ≤ 4.5 | ≤ 7.0 |
| 64 QAM | ≤ 13.0 | ≤ 16.0 | ≤ 4.5 | ≤ 7.0 |
| 256 QAM | ≤ 13.0 | ≤ 16.0 | ≤ 4.5 | ≤ 7.0 |
| CP-OFDM | QPSK | ≤ 14.0 | ≤ 16.5 | ≤ 6.0 | ≤ 7.5 |
|  | 16 QAM | ≤ 14.0 | ≤ 16.5 | ≤ 6.0 | ≤ 7.5 |
|  | 64 QAM | ≤ 14.0 | ≤ 16.5 | ≤ 6.0 | ≤ 7.5 |
|  | 256 QAM | ≤ 14.0 | ≤ 16.5 | ≤ 6.5 | ≤ 7.5 |
| NOTE 1: Full allocation A-MPR applies when all RB’s in a 20 MHz channel or all RB’s in all sub-bands for wideband operation are fully allocated and all sub-bands are transmitted. Partial allocation A-MPR applies when one or more RB’s in one or more sub-bands are not allocated or when not all transmitted sub-bands for wideband operation are transmitted.  NOTE 2: Applicable for 20 MHz channels centered at the nearest NR-ARFCN corresponding to 5160, 5340, 5480, and 5700 MHz, 40 MHz channels centered at the nearest NR-ARFCN corresponding to 5170, 5190, 5310, 5330, 5490, and 5510 MHz, 60 MHz channels centered at the nearest NR-ARFCN corresponding to 5180, 5200, 5220, 5280, 5300, 5320, 5500, 5520, 5540, 5680 MHz, and 80 MHz channels centered at the nearest NR-ARFCN corresponding to 5190, 5210, 5290, 5310, 5510, and 5530 MHz.  NOTE 3: Applicable for 20 MHz channels centered at the nearest NR-ARFCN corresponding to 5180 and 5320 MHz, and 40 MHz channels centered at the nearest NR-ARFCN corresponding to 5230 and 5270 MHz.  NOTE 4: Applicable for all valid channels other than those enumerated under NOTE 2 and NOTE 3. | | | | | | |

**Issue 2-3: A-MPR proposal**

LGE: for A-MPR, the A-MPR is provided for 1Tx. Do you consider 2Tx? For MPR, we consider both 1Tx and 2Tx. For some region, we consider 1Tx and 2Tx for A-MPR. For others, we did not.

Skyworks: similar question. For other cases, in the end, what we present in the specification needs the clarification for different combination of 1Tx and power class. We need to decide how many cases we need specify.

**Agreement:**

* For 1Tx, agree on Option 2, i.e., the table below is agreed.

**Table 5: A-MPR for NS\_54 power class 3**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pre-coding** | **Modulation** | **RB Allocation (Note 2)** | **RB Allocation (Note 3)** | | **RB Allocation ~~(Note 5)~~** | |
|  |  | **Full/Partial** | **Full (dB)** | **Partial (dB)** | **Full (dB)** | **Partial (dB)** |
| DFT-s-OFDM | PI/2 BPSK | See Table PC3 MPR | ≤ [2.0] | ≤ [4.5] | ≤ [1.0] | ≤ [2.0] |
| QPSK | ≤ [3.0] | ≤ [5.0] | ≤ [1.5] | ≤ [3.0] |
| 16 QAM | ≤ [3.5] | ≤ [5.0] | ≤ [2.0] | ≤ [3.0] |
| 64 QAM |  | ≤ [3.5] | ≤ [5.0] | ≤ [2.5] | ≤ [3.0] |
|  | 256 QAM |  | ≤ [5.0] | ≤ [6.0] | ≤ [4.5] | ≤ [5.0] |
| CP-OFDM | QPSK |  | ≤ [4.5] | ≤ [6.0] | ≤ [3.0] | ≤ [4.0] |
|  | 16 QAM |  | ≤ [5.0] | ≤ [6.0] | ≤ [3.0] | ≤ [4.0] |
|  | 64 QAM |  | ≤ [5.0] | ≤ [6.0] | ≤ [4.0] | ≤ [5.0] |
|  | 256 QAM |  | ≤ [6.5] | ≤ [7.0] | ≤ [6.5] | ≤ [7.0] |
| NOTE 1: Full allocation A-MPR applies when all RB’s in a 20 MHz channel or all RB’s in all sub-bands for wideband operation are fully allocated and all sub-bands are transmitted. Partial allocation A-MPR applies when one or more RB’s in one or more sub-bands are not allocated or when not all transmitted sub-bands for wideband operation are transmitted.  NOTE 2: Applicable for all valid channels and bandwidths other than those enumerated in NOTE 3 and NOTE 5.  NOTE 3: Applicable for 40 MHz channels centered at the nearest NR-ARFCN corresponding to [5965 MHz], 60 MHz channels centered at the nearest NR-ARFCN corresponding to [5975 and 5995 MHz], and 80 MHz channels centered at the nearest NR-ARFCN corresponding to [5985 MHz].  NOTE 4: Applicable to Pi/2-BPSK modulation when IE powerBoostPi2BPSK is set to 0.  ~~NOTE 5: Applicable for 60 MHz channels centered at the nearest NR-ARFCN corresponding to [5995 and 6015 MHz], and 80 MHz channels centered at the nearest NR-ARFCN corresponding to [6005 MHz].~~ | | | | | | |

**Issue 2-4-1: Tables for 1Tx and 2Tx**

LGE: we are fine with WF.

Skyworks: support the WF to ensure the consistency.

**Agreement:**

* Define two separate tables for 1Tx and 2Tx and harmonize values so that 2Tx A-MPR is not lower than 1Tx

**Issue 2-4-2: Remove brackets**

**Agreement:**

* Option 1.

**Issue 2-5: Full and Partial RB definition**

Further disucss it offline.

**Issue 3-1-1: Consider the extended range of NS values & Issue 3-1-1: Consider the extended range of NS values**

**Discussions:**

Nokia: we should reserve 7.

Charter: agree on reserving 7.

LGE: We would like to add the note in the table for number 7.

**Agreement:**

* RAN4 shall take into account the extended range of NS values introduced by RAN2.
* Label the highest NS value "7" as "RESERVED" for all existing NS values.

**Issue 3-2: Support of flags from different releases**

**Discussions:**

Huawei: in Rel-17 we introduced the NS value and modified MPR is not defined. Does it mean that we do not require the early release UE to support it?

Charter: We support Option 1.

Ericsson: we would like to remark the bit to be introduced for which the network should understand. The better way is to define the new band.

Charter: the problem is that the new band will create a lot of work for VLP. It will make work more difficult.

Ericsson: in our view, we can use the same method as for n90.

Charter: it does not explain how to do duplexer for CA.

**Issue 3-3-5: Summary of NS values for PC5**

**Discussions:**

Skyworks: for UK there is no need to protect. But there is requirement for normal.

### 8.32 Introduction of 900 MHz NR Band in the US

#### 8.32.1 General and work plan

**[119] Topic #1: Work plans**

[**R4-2300142**](file:///D:\RAN4%23106\Docs\R4-2300142.zip) **Work plan for 900 MHz NR new band**

*Type: Work Plan For: Decision  
 Source: Anterix*

**Abstract:**

A spectrum-related work item was agreed to specify a new NR band in the 900 MHz frequency range. This contribution provides a work plan to complete the technical work.

**Decision: Revised to** [**R4-2303485**](file:///D:\RAN4%23106\Docs\R4-2303485.zip) **(from** [**R4-2300142**](file:///D:\RAN4%23106\Docs\R4-2300142.zip)**).**

**[R4-2303485](D:\\RAN4#106\\Docs\\R4-2303485.zip) Work plan for 900 MHz NR new band**

*Type: Work Plan For: Decision  
 Source: Anterix*

**Abstract:**

A spectrum-related work item was agreed to specify a new NR band in the 900 MHz frequency range. This contribution provides a work plan to complete the technical work.

**Decision: Approved.**

#### 8.32.2 Band definition and co-existence

**[119] Topic #2: Band plan**

[**R4-2301229**](file:///D:\RAN4%23106\Docs\R4-2301229.zip) **Discussion on band definition for 900 MHz NR Band**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

#### 8.32.3 UE RF requirements

**[119] Topic #3: UE RF requirements**

[**R4-2300376**](file:///D:\RAN4%23106\Docs\R4-2300376.zip) **UE Requirements for US 900MHz band**

*Type: discussion For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2301230**](file:///D:\RAN4%23106\Docs\R4-2301230.zip) **Discussion on UE RF requirements for 900 MHz NR Band**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2302382**](file:///D:\RAN4%23106\Docs\R4-2302382.zip) **Discussion on UE RF requirements for new 900MHz NR band**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Mediatek India Technology Pvt.*

**Decision: Noted.**

[**R4-2302524**](file:///D:\RAN4%23106\Docs\R4-2302524.zip) **Band 5 and 26 protection aspect related to the new 900 MHz NR Band in the US**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution we discuss UE filter aspects in relation to band 5 and 26 protection.

**Decision: Noted.**

#### 8.32.4 BS RF requirements

**[119] Topic #5: BS RF requirements**

[**R4-2301197**](file:///D:\RAN4%23106\Docs\R4-2301197.zip) **BS requirements for 900 MHz NR Band in the US**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2301231**](file:///D:\RAN4%23106\Docs\R4-2301231.zip) **Discussion on BS RF requirements for 900 MHz NR Band**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

#### 8.32.5 RRM requirements

**[119] Topic #4: UE RRM requirements**

[**R4-2301206**](file:///D:\RAN4%23106\Docs\R4-2301206.zip) **draft CR to TS 38.133: Introduction of 900 MHz NR Band in the US**

*Type: draftCR For: Endorsement  
 38.133 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Postponed.**

#### 8.32.6 Moderator summary and conclusions

**[106][119] LTE\_NR\_US\_900MHz, AI 8.32, 10.4 – Gene Fong (Qualcomm)**

[**R4-2302812**](file:///D:\RAN4%23106\Docs\R4-2302812.zip) **Topic summary for [106][119] LTE\_NR\_US\_900MHz**

*Type: other For: Information  
 Source: Moderator (Qualcomm)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303486**](file:///D:\RAN4%23106\Docs\R4-2303486.zip) **WF on US 900MHz bands**

*Type: other For: Approval  
 Source: Qualcomm*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Approved.**

**Topic #1: Work plans**

Huawei: we should consider the impact of on-going WI of NR\_FR1\_lessthan\_5MHz. When the new bandwidth of NR is introduced, we should revisit the mode of NB-IoT for 3MHz channel bandwidth

Verizon: I gave the comment before. Our concern is the FCC provides the 3MHz emission requirement. How can we solve the emission requirement for 5MHz? Based on which regulation? We do not want to slow down the work and we want to get the correct indication.

**Topic #2: Band plan**

**Agreement:**

* Agree to reserve the band number 106 and n106 for these bands.

**Topic #3: UE RF requirements**

**3MH requirements**

**Agreement:**

* 3 MHz requirements for NR. Propose to defer until further progress is made in NR\_FR1\_lessthan\_5MHz\_BW. Anyways, the work plan does not consider starting the NR band until Aug 2023.

**SEM**

**Discussions:**

Murata: we prefer to use the general SEM.

ZTE: We want to define the additional SEM for 900Mhz band. Keep general SEM.

Skyworks: Is there impact on the co-existence.

Anterix: We prefer general SEM or use FCC SEM as NS.

**UE co-existence**

**Discussions:**

Mediatek: the solution is about the uplink restriction. Before we decide the final solution, we would like to konw if other company wants to relax -50dBm/MHz.

AT&T: we would like to see the analsis on what kind of A-MPR with uplink restriction we are talking about.

Skyworks: it is quite early at the stage to know what compromise is. We need work on different options.

Ericsson: Another aspect is the use case for this band. Further information from operators is needed.

Dish: We agree that the analysis is needed.

Qualcomm: we had similar discussions for rail way HPUE.

**Topic #5: BS RF requirements**

**Agreement**:

* For LTE 900MHz band, agree to the BS RF changes to 36.104 in [R4-2301196](file:///D:\RAN4%23106\Docs\R4-2301196.zip) from Nokia.

### 8.33 Introduction of NR TDD band in 1670 – 1675 MHz

#### 8.33.1 General and work plan

**[120] Topic #1: System Parameters and UE RF**

[**R4-2300070**](file:///D:\RAN4%23106\Docs\R4-2300070.zip) **System Parameters for n54**

*Type: discussion For: Approval  
 Source: Ligado Networks*

**Decision: Noted.**

[**R4-2301614**](file:///D:\RAN4%23106\Docs\R4-2301614.zip) **On system parameters for n54**

*Type: discussion For: Decision  
 Source: MediaTek Inc.*

**Decision: Noted.**

#### 8.33.2 UE RF requirements

**[120] Topic #1: System Parameters and UE RF**

[**R4-2302350**](file:///D:\RAN4%23106\Docs\R4-2302350.zip) **Discussion on NR band n54 UE RF requirements**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Mediatek India Technology Pvt.*

**Decision: Noted.**

[**R4-2300071**](file:///D:\RAN4%23106\Docs\R4-2300071.zip) **Updates to TS 38.101-1 related to the introduction of n54**

*Type: discussion For: Approval  
 Source: Ligado Networks*

**Decision: Noted.**

[**R4-2301219**](file:///D:\RAN4%23106\Docs\R4-2301219.zip) **Discussion on UE RF requirements for NR TDD band in 1670–1675 MHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

CR

[**R4-2300072**](file:///D:\RAN4%23106\Docs\R4-2300072.zip) **CR related to Introduction of NR TDD Band n54**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1282 rev Cat: B (Rel-18)  
  
 Source: Ligado Networks*

**Decision: Agreed.**

[**R4-2300073**](file:///D:\RAN4%23106\Docs\R4-2300073.zip) **CR related to Introduction of NR TDD Band n54**

*Type: CR For: Agreement  
 38.101-5 v18.0.0 CR-0016 rev Cat: B (Rel-18)  
  
 Source: Ligado Networks*

**Decision: Agreed.**

[**R4-2301211**](file:///D:\RAN4%23106\Docs\R4-2301211.zip) **draft CR to TS38.101-1 the introduction of NR TDD band in 1670 – 1675 MHz**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Not pursued.**

#### 8.33.3 BS RF requirements

**[120] Topic #2: BS RF**

[**R4-2301220**](file:///D:\RAN4%23106\Docs\R4-2301220.zip) **Discussion on BS RF requirements for NR TDD band in 1670–1675 MHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301195**](file:///D:\RAN4%23106\Docs\R4-2301195.zip) **BS requirements for n54**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

CR

[**R4-2301194**](file:///D:\RAN4%23106\Docs\R4-2301194.zip) **CR to 38.104 on introduction of Band n54**

*Type: CR For: Agreement  
 38.104 v18.0.0 CR-0446 rev Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **revised to** [**R4-2302028**](file:///D:\RAN4%23106\Docs\R4-2302028.zip).

[**R4-2302028**](file:///D:\RAN4%23106\Docs\R4-2302028.zip) **CR to 38.104 on introduction of Band n54**

*Type: CR For: Agreement  
 38.104 v18.0.0 CR-0446 rev 1 Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces [R4-2301194](file:///D:\RAN4%23106\Docs\R4-2301194.zip))

**Decision: Agreed.**

[**R4-2301218**](file:///D:\RAN4%23106\Docs\R4-2301218.zip) **draft CR to TS38.104 the introduction of NR TDD band in 1670 – 1675 MHz**

*Type: draftCR For: Endorsement  
 38.104 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Not pursued.**

[**R4-2301188**](file:///D:\RAN4%23106\Docs\R4-2301188.zip) **CR to 38.141-1 on introduction of Band n54**

*Type: CR For: Agreement  
 38.141-1 v18.0.0 CR-0306 rev Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **revised to** [**R4-2302030**](file:///D:\RAN4%23106\Docs\R4-2302030.zip).

[**R4-2302030**](file:///D:\RAN4%23106\Docs\R4-2302030.zip) **CR to 38.141-1 on introduction of Band n54**

*Type: CR For: Agreement  
 38.141-1 v18.0.0 CR-0306 rev 1 Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces [R4-2301188](file:///D:\RAN4%23106\Docs\R4-2301188.zip))

**Decision: Agreed.**

[**R4-2301189**](file:///D:\RAN4%23106\Docs\R4-2301189.zip) **CR to 38.141-2 on introduction of Band n54**

*Type: CR For: Agreement  
 38.141-2 v18.0.0 CR-0449 rev Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **revised to** [**R4-2302029**](file:///D:\RAN4%23106\Docs\R4-2302029.zip).

[**R4-2302029**](file:///D:\RAN4%23106\Docs\R4-2302029.zip) **CR to 38.141-2 on introduction of Band n54**

*Type: CR For: Agreement  
 38.141-2 v18.0.0 CR-0449 rev 1 Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

(Replaces [R4-2301189](file:///D:\RAN4%23106\Docs\R4-2301189.zip))

**Decision: Agreed.**

[**R4-2300681**](file:///D:\RAN4%23106\Docs\R4-2300681.zip) **CR to 38.115-1 on introduction of Band n54**

*Type: CR For: Agreement  
 38.115-1 v17.0.0 CR-0002 rev Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Agreed.**

[**R4-2300682**](file:///D:\RAN4%23106\Docs\R4-2300682.zip) **CR to 38.106 on introduction of Band n54**

*Type: CR For: Agreement  
 38.106 v17.3.0 CR-0030 rev Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

*revised the WI code to Core.*

**Decision: Revised to** [**R4-2303487**](file:///D:\RAN4%23106\Docs\R4-2303487.zip) **(from** [**R4-2300682**](file:///D:\RAN4%23106\Docs\R4-2300682.zip)**).**

[**R4-2303487**](file:///D:\RAN4%23106\Docs\R4-2303487.zip) **CR to 38.106 on introduction of Band n54**

*Type: CR For: Agreement  
 38.106 v17.3.0 CR-0030 rev Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Agreed.**

[**R4-2300683**](file:///D:\RAN4%23106\Docs\R4-2300683.zip) **CR to 38.176-1 on introduction of Band n54**

*Type: CR For: Agreement  
 38.176-1 v17.3.0 CR-0016 rev Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Agreed.**

[**R4-2300684**](file:///D:\RAN4%23106\Docs\R4-2300684.zip) **CR to 38.176-2 on introduction of Band n54**

*Type: CR For: Agreement  
 38.176-2 v17.3.0 CR-0018 rev Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Agreed.**

[**R4-2300685**](file:///D:\RAN4%23106\Docs\R4-2300685.zip) **CR to 38.174 on introduction of Band n54**

*Type: CR For: Agreement  
 38.174 v17.2.0 CR-0040 rev Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

*WI code* needs be revised.

**Decision: Revised to** [**R4-2303488**](file:///D:\RAN4%23106\Docs\R4-2303488.zip) **(from** [**R4-2300685**](file:///D:\RAN4%23106\Docs\R4-2300685.zip)**).**

[**R4-2303488**](file:///D:\RAN4%23106\Docs\R4-2303488.zip) **CR to 38.174 on introduction of Band n54**

*Type: CR For: Agreement  
 38.174 v17.2.0 CR-0040 rev Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Agreed.**

[**R4-2301190**](file:///D:\RAN4%23106\Docs\R4-2301190.zip) **CR to 36.104 on introduction of Band n54**

*Type: CR For: Agreement  
 36.104 v18.0.0 CR-4966 rev Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Agreed.**

[**R4-2301191**](file:///D:\RAN4%23106\Docs\R4-2301191.zip) **CR to 36.141 on introduction of Band n54**

*Type: CR For: Agreement  
 36.141 v18.0.0 CR-1346 rev Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Agreed.**

[**R4-2301192**](file:///D:\RAN4%23106\Docs\R4-2301192.zip) **CR to 37.104 on introduction of Band n54**

*Type: CR For: Agreement  
 37.104 v18.0.0 CR-0977 rev Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Agreed.**

[**R4-2301193**](file:///D:\RAN4%23106\Docs\R4-2301193.zip) **CR to 37.141 on introduction of Band n54**

*Type: CR For: Agreement  
 37.141 v18.0.0 CR-1029 rev Cat: B (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Agreed.**

[**R4-2301474**](file:///D:\RAN4%23106\Docs\R4-2301474.zip) **CR related to Introduction of NR TDD Band n54**

*Type: CR For: Agreement  
 37.105 v18.0.0 CR-0268 rev Cat: B (Rel-18)  
  
 Source: Ericsson, Ligado Networks*

**Abstract:**

This contribution is a CR to TS 37.105, introducing new NR band n54

**Decision: Agreed.**

[**R4-2301475**](file:///D:\RAN4%23106\Docs\R4-2301475.zip) **CR to TS 37.145-1: Introduction of NR band n54**

*Type: CR For: Agreement  
 37.145-1 v18.0.0 CR-0305 rev Cat: B (Rel-18)  
  
 Source: Ericsson, Ligado Networks*

**Abstract:**

This contribution is a CR to TS 37.145-1, introducing new NR band n54

**Decision: Agreed.**

[**R4-2301476**](file:///D:\RAN4%23106\Docs\R4-2301476.zip) **CR to TS 37.145-2: Introduction of NR band n54**

*Type: CR For: Agreement  
 37.145-2 v18.0.0 CR-0344 rev Cat: B (Rel-18)  
  
 Source: Ericsson, Ligado Networks*

**Abstract:**

This contribution is a CR to TS 37.145-2, introducing new NR band n54

**Decision: Agreed.**

#### 8.33.4 RRM requirements

**[120] Topic #3: RRM Requirements**

[**R4-2301207**](file:///D:\RAN4%23106\Docs\R4-2301207.zip) **draft CR to TS 38.133: Introduction of NR band n54**

*Type: draftCR For: Endorsement  
 38.133 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Not pursued.**

[**R4-2301477**](file:///D:\RAN4%23106\Docs\R4-2301477.zip) **CR related to Introduction of NR TDD Band n54**

*Type: CR For: Agreement  
 38.133 v18.0.0 CR-2903 rev Cat: B (Rel-18)  
  
 Source: Ericsson, Ligado Networks*

**Abstract:**

This contribution is a CR to TS 38.133, introducing new NR band n54

**Decision: Agreed.**

#### 8.33.5 Moderator summary and conclusions

**[106][120] R18\_NR\_TDD\_n54, AI 8.33 – Ojas Choksi (Ligado)**

[**R4-2302813**](file:///D:\RAN4%23106\Docs\R4-2302813.zip) **Topic summary for [106][120] R18\_NR\_TDD\_n54**

*Type: other For: Information  
 Source: Moderator (Ligado)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

**Issue 1-1: GSCN Range**

Mediatek: We think about this re-design of PBCH will happen in Rel-18. For the sync raster, we can extend by two points. We are fine with Option1. We can revisit this after RAN1 finish the design.

ZTE: Similar as Mediatek.

Nokia: Prefer to Option 1.

**Agreement:**

* Option 1.
  + Revisit the sync raster after RAN1 finalizes the design of PBCH for < 5MHz.

### 8.34 Introduction of the satellite L-/S-band

#### 8.34.1 General and work plan

[**R4-2300300**](file:///D:\RAN4%23106\Docs\R4-2300300.zip) **Work plan for the NTN L-/S-band**

*Type: Work Plan For: Approval  
 Source: Apple, Globalstar*

**Agreement:**

* It is unnecessary to endorse the running draft CR each meeting

**Decision: Approved.**

[**R4-2302354**](file:///D:\RAN4%23106\Docs\R4-2302354.zip) **Draft TR for the NTN L-/S-band**

*Type: other For: Information  
 Source: Apple, Globalstar*

**Discussions:**

Qualcomm: we consider global band. Section 5 needs further expansion.

**Decision: Noted.**

#### 8.34.2 Band definition and system parameters

**[121] Topic #1: System parameters**

[**R4-2300301**](file:///D:\RAN4%23106\Docs\R4-2300301.zip) **System parameters for the NTN L-/S-band**

*Type: discussion For: Discussion  
 Source: Apple, Globalstar*

**Decision: Noted.**

[**R4-2301672**](file:///D:\RAN4%23106\Docs\R4-2301672.zip) **Discussion on new FR1 NTN band**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

#### 8.34.3 UE RF requirements

**[121] Topic #2: UE RF requirements**

[**R4-2300302**](file:///D:\RAN4%23106\Docs\R4-2300302.zip) **RF requirements for the NTN L-/S-band**

*Type: discussion For: Discussion  
 Source: Apple, Globalstar*

**Decision: Noted.**

[**R4-2301100**](file:///D:\RAN4%23106\Docs\R4-2301100.zip) **Discussion on UE RF for NTN L-S- bands**

*Type: other For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2302710**](file:///D:\RAN4%23106\Docs\R4-2302710.zip) **UE additional spurious emission requirements for the L-/S-band**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

CR

[**R4-2300304**](file:///D:\RAN4%23106\Docs\R4-2300304.zip) **Draft running CR on Introduction of the NTN L-/S-band to TS 38.101-5**

*Type: draftCR For: Endorsement  
 38.101-5 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Apple, Globalstar*

**Decision: Postponed.**

[**R4-2301394**](file:///D:\RAN4%23106\Docs\R4-2301394.zip) **Draft CR to TS 38.101-5: Introduction of a new NTN FDD band n254**

*Type: draftCR For: Endorsement  
 38.101-5 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Postponed.**

#### 8.34.4 SAN RF requirements

#### 8.34.5 RRM requirements

**[121] Topic #3: RRM requirements**

[**R4-2300303**](file:///D:\RAN4%23106\Docs\R4-2300303.zip) **RRM requirements for the NTN L-/S-band**

*Type: discussion For: Discussion  
 Source: Apple, Globalstar*

**Decision: Noted.**

CR

[**R4-2300305**](file:///D:\RAN4%23106\Docs\R4-2300305.zip) **Draft running CR on Introduction of the NTN L-/S-band to TS 38.133**

*Type: draftCR For: Endorsement  
 38.133 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Apple, Globalstar*

**Decision: Postponed.**

[**R4-2301392**](file:///D:\RAN4%23106\Docs\R4-2301392.zip) **Draft CR to TS 38.133:Introduction of a new NTN FDD band n254**

*Type: draftCR For: Endorsement  
 38.133 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Postponed.**

#### 8.34.6 Moderator summary and conclusions

**[106][121] NR\_NTN\_LSband, AI 8.34, 8.34.1, 8.34.2, 8.34.3, 8.34.5 – Alexander SAYENKO (Apple)**

[**R4-2302814**](file:///D:\RAN4%23106\Docs\R4-2302814.zip) **Topic summary for [106][121] NR\_NTN\_LSband**

*Type: other For: Information  
 Source: Moderator (Apple)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303531**](file:///D:\RAN4%23106\Docs\R4-2303531.zip) **WF on NTN L-/S-band**

*Type: other For: Information  
 Source: Apple*

**Decision: Approved.**

**Issue 1-1: General issues**

**Discussions:**

Qualcomm: which countries are they applied to? Then we can identify the regulatory requirement will be applie. Is it for GEO?

Nokia: We should need figure out where the intended regulatory applies for.

Apple: this is not limited for GEO. It should be for global application. We propose requirements for global bands.

**Agreement:**

* To be discussed further whether there are any co-existence issues with bands n53 and n41/n90.
* All the related regulatory requirements should be taken into account.
* Identify the countries where the co-existence requirement and regulatory requirements apply
* FFS on whether to apply for GEO only or for other types of satellites

**Issue 1-2: Band definition**

**Discussions:**

Nokia: we are fine to reserve this number.

**Agreement:**

* n254 is reserved for the band defined for WI NR\_NTN\_LSband

**Issue 1-4: Channel bandwidth**

**Discussions:**

Qualcomm: wonder if we establish feasibility for wider bandwidth.

Apple: Understand. The band can be applied for LEO also. n256 and n255 have bandwidth up to 20MHz. UL and DL bandwidth can be asymmetric.

Qualcomm: Do we still restrict 20MHz to LEO? Would like to understand what the link budget looks like. We understand there would be RB restriction.

ZTE: put multiple users in wider bandwidth.

Apple: the CBW does no neccessariliy directly link to UE capability. The operation can be for multi-users. The satellite can combine multiple users.

ZTE: Maximum channel bandwidth 16MHz. The maximum should be 15MHz.

Apple: following WID objectives, we only specify up to 15MHz.

**Issue 1-5: Channel raster points**

**Discussions:**

Nokia: fine with discussing it.

**Issue 2-1: Asymmetric channel bandwidth combinations**

**Discussions:**

Qualcomm: requires re-modification.

**Issue 2-2: Tx-Rx separation distance**

**Discussions:**

Qualcomm: the range is supporting asymmetric. Tx-Rx has to be fixed.

Apple: Is there concern to support asymmetric CBW?

Qualcomm: it leads to additional asymmetric work. We needs WID update in RAN.

Apple: there is need from stakeholder of those spectrums. The asymmetric combinations is not that many.

Qualcomm: what is the need for asymmetric?

**Issue 2-1: Power class**

**Discussions:**

Nokia: we should consider PC3.

**Agreement:**

* Consider PC3 power class for the new NTN band

**Issue 2-2: MPR/A-MPR**

**Discussions:**

Nokia: this depends on co-existence study, which is not completed yet.

Apple: for co-existence study, is it like to co-existence for different bands? Should it be done for NTN WI.

ZTE: in Rel-17 we have done the co-existence study in WI.

Qualcomm: For MPR, what is the assumption for MPR? we are going to use that for terrestrial UE, or have a new PA design? For statellite the required power is different from TN.

Apple: we try to leverage what Rel-17 has done for NTN. We do not see the particular reason to take different approach to specify the requirement.

**Issue 2-3: Out-of-band emission requirements**

**Discussions:**

Nokia: this is a good starting point. What should we do in Japan or China? This is not covered yet.

Qualcomm: version EN301 441 2.1.1. It looks different. PSD requirements are not reflected here.

**Issue 2-4: In-band emission requirements**

**Discussions:**

Qualcomm: have similar comment as the previous one. NOTE has typo. There is no corresponding region. The number is just scaled.

**Issue 2-7: Reference sensitivity**

**Discussions:**

Xiaomi: option 2. For this band, the dedicated filter will be used. The separate is larger. REFSEN requirement will be better. Reusing the existing one is also acceptable to us.

Qualcomm: we do not know what the filter requirement is. We prefer to look further into technical part.

Apple: we propose the value be the same as for n256. it is not because the frequency overlapping. The DL is the same region as n53 TDD. We use it as baseline.

## 9 Rel-18 on-going non-spectrum related work items and study items for NR

*This is related to Rel-18 on-going non-spectrum related work items and study items for NR.*

*- RAN4-led WIs and SIs are related to agenda item 9.1 – 9.18.*

*- WIs and SIs led by other WGs are related to agenda item 9.19 – 9.32.*

### 9.1 Study on Efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths

#### 9.1.1 General and TR

[**R4-2302237**](file:///D:\RAN4%23106\Docs\R4-2302237.zip) **Study on Efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidth**

*Type: draft TR For: (not specified)  
 38.844 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson Inc.*

**Decision:** The document was **for email approval**.

#### 9.1.2 SIB1 signaling, CBW configuration and legacy behavior related to channel raster

**[123] Topic #1: SIB1 signaling and CBW configuration**

[**R4-2300199**](file:///D:\RAN4%23106\Docs\R4-2300199.zip) **SIB1 signaling, CBW configuration and legacy behavior related to channel raster**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2300487**](file:///D:\RAN4%23106\Docs\R4-2300487.zip) **Views on FR1 low frequency bands on channel raster**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

[**R4-2300749**](file:///D:\RAN4%23106\Docs\R4-2300749.zip) **SIB1 signaling and configuration of the UE-specific channel bandwidth**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution we provide a background to proposed Rel-15 changes to clarify carrier resource grid mapping to the channel raster and the configuration of the UE-specific channel bandwidth

**Decision: Noted.**

[**R4-2301232**](file:///D:\RAN4%23106\Docs\R4-2301232.zip) **Discussion on SIB1 signaling and CBW configuration**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301430**](file:///D:\RAN4%23106\Docs\R4-2301430.zip) **Open issues on SIB1 signaling and CBW configuration**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2301605**](file:///D:\RAN4%23106\Docs\R4-2301605.zip) **Further discussion on irregular channel bandwidth**

*Type: discussion For: Decision  
 Source: MediaTek Inc.*

**Decision: Noted.**

[**R4-2301431**](file:///D:\RAN4%23106\Docs\R4-2301431.zip) **Consideration of the outcome on SIB1 and CBW configuration issue**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

TP/draft CR

[**R4-2300371**](file:///D:\RAN4%23106\Docs\R4-2300371.zip) **TP on additional enhancements for irregular channels**

*Type: pCR For: Approval  
 38.844 v0.0.9 CR- rev Cat: (Rel-18)  
  
 Source: Apple*

**Decision: Revised to** [**R4-2303497**](file:///D:\RAN4%23106\Docs\R4-2303497.zip) **(from** [**R4-2300371**](file:///D:\RAN4%23106\Docs\R4-2300371.zip)**).**

[**R4-2303497**](file:///D:\RAN4%23106\Docs\R4-2303497.zip) **TP on additional enhancements for irregular channels**

*Type: pCR For: Approval  
 38.844 v0.0.9 CR- rev Cat: (Rel-18)  
  
 Source: Apple*

**Decision: Approved.**

[**R4-2301432**](file:///D:\RAN4%23106\Docs\R4-2301432.zip) **One example to introduce 5 kHz channel raster in Rel-18**

*Type: draftCR For: Discussion  
 38.104 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Not pursued.**

[**R4-2303498**](file:///D:\RAN4%23106\Docs\R4-2303498.zip) **One example to introduce 5 kHz channel raster in Rel-18**

*Type: draftCR For: Discussion  
 38.104 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Withdrawn.**

Refer to other CRs submitted under AI 4.1 and AI 5.3 “**CRs related to irregular channel bandwidth [123]”**

#### 9.1.3 Finalization of candidate solutions for SI

**[123] Topic #2: Finalization of candidate solutions for SI**

[**R4-2300200**](file:///D:\RAN4%23106\Docs\R4-2300200.zip) **TP to TR 38.844 on Comparison Between Different Schemes**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

**[R4-2303499](D:\\RAN4#106\\Docs\\R4-2303499.zip) TP to TR 38.844 on Comparison Between Different Schemes**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Withdrawn.**

##### 9.1.3.1 Use of larger channel bandwidths than licensed bandwidth

[**R4-2300201**](file:///D:\RAN4%23106\Docs\R4-2300201.zip) **TP to TR 38.844 on Larger Channel BW than licensed BW**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2303500**](file:///D:\RAN4%23106\Docs\R4-2303500.zip) **TP to TR 38.844 on Larger Channel BW than licensed BW**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Withdrawn.**

[**R4-2300750**](file:///D:\RAN4%23106\Docs\R4-2300750.zip) **TP for 38.844: Configuration for the case of larger channel bandwidths than licensed bandwidth and conclusions**

*Type: pCR For: Approval  
 38.844 v0.0.9 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

TP on the method of using a larger CHBW to support an irregular spectrum block for both FDD and TDD.

**Decision: Revised to** [**R4-2303501**](file:///D:\RAN4%23106\Docs\R4-2303501.zip) **(from** [**R4-2300750**](file:///D:\RAN4%23106\Docs\R4-2300750.zip)**).**

[**R4-2303501**](file:///D:\RAN4%23106\Docs\R4-2303501.zip) **TP for 38.844: Configuration for the case of larger channel bandwidths than licensed bandwidth and conclusions**

*Type: pCR For: Approval  
 38.844 v0.0.9 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

TP on the method of using a larger CHBW to support an irregular spectrum block for both FDD and TDD.

**Decision: Approved.**

[**R4-2301606**](file:///D:\RAN4%23106\Docs\R4-2301606.zip) **TP on the larger channel bandwidth approach (Section 6.1.1) for TR 38.844**

*Type: other For: Approval  
 Source: MediaTek Inc.*

**Decision: Revised to** [**R4-2303502**](file:///D:\RAN4%23106\Docs\R4-2303502.zip) **(from** [**R4-2301606**](file:///D:\RAN4%23106\Docs\R4-2301606.zip)**).**

**[R4-2303502](D:\\RAN4#106\\Docs\\R4-2303502.zip) TP on the larger channel bandwidth approach (Section 6.1.1) for TR 38.844**

*Type: other For: Approval  
 Source: MediaTek Inc.*

**Decision: Approved.**

##### 9.1.3.2 Overlapping CBWs from network perspective

[**R4-2300202**](file:///D:\RAN4%23106\Docs\R4-2300202.zip) **TP to TR 38.844 on Overlapping UE CBWs from Network Perspective**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Revised to** [**R4-2303503**](file:///D:\RAN4%23106\Docs\R4-2303503.zip) **(from** [**R4-2300202**](file:///D:\RAN4%23106\Docs\R4-2300202.zip)**).**

[**R4-2303503**](file:///D:\RAN4%23106\Docs\R4-2303503.zip) **TP to TR 38.844 on Overlapping UE CBWs from Network Perspective**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Approved.**

[**R4-2300853**](file:///D:\RAN4%23106\Docs\R4-2300853.zip) **Channel Raster Issues related to Overlapping Channel BW from Network Perspecive**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2302436**](file:///D:\RAN4%23106\Docs\R4-2302436.zip) **TP for 38.844: conclusions for overlapping CBWs from network perspective**

*Type: pCR For: Approval  
 38.844 v0.0.9 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, Apple, Nokia*

**Abstract:**

TP with conclusions for overlapping CHBW from a network perspective

**Decision: Approved.**

**[R4-2303504](D:\\RAN4#106\\Docs\\R4-2303504.zip) TP for 38.844: conclusions for overlapping CBWs from network perspective**

*Type: pCR For: Approval  
 38.844 v0.0.9 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

TP with conclusions for overlapping CHBW from a network perspective

**Decision: Withdrawn.**

##### 9.1.3.3 Combined UE CBWs (one cell)

##### 9.1.3.4 Overlapping CA (two cells)

#### 9.1.4 Moderator summary and conclusions

**[106][123] FS\_NR\_eff\_BW\_util, AI 9.1 – Esther Sienkiewicz (Ericsson)**

[**R4-2302816**](file:///D:\RAN4%23106\Docs\R4-2302816.zip) **Topic summary for [106][123] FS\_NR\_eff\_BW\_util**

*Type: other For: Information  
 Source: Moderator (Ericsson)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303492**](file:///D:\RAN4%23106\Docs\R4-2303492.zip) **Ad hoc minutes for FS\_NR\_eff\_BW\_util**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution provides the ad hoc minutes..

**Discussions:**

**The following bullets were discussed during 1st round**

* The SIB1bandwidth indicated by SIB1 for at least one numerology must be on the channel raster, and the UE dedicated bandwidth must also be on the channel raster
  + The new capability is introduced to allow UE dedicated bandwidth not to be located on the channel raster.
    - No earlier than Rel-17

**Decision: Noted.**

### 9.2 Study on enhancement for 700/800/900MHz band combinations for NR

#### 9.2.1 General and TR

**[124] Topic #1: General**

[**R4-2300560**](file:///D:\RAN4%23106\Docs\R4-2300560.zip) **TP for TR 38.872: scope and references**

*Type: pCR For: Approval  
 38.872 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: CATT*

**Decision: Approved.**

[**R4-2300561**](file:///D:\RAN4%23106\Docs\R4-2300561.zip) **TR 38.872 v0.4.0**

*Type: draft TR For: Approval  
 38.872 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: CATT*

**Decision:** The document was **for email approval**.

#### 9.2.2 CA band combination of CA\_n5-n8

##### 9.2.2.1 Feasibility investigation of simultaneous reception and transmissions

**[124] Topic #2: CA\_n5-n8**

[**R4-2300043**](file:///D:\RAN4%23106\Docs\R4-2300043.zip) **Feasibility of CA n5, n8**

*Type: discussion For: Information  
 Source: Spark NZ Ltd*

**Abstract:**

This contribution shares the experience of Spark NZ in operating bands 5 and 8 in close proximity. Although the doc gives base station isolation, the lessons learnt will be of use in deriving isolation requirements for CA n5+n8

**Decision: Noted.**

[**R4-2300559**](file:///D:\RAN4%23106\Docs\R4-2300559.zip) **Further discussion on the solutions for CA\_n5-n8**

*Type: other For: Approval  
 Source: CATT*

**Decision: Noted.**

[**R4-2300858**](file:///D:\RAN4%23106\Docs\R4-2300858.zip) **Further discussion on methods for overlap in CA\_n5-n8**

*Type: other For: Approval  
 Source: China Telecom*

**Abstract:**

Proposal 1: Option 1for Restricting UL support to n5 UL only shall be excluded from agreed options for UL CA.

Proposal 2: Considering complexity of option 2 non-concurrent CA, option 3 for dedicated filter shall be kept at this stage.

**Decision: Noted.**

[**R4-2301264**](file:///D:\RAN4%23106\Docs\R4-2301264.zip) **On CA band combination of n5-n8**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301531**](file:///D:\RAN4%23106\Docs\R4-2301531.zip) **Further discussion on feasibility aspects and RF requirements impact for CA\_n5-n8**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301615**](file:///D:\RAN4%23106\Docs\R4-2301615.zip) **Discussion on CA\_n5-n8**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2302239**](file:///D:\RAN4%23106\Docs\R4-2302239.zip) **Considerations on CA\_n5-n8**

*Type: other For: Approval  
 Source: Qualcomm Finland RFFE Oy*

**Abstract:**

Analysis and proposals on CA\_n5-n8 are provided in this contribution.

**Decision: Noted.**

[**R4-2300107**](file:///D:\RAN4%23106\Docs\R4-2300107.zip) **Potential issue on semi-full-duplex CA for CA\_n5-n8**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution discusses potential issues to use semi-full-duplex CA for CA\_n5-n8.

**Decision: Noted.**

TP

[**R4-2302251**](file:///D:\RAN4%23106\Docs\R4-2302251.zip) **TP for TR38.872**

*Type: pCR For: Approval  
 38.872 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Qualcomm Finland RFFE Oy*

**Abstract:**

TP For TR-38.872 is proposed

**Decision: Noted.**

##### 9.2.2.2 UE RF requirements

[**R4-2300759**](file:///D:\RAN4%23106\Docs\R4-2300759.zip) **Blocking and MSD for CA\_n5-n8 w/wo dedicated n8R filter**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution we provide our feasibility assessment on the different architectures with and without a dedicated filter and evaluate the blocking and MSD issues based on PA measurements.

**Decision: Noted.**

[**R4-2300859**](file:///D:\RAN4%23106\Docs\R4-2300859.zip) **RF parameters requirements for dedicated filter for CA\_n5-n8**

*Type: other For: Approval  
 Source: China Telecom*

**Abstract:**

Observation: Only Band n8 Tx filter needs to be optimized to achieve 30dB attenuation at its low boundary with 20dB antenna ISO assumption for 3antenna architecture.

Proposal: 3 antenna architecture shall be kept for dedicated filter analysis.

**Decision: Noted.**

[**R4-2302101**](file:///D:\RAN4%23106\Docs\R4-2302101.zip) **Discussion on potential solutions for CA\_n5-n8**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

TP

[**R4-2300860**](file:///D:\RAN4%23106\Docs\R4-2300860.zip) **TP for TR 38.872 RF parameters requirements for dedicated filter for CA\_n5-n8**

*Type: pCR For: Approval  
 38.872 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: China Telecom*

**Decision: Noted.**

[**R4-2302102**](file:///D:\RAN4%23106\Docs\R4-2302102.zip) **TP for TR 38.872 to complete the open issues for CA\_n5-n8**

*Type: pCR For: Approval  
 38.872 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2303544**](file:///D:\RAN4%23106\Docs\R4-2303544.zip) **(from** [**R4-2302102**](file:///D:\RAN4%23106\Docs\R4-2302102.zip)**).**

**[R4-2303544](D:\\RAN4#106\\Docs\\R4-2303544.zip) TP for TR 38.872 to complete the open issues for CA\_n5-n8**

*Type: pCR For: Approval  
 38.872 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon, Qualcomm Inc., Skyworks, Xiaomi, China Telecom*

**Decision: Approved.**

#### 9.2.3 CA band combination of CA\_n5-n28

##### 9.2.3.1 Feasibility investigation of simultaneous reception and transmissions

**[124] Topic #3: CA\_n5-n28**

[**R4-2301265**](file:///D:\RAN4%23106\Docs\R4-2301265.zip) **On CA band combination of n5-n28**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2302253**](file:///D:\RAN4%23106\Docs\R4-2302253.zip) **Considerations on CA\_n5-n28**

*Type: other For: Approval  
 Source: Qualcomm Finland RFFE Oy*

**Abstract:**

Analysis and proposals on CA\_n5-n28 are provided in this contribution.

**Decision: Noted.**

##### 9.2.3.2 UE RF requirements

[**R4-2300657**](file:///D:\RAN4%23106\Docs\R4-2300657.zip) **2UL cross band MSDs for CA\_n5-n28**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution we provide our feasibility assessment on different architectures and evaluate the n28 DL de-sense due to the combined interference of band n28 and n5 ULs.

**Decision: Noted.**

[**R4-2302097**](file:///D:\RAN4%23106\Docs\R4-2302097.zip) **Discussion on MSD evaluation for CA\_n5-n28**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

TP

[**R4-2301266**](file:///D:\RAN4%23106\Docs\R4-2301266.zip) **TP to TR 38.872: 1UL cross band isolation MSD value for n5-n28**

*Type: pCR For: Approval  
 38.872 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2302098**](file:///D:\RAN4%23106\Docs\R4-2302098.zip) **TP for TR 38.872 to capture MSD evaluation for CA\_n5-n28**

*Type: pCR For: Approval  
 38.872 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

#### 9.2.4 CA band combination of CA\_n8-n20-n28

##### 9.2.4.1 Feasibility investigation of simultaneous reception and transmissions

##### 9.2.4.2 UE RF requirements

**[124] Topic #4: CA\_n8-n20-n28**

[**R4-2300654**](file:///D:\RAN4%23106\Docs\R4-2300654.zip) **2UL IMD3 MSDs for CA\_n8-n20-n28**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution we provide our feasibility assessment on isolation to third band for different architectures and derive IMD3 related MSDs to third band accordingly.

**Decision: Noted.**

[**R4-2302099**](file:///D:\RAN4%23106\Docs\R4-2302099.zip) **Discussion on MSD evaluation and deltaTibRib for CA\_n8-n20-n28**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

TP

[**R4-2302100**](file:///D:\RAN4%23106\Docs\R4-2302100.zip) **TP for TR 38.872 to capture MSD evaluation and deltaTibRib for CA\_n8-n20-n28**

*Type: pCR For: Approval  
 38.872 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

#### 9.2.5 Moderator summary and conclusions

**[106][124] FS\_NR\_700800900, AI 9.2 – Huiping Shan (CATT)**

[**R4-2302817**](file:///D:\RAN4%23106\Docs\R4-2302817.zip) **Topic summary for [106][124] FS\_NR\_700800900**

*Type: other For: Information  
 Source: Moderator (CATT)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303545**](file:///D:\RAN4%23106\Docs\R4-2303545.zip) **TP for TR 38.872 to complete the open issues for CA\_n5-n28**

*Type: pCR For: Approval  
 38.872 v0.3.0 CR- rev Cat: (Rel-18)*

*Source: ZTE Corporation, Skyworks, Huawei, Qualcomm, Murata, Xiaomi*

**Decision: Approved.**

[**R4-2303546**](file:///D:\RAN4%23106\Docs\R4-2303546.zip) **TP for TR 38.872 to complete the open issues for CA\_n8-n20-n28**

*Type: pCR For: Approval  
 38.872 v0.3.0 CR- rev Cat: (Rel-18)*

*Source: vivo, Huawei, HiSilicon, Skyworks, ZTE, Qualcomm, Xiaomi*

**Decision: Approved.**

**Issue 2-1: Which solution should be kept in WI phase?**

**Discussions:**

Qualcomm: Option 1 is the only solution today. Option 2 is very problematic. We can down-scope Option 2.

Skyworks: Option 1 should be the baseline. We consider option 2 and 3 as optional approach. In our paper, we are not against any solution.

Vivo: we support option 1. It simplifies the handheld UE. Two uplink CA is proposed. Can operator only consider 1 UL for n5.

ZTE: we should consider whether to consider only 1UL/2DL CA or considering 2UL/2DL. We support to include both.

Murata: Option 2 and Option 3 require more loss. Legacy operation makes Option 1 preferable.

Apple: Support Option 2 and also OK with Option 1. From the requirement definition point of view, we have concern on Option 3 to use dedicated filter.

Meta: we do not prefer to use dedicated filter. Support Option 1 and 2.

Xiaomi: Option 1 and 2.

Qualcomm: To make combination work, option 3 can allow DL and UL simultaneously.

China Telecom: Prefer Option 2 and 3. Removing Option 1 does not mean UE cannot support. It can be done in the basket WI. Option 3 could be achieved with the dedicated filter.

Huawei: based on operator demand, we cannot exclude option 3.

Skyworks: I got impression. In our position, if network supports the legacy UE in option 1, we should look at the other more advanced solution.

**Agreement:**

* RAN4 conclusion that Option 1 is feasible.
* RAN4 proposes to consider Option 2 and 3 in the following-up WI.

**Issue 2-3: New band definition for dedicated filter**

**Discussions:**

Qualcomm: we are also OK without new band definition.

Spark: agree with Qualcomm. The dual operation n5 and n8 exists. New band definition would be needed.

Moderator: we can capture the issue in the TR.

**Issue 2-4: RF performance evaluation results to be captured in TR**

**Discussions:**

Skyworks: I do not see the reason to conclude the number. It is better to capture all the inputs in TR. There is only two for option 1 and option 2.

Murata: in Table 5, there is no perfect filter to protect the blocking.

Qualcomm: we also capture companies’ results.

Moderator: Take skyworks proposals.

**Agreement:**

* Capture all the inputs from companies in the TR.

**Issue 3-1: Tib/Rib value**

**Discussions:**

Skyworks: if you have different architecture, you may have different values.

**Issue 3-2: 2UL cross band MSD test points and MSD value**

**Discussions:**

Qualcomm: what is the principle to choose the test points? Largest bandwidth?

Skyworks: we have different approaches to choose the test points. In TR, if we capture different test points, explain the concept and logic. We do not need down-select now.

Huawei: New kinds of MSD. If band n8 we choose the CBW </= 20MHz, we do not think there is impact of 2UL on DL. We can further align the understanding.

Murata: there is MSD to all DL channel bands.

Skyworks: We agree that it is new kind of MSD. We just say in this particular situation we have difference.

**Issue 4-1: Tib/Rib**

**Discussions:**

Skyworks: some differences are related to choosing the number of antenna. It is good to clarify which antenna architecture is used.

**Agreement:**

* Clarify the antenna architecture together with the inputs from companies.

**Issue 4-2: MSD**

**Discussions:**

Moderator: The test points for n28 MSD are the same for the two proposals. The test points for n8 MSD are different.

Murata: we have contributions in the last meeting.

Huawei: the values are quite similar.

Skyworks: we are in the study phase. We do not need to align the value. We do not need capturing test points themselves.

### 9.3 Study on simplification of band combination specification for NR and LTE

#### 9.3.1 General and work plan

**[125] Topic #1: General and work plan**

[**R4-2302551**](file:///D:\RAN4%23106\Docs\R4-2302551.zip) **TR 38.846 v0.3.0\_Study on simplification of band combination specification for NR and LTE**

*Type: draft TR For: Agreement  
 38.846 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: ZTE Corporation*

**Decision:** The document was **for email approval**.

#### 9.3.2 Simplification of working procedure

**[125] Topic #2: Simplification of working procedure**

[**R4-2301676**](file:///D:\RAN4%23106\Docs\R4-2301676.zip) **Adding guidance on document type for addition of band combinations**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2302571**](file:///D:\RAN4%23106\Docs\R4-2302571.zip) **Discussion on template of mixed intra-band contiguous and non-contiguous NR CA**

*Type: discussion For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2302525**](file:///D:\RAN4%23106\Docs\R4-2302525.zip) **Discussion on the rules of making up for the missing fallbacks**

*Type: discussion For: Discussion  
 Source: CHTTL*

**Decision: Noted.**

TP

[**R4-2302572**](file:///D:\RAN4%23106\Docs\R4-2302572.zip) **TP for TR 38.846 on template for mixed intra-band contiguous and non-contiguous NR CA**

*Type: pCR For: Approval  
 38.846 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Revised to** [**R4-2303512**](file:///D:\RAN4%23106\Docs\R4-2303512.zip) **(from** [**R4-2302572**](file:///D:\RAN4%23106\Docs\R4-2302572.zip)**).**

**[R4-2303512](D:\\RAN4#106\\Docs\\R4-2303512.zip) TP for TR 38.846 on template for mixed intra-band contiguous and non-contiguous NR CA**

*Type: pCR For: Approval  
 38.846 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Approved.**

#### 9.3.3 Simplification of specification and reduction of test burden

**[125] Topic #3: Simplification of specification and reduction of test burden**

[**R4-2300370**](file:///D:\RAN4%23106\Docs\R4-2300370.zip) **On FR1 2UL inter-band CA coexistence requirements**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2300425**](file:///D:\RAN4%23106\Docs\R4-2300425.zip) **Discussions on LTE interband 2UL CA co-ex simplification**

*Type: discussion For: Discussion  
 Source: Nokia*

**Decision: Noted.**

[**R4-2302569**](file:///D:\RAN4%23106\Docs\R4-2302569.zip) **Discussion on simplification for CA uplink configurations**

*Type: discussion For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2302103**](file:///D:\RAN4%23106\Docs\R4-2302103.zip) **Discussion on MSD test burden reduction**

*Type: other For: Approval  
 38.846 v CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2300937**](file:///D:\RAN4%23106\Docs\R4-2300937.zip) **Cross-band isolation MSD test point simplification for EN-DC**

*Type: discussion For: Discussion  
 38.101-3 v CR- rev Cat: (Rel-18)  
  
 Source: Skyworks Solutions Inc.*

**Decision: Noted.**

[**R4-2302738**](file:///D:\RAN4%23106\Docs\R4-2302738.zip) **Views on BC simplification for two-band combinations**

*Type: other For: Approval  
 Source: Skyworks Solutions Inc.*

**Decision: Noted.**

TP

[**R4-2302570**](file:///D:\RAN4%23106\Docs\R4-2302570.zip) **TP for TR 38.846 on simplification for CA uplink configurations**

*Type: pCR For: Approval  
 38.846 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Revised to** [**R4-2303513**](file:///D:\RAN4%23106\Docs\R4-2303513.zip) **(from** [**R4-2302570**](file:///D:\RAN4%23106\Docs\R4-2302570.zip)**).**

[**R4-2303513**](file:///D:\RAN4%23106\Docs\R4-2303513.zip) **TP for TR 38.846 on simplification for CA uplink configurations**

*Type: pCR For: Approval  
 38.846 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Approved.**

[**R4-2302104**](file:///D:\RAN4%23106\Docs\R4-2302104.zip) **TP for TR 38.846 to capture some agreements for MSD test burden reduction**

*Type: pCR For: Approval  
 38.846 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2303514**](file:///D:\RAN4%23106\Docs\R4-2303514.zip) **(from** [**R4-2302104**](file:///D:\RAN4%23106\Docs\R4-2302104.zip)**).**

**[R4-2303514](D:\\RAN4#106\\Docs\\R4-2303514.zip) TP for TR 38.846 to capture some agreements for MSD test burden reduction**

*Type: pCR For: Approval  
 38.846 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

#### 9.3.4 Others

**[125] Topic #4: Other aspects related to FS\_SimBC**

[**R4-2302379**](file:///D:\RAN4%23106\Docs\R4-2302379.zip) **Restructure TR for basket WI with MSD analysis**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Discussions:**

CHTTL: for architecture, we do not need ask proponents to provide the information.

ZTE: share the similar view as CHTTL. The current TR structure is still OK.

Samsung: share the view as CHTTL and ZTE. It will increase the workload for proponents. The data may be provided by multiple vendors, it is difficult for us to provide them.

AT&T: The process works well. It is better to capture information about the detailed MSD in the Annex. It helps the people outside 3GPP. There would be not much work.

Ericsson: it is complicated to provide our architecture.

Skyworks: We should make sure all the cases be covered and all checking will be done.

**Decision: Noted.**

#### 9.3.5 Moderator summary and conclusions

**[106][125] FS\_SimBC, AI 9.3 – Zhifeng Ma (ZTE)**

[**R4-2302818**](file:///D:\RAN4%23106\Docs\R4-2302818.zip) **Topic summary for [106][125] FS\_SimBC**

*Type: other For: Information  
 Source: Moderator (ZTE)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303515**](file:///D:\RAN4%23106\Docs\R4-2303515.zip) **TP for TR 38.846 to add guidance on document type for addition of band combinations**

*Type: pCR For: Approval  
 38.846 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia*

**Decision: Approved.**

[**R4-2303543**](file:///D:\RAN4%23106\Docs\R4-2303543.zip) **Updates of template for ENDC NRCA SUL band combinations**

*Type: other For: Approval  
 Source: ZTE*

**Decision: Approved.**

**Issue 2-1A: Shall we agree the proposed TP in 2301676 to capture the guidance on a single draft CR introducing band combinations per basket WI per company / companies?**

**Discussions:**

Nokia: support option 1. Way forward is not agreeable, which is not aligned with our proposal.

Samsung: support Nokia proposal for sake of moderator review.

Softbank: how to handle Cat-B and Cat-F? We should have per CR type.

Huawei: we should consider per agenda. We prefer to add per delegate.

ZTE: It is difficult to capture per-delegate. For some HPUE basket, they are not in the block approval approach.

AT&T: we should agree the approach. And refine it. We can use the same method for HPUE.

Samsung: we want to remove per-delegate.

CHTTL: in the last meeting, we have already agreed the CR per agenda. We have already discussed it in the last meeting.

Huawei: Per-delegate, we can address the operator demand.

Ericsson: Support Nokia view.

Nokia: we have already opened the approach for per-company. We can list which band combination comes from with companies in the summary.

CHTTL: per agenda is still needed.

**Agreement:**

* A single draft CR introducing band combinations is allowed per CR type per basket WI per specification per company group per agenda.

**Issue 2-2A: Shall we introduce a new template for Rel-18 ENDC NR CA SUL band combination basket WID to include a new spread sheet for mixed intra-band contiguous & non-contiguous NR CA in FR1?**

**Discussions:**

CHTTL: cover sheet of excel document is also needed be update.

ZTE: cover sheet of excel

**Agreement:**

* Add a new sheet in the basket WID template specific for mixed intra-band contiguous & non-contiguous NR CA in FR1.

**Issue 2-3A: Shall we agree the following rules toward missing fallbacks for a combination in the specifications or basket work items?**

**Discussions:**

Samsung: support the proposal.

AT&T: support option 1. The key here is that fallbacks needs be requested to complete the work.

Apple: on the missing combination identified process, we also have to enforce it.

Nokia: if we identify the fallback, it is possible to add the fallbacks into the basket.

Ericsson: if we found the fallback, it is very good to update the WID in parallel.

**Agreement:**

* If there are missing fallbacks for a given combination in the specifications or basket work items of an open release, the missing fallbacks shall also be requested via the agreed template before adding to the specification.

**Issue 3-2A: Simplification on CA uplink configurations.**

**Discussions:**

AT&T: support Option 1. It would be very easy to apply the CA combo request.

CHTTL: is it for FR2 only? We can still keep inter FR1 as it is.

Ericsson: support it.

Nokia: similar as Ericsson.

Samsung: support option 1. CHTTL makes a good point. ZTE proposal is only for FR2

Skyworks: support option 1.

Apple: In the spec, we need the complete notation of combination.

**Issue 3-3A: REFSENS test burden reduction.**

**Discussions:**

AT&T: OK with Option 1.

Skyworks: what is the proposal which has impact on RAN4 specification?

Huawei: this test proposal is for TR. For RAN4 specification, we can discuss it separately.

Samsung: regarding the last sentence, what does it mean “proposed test reduction could be considered for an informative annex in the TS”? we prefer to capture it in TR.

AT&T: nothing will be changed in RAN4 spec. The core spec won't be changed.

CHTTL: agree with Samsung.

**Agreement:**

* MSD due to IMD for NR CA, NR DC, EN-DC and NE-DC band combinations with two bands are shown in table 1 based on the latest version of TS 38.101-1 and TS 38.101-3. One band combination can be chosen to verify the requirements for some band combinations in same row in table 1, as a result of reducing test burden. It’s suggested to randomly choose one band combination that UE support for MSD testing. The final decision should be taken by RAN5 based on the industry certification testing needs.

**Issue 3-3C: Simplification of MSD test point number for two-band NR-CA or EN-DC combinations in FR1.**

**Discussions:**

CHTTL: for example for case with IMD2, IMD4 and IMD5, normally RAN4 set the requirement for IMD2 and IMD4. The impact of IMD5 is not obvious.

Skyworks: if we only specify IMD2 and IMD5, we keep IMD2 and specify IMD5. The proposal is for the future combination.

Verizon: IMD4 is not needed and do not come back.

Qualcomm: The potential change must be done in one

A&T: support the proposal. We need keep it in case by case manner.

Samsung: In previous meeting, we mandate one and make the other optional.

Skyworks: the proposal applies to mixed of even and odd IMD order. To Qualcomm, we simplify the work for future and do not reverse the existing one.

CHTTL: sometimes some combinations have similarity to existing one.

**Agreement:**

* Use the following changes highlighted by yellow as the starting point for refinement.

### 9.4 Study on NR BS RF requirement evolution

### 9.5 Study on NR FR2 OTA testing enhancements

### 9.6 Further RF requirements enhancement for NR and EN-DC in FR1

#### 9.6.1 General and work plan

#### 9.6.2 4Tx UE RF requirements

**[127] Topic #1: Issues for 4Tx (Agenda 9.6.2)**

[**R4-2300950**](file:///D:\RAN4%23106\Docs\R4-2300950.zip) **4Tx UE RF requirements**

*Type: discussion For: Discussion  
 Source: LG Electronics*

**Abstract:**

It discusses 4Tx UE RF requirements.

**Decision: Noted.**

[**R4-2301175**](file:///D:\RAN4%23106\Docs\R4-2301175.zip) **R18 Discussion on 4Tx FWA**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2301537**](file:///D:\RAN4%23106\Docs\R4-2301537.zip) **Discussion on 4Tx UE RF requirements**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301613**](file:///D:\RAN4%23106\Docs\R4-2301613.zip) **On 4Tx UE RF requirements**

*Type: discussion For: Decision  
 Source: MediaTek Inc.*

**Decision: Noted.**

[**R4-2302367**](file:///D:\RAN4%23106\Docs\R4-2302367.zip) **On UE RF requirements for 4Tx**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302516**](file:///D:\RAN4%23106\Docs\R4-2302516.zip) **4 Tx RF issues**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Discussion on 4Tx RF issues

**Decision: Noted.**

[**R4-2302742**](file:///D:\RAN4%23106\Docs\R4-2302742.zip) **EVM for Transmit Diversity with 4Tx**

*Type: discussion For: Approval  
 Source: Lenovo*

**Decision: Noted.**

Draft CR

[**R4-2302368**](file:///D:\RAN4%23106\Docs\R4-2302368.zip) **draft CR to TS 38.101-1 4Tx requirements (phase 1)**

*Type: draftCR For: Discussion  
 38.101-1 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Postponed.**

#### 9.6.3 8Rx UE RF requirements

**[128] Topic #1: ΔRIB for 8Rx for TDD**

[**R4-2300696**](file:///D:\RAN4%23106\Docs\R4-2300696.zip) **8RX UE RF requirements**

*Type: other For: Approval  
 Source: Qualcomm Finland RFFE Oy*

**Abstract:**

Considerations and proposals on 8RX UE RF requirements are provided in this contribution.

**Decision: Noted.**

[**R4-2301096**](file:///D:\RAN4%23106\Docs\R4-2301096.zip) **Discussion on 8Rx on for CPE FWA vehicle industrial devices**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2301106**](file:///D:\RAN4%23106\Docs\R4-2301106.zip) **Views on 8Rx for CPE FWA vehicle industrail devices**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision: Noted.**

[**R4-2301174**](file:///D:\RAN4%23106\Docs\R4-2301174.zip) **R18 Discussion on 8Rx FWA**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2301538**](file:///D:\RAN4%23106\Docs\R4-2301538.zip) **Discussion on 8Rx UE RF requirements**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301588**](file:///D:\RAN4%23106\Docs\R4-2301588.zip) **Further view on 8Rx for Rel-18 RF FR1 enhancements**

*Type: other For: Approval  
 Source: NTT DOCOMO INC.*

**Decision: Noted.**

[**R4-2301763**](file:///D:\RAN4%23106\Docs\R4-2301763.zip) **On FR1 8Rx UE RF requirements**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302347**](file:///D:\RAN4%23106\Docs\R4-2302347.zip) **Discussion on FR1 8RX UE RF requirements**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Mediatek India Technology Pvt.*

**Decision: Noted.**

[**R4-2302732**](file:///D:\RAN4%23106\Docs\R4-2302732.zip) **Further discussion on UE RF requirements for 8Rx in FR1**

*Type: other For: Approval  
 Source: Ericsson Limited*

**Decision: Noted.**

**[128] Topic #2: ΔTRxSRS**

[**R4-2300215**](file:///D:\RAN4%23106\Docs\R4-2300215.zip) **Delta TRxSRS handling**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution discusses necessity of reporting of delta TRxSRS as well as relaxation on the main Tx chain via delta TRxSRS.

**Decision: Noted.**

[**R4-2302746**](file:///D:\RAN4%23106\Docs\R4-2302746.zip) **On ?TRxSRS Measurement**

*Type: discussion For: Discussion  
 Source: Lenovo*

**Decision: Noted.**

LS

[**R4-2301765**](file:///D:\RAN4%23106\Docs\R4-2301765.zip) **draft LS on the UE SRS IL imbalance issue**

*Type: LS out For: Approval  
 to RAN1, RAN2  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2303519**](file:///D:\RAN4%23106\Docs\R4-2303519.zip) **(from** [**R4-2301765**](file:///D:\RAN4%23106\Docs\R4-2301765.zip)**).**

[**R4-2303519**](file:///D:\RAN4%23106\Docs\R4-2303519.zip) **draft LS on the UE SRS IL imbalance issue**

*Type: LS out For: Approval  
 to RAN1, RAN2  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

**Topic #3: ΔPPowerClass for SRS antenna switching for PCMAX\_H,f,c**

draft CR

[**R4-2301764**](file:///D:\RAN4%23106\Docs\R4-2301764.zip) **draft CR for 38.101-1 removal of 3dB relaxation to PCMAX\_H,f,c for 8Rx capable UE**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Postponed.**

#### 9.6.4 Lower MSD for inter-band CA/EN-DC/DC combinations

**[126] Topic #1: General issues**

[**R4-2302369**](file:///D:\RAN4%23106\Docs\R4-2302369.zip) **Discussion on conclusion of study phase for feasibility of lower MSD**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

TP/TR

[**R4-2302370**](file:///D:\RAN4%23106\Docs\R4-2302370.zip) **TR 38.881 v0.3.0**

*Type: draft TR For: Endorsement  
 38.881 v0.3.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **for email approval**.

**[126] Topic #3: TPs for TR 38.881**

TP

[**R4-2300041**](file:///D:\RAN4%23106\Docs\R4-2300041.zip) **TR handling and TP on possible Lower MSD signaling for TR 38.881**

*Type: pCR For: Approval  
 38.881 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution discusses TR handling and propose a TP for possible lower MSD signaling into TR 38.881.

**Decision: Revised to** [**R4-2303520**](file:///D:\RAN4%23106\Docs\R4-2303520.zip) **(from** [**R4-2300041**](file:///D:\RAN4%23106\Docs\R4-2300041.zip)**).**

[**R4-2303520**](file:///D:\RAN4%23106\Docs\R4-2303520.zip) **TR handling and TP on possible Lower MSD signaling for TR 38.881**

*Type: pCR For: Approval  
 38.881 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution discusses TR handling and propose a TP for possible lower MSD signaling into TR 38.881.

**Decision: Approved.**

[**R4-2301097**](file:///D:\RAN4%23106\Docs\R4-2301097.zip) **TP for 38.881 on feasible study**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Xiaomi*

**Decision: Approved.**

##### 9.6.4.1 Study of approach to Improve MSD

[**R4-2300984**](file:///D:\RAN4%23106\Docs\R4-2300984.zip) **Discussion On the Fundamentals of Lowering MSDs**

*Type: discussion For: Discussion  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Murata Manufacturing Co Ltd.*

**Abstract:**

In this document, basing on the fundamentals of existing MSD specs, we review the limitations and reasonable approaches RAN4 can take to achieve the goal of lowering MSDs

**Decision: Noted.**

##### 9.6.4.2 Study of signaling for improved lower MSD

**[126] Topic #2: Study of signaling for Lower MSD**

[**R4-2300040**](file:///D:\RAN4%23106\Docs\R4-2300040.zip) **Lower MSD signaling**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

RAN4#105 approved WF of [R4-2220824](file:///D:\RAN4%23106\Docs\R4-2220824.zip), where several way forwards related to signaling aspects are captured. This contribution is an update of [R4-2218554](file:///D:\RAN4%23106\Docs\R4-2218554.zip) (where zero MSD region report was also proposed) and shares our further views.

**Decision: Noted.**

[**R4-2300206**](file:///D:\RAN4%23106\Docs\R4-2300206.zip) **Lower MSD capability signalling**

*Type: other For: Approval  
 Source: Meta Ireland*

**Abstract:**

we propose the reported lower MSD value range, MSD threshold and granularity for the lower MSD capability. Also, we propose how to apply the MSD applicability for different orders and different MSD sources.

**Decision: Noted.**

[**R4-2300719**](file:///D:\RAN4%23106\Docs\R4-2300719.zip) **On the signalling design for low-MSD capability**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302744**](file:///D:\RAN4%23106\Docs\R4-2302744.zip) **Signaling for low MSD**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Qualcomm Technologies Int*

**Abstract:**

Proposals on signaling for low MSD

**Decision: Noted.**

[**R4-2300797**](file:///D:\RAN4%23106\Docs\R4-2300797.zip) **Discussion on lower MSD capability**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision: Noted.**

[**R4-2301098**](file:///D:\RAN4%23106\Docs\R4-2301098.zip) **Discussion on lower MSD signaling for inter-band CA/EN-DC/DC**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2301105**](file:///D:\RAN4%23106\Docs\R4-2301105.zip) **Views on Lower MSD**

*Type: discussion For: Discussion  
 Source: Samsung, KT corporation*

**Decision: Noted.**

[**R4-2301176**](file:///D:\RAN4%23106\Docs\R4-2301176.zip) **R18 Discussion on low MSD reporting**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2301267**](file:///D:\RAN4%23106\Docs\R4-2301267.zip) **On lower MSD for inter-band CA/ENDC**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301536**](file:///D:\RAN4%23106\Docs\R4-2301536.zip) **Discussion of signaling on Lower MSD**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301709**](file:///D:\RAN4%23106\Docs\R4-2301709.zip) **Continue discussion for low MSD**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: MediaTek Inc.*

**Decision: Noted.**

[**R4-2302481**](file:///D:\RAN4%23106\Docs\R4-2302481.zip) **Discussion on the capability signalling design for Low MSD indication**

*Type: discussion For: Discussion  
 Source: CHTTL*

**Decision: Noted.**

Withdrawn

[**R4-2300757**](file:///D:\RAN4%23106\Docs\R4-2300757.zip) **Signaling for low MSD**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Proposals on signaling for low MSD

**Decision:** The document was **withdrawn**.

#### 9.6.5 RRM core requirements

#### 9.6.6 Demodulation and CSI requirements

#### 9.6.7 Moderator summary and conclusions

**[106][126] FR1\_enh2\_part1, AI 9.6, 9.6.1, 9.6.4 – Ye Liu (Huawei)**

[**R4-2302819**](file:///D:\RAN4%23106\Docs\R4-2302819.zip) **Topic summary for [106][126] FR1\_enh2\_part1**

*Type: other For: Information  
 Source: Moderator (Huawei)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303686**](file:///D:\RAN4%23106\Docs\R4-2303686.zip) **Ad hoc minutes for FR1\_enh2\_part1**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2303516**](file:///D:\RAN4%23106\Docs\R4-2303516.zip) **WF on study for lower MSD**

*Type: other For: Approval  
 Source: Huawei*

**Chair:** capture the follow bullets in the revised way forward

* UE could indicate Lower MSD capability for a band combination as long as one kind of MSD from one victim band is improved.
  + The amount of MSD improvement necessary for indication needs further study.

**Chair:** the “*Conclusion proposal for the study phase of lower MSD in RAN#99”* in the WF is agreeable*.*

**Decision: Revised to** [**R4-2303695**](file:///D:\RAN4%23106\Docs\R4-2303695.zip) **(from** [**R4-2303516**](file:///D:\RAN4%23106\Docs\R4-2303516.zip)**).**

[**R4-2303695**](file:///D:\RAN4%23106\Docs\R4-2303695.zip) **WF on study for lower MSD**

*Type: other For: Approval  
 Source: Huawei*

**Decision: Approved.**

**Issue 2-1-1: UE reported lower MSD capability vs NW configured value**

**Agreement:**

* Option 1.

**Issue 2-1-2: Conditions to indicate the lower MSD capability**

**Discussions:**

Skyworks: Capability is optional. Why do you need always signal?

Samsung: Agree with Skyworks. UE can report correspoding values for different types. We do not prefer to complicate what small and big means. For option 1 and 2, it is difficult to determine low and high.

AT&T: in last meeting, we agreed with some threshold. We should keep it simple. It is important to define a few number of thresholds. But avoid too much information for BS.

Nokia: Capaiblity is optional is OK. We can set some side condition on the absolute threshold.

Mediatek: why do we need set threshold to restric UE to report. We support Option 1.

Qualcomm: support Option 1. The granularity and how many needs discussions.

Meta: we also support Option 1. The last sentence could be removed.

OPPO: Option 3. We do not need impact he MSD.

Huawei: it is unnecessary to decide how many will be report. The MSD values can be used as offset of RSRP.

**Issue 2-1-3: Essential information included in the lower MSD capability**

**Discussions:**

AT&T: general Option 2 is OK. Not sure about the level in details. MSD could be reported as bit level type. We should all the signaling design.

Mediatek: support Option 2. Not limited to those types.

CHTTL: we propose to consider Option 2 and Option 3.

Meta: support Option 1. We do not need to report order, which is no necessary. For option, power class 2 and 3 are baseline. If we have different MSD value between PC2 and PC3, then we can report.

Skyworks: Support mix of Option 2 and Option 3. What is the capaiblity granularity? It is not DL configuration, it is uplink configuration. Per-band per band combination for power classe?

OPPO: in addition to option 2, the aggressor band information is also important.

Samsung: on top of Option 2, we want to add power class. Aggressor UL and victim DL bandwidth is not needed. To Mediatek, triple beat is included.

ZTE: in addition, aggressor uplink is needed.

Qualcomm: support Option 2. Power class needs be careful.

Huawei: Order is important to be report. It is important for operator to decide which one will be used.

Nokia: agree with combination of Option 2 and Option 3. Regarding aggressor band, it would be clear. The highest order of aggressor will be used.

Xiaomi: for MSD type and harmonic, only one order is enough.

NTT DOCOMO: Support Option 2.

Apple: MSD requirements in the current spec is based on particular frequency configuration. If storing the information and UE report it, it may not work in the real feild if there is no hit on MSD.

CHTTL: to Samsung, regarding aggressor cell, we assume maximum uplink and minimum DL.

**Agreement:**

* Use Option 2 as the starting point and discuss how to capture the other necessary parameters.

**Issue 2-1-9: Dyanmic capability reporting in Rel-18**

**Discussions:**

OPPO: what is the dynamic signalling?

Samsung: when network requires UE to report, it is not dynamic reporting. Support Option 1.

Meta: support Option 1.

LGE: we support option 2.

Skyworks: given the complexity, we do not see the way forward for dynamic signalling scheme.

**Agreement:**

* Don’t introduce Lower MSD report as dynamic signaling scheme in Rel-18.

**Issue 2-2-2: Applicability of Lower MSD capability for higher order combination**

**Discussions:**

Samsung: propose to use Option 1 + table.

OPPO: Some high order BC has more MSD which not covered by low order band combination. Prefer Option 2 and Option 3.

Qualcomm: all the options say the same thing. Somehow the principle is the same. 1UL case may be unclear.

Skyworks: similar comments for table.

Huawei: For table, MSD is only covered by 2DL or 3DL.

Meta: support Option 1 without table.

**Agreement:**

* Use Option 1 as the baseline.

**[106][127] FR1\_enh2\_part2 , AI 9.6.2 – Sanjun Feng (Vivo)**

[**R4-2302820**](file:///D:\RAN4%23106\Docs\R4-2302820.zip) **Topic summary for [106][127] FR1\_enh2\_part2**

*Type: other For: Information  
 Source: Moderator (Vivo)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303517**](file:///D:\RAN4%23106\Docs\R4-2303517.zip) **WF on 4Tx UE RF requirements**

*Type: other For: Approval  
 Source: Vivo*

**Decision: Approved.**

**Issue 1-2-1: Whether 4Tx UE need to keep power class capability when configured with different antenna ports, i.e.4/2/1**

**Discussions:**

OPPO: Regarding fallback power class, UE reports for the highest supported configuration. When BS configures two ports, BS should allow UE to fall back.

Mediatek: when we said 4Tx UE, do we mean 4Tx capable UE? Option 3 sounds reasonable.

Apple: power class per band base no matter what the implementation is, i.e., 4Tx or 2Tx.

Huawei: No matter how many ports used, the power class should be the same.

Nokia: Spec needs to clarify the associated power with different antenna port configuration.

Qualcomm: UE virtualizes the antenna. Is it single-layer transmission? or two layer capable.

Vivo: power class is reported for the maximum power which can be achieved.

LGE: the maximum power depends on PA configurations.

**Issue 1-2-2: Whether Issue 1-2-1 need to be specified? If yes, how?**

**Discussions:**

Skyworks: we are talking about the power class fallback.

**Issue 1-2-3: Other Fall back related issues.**

**Agreement:**

In non-MIMO operation, when UE power class fallback to PC2/PC3 due to exceeding dutycycle capability or the output power is lower than the reported power class due to scheduling, whether to maintain 4Tx transmission is up to UE implementation.

**Issue 1-2-4: MPR requirements**

**Discussions:**

Skyworks: we try to provide the data. If we copy from 2Tx, 20dB isolation is assumed. If we keep 20dB all the other three will interfere one. There would be higher interference. Then we do not agree to use 2Tx 20dB for 4Tx. If so it means more than 20dB isolation will be assumed.

Huawei: we do not preclude other consideration for relaxation. The proposal is whether to have one set or two sets of requriements. First we need to figure out whether to define the requirements based on 20dB isolation. 2Tx PC1.5 MPR is too tight if considering 3PA impact on one Tx.

LGE: proposal shows the different isolation. We have agreed to consider the different isolation values.

Huawei: if we define two sets of MPR requirements, we do not need highlight what isolation is.

**[106][128] FR1\_enh2\_part3, AI 9.6.3 – Yuta Oguma (NTT DOCOMO)**

[**R4-2302821**](file:///D:\RAN4%23106\Docs\R4-2302821.zip) **Topic summary for [106][128] FR1\_enh2\_part3**

*Type: other For: Information  
 Source: Moderator (NTT DOCOMO)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303518**](file:///D:\RAN4%23106\Docs\R4-2303518.zip) **WF on UE 8Rx requirements**

*Type: other For: Approval  
 Source: NTT DOCOMO*

**Decision: Approved.**

**Issue 1-1-1: Value of PDCCH aggregation level**

**Discussions:**

Qualcomm: Option 1.

Ericsson: support Option 3. We do not need assumption on it.

DOCOMO: option 2 is the same as LTE performance requirement. It will not impact the implementations.

Mediatek: we do not need define the requirement of aggregation level in RAN4. We can agree AL8 for RAN5 testing. Option 2 comes from ACS testing in RAN5.

Samsung: Option 1. PDCCH should have no impact on refsens.

CHTTL: support option 3.

OPPO: option 3 means the worst case.

Xiaomi: support option 1. In LTE, it is clear said that AL is 8.

NTT DOCOMO: to provide some concrete analysis. PDCCH is not bottleneck.

Qualcomm: more companies to support option1. it is difficult to show the bottleneck performance. In LTE, we agree with AL8.

Mediatek: agree with AL8 and we do not specify it in 38.101-1.

**Issue 1-1-2: The number of PDCCH AL values**

**Agreement:**

* RAN4 to specify 8Rx requirements under a single aggregation level for the same set of SCS/CBW if RAN4 agrees to have AL assumption.

**Issue 2-1-1: Value of ΔTRxSRS for antennas other than main branch for n41/n77/n78 for PC3**

**Discussions:**

OPPO: we can accept 4.5 for 2T8R and 1T8R/2T8R.

Ericsson: OK with Option 1.

DOCOMO: OK with Option 1.

**Issue 2-2: Value of ΔTRxSRS for the main branch**

**Agreement:**

* Option 2.

**Issue 2-3-1: Discussion on indication of ΔTRxSRS to NW**

**Discussions:**

Huawei: we have draft LS. we would like to still have technique comment on our LS. The issues on the table have been solved.

Nokia: We have to agree on we should report. We would like to list all the possible options that we identify so far.

Vivo: We would like to confirm that it is for 8Rx in Rel-18 only. We would like to confirm it.

Lenovo: we think it is possible to measure insertion loss. And network can know the value.

OPPO: Reporting should not be static reporting.

Ericsson: These proposals do not preclude each other. We can include the possible options to RAN1.

Huawei: to vivo, we can accept only 8Rx use the scheme. We can consider all the comment and work on draft LS.

Samsung: proposal 5, UE has accurate monitor the insertion loss. How can the network ask UE to get the value. For each SRS resources, there is specific ID for each resource.

Lenovo: UE can assist the network to know the insertion loss. The method is to look at the difference from UE and network sides. The network want verify the value.

Vivo: Even if UE has the accurate the value, the other fact will impact the accuracy of reported insertion loss in the network.

OPPO: the insertion loss will be changed in the real network. We show the gain. Regarding the concern it mainly comes from legacy device.

**Issue 3-1-1: Discussion on whether or not to remove** ΔPPowerClass for SRS antenna switching to PCMAX\_H,f,c

**Discussions:**

Samsung: support to remove delat-P. It should be for power class 2. PC1.5 should be precluded.

DOCOMO: One full PA and half PA assumption is OK.

Ericsson: We are not OK to remove.

### 9.7 NR RF requirements enhancement for FR2, Phase 3

#### 9.7.1 General and work plan

[**R4-2301618**](file:///D:\RAN4%23106\Docs\R4-2301618.zip) **TR38.891 v 0.3.0 for NR RF requirements enhancement for frequency range 2 (FR2), Phase 3**

*Type: draft TR For: Approval  
 38.891 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Xiaomi,Nokia*

**Decision: for email approval.**

#### 9.7.2 UL 256QAM

**[130] Topic #1: EVM requirements for UL 256QAM**

[**R4-2300193**](file:///D:\RAN4%23106\Docs\R4-2300193.zip) **System level simulation results for FR2-1 UL 256QAM**

*Type: other For: Information  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides system level simulation results for FR2-1 UL 256QAM according to the agreed simulation assumptions.

**Decision: Noted.**

[**R4-2300821**](file:///D:\RAN4%23106\Docs\R4-2300821.zip) **Discussion on FR2-1 UL 256QAM**

*Type: discussion For: (not specified)  
 Source: LG Electronics France*

**Decision: Noted.**

[**R4-2301235**](file:///D:\RAN4%23106\Docs\R4-2301235.zip) **Discussion on FR2-1 UL 256QAM**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301433**](file:///D:\RAN4%23106\Docs\R4-2301433.zip) **Discussion on UE UL 256QAM**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2301569**](file:///D:\RAN4%23106\Docs\R4-2301569.zip) **Further evaluation on FR2 UL 256QAM**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301620**](file:///D:\RAN4%23106\Docs\R4-2301620.zip) **Discussion on UL 256QAM**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2302240**](file:///D:\RAN4%23106\Docs\R4-2302240.zip) **Views on UL 256-QAM for FR2-1**

*Type: other For: Approval  
 Source: Sony*

**Decision: Noted.**

[**R4-2302529**](file:///D:\RAN4%23106\Docs\R4-2302529.zip) **Proposals on UE RF requirements for FR2-1 UL 256QAM**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2302733**](file:///D:\RAN4%23106\Docs\R4-2302733.zip) **Discussion on UE RF requirements for UL 256QAM for FR2-1**

*Type: other For: Approval  
 Source: Ericsson Limited*

**Decision: Noted.**

[**R4-2302734**](file:///D:\RAN4%23106\Docs\R4-2302734.zip) **SLS results for UL 256QAM feasibility study for FR2-1**

*Type: other For: Information  
 Source: Ericsson Limited*

**Decision: Noted.**

**[130] Topic #2: MPR**

[**R4-2300707**](file:///D:\RAN4%23106\Docs\R4-2300707.zip) **On enabling FR2 UL256QAM**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

Proposals on details of PTRS calculation

**Decision: Noted.**

[**R4-2301147**](file:///D:\RAN4%23106\Docs\R4-2301147.zip) **UL 256QAM and CPE compensation based on PTRS**

*Type: other For: Approval  
 Source: Anritsu Limited*

**Decision: Noted.**

[**R4-2301928**](file:///D:\RAN4%23106\Docs\R4-2301928.zip) **Views on FR2-1 UL 256QAM**

*Type: discussion For: Discussion  
 Source: MediaTek Korea Inc.*

**Decision: Noted.**

**[130] Topic #3: EVM test**

[**R4-2300343**](file:///D:\RAN4%23106\Docs\R4-2300343.zip) **On FR2 UL 256QAM**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2302371**](file:///D:\RAN4%23106\Docs\R4-2302371.zip) **On PTRS correction for EVM test**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

**[130] Topic #4: TP**

[**R4-2301619**](file:///D:\RAN4%23106\Docs\R4-2301619.zip) **TP for TR 38.891 on link level simulation results and system level simulation assumption for FR2 UL 256QAM**

*Type: pCR For: Approval  
 38.891 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Xiaomi*

**Decision: Revised to** [**R4-2303490**](file:///D:\RAN4%23106\Docs\R4-2303490.zip) **(from** [**R4-2301619**](file:///D:\RAN4%23106\Docs\R4-2301619.zip)**).**

[**R4-2303490**](file:///D:\RAN4%23106\Docs\R4-2303490.zip) **TP for TR 38.891 on link level simulation results and system level simulation assumption for FR2 UL 256QAM**

*Type: pCR For: Approval  
 38.891 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Xiaomi*

**Decision: Approved.**

Withdrawn

[**R4-2300194**](file:///D:\RAN4%23106\Docs\R4-2300194.zip) **Proposals on UE RF requirements for FR2-1 UL 256QAM**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides proposals on UE RF requirements for FR2-1 UL 256QAM according to the agreed WF and the simulation results.

**Decision:** The document was **withdrawn**.

[**R4-2302337**](file:///D:\RAN4%23106\Docs\R4-2302337.zip) **Proposals on UE RF requirements for FR2-1 UL 256QAM**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides proposals on UE RF requirements for FR2-1 UL 256QAM according to the agreed WF and the simulation results.

**Decision:** The document was **withdrawn**.

#### 9.7.3 Beam correspondence requirements for RRC\_INACTIVE and initial access

##### 9.7.3.1 Beam correspondence requirement applicability

**[129] Topic #1: Beam correspondence requirement applicability**

[**R4-2302249**](file:///D:\RAN4%23106\Docs\R4-2302249.zip) **Views on Beam correspondence for initial access**

*Type: other For: Approval  
 Source: Sony, Ericsson*

**Decision: Noted.**

[**R4-2300505**](file:///D:\RAN4%23106\Docs\R4-2300505.zip) **Beam correspondence requirement applicability**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2300708**](file:///D:\RAN4%23106\Docs\R4-2300708.zip) **On initial access beam correspondence**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

Views on beam correspondence for initial access

**Decision: Noted.**

[**R4-2300795**](file:///D:\RAN4%23106\Docs\R4-2300795.zip) **Beam correspondence requirements for initial access**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision: Noted.**

[**R4-2301179**](file:///D:\RAN4%23106\Docs\R4-2301179.zip) **R18 FR2 beam correspondence requirements in IA**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2301570**](file:///D:\RAN4%23106\Docs\R4-2301570.zip) **Discussion on beam correspondence requirement applicability in initial access**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301579**](file:///D:\RAN4%23106\Docs\R4-2301579.zip) **On beam correspondence requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2301609**](file:///D:\RAN4%23106\Docs\R4-2301609.zip) **On correspondence requirements for initial access and RRC\_INACTIVE**

*Type: discussion For: Decision  
 Source: MediaTek Inc.*

**Decision: Noted.**

[**R4-2301621**](file:///D:\RAN4%23106\Docs\R4-2301621.zip) **Discussion on beam correspondence requirements for RRC\_INACTIVE and initial access**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2302476**](file:///D:\RAN4%23106\Docs\R4-2302476.zip) **On BC requirement for IA/RA-SDT/CG-SDT**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

##### 9.7.3.2 UE beam type and DRX implications

**[129] Topic #2: UE beam type and DRX implications**

[**R4-2300506**](file:///D:\RAN4%23106\Docs\R4-2300506.zip) **UE beam type and DRX implicationss**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2301180**](file:///D:\RAN4%23106\Docs\R4-2301180.zip) **R18 FR2 beam type in IA**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2301571**](file:///D:\RAN4%23106\Docs\R4-2301571.zip) **Discussion on beam correspondence requirement for msg1**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301608**](file:///D:\RAN4%23106\Docs\R4-2301608.zip) **On beam type for beam correspondence requirements for initial access and RRC\_INACTIVE**

*Type: discussion For: Decision  
 Source: MediaTek Inc.*

**Decision: Noted.**

##### 9.7.3.3 Beam correspondence test issues

**[129] Topic #3: Beam correspondence test issues**

[**R4-2300507**](file:///D:\RAN4%23106\Docs\R4-2300507.zip) **Beam correspondence test issues**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2300796**](file:///D:\RAN4%23106\Docs\R4-2300796.zip) **Beam correspondence test issues for initial access state**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision: Noted.**

[**R4-2300989**](file:///D:\RAN4%23106\Docs\R4-2300989.zip) **Discussion on how to achieve maximum output power in initial access**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision: Noted.**

[**R4-2301181**](file:///D:\RAN4%23106\Docs\R4-2301181.zip) **R18 FR2 beam correspondence test in IA**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2301580**](file:///D:\RAN4%23106\Docs\R4-2301580.zip) **On beam correspondence test issues**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2301607**](file:///D:\RAN4%23106\Docs\R4-2301607.zip) **On beam correspondence test issues**

*Type: discussion For: Decision  
 Source: MediaTek Inc.*

**Decision: Noted.**

#### 9.7.4 Moderator summary and conclusions

**[106][129] FR2\_enh\_req\_Ph3\_part1, AI 9.7, 9.7.1, 9.7.3 – Hisashi Onozawa (Nokia)**

[**R4-2302822**](file:///D:\RAN4%23106\Docs\R4-2302822.zip) **Topic summary for [106][129] FR2\_enh\_req\_Ph3\_part1**

*Type: other For: Information  
 Source: Moderator (Nokia)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303550**](file:///D:\RAN4%23106\Docs\R4-2303550.zip) **Ad hoc minutes for FR2 enhancement phase 3**

*Type: other For: Approval  
 Source: Moderator (Nokia)*

**Decision: Noted.**

[**R4-2303563**](file:///D:\RAN4%23106\Docs\R4-2303563.zip) **WF on beam correspondence requirements for initial access and RRC\_inactive mode**

*Type: other For: Approval  
 Source: Nokia*

**Decision: Revised to R4-2303717 (from R4-2303563).**

[**R4-2303717**](file:///D:\RAN4%23106\Docs\R4-2303563.zip) **WF on beam correspondence requirements for initial access and RRC\_inactive mode**

*Type: other For: Approval  
 Source: Nokia*

**Decision: Approved.**

**Issue 2-1-1: minimum peak EIRP for msg1**

**Discussions**

Nokia: for min peak EIRP, this is important requirement. We suggest to add this requirement with some relaxation.

Ericsson: we support Option 1a.

AT&T: prefer Option 1a. Option 1b can be the way forward if the option 1 is selected for issue 2-1-2.

Sony: we prefer Option 1a. If not agreeable, we prefer Option 2. Option 1b cannot lead to meaningful requirement.

Oppo: Option 2.

Apple: Option 2. Unlike connect mode the throughput is not requirement focus in the initial access. We do not see the min peak EIRP is the meaningful metric.

Huawei: First priority is Option 2 and we can discuss Option 1b.

Vivo: Agree with Option 2.

Xiaomi: Prefer Option 1b. Option 2 is also acceptable. In initial access, we should consider relaxation.

Samsung: we share the similar view as Sony. We just focus the spherical coverage.

Sony: We do not specify the min peak EIRP rather than specify the same EIRP spherical coverage requirement.

Mediatek: we prefer to Option 1b. We would like to further discuss with other companies.

Apple: we can take Sony proposal as baseline.

The additional option below can be further discussed

* + Do not specify the min peak EIRP requirements
  + Specify the same EIRP spherical coverage requirement as RRC\_CONNECTED

**Issue 2-6: requirement scenario**

**Discussions**

Sony: support Option 1a.

Huawei: prefer Option 2. Specifying the requirement for initial access is enough. If the test is limited to idle mode, we can also consider Option 1a.

Vivo: Support Option 1a. In previous release, there are two factors, 1) mismatch 2) RSRP accuracy. Option 1a is feasible. For Option 1b, if companies support it, companies should provide the simulation or test results.

Xiaomi: Support 1a.

Ericsson: Option 1a. Focus on initial access first.

Nokia: we would like to provide the data for CG-SDT. The requirements for CG-SDT would be different from those for IA.

Apple: if we agree to reuse the requriement for RRC\_connected, how can the requirement for CG-SDT be different from the requirement for RRC\_connected.

Nokia: we can further discuss it offline. Channel may change.

**Issue 2-8: BC tolerance**

**Agreement:**

* Focus on msg1 requirement first. Then, discuss whether BC tolerance is needed later

**[106][130] FR2\_enh\_req\_Ph3\_part2, AI 9.7.2 – Juan Zhang (Xiaomi)**

[**R4-2302823**](file:///D:\RAN4%23106\Docs\R4-2302823.zip) **Topic summary for [106][130] FR2\_enh\_req\_Ph3\_part2**

*Type: other For: Information  
 Source: Moderator (Xiaomi)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303491**](file:///D:\RAN4%23106\Docs\R4-2303491.zip) **WF on FR2-1 UL 256QAM**

*Type: other For: Approval  
 Source: Xiaomi*

**Decision: Revised to R4-2303709 (from R4-2303491).**

**[R4-2303709](file:///D:\\RAN4%23106\\Docs\\R4-2303491.zip) WF on FR2-1 UL 256QAM**

*Type: other For: Approval  
 Source: Xiaomi*

**Decision: Approved.**

**Issue 1-1-1: UL 256QAM feasibility for 29GHz and 39GHz**

**Discussions**

Vivo: based on our simulation, we set max EIRP and study the link EIRP. We found a few UE can achieve. But we can agree on Option 1.

Sony: we provide the results for indoor scenario. But we did not separate the requirements for indoor and outdoor. Then we can conclude it is feasible.

Qualcomm: what is the assumption for phase noise and peak EIS. The study is pre-mature.

Xiaomi: Phase noise assumption is used for link level. We have assumption based on TR 38.803 for phase noise model.

Qualcomm: Given the phase noise profile, how does it impact the receiver SNR or EVM?

Nokia: Agree with Qualcomm. In the system level simulation, we evaluate the SNR is achievable. We should first agree the feasibility and then decide the requirement for EVM.

LGE: we agree with Nokia comment.

Qualcomm: when we try to establish the feasibility, we need to know what UE can do.

AT&T: tend to agree with Option 1 as working assumption and work on the details.

Xiaomi: The evaluation is based on the worst phase noise. There is possibility to change the small phase noise.

Nokia: to Qualcomm, companies have taken the worse SNR into consideration.

**Agreement:**

* Agree Option 1
  + Further discuss the phase noise model in the normative work to specify the requirements.

**Issue 1-2-1: MCS limitation for 39GHz**

**Agreement:**

* Limit MCS with 256QAM for 39GHz to the range of MCS#20, #21 and #22.
* Limit MCS with 256QAM for 29GHz to the range of MCS#20, #21, #22 and #23.

**Issue 1-2-2: Operating SNR for 29GHz and 39GHz**

**Agreement:**

* Adopt 28 dB as operating SNR for 29GHz.
* Adopt 30 dB as operating SNR for 39GHz.

**Issue 2-1-1: Phase noise assumption**

Qualcomm commented that there is no need to agree on the three bullet. Companies need to check the concrete proposal for phase noise profile.

**Issue 2-1-2: Phase noise profile**

**Discussions**

Qualcomm: Option 3 is orthogonal to Option 1 and 2. The question is between Option 1 and Option 2. i.e., between new parameters and reusing the existing ones.

Nokia: the example 1 and example 2 are related to parameters. To Mediatek, do you reuse the existing parameters or new parameters?

Mediatek: This phase noise is feasible based on the parameters. The parameters are new. The proposed model is similar Qualcomm with some improvement.

Qualcomm: In our paper, we share some EVM floors. It is nice that Mediatek can do the same.

**Issue 2-1-3: EVM budget**

**Discussions**

Mediatek: We are also OK with Option 2, if companies do not want to show more detailed parameters.

LGE: we do not need further detailed information for other impairments.

Qualcomm: why do we not need agree with one value, i.e., Tx EVM.

Mediatek: we are OK with Qualcomm proposal, i.e., just one parameter.

Sony: what is the upper limit for MPR?

**Agreement:**

* For MPR evaluation, only consider the total value of 3.5% for Tx EVM.
  + Companies need to clarify the components of Tx EVM in their simulation results, including
    - Phase noise
    - Value for IQ imbalance
    - PA and transmitter non-linearity

**Issue 2-1-4: Whether consider other UE implementation-based methods to confine the MPR values for 256QAM**

**Agreement:**

* The advanced UE implementation technologies are not precluded for MPR evaluation.
  + Companies should clarify what advanced UE implementation technologies are used in the simulation.
* For MPR evaluation, either simulation results or measurement data or both can be provided

### 9.8 Requirement for NR FR2 multi-Rx chain DL reception

#### 9.8.1 General and work plan

#### 9.8.2 UE RF requirements for simultaneous DL reception with up to 4 layer MIMO

[**R4-2301759**](file:///D:\RAN4%23106\Docs\R4-2301759.zip) **On UE RF requirement for FR2 multi-Rx chain DL reception**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302250**](file:///D:\RAN4%23106\Docs\R4-2302250.zip) **Further views on multi-Rx chain DL reception in FR2**

*Type: other For: Approval  
 Source: Sony, Ericsson*

**Decision: Noted.**

##### 9.8.2.1 System parameter assumption, UE architecture and conditions of UE RF requirements

[**R4-2300195**](file:///D:\RAN4%23106\Docs\R4-2300195.zip) **Discussion on System parameter assumption, UE architecture and conditions of UE RF requirements**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides Nokia’s further views on ‘System parameter assumption, UE architecture and conditions of UE RF requirements’ topic for defining the RF requirements for FR2-1 multi-Rx chain DL reception for reception from two directions for PC3

**Decision: Noted.**

[**R4-2300267**](file:///D:\RAN4%23106\Docs\R4-2300267.zip) **System parameter and UE assumption for NR FR2 multi-Rx chain DL reception**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

[**R4-2301233**](file:///D:\RAN4%23106\Docs\R4-2301233.zip) **Discussion on System parameter and UE architecture of UE RF requirements**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301461**](file:///D:\RAN4%23106\Docs\R4-2301461.zip) **On AoA separation range and value for RF requirement**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2301572**](file:///D:\RAN4%23106\Docs\R4-2301572.zip) **Evaluation on UE requirement of multiRx DL reception**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2302522**](file:///D:\RAN4%23106\Docs\R4-2302522.zip) **System Parameter Assumptions for Multi-AoA Rx Testing**

*Type: other For: Approval  
 Source: Keysight Technologies UK Ltd*

**Decision: Noted.**

##### 9.8.2.2 UE RF requirements

[**R4-2300146**](file:///D:\RAN4%23106\Docs\R4-2300146.zip) **Discussion for FR2 multi-Rx FOM**

*Type: discussion For: Discussion  
 Source: Murata Manufacturing Co Ltd.*

**Decision: Noted.**

[**R4-2300196**](file:///D:\RAN4%23106\Docs\R4-2300196.zip) **Proposal on UE RF requirements for FR2-1 multi-Rx chain DL reception**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides a proposal on UE RF requirements for FR2-1 multi-Rx chain DL reception comparing to the legacy spherical coverage requirement for reception from a single direction for PC3 UE.

**Decision: Noted.**

[**R4-2300268**](file:///D:\RAN4%23106\Docs\R4-2300268.zip) **RF requirement for NR FR2 multi-Rx chain DL reception**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

[**R4-2300709**](file:///D:\RAN4%23106\Docs\R4-2300709.zip) **On UE RF requirements for 2AoA FR2 DL MIMO**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

Proposal on scan grid for UE requirement, proposal for requirement framework based on sim data

**Decision: Noted.**

[**R4-2300949**](file:///D:\RAN4%23106\Docs\R4-2300949.zip) **Discussion on UE RF requirements for simultaneous DL reception**

*Type: discussion For: Discussion  
 Source: LG Electronics*

**Abstract:**

It discusses UE RF requirements for simultaneous DL reception with up to 4 layer MIMO.

**Decision: Noted.**

[**R4-2300987**](file:///D:\RAN4%23106\Docs\R4-2300987.zip) **Discussion on FR2 Multi-RX DL UE RF requirements**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision: Noted.**

[**R4-2301234**](file:///D:\RAN4%23106\Docs\R4-2301234.zip) **Discussion on UE RF requirements for simultaneous DL reception**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301573**](file:///D:\RAN4%23106\Docs\R4-2301573.zip) **Discussion on AoA separation for multiRx DL reception**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301622**](file:///D:\RAN4%23106\Docs\R4-2301622.zip) **Discussion on UE RF requirements supporting simultaneous DL reception**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision: Noted.**

#### 9.8.3 RRM core requirements for simultaneous DL reception from different directions

#### 9.8.4 Demodulation performance and CSI requirements

#### 9.8.5 Moderator summary and conclusions

**[106][131] FR2\_multiRx\_UERF\_part1, AI 9.8.2, 9.8.2.2 – Sumant Iyer (Qualcomm)**

[**R4-2302824**](file:///D:\RAN4%23106\Docs\R4-2302824.zip) **Topic summary for [106][131] FR2\_multiRx\_UERF\_part1**

*Type: other For: Information  
 Source: Moderator (Qualcomm)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303551**](file:///D:\RAN4%23106\Docs\R4-2303551.zip) **Ad hoc minutes for NR FR2 multi-Rx chain DL reception**

*Type: others For: Approval  
 Source: Moderator (Qualcomm)*

**Decision: Withdrawn.**

**2TRP grid for UE perfomance evaluation**

**Discussions:**

Apple: it is really necessary what the test constraints to test AoA are. Based on it we can set the test. Let us discuss the constrains on the test system.

Sony: for #1 nd #4 we are OK. for #2 and #3, we need more discussion.

Samsung: #2 and #3 are new scan. We support. #1 is good proposal. #4 is an example. We can further discuss it.

Keysight: Support #1, 2, 3.

LGE: for #1, it is better to consider together concept with proposal #1. It depends on requirement concept for 2TRP setting.

Qualcomm: #1~3. #4 is an example for implementation.

R&S: Support #1~3.

Vivo: support all the proposals. Companies want to align the simulation assumption.

Qualcomm: this is 2 TRP scanning scheme, which has nothing to do with requirement concept.

Nokia: #1 is whole idea. We should test AoA to point AoA1.

**Agreement:**

* The 2TRP data set is only complete when each TRP traverses the entire surface of the test sphere.
* In the coordination system of z-axis pointing to AoA1 (P0), the two AoAs (probes) are suggested to be located in xz plane**.**

**Requirement Concept for UE RF**

**Discussion:**

Samsung: in the motivation part, considering 1b and 3. Here option 1 in table seems Option 1c. What is the option 1? In the table there are minimum number, 266. Why the number is larger.

Vivo: #1 and #3 are OK for us. For #5, does it mean only to consider the second direction

Huawei: similar question as Samsung. What is option 1 here. We prefer option 3.

LGE: Option 1 and Option 5 are different in terms of spherical coverage. TRP1 and TRP2 are as pairs.

Keysight: to Samsung, 266 is number of unique grid points with 30 degree step. We change the number of sampling.

Qualcomm: Strongly prefer Option 3. Option 1 is generic for concept requiring the sensitivity. It could be 1c.

Apple: prefer Option 3 for the simplicity.

Nokia: prefer Option 3. Want to discuss more details. For number in this table, it is based on one test technology. The table is just an example.

ZTE: Option 3.

Qualcomm: we evaluate both #1 and #3.

Xiaomi: the requirement can be defined per band. We see the similarity between option 1 and 3.

**Agreement:**

* Use Option 3 as baseline.
  + Companies can also provide the evaluation for Option 1 and Option 5.
  + FFS on details for requirement concept e.g., DL power level, in Option 3 in section 1.2.9

**UE orientation during verification or simulation**

**Discussion:**

Vivo: Our concern is that all the orientation may not be used for testing. We need discussion some relation to test.

Sony: how can we determine the proper polarization direction?

Apple: Support Samsung proposal in high level.

Qualcomm: We support it and FFS on the details.

Samsung: it is not testability study. Different direction will lead to different performance. Detailed option can be further refined.

Qualcomm: Nothing needs be done. The requirement should be met by UE in some diretions.

Keysight: In MIMO-OTA, we mandate the single direction. We should go down the same.

Sony: we are open to discussion. We do not think it is part of core requirement.

Apple: the proposal is “core requirement consideration”.

**Agreement:**

* UE orientation w.r.t P0 position (z-axis) is part of core requirement consideration.
  + in the simulation, RAN4 should study all the orientations.

**On DL polarizations**

**Discussion:**

Nokia: we propose to choose one polarization in one orientation to save time. We would like to test in the same polarization in two AoA.

Sony: there are few points. UE can support dual-pol. There is no point to switch the polarizations. The only thing is to determine one polarization. Two test is enough.

Qualcomm: #1 is basic understanding. For #2, we use nDCI, we end up with the requirements based on polarization match. For #3, if requirement is derived based on worst case, it does not matter what polarization is chosen by RAN5. We can choose #2 and leave the question of #3 can be left to RAN5.

Apple: similar comment as Sony. #1 is core requirement. #2 has something we can agree. We can agree to use worst case. #3 needs more discussion.

Samsung:#1 we do agree with four panel wording. We should assume two. #2 and #3, we share the similar view as Sony we do not need test all the polarization. Option 3 in #3 is agreeable.

Sony: #1 is based on the agreement in previous meetings.

Vivo: we share the similar view as Sony. For #1, we discuss it for several meetings. We prefer Option 3.

LGE: We support #1 and #2.

Huawei: #3 needs more discussions.

Sony: #1 just motivates that we do not need two pol test for two AoA.

Xiaomi: Support #2. The requirement should be based on worst case.

ZTE: support #2 and #3.

**Agreement:**

* DL pol. assumption for derivation of the UE RF requirement (Y/N):
  + The UE RF requirement is derived assuming the worst case polarization match between the 2 TRPs. The requirement applies for any combination of DL polarizations from each TRP.

**AoA separation for UE RF requirement**

**Discussion:**

Samsung: for #1, we support Option 1, i.e., based on UE declaration. It is not possible for UE to test all the separation. For #2, support Option 2, especially for 180 degree, which is typical.

Sony: we cannot accept Option 1 in #1. The requirement should ensure the performance in the real field. For #1 we prefer Option 3. We are open to define different requierments for different AoA.

Nokia: similar comment as Sony. Prefer Option 3 for #1. For #2, we prefer Option 1.

LGE: for #1, prefer option 1. For #2, Option 1.

Vivo: We have another proposal to combine Option 1 and Option 3. UE can declare two AoA separations. Verifying one AoA separation is not enough.

R&S: for #2, support option 1. 180 is not realistic.

Keysight: support R&S. We have paper in the study item. We believe 180 is not feasible.

ZTE: for #1, the requirement for each AoA should be the same. For #2, multiple AoA should be adopted. Option 1 and 2 are OK.

Ericsson: it should be test two different separations to make sure UE works in the field. Conformance is to verify under a certain condition.

Murata: we should be care of the difference between CDFs.

**Further details for option 3 from WF** [**R4-2220533**](file:///D:\RAN4%23106\Docs\R4-2220533.zip)

**Discussion:**

Samsung: for #1, the option 1 would be complicated. Option 2 is starting point. For #2, it is helpful to compensate the measurement of sampling. Support #2.

Nokia: prefer option 1 for #1. We can accept option 2 as it is.

Sony: Option 2 is more straightforward. Option 2 can be taken as starting point.

Vivo: For #1 we also agree with Option 2. For #2, option 1 and option 2 have big differences.

Apple: for #1, we agree with Samsung and Vivo to use option 2 as starting point. For #2, we should defer to next meeting.

Huawei: for #1, we prefer option 2. for option 1 we need see more justification.

Xiaomi: we can use Option 2 as starting point to further evaluate the sperhical coverage and test point. Whether to have relaxation needs more discussions. For #2, agree with Sony.

Qualcomm: for #1 support Option 2.

Nokia: we cannot accept relaxation on the second AoA.

**Agreement:**

* For the simulation assumption, use Option 2 in proposal 1 as the staring point.

**[106][132] FR2\_multiRx\_UERF\_part2, AI 9.8.2.1 – Steven Chen (Apple)**

[**R4-2302825**](file:///D:\RAN4%23106\Docs\R4-2302825.zip) **Topic summary for [106][132] FR2\_multiRx\_UERF\_part2**

*Type: other For: Information  
 Source: Moderator (Apple)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303493**](file:///D:\RAN4%23106\Docs\R4-2303493.zip) **WF on NR FR2 multi-Rx chain DL reception**

*Type: other For: Approval  
 Source: Samsung*

**Decision: Revised to R4-2303708 (from R4-2303493).**

[**R4-2303708**](file:///D:\RAN4%23106\Docs\R4-2303493.zip) **WF on NR FR2 multi-Rx chain DL reception**

*Type: other For: Approval  
 Source: Samsung*

**Decision: Approved.**

**Issue 1-1-3: AoA offset value should be an integer multiple of the test grid. (vivo)**

**Agreement:**

* AoA offset value should be an integer multiple of the step size of the constant step size measurement test grid.

**Issue 1-2-1: requirements for sDCI and mDCI**

**Discussions:**

Qualcomm: we should derive the requirement for mDCI first.

Apple: we should clarify what receiver is used for mDCI.

Samsung: agree with Qualcomm. RAN4 should derive the requirements based on minimum UE capability. In the previous meeting, we agree to struggle define the single requirement. In this sense, we prefer to define mDCI requirement.

Huawei: this issue is related to receiver type. What kind of difference between sDCI and mDCI? It is related to simulation done for the next meeting.

Sony: for RF requirement, we do not need to go to details for DCI in the simulation.

Nokia: There are difference between sDCI and mDCI.

**Agreement:**

* Define the RF requirement based on mDCI with understanding that UE supporting sDCI can also meet the requirement.

**Issue 1-2-2: mDCI scenario**

**Discussions:**

Qualcomm: support option 1.

Samsung: Option 1 and 2 are quite similar. tend to agree Option 1. Fully overlapping is typical four layer scenario.

**Agreement:**

* To have the unified requirement concept for UEs supporting multi-DCIs as for UEs supporting single DCI, RAN4 can focus on fully overlapping in time and in frequency, supported by UE capabilities “multiDCI-MultiTRP-r16” and “overlapPDSCHsFullyFreqTime-r16.”

**Issue 1-2-3: receiver assumption**

**Discussions:**

Vivo: we are fine with the proposal. Does interference reduction should be considered?

Sony: taking it as starting point is preferred.

Qualcomm: in legacy, we determine the sensitivity as target SNR. Is it related to 4x4 MIMO?

Samsung: we share the similar view as Qualcomm. we do not know how it will impact the simulation. the first bullet our preference.

**Issue 1-4-1: Testing aspects**

**Discussions:**

Qualcomm: Proposal 4 is a good question for discussion. It would be just a procedure change. If we do not respect this reciprocity, the performance degrades.

Samsung: this is good observation. This is a new issue introduced from the new scan. We need consider the procedure to accommodate the issue.

### 9.9 Even Further RRM enhancement for NR and MR-DC

### 9.10 Further enhancements on NR and MR-DC measurement gaps and measurements without gaps

### 9.11 Support of intra-band non-collocated EN-DC/NR-CA deployment

#### 9.11.1 General and work plan

**[133] Topic #1: LS to RAN2**

[**R4-2300245**](file:///D:\RAN4%23106\Docs\R4-2300245.zip) **LS on signaling support for intra-band non-collocated CA**

*Type: LS out For: Approval  
 to RAN2  
 Source: Apple*

**Decision: Noted.**

#### 9.11.2 UE RF architecture and RF requirements

**[133] Topic #2: Type-2 NR-CA UE for 2 layer MIMO case (non-collocated non-contiguous intra-band)**

[**R4-2300246**](file:///D:\RAN4%23106\Docs\R4-2300246.zip) **Further discussion on type 3a/3b UE for intra-band non-collocated CA/EN-DC**

*Type: discussion For: Approval  
 Source: Apple*

**Decision: Noted.**

CR

[**R4-2300247**](file:///D:\RAN4%23106\Docs\R4-2300247.zip) **UE RF requirements for supporting intra-band non-collocated CA for 2MIMO layer case**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1294 rev Cat: B (Rel-18)  
  
 Source: Apple, Samsung, KDDI, Huawei, ZTE*

**Decision: Revised to** [**R4-2303557**](file:///D:\RAN4%23106\Docs\R4-2303557.zip) **(from** [**R4-2300247**](file:///D:\RAN4%23106\Docs\R4-2300247.zip)**).**

[**R4-2303557**](file:///D:\RAN4%23106\Docs\R4-2303557.zip) **UE RF requirements for supporting intra-band non-collocated CA for 2MIMO layer case**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1294 rev Cat: B (Rel-18)  
  
 Source: Apple, Samsung, KDDI, Huawei, ZTE, MediaTek*

**Decision: Agreed.**

**[133] Topic #3: Type 3a/3b UE for 4 layer MIMO case (non-collocated non-contiguous intra-band NR-CA and inter-band EN-DC)**

[**R4-2300133**](file:///D:\RAN4%23106\Docs\R4-2300133.zip) **Discussion on non-collocated Type 3**

*Type: discussion For: Discussion  
 Source: KDDI Corporation, LG Uplus*

**Decision: Noted.**

[**R4-2300852**](file:///D:\RAN4%23106\Docs\R4-2300852.zip) **Issues for Non-collocated Deployments with 4Layers per CC**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2301108**](file:///D:\RAN4%23106\Docs\R4-2301108.zip) **Views on non-collocated Type-3 Type-4 UE**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision: Noted.**

[**R4-2301236**](file:///D:\RAN4%23106\Docs\R4-2301236.zip) **Discussion on UE RF of non-collocated EN-DC and NR-CA**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301576**](file:///D:\RAN4%23106\Docs\R4-2301576.zip) **Discussion on Type 3 UE to support non-collocated deployment**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301711**](file:///D:\RAN4%23106\Docs\R4-2301711.zip) **Discussion on intra-band non-co-located**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: MediaTek Inc.*

**Decision: Noted.**

[**R4-2301901**](file:///D:\RAN4%23106\Docs\R4-2301901.zip) **On UE architectures**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

UE type 3

**Decision: Noted.**

[**R4-2302494**](file:///D:\RAN4%23106\Docs\R4-2302494.zip) **Power Imbalance and MRTD in Case of Non-Collocated Intra-Band NC CA**

*Type: discussion For: Discussion  
 Source: Huawei Technologies France*

**Decision: Noted.**

**[133] Topic #4: Type 4a/4b UE for 4 layer MIMO case (non-collocated non-contiguous intra-band NR-CA and inter-band EN-DC)**

[**R4-2300426**](file:///D:\RAN4%23106\Docs\R4-2300426.zip) **Intra-band non-collocated EN-DC/NR-CA type 4 UE**

*Type: other For: Approval  
 Source: Nokia*

**Decision: Noted.**

#### 9.11.3 RRM Core requirements

#### 9.11.4 Moderator summary and conclusions

**[106][133] NonCol\_intraB, AI 9.11.1, 9.11.2 – Yasuki Suzuki (KDDI)**

[**R4-2302826**](file:///D:\RAN4%23106\Docs\R4-2302826.zip) **Topic summary for [106][133] NonCol\_intraB**

*Type: other For: Information  
 Source: Moderator (KDDI)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303558**](file:///D:\RAN4%23106\Docs\R4-2303558.zip) **WF on UE RF requirements for intra-band non-collocated EN-DC/NR-CA deployment**

*Type: other For: Approval  
 Source: KDDI*

**Decision: Revised to** [**R4-2303696**](file:///D:\RAN4%23106\Docs\R4-2303696.zip) **(from** [**R4-2303558**](file:///D:\RAN4%23106\Docs\R4-2303558.zip)**).**

[**R4-2303696**](file:///D:\RAN4%23106\Docs\R4-2303696.zip) **WF on UE RF requirements for intra-band non-collocated EN-DC/NR-CA deployment**

*Type: other For: Approval  
 Source: KDDI*

**Decision: Approved.**

**Issue 2-1-1: Whether to define the power imbalance requirement as shown in Table 2.1.1-1 for intra-band non-collocated CA.**

**Table 2.1-1 Signaling for intra-band non-collocated CA type 2 UE**

| ***Definitions for parameters*** | Per | M | FDD-TDD  DIFF | FR1-FR2  DIFF |
| --- | --- | --- | --- | --- |
| ***intraBandNonColocatedCA-r18***  Indicates the UE supports ~~[FDD-FDD or]~~ TDD-TDD inter-band non-collocated CA operation with an NR carrier aggregation MRTD according to Table 7.6.4-1 in 38.133 [5] and UE RF requirements for non-collocated intra-band CA in 7.10A in 38.101-1 (i.e CA Type 2 UE).  If the capability is not reported, the UE supports ~~[FDD-FDD or]~~ TDD-TDD inter-band CA operation with NR carrier aggregation MRTD according to Table 7.6.4-1 in 38.133 [5] and intra-band RF requirements (i.e. CA Type 1 UE). | BC | No | [N/A or TDD only] | FR1 only |

**Discussions:**

KDDI: not sure if FDD-FDD is needed.

Huawei: RRM session discussed. It includes TDD-TDD. It should be non-collocated intra-band. It should be 38.101-1. Can we propose the exact working to RAN2?

Nokia: WI only needs TDD-TDD.

Apple: in the WID, only TDD-TDD is included. But in RRM, people think FDD-FDD is also needed.

KDDI: as Huawei commented, in RRM room, there are similar discussion. In RRM, they decided focus on TDD-TDD.

Samsung: type 3 and Type 2 can use the same IE. It is pre-mature to send the LS.

Apple: it is difficult to combine the signaling for type 2 and type 3. I am OK to postpone.

Moderator: considering the work plan, we can send it in the next meeting.

Ericsson: Table 7.6.4-1 in 38.133 has 3us. We have not agree with it.

Huawei: according to our simulation with 25dB we show the results. Encourage other companies to provide the simulation results with 25dB imbalance.

Mediatek: if the IE is for multiple types, we need change wording.

**Issue 2-1-2: Whether to decide one of the following options.**

**Agreement:**

* Only define the CA type 2 UE signalling for TDD-TDD case in Rel-18

**Issue 3-1-1: Possible UE RF architecture for Type 3a/3b**

**Discussions:**

Ericsson: since this is WI, UE type 3a/3b with shared LNA means to control data loss or component carrier within CP. We would like to focus on Type 2 and 4 without impact on PHY.

Samsung: we see the possibility to use type 3a/3b. It may require the update of device but does not mean infeasibility.

Skyworks: similar to Samsung. Beyond switching issue, the AGC issue. Type 4 is for further release. We have solution for type 4.

Apple: Similar view as Skyworks and Samsung. Type 3 is general device type. if looking at the proposal, the table focuses on 3a/3b. Does the proposal limit to 3a/3b or cover other types?

Huawei: Type 3. In Ericsson, MRTD can be larger than CP seems fine. There was no agreement to put type 4 for future. We would like to consider it in this release.

ZTE: Type 3 should be included. Type 4 is for FWA. We need discuss if Type 4 is feasible.

Nokia: there is no such decision that type 4 is for future. We would like keep type 4 in spec, which can use the type 2 requirement. 8 Rx needs 8-layer. Even if type 4 has 8Rx, it is not related to 8Rx WI.

Samsung: we just propose the possible architecture. It does not mean with this table we definitely introduce type3. To Apple, we want to agree the whole table. Regarding other requirements such as MRTD, we have separate discussions. Whether to prioritize Type 4 has separate discussions.

KDDI: as Samsung point out, the table is possible architecture. We need reference for architecture.

**Issue 3-2-1: Whether to keep TAE/network synchronization requirement for Type 3a/3b**

**Discussions:**

Apple: TAE is related to MRTD discussion. What if MRTD agreement contradicts to TAE? Let us confirm MRTD and then see if TAE can fit.

Nokia: RRM relies on RF decision.

Huawei: MRTD=TAE + propagation delay. MRTD is at least 3us.

Samsung: Share the similar view as Huawei. We first decide TAE. There is no room to tighten TAE even for collocated. Need consider the impact on legacy network.

Mediatek: better to say MRTD is 3us. 3us is already compromise.

Ericsson: support Option 1. Operator can reuse the existing. Share the same comment as Samsung on the impact on legacy network.

KDDI: Agree with Ericsson. Option 1 can simplify the discussion by discussing the TAE.

Apple: Infra vendors do not want to change TAE. Device vendor indicate the performance loss. Cell size would be very small. The propagation is less than 1us.

Nokia: As UE vendor, 3us is not a big value. The real performance is much better.

Apple: 38.101-4 for 30KHz SCS, the performance degradation is expected.

**Issue 3-2-2: Whether to discuss to cope with both 25dB power imbalance (including the relaxation<25dB) and MRTD>CP Length for Type 3a/3b.**

**Discussions:**

Samsung: MRTD could be larger than CP. We are OK to keep both open. It should not preclude the evaluation and simulation.

Ericsson: MRTD bigger than CP for Type 3a/3b gives operator flexibility to deploy network.

Mediatek: we are not sure if we need make decision. We have something need to be decided, e.g, power level…

Huawei: Support #1.

Apple: We see the companies’ proposal of MRTD. We should discuss MRTD in RRM. Regarding power, that should depend on the value of MRTD, which is related to propagation loss between two sites.

Ericsson: Support #1. Type 3a/3b UE should handle 25dB imbalance.

Huawei: The agreement last meeting is to have joint discussion. It is not always larger than 25dB.

KDDI: prefer Option 1.

Mediatek: we do not agree on the number. At least number should be []

Apple: We do not want to preclude options.

**Issue 3-2-4: Whether it is feasible to restrict the n77/n78 SCS=15kHz for Type 3a/3b**

**Discussions:**

KDDI: NR SCS 30KHz is needed. Cannot agree with proposal.

NTT DOCOMO: Similar view as KDDI.

Vivo: our view is that if we assume MRTD lager than CP, then UE performance will degrade. Maybe we need some restriction.

Mediatek: From UE perspective, we support option 1. We can put Option 1 as condition for type 3.

Samsung: Disagree. 30KHz SCS is main case.

Huawei: cannot agree to remove 30KHz.

Ericsson: Cannot agree. 30KHz is important for this particular band combination.

Nokia: 30KHz is needed.

**Issue 3-2-5: Whether to discuss the power imbalance along with the assumption MRTD＜CP.**

**Discussions:**

Samsung: keep it open since no agreement for other case.

**Issue 4-1-1: When to develop requirements for Type 4a/4b UE**

**Discussions:**

Apple: it is good to introduce the sub-AI for simulation. And align the simulation assumption. For Huawei paper, we should consider both phase and amplitude impact of LNA.

Huawei: Topic is about how AGC gain does suffer from that symbol. We only consider the gain in our simulation. Adding some phase for further simulation may not change a lot. We are open.

Mediatek: in Huawei simulation, we do not see any margin for UE implementation.

Ericsson: Support Option 1. Type 4 is capable UE.

Mediatek: MRTD and power imbalance discussions should be decoupled.

### 9.12 Enhanced NR support for high speed train scenario in frequency range 2

#### 9.12.1 General and work plan

#### 9.12.2 RF requirements for intra-band carrier aggregation (CA) scenario

[**R4-2301678**](file:///D:\RAN4%23106\Docs\R4-2301678.zip) **RF requirements for intra-band carrier aggregation (CA) scenario**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

#### 9.12.3 RF requirement for simultaneous multi-panel operation for train roof-mounted FR2 high power devices

[**R4-2300998**](file:///D:\RAN4%23106\Docs\R4-2300998.zip) **Discussion on feasibility and requirements for simultaneous multi-panel operation for FR2 HST**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision: Noted.**

[**R4-2301581**](file:///D:\RAN4%23106\Docs\R4-2301581.zip) **On Multi-panel RF requirements for NR FR2 HST enhancement**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2301679**](file:///D:\RAN4%23106\Docs\R4-2301679.zip) **RF requirement for simultaneous multi-panel operation for train roof-mounted FR2 high power devices**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

#### 9.12.4 Study on reference tunnel deployment scenario

#### 9.12.5 RRM core requirements

#### 9.12.6 Moderator summary and conclusions

**[106][134] NR\_HST\_FR2\_enh\_UERF, AI 9.12, 9.12.2, 9.12.3 – Bozhi Li (Samsung)**

[**R4-2302827**](file:///D:\RAN4%23106\Docs\R4-2302827.zip) **Topic summary for [106][134] NR\_HST\_FR2\_enh\_UERF**

*Type: other For: Information  
 Source: Moderator (Samsung)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303639**](file:///D:\RAN4%23106\Docs\R4-2303639.zip) **WF on UE RF for FR2 HST enhancement**

*Type: other For: Approval  
 Source: Samsung*

**Decision: Approved.**

**Issue 1-1: Scope of intra-band CA**

**Discussions:**

Nokia: We are OK to have some editorial change.

**Issue 2-1: RF requirements for bi-directional scenario**

**Discussions:**

Qualcomm: Support Option 1. It is not clear what requirement is needed at this stage.

Samsung: support Option 1. Huawei prefer option2.

Nokia: it is related to UE structure. If two UEs are separate far away from each other, we do not need RF requirements. We should study the spherical coverage based on UE structure.

Qualcomm: Nokia proposal is overlapping with multi-Rx work item. We should consider the generic scenario. To Nokia, what aspects do you want to study?

Nokia: Based on the structure of UE if the module of UE are put to far away, there is no impact on each other. We already have spherical different from HST.

Huawei: support Option 2. We do not see much risk. The received signals does not impact each other. In multi-Rx WI, how to define the requirement depends on the distance in-between. But HST is a special case. We are OK with Option 1.

Apple: given that we have discussions on multi-RX UE, there is good progress in terms of performance concept, it seems reasonable to wait a little bit. We may use multi-Rx outcome as baseline.

**Agreement:**

* it is proposed to determine how to specify RF requirements for bi-directional scenario after Multi-RX DL WI has conclusion on 2AoA spherical coverage requirement concept

**Issue 2-2-1: feasibility of uni-directional scenario**

**Discussions:**

Nokia: for uni-direction, there are some cases that we think it is not feasible and needs further study.

Samsung: for uni-direction, it is very challenging. We analysed the key issue. UE with two panels causes interference issue. The value is not fully justified.

Huawei: Tend to agree with Samsung. Even with different polarizations the interference still exists.

Nokia: in multi-Rx, we have already use different polarizations for two-layer in one antenna.

Huawei: even with Rel-17 the single panel case there are two different polarizations. We use two panel with two polarizations. I do not see how to address the issue.

Samsung: we agree with Huawei. Even a single RRH can support dual polarization in Rel-15. There is no performance improvement but with large investment.

Nokia: it depends on the architectures of RF design. If there is one RF module and split to two RF panels, we can achieve the goal.

**Issue 2-2-2: requirements for uni-directional scenario (assume uni-directional scenario is feasible)**

**Discussions:**

Nokia: we think spherical coverage for PC6 is different from PC3. For bi-directional, we can wait for UE RF for multi-RX output.

### 9.13 Air-to-ground network for NR

**[135] Topic #1: TR 38.876**

TR

[**R4-2301861**](file:///D:\RAN4%23106\Docs\R4-2301861.zip) **TR 38.876 ATG v0.2.0**

*Type: draft TR For: (not specified)  
 38.876 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: CMCC.*

**Decision: Revised to** [**R4-2303640**](file:///D:\RAN4%23106\Docs\R4-2303640.zip) **(from** [**R4-2301861**](file:///D:\RAN4%23106\Docs\R4-2301861.zip)**).**

**[R4-2303640](D:\\RAN4#106\\Docs\\R4-2303640.zip) TR 38.876 ATG v0.2.0**

*Type: draft TR For: (not specified)  
 38.876 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: CMCC.*

**Decision: for email approval.**

#### 9.13.1 FR1 co-existence evaluation for ATG network

##### 9.13.1.1 General aspects

##### 9.13.1.2 Co-existence scenario and network layout

**[135] Topic #2: Co-existence scenario and network layout**

[**R4-2300293**](file:///D:\RAN4%23106\Docs\R4-2300293.zip) **On the ATG co-existence deployment and network layout**

*Type: discussion For: Approval  
 Source: Qualcomm CDMA Technologies*

**Decision: Noted.**

[**R4-2300788**](file:///D:\RAN4%23106\Docs\R4-2300788.zip) **ATG co-existence simulation scenarios and layout**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision: Noted.**

[**R4-2301876**](file:///D:\RAN4%23106\Docs\R4-2301876.zip) **ATG co-existence simulation assumptions refinement**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

Discussion on refining some simulation assumptions

**Decision: Noted.**

[**R4-2301874**](file:///D:\RAN4%23106\Docs\R4-2301874.zip) **On asynchronous operation and CLI for ATG**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

Discussion on TDD and CLI issues

**Decision: Noted.**

TP

[**R4-2302096**](file:///D:\RAN4%23106\Docs\R4-2302096.zip) **TP for TR 38.876 to add some coexistence assumption and methodology**

*Type: pCR For: Approval  
 38.876 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

[**R4-2300805**](file:///D:\RAN4%23106\Docs\R4-2300805.zip) **TP for TR 38.876 to capture system parameter assumption**

*Type: other For: Approval  
 Source: CMCC*

**Decision: Revised to** [**R4-2303641**](file:///D:\RAN4%23106\Docs\R4-2303641.zip) **(from** [**R4-2300805**](file:///D:\RAN4%23106\Docs\R4-2300805.zip)**).**

**[R4-2303641](D:\\RAN4#106\\Docs\\R4-2303641.zip) TP for TR 38.876 to capture system parameter assumption**

*Type: other For: Approval  
 Source: CMCC*

**Decision: Approved.**

##### 9.13.1.3 Co-existence system parameters and modeling

**[135] Topic #3: Co-existence system parameters and modeling**

[**R4-2300508**](file:///D:\RAN4%23106\Docs\R4-2300508.zip) **On the ATG co-existence parameters and modeling**

*Type: discussion For: Discussion  
 Source: Qualcomm CDMA Technologies*

**Decision: Noted.**

[**R4-2300789**](file:///D:\RAN4%23106\Docs\R4-2300789.zip) **ATG co-existence simulation assumption**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision: Noted.**

[**R4-2301730**](file:///D:\RAN4%23106\Docs\R4-2301730.zip) **Further discussion on system parameters and modeling**

*Type: discussion For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301880**](file:///D:\RAN4%23106\Docs\R4-2301880.zip) **Calibration results**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

Results for calibration

**Decision: Noted.**

TP

[**R4-2301877**](file:///D:\RAN4%23106\Docs\R4-2301877.zip) **TP to TR 38.876: Update of simulation assumptions**

*Type: pCR For: Approval  
 38.876 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

TP to TR to update and correct some assumptions

**Decision: Revised to** [**R4-2303642**](file:///D:\RAN4%23106\Docs\R4-2303642.zip) **(from** [**R4-2301877**](file:///D:\RAN4%23106\Docs\R4-2301877.zip)**).**

**[R4-2303642](D:\\RAN4#106\\Docs\\R4-2303642.zip) TP to TR 38.876: Update of simulation assumptions**

*Type: pCR For: Approval  
 38.876 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

TP to TR to update and correct some assumptions

**Decision: Approved.**

##### 9.13.1.4 Co-existence simulation results

**[135] Topic #3: Simulation results**

[**R4-2300556**](file:///D:\RAN4%23106\Docs\R4-2300556.zip) **ATG co-existence simulation results**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision: Noted.**

[**R4-2300790**](file:///D:\RAN4%23106\Docs\R4-2300790.zip) **ATG co-existence calibration data**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision: Noted.**

[**R4-2301731**](file:///D:\RAN4%23106\Docs\R4-2301731.zip) **Initial simulation results for ATG coexistence study**

*Type: discussion For: Discussion  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2302091**](file:///D:\RAN4%23106\Docs\R4-2302091.zip) **Discussion on initial simulation result for ATG scenario**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

#### 9.13.2 UE RF requirements

##### 9.13.2.1 General aspects

**[136] Topic #1: ATG UE general aspects and Tx RF requirements**

[**R4-2300081**](file:///D:\RAN4%23106\Docs\R4-2300081.zip) **Discussion on general aspects for ATG UE RF**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

##### 9.13.2.2 Tx requirements

**[136] Topic #1: ATG UE general aspects and Tx RF requirements**

[**R4-2300082**](file:///D:\RAN4%23106\Docs\R4-2300082.zip) **Discussion on Tx requirements for ATG UE RF**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2300806**](file:///D:\RAN4%23106\Docs\R4-2300806.zip) **Discussion on ATG UE Tx requirements**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision: Noted.**

[**R4-2301727**](file:///D:\RAN4%23106\Docs\R4-2301727.zip) **Further discussion on ATG UE Tx RF requirements**

*Type: discussion For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301878**](file:///D:\RAN4%23106\Docs\R4-2301878.zip) **ATG UE TX requirements**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

Discussion on UE TX requirements

**Decision: Noted.**

[**R4-2302092**](file:///D:\RAN4%23106\Docs\R4-2302092.zip) **Discussion on ATG UE Tx requirements**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302477**](file:///D:\RAN4%23106\Docs\R4-2302477.zip) **On open issue for ATG UE requirements**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

TP

[**R4-2302093**](file:///D:\RAN4%23106\Docs\R4-2302093.zip) **TP for TR 38.876 to introduce ATG UE Tx requirements**

*Type: pCR For: Approval  
 38.876 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2303643**](file:///D:\RAN4%23106\Docs\R4-2303643.zip) **(from** [**R4-2302093**](file:///D:\RAN4%23106\Docs\R4-2302093.zip)**).**

[**R4-2303643**](file:///D:\RAN4%23106\Docs\R4-2303643.zip) **TP for TR 38.876 to introduce ATG UE Tx requirements**

*Type: pCR For: Approval  
 38.876 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon, Apple*

Chair: In next meeting the justification for emission requirement needs be provided.

**Decision: Approved.**

[**R4-2302478**](file:///D:\RAN4%23106\Docs\R4-2302478.zip) **TP to TR 38.876: on ATG Tx requirements**

*Type: pCR For: Approval  
 38.876 v0.1.0 CR- rev Cat: (Rel-18)  
  
 Source: Apple*

**Decision: Noted.**

##### 9.13.2.3 Rx requirements

**[136] Topic #2: ATG UE Rx RF requirements**

[**R4-2300083**](file:///D:\RAN4%23106\Docs\R4-2300083.zip) **Discussion on Rx requirements for ATG UE RF**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2300807**](file:///D:\RAN4%23106\Docs\R4-2300807.zip) **Discussion on ATG UE Rx requirements**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision: Noted.**

[**R4-2301879**](file:///D:\RAN4%23106\Docs\R4-2301879.zip) **ATG UE RX requirements**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

Discussion on UE RX requirements

**Decision: Noted.**

[**R4-2302094**](file:///D:\RAN4%23106\Docs\R4-2302094.zip) **Discussion on ATG UE Rx requirements**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2301728**](file:///D:\RAN4%23106\Docs\R4-2301728.zip) **Further discussion on ATG UE Rx RF requirements**

*Type: discussion For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

TP

[**R4-2302095**](file:///D:\RAN4%23106\Docs\R4-2302095.zip) **TP for TR 38.876 to introduce technical analysis for ATG UE Rx requirements.**

*Type: pCR For: Approval  
 38.876 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2303644**](file:///D:\RAN4%23106\Docs\R4-2303644.zip) **(from** [**R4-2302095**](file:///D:\RAN4%23106\Docs\R4-2302095.zip)**).**

**[R4-2303644](D:\\RAN4#106\\Docs\\R4-2303644.zip) TP for TR 38.876 to introduce technical analysis for ATG UE Rx requirements.**

*Type: pCR For: Approval  
 38.876 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

Chair: In next meeting the justification for emission requirement needs be provided.

**Decision: Approved.**

#### 9.13.3 BS RF requirements

#### 9.13.4 RRM core requirements

#### 9.13.5 Demodulation performance requirements

#### 9.13.6 Moderator summary and conclusions

**[106][135] NR\_ATG\_UERF\_part1, AI 9.13, 9.13.1 – Chunxia Guo (CMCC)**

[**R4-2302828**](file:///D:\RAN4%23106\Docs\R4-2302828.zip) **Topic summary for [106][135] NR\_ATG\_UERF\_part1**

*Type: other For: Information  
 Source: Moderator (CMCC)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303573**](file:///D:\RAN4%23106\Docs\R4-2303573.zip) **WF on ATG co-existence evaluation**

*Type: other For: Approval  
 Source: CMCC*

**Decision: Approved.**

[**R4-2303572**](file:///D:\RAN4%23106\Docs\R4-2303572.zip) **ATG co-existence calibration results collection**

*Type: other For: Approval  
 Source: CMCC*

**Decision: Noted.**

[**R4-2303684**](file:///D:\RAN4%23106\Docs\R4-2303684.zip) **LS on applicability of SIB 19 for NR ATG**

*Type: other For: Approval  
 Source: Qualcomm*

**Decision: Approved.**

**[106][136] NR\_ATG\_UERF\_part2, AI 9.13.2 – Peng(Henry) Zhang (Huawei)**

[**R4-2302829**](file:///D:\RAN4%23106\Docs\R4-2302829.zip) **Topic summary for [106][136] NR\_ATG\_UERF\_part2**

*Type: other For: Information  
 Source: Moderator (Huawei)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303645**](file:///D:\RAN4%23106\Docs\R4-2303645.zip) **WF on ATG UE RF requirements.**

*Type: other For: Approval  
 Source: Huawei*

**Decision: Approved.**

**Issue 1-1-1: The solution to solve UE access control for ATG:**

**Discussions:**

ZTE: Support option 3. Currently RAN2 can address the problem.

Qualcomm: Option 1c and 1d are similar solution. RAN2 should follow it. I do not think RAN2 identify the access control issue. We suggest LS to RAN2.

Ericsson: Support option 3. We do not need to discuss it here.

CMCC: not sure if we need to inform RAN2. The issue is very corner.

Ericsson: to CMCC, we do not need send LS. It is RAN2 work. RAN2 may not need specification work.

Qualcomm: Option 1c and 1d are possible solution and capture them in TR in RAN4. RAN2 can check RAN4 TR.

ZTE: TR cannot capture RAN2 responsibility. RAN2 can address it by multiple solutions.

CMCC: to Ericsson, SIB-19 should be used for ATG. For this issue, very unlikely TN UE will access ATG network.

Qualcomm: we do not have proposal to define the new solution. We just tell RAN2 solution that 1c, 1d will be considered in RAN4. SIB-19 is used for NTN.

ZTE: ATG is word in Rel-17. From RAN2 perspective, ATG is part of NTN.

Ericsson: SIB-19 can only be signalled in NTN band.

Nokia: RRM also find this problem. It is RAN2 signalling thing. We disagree ATG is considered as part of NTN.

**Issue 1-1-2: Please discuss the following proposal:**

**Discussions:**

Moderator: use Qualcomm LS as baseline to work on the wording.

ZTE: we can compromise to send LS.

Nokia: We do not agree the current version. If SIB-19 is not applied, we may need new SIB design.

Ericsson: We should tell RAN2 that the signalling like SIB\_19 is needed. For power control, we should talk other solutions.

Qualcomm: we support option 1.

Huawei: we have agreement regarding to applicability of SIB-19 in last meeting. Not sure if we need the new design.

CMCC: the intention is that we need the information in SIB-19. Whether RAN2 use the SIB-19 or not depends on their discussions.

**Agreement:**

* Use Qualcomm LS as baseline and focus on the work related SIB-19 in the LS.

**Issue 1-2-1: MOP requirements:**

* Proposals for lower limit of ATG UE MOP:
  + Option 1: 23dBm
  + Option 2: 25~29dBm
  + Option 3: 26dBm
  + Option 4: 29dBm

**Discussions:**

Moderator: in last meeting, we agreed to specify the range of MOP for declaration.

Ericsson: this is range. We do not see the need of lower limit. Option 1 is OK.

ZTE: for 4GHz, there would be antenna array.

Qualcomm: if RAN4 defines the range, there is no different power classes? Do we need the new signalling?

**Agreement:**

* The lower limit of conductive MOP or TRP of ATG UE is 23dBm
* Proposals for upper limit of ATG UE MOP:
  + Option 1: 40dBm
    - [Maximum output power used in co-existence simulations]
  + Option 2: RAN4 shall define an upper limit for MoP range. The value shall be decided based on the considerations of co-channel interference and related requirements. The existing standards such as RTCA DO-160G may be studied and referred if suitable.
  + Option 3: 50dBm~60dBm
  + Option 4: FFS

**Discussions:**

Ericsson: we should align with co-existence. 40dBm for conductive MOP or TRP.

Qualcomm: we analyse the upper limit of MOP on the co-existence on co-channel impact. We need more study how to define the MOP. We should ensure the emission does not cause interference.

CMCC: for co-existence, we use higher value for EIRP. For simulation, we use smaller value. We are fine.

Ericsson: we do not have study for co-channel co-existence study. We can study it further.

* Proposals for ATG UE MOP capability:
  + Option 1: 1dB granularity per band
  + Option 2: 3dB granularity per band

**Discussions:**

Ericsson: do we need the granularity?

CMCC: if we define a range, the MOP is just for UE to declare. Maybe network need this information. Is the MOP used for network.

Ericsson: we are fine with Option 1.

Qualcomm: it depends on whether the new signaling is needed for MOP range. We are open to option 1 and 2.

ZTE: There would be two solutions. Even with declaration, RAN4 need the granularity. We can further discussion.

**Issue 1-2-2: Please discuss the following proposal:**

**Discussions:**

Qualcomm: the reason is that in legacy MOP definition for UE, RAN4 has tolerance. The tolerance should be defined in RAN5.

Huawei: tolerance is like a relaxation. In real UE just meeting 22 or 24, UE can report 23.

Qualcomm: we are defining upper limit and lower limit. Why should we need the tolerance?

Ericsson: UE need signal maximum power. Network needs to know what power is expected.

**Issue 1-2-3: Please discuss the following proposal:**

**Discussions:**

Ericsson: we need to see whether we need to differentiate UE. We need see how the requirements are.

ZTE: it depends on how to define requirements.

CMCC: same understanding.

**Issue 1-2-4: MPR requirements**

**Discussions:**

Huawei: as MOP can be declared, there is no need to have MPR requirement. ATG UE can be stronger than normal UE.

ZTE: EVM, ACS and SEM requirements should be concluded first.

Ericsson: to ZTE, if you need power back-off, you can declare lower power.

ZTE: OK not to define the MPR.

Qualcomm: it is related to MOP discussion. We should have RP configuration. otherwise how can we test MOP requirement.

Ericsson: to Qualcomm, that is Option 4.

**Agreement:**

* Specify the MOP to be at maximum modulation order and full PRB configurations instead of defining MPR

**Issue 1-2-5: AMPR requirements**

**Agreement:**

* not to specify AMPR requirements for ATG UE.

**Issue 1-2-6: Minimum output power**

**Agreement:**

* ATG UE minimum output power can be specified as -25dBm+X/20MHz for 2GHz and -20dbm+Y/100MHz for 4GHz.
  + FFS on X and Y pending on the co-existence study.

**Issue 1-2-7: Transmit OFF power**

**Agreement:**

* to reuse the current requirements for Transmit OFF power as TS 38.101-1.

**Issue 1-2-8: Transmit ON/OFF time mask**

**Agreement:**

* to reuse the current requirements for Transmit ON/OFF time mask as TS 38.101-1.

**Issue 1-2-9: Frequency error**

**Agreement:**

* to use the existing requirement defined for NTN UE in TS 38.101-5 as baseline.

**Issue 1-2-10: Transmit modulation quality**

ZTE: put 256QAM in []. For Option 2, IBE.

**Agreement:**

* Transmit modulation quality requirements for ATG UE could reuse the existing requirements defined for TN UE in TS 38.101-1,
  + FFS on whether 256 QAM should be supported.
* The existing TN IBE requirements can be reused for ATG UE.

**Issue 1-2-12: SEM/ACLR**

**Discussions:**

ZTE: depend on the co-existence.

**Issue 1-2-13: Transmit intermodulation**

**Discussions:**

Ericsson: We are OK with Option 1.

**Agreement:**

* TX IM is not needed from a cellular radio operation perspective.

**Issue 2-1-1: REFSENS requirements**

**Discussions:**

ZTE: Option 1 refers to 2Rx requirements?

Ericsson: Do we need mandating.

CMCC: If 4Rx can be supported, the requirements can be reused.

**Agreement:**

* The REFSENS requirements specified in TS 38.101-1 for each band can be reused for ATG UE

**Issue 2-1-2: to mandate 4Rx for ATG UE band n1/n78 and n79 or not**

**Discussions:**

Ericsson: we are OK not to mandate. We still have optional thing.

**Agreement:**

* not to mandate 4Rx for ATG UE in ATG bands

**Issue 2-1-3: Maximum input level**

**Discussions:**

ZTE: probably OK with Option 1. We can check couple loss and come back in the next meeting.

Huawei: this requirement is based on coupling loss. For NTN UE this requirement is -40dBm. If we go with Option 1, it means too much relaxed.

**Issue 2-1-7: Narrow band blocking requirements**

**Discussions:**

ZTE: narrow band is for GSM like channel. For ATG use, there is any GSM system interfered.

**Agreement:**

* no need to specify this Narrow band blocking requirements for ATG UE

**Issue 2-1-8: Intermodulation characteristics**

**Discussions:**

Ericsson: we should get the other requirements first.

### 9.14 NR support for dedicated spectrum less than 5MHz for FR1

#### 9.14.1 General and work plan

**[137] Topic #1: General and work plan**

[**R4-2300197**](file:///D:\RAN4%23106\Docs\R4-2300197.zip) **Work plan for NR support for dedicated spectrum less than 5MHz for FR1**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides a RAN4 work plan for this WI to complete the core and performance parts as targeted at TSG RAN#102 and RAN#104, respectively

**Decision: Approved.**

LS

[**R4-2300378**](file:///D:\RAN4%23106\Docs\R4-2300378.zip) **Draft LS on NR support for dedicated spectrum less than 5MHz for FR1**

*Type: LS out For: Approval  
 to RAN1  
 Source: Apple*

**Decision: Noted.**

[**R4-2301221**](file:///D:\RAN4%23106\Docs\R4-2301221.zip) **response R1-2212919 LS to RAN4 on sub 5MHz**

*Type: LS out For: Approval  
 to RAN1  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301484**](file:///D:\RAN4%23106\Docs\R4-2301484.zip) **Spectrum les than 5 MHz - LS reply to RAN1**

*Type: LS out For: Approval  
 to RAN WG1  
 Source: Ericsson*

**Abstract:**

This contribution is a LS reply to R1-2212919

**Decision: Noted.**

[**R4-2301575**](file:///D:\RAN4%23106\Docs\R4-2301575.zip) **draft reply LS on NR support for dedicated spectrum less than 5MHz for FR1**

*Type: LS out For: Approval  
 to RAN1  
 Source: vivo*

**Decision: Noted.**

[**R4-2301611**](file:///D:\RAN4%23106\Docs\R4-2301611.zip) **Draft LS on NR support for dedicated spectrum less than 5MHz for FR1**

*Type: LS out For: Approval  
 to RAN1  
 Source: MediaTek Inc.*

**Decision: Noted.**

#### 9.14.2 System parameters

**[137] Topic #2: System parameters**

[**R4-2300203**](file:///D:\RAN4%23106\Docs\R4-2300203.zip) **System parameters of NR support for dedicated spectrum less than 5MHz for FR1**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2300291**](file:///D:\RAN4%23106\Docs\R4-2300291.zip) **On NR Synchronization Raster for Dedicated Spectrum less than 5MHz**

*Type: discussion For: Discussion  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Apple*

**Decision: Noted.**

[**R4-2301222**](file:///D:\RAN4%23106\Docs\R4-2301222.zip) **Discussion on system parameters for dedicated spectrum less than 5MHz for FR1**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301483**](file:///D:\RAN4%23106\Docs\R4-2301483.zip) **Spectrum les than 5 MHz - System Parameters**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution discusses the system parameters impacts when introducing new channel bandwidth less than 5 MHz

**Decision: Noted.**

[**R4-2301574**](file:///D:\RAN4%23106\Docs\R4-2301574.zip) **Discussion on system parameter of less than 5MHz for FR1**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2302514**](file:///D:\RAN4%23106\Docs\R4-2302514.zip) **Introduction of Channel BW Smaller Than 5 MHz in NR**

*Type: discussion For: Discussion  
 Source: Huawei Technologies France*

**Decision: Noted.**

[**R4-2302727**](file:///D:\RAN4%23106\Docs\R4-2302727.zip) **Analysis of GB, Channel Size and Sync Raster for potential new 3MHz channel BW for NR FR1 less than 5MHz BW**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

LS

[**R4-2302273**](file:///D:\RAN4%23106\Docs\R4-2302273.zip) **LS out: System parameters and spectrum utilization for dedicated spectrum**

*Type: other For: Approval  
 Source: Qualcomm Inc.*

**Decision: Revised to** [**R4-2303646**](file:///D:\RAN4%23106\Docs\R4-2303646.zip) **(from** [**R4-2302273**](file:///D:\RAN4%23106\Docs\R4-2302273.zip)**).**

**[R4-2303646](D:\\RAN4#106\\Docs\\R4-2303646.zip) LS out: System parameters and spectrum utilization for dedicated spectrum**

*Type: other For: Approval  
 Source: Qualcomm Inc.*

**Decision: Approved.**

#### 9.14.3 UE RF requirements

**[137] Topic #3: UE RF requirements**

[**R4-2300375**](file:///D:\RAN4%23106\Docs\R4-2300375.zip) **UE Requirements for less than 5MHz NR channels**

*Type: discussion For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2300427**](file:///D:\RAN4%23106\Docs\R4-2300427.zip) **A-MPR analysis for dedicated spectrum less than 5MHz for FR1**

*Type: discussion For: Discussion  
 Source: Nokia*

**Decision: Noted.**

[**R4-2300428**](file:///D:\RAN4%23106\Docs\R4-2300428.zip) **UE RF specification impact due to dedicated spectrum less than 5MHz for FR1**

*Type: other For: Approval  
 Source: Nokia*

**Decision: Noted.**

[**R4-2301223**](file:///D:\RAN4%23106\Docs\R4-2301223.zip) **Discussion on UE RF for dedicated spectrum less than 5MHz for FR1**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301486**](file:///D:\RAN4%23106\Docs\R4-2301486.zip) **Spectrum les than 5 MHz - UE RF requirements**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution discusses the UE RF requirements impacts when introducing new channel bandwidth less than 5 MHz

**Decision: Noted.**

[**R4-2302274**](file:///D:\RAN4%23106\Docs\R4-2302274.zip) **RF requirements for dedicated spectrum**

*Type: other For: Approval  
 Source: Qualcomm Inc.*

**Decision: Noted.**

#### 9.14.4 BS RF requirements

#### 9.14.5 RRM requirements

#### 9.14.6 Moderator summary and conclusions

**[106][137] NR\_FR1\_lessthan\_5MHz\_BW, AI 9.14, 9.14.1, 9.14.2, 9.14.3 – Man Hung Ng (Nokia)**

[**R4-2302830**](file:///D:\RAN4%23106\Docs\R4-2302830.zip) **Topic summary for [106][137] NR\_FR1\_lessthan\_5MHz\_BW**

*Type: other For: Information  
 Source: Moderator (Nokia)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Revised to** [**R4-2303779**](file:///D:\RAN4%23106\Docs\R4-2303779.zip) **(from** [**R4-2302830**](file:///D:\RAN4%23106\Docs\R4-2302830.zip)**).**

[**R4-2303779**](file:///D:\RAN4%23106\Docs\R4-2303779.zip) **Topic summary for [106][137] NR\_FR1\_lessthan\_5MHz\_BW**

*Type: other For: Information  
 Source: Moderator (Nokia)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303654**](file:///D:\RAN4%23106\Docs\R4-2303654.zip) **LS for spectrum less than 5 MHz**

*Type: LSout For: Approval  
 Source: Apple*

**Decision: Revised to R4-2303713 (from R4-2303654).**

[**R4-2303713**](file:///D:\RAN4%23106\Docs\R4-2303654.zip) **LS for spectrum less than 5 MHz**

*Type: LSout For: Approval  
 Source: Apple*

**Decision: Approved.**

[**R4-2303655**](file:///D:\RAN4%23106\Docs\R4-2303655.zip) **WF on UE RF requirements for 3MHz**

*Type: other For: Approval  
 Source: Nokia*

**Decision: Approved.**

[**R4-2303656**](file:///D:\RAN4%23106\Docs\R4-2303656.zip) **WF on system parameters for <5MHz**

*Type: other For: Approval  
 Source: Nokia*

**Decision: Approved.**

**Issue 1-2: Maximum transmission bandwidth for 3 MHz channel bandwidth**

**Agreement:**

* Maximum transmission bandwidth for 3 MHz channel bandwidth is 15PRBs

**Issue 1-3: If finer synch raster for the 3MHz and/or 5MHz channel bandwidth is feasible**

**Discussions:**

Huawei: the n100 is for RMR. 3MHz can be used for the whole range of n100.

Qualcomm: Agree with Option 1. 3MHz can be used anywhere in n100. For 5MHz, we need more general level discussions. If we can restrict the applicability to use case, all the issues to legacy UE will go away.

Ericsson: it is pre-mature to conclude 5MHz. OK with Option1.

UIC: for 3MHz, it can be in anyplace of n100. Railroad want to use 5MHz in the lower edge.

Qualcomm: there is huge risk reusing the current sync raster in n100. 200Khz will be lost. More analysis is needed. We provided two options in our paper.

**Agreement:**

* Finer synch raster is feasible for 3MHz
* FFS on Option 2 and 3

**Issue 1-4: Questions to RAN1**

* Proposals
  + Option 1: Clarify how can legacy UEs still access the network with a new synchronization raster in place and without impacting the relevant KPIs on initial access for legacy devices, such as time to read the system information for the cell (Apple)

**Discussions:**

Qualcomm: this is important thing to address. One way is to be solved by RAN4 to define different sync-raster compared to the legacy UEs. Legacy UE cannot access the new raster.

Huawei: based on RAN1 discussion, these cause issues from RF perspective. When we have asymmetrical PBCH puncturing, there would be some RB out-of filter.

Ericsson: We need understanding if the legacy UE can access channel 3MHz.

Nokia: We can solve it out in RAN4. We do not need ask RAN1.

Apple: there are two issues: 1) whether the spectrum is dedicated spectrum (to RAN plenary and can have discussion in RAN4). See if it can be accessed by legacy UE.

Intel: in our view, we should look at the solution for sync-up. Puncturing is one solution and there is other solutions in RAN1. We do not need spend time on one solution.

Apple: in our understanding, we need take it in RAN plenary. I do not see the harm to inform RAN1.

Anterix: there is a dedicated spectrum. 2G and 4G only.

T-Mobile USA: we would ask for 3MHz to be supported in 7MHz band.

**Agreement:**

* We do not need ask this question in the LS to RAN1 in this meeting.

------------------------------------------------------------------------

* + Option 2: The number of PRBs of the punctured SSB (Ericsson, vivo, MediaTek)
  + Option 3: The PSS/SSS and PBCH positions within the punctured SSB (Ericsson, Qualcomm)

**Discussions:**

Qualcomm: need clarification on what is the impact on RAN4 in the LS.

Huawei: RAN1 needs information on the RB number.

Apple: Option 2 and 3 are RAN1 business.

Qualcomm: The options are addressed in different. We need map the sync-raster.

Intel: RAN1 LS does not include puncturing.

Apple: To Qualcomm, interlace between option 2 and option 3 from RAN1 will be discussed in RAN4. But we need find out if the spectrum is dedicated and is open to legacy UE.

ZTE: for Option 2 the punctured RB is up to raster design and puncture pattern design.

Nokia: there is no harm to ask and it is important to finalize the sync raster design.

Ericsson: we do not agree Option 2 and 3 are linked to dedicate spectrum. Design sync rater. We need answer RAN1 on option 1 and option 2.

Vivo: RAN1 wants RAN4 to feedback how to design the sync raster.

**Agreement:**

* Try to capture the option 2 and option 3 in the LS to RAN1.

**Issue 2-3: Channel spacing with 3MHz channel bandwidth**

**Discussions:**

Qualcomm: it is not clear to us if CA is in the scope of WI for this dedicated spectrum.

Nokia: channel spacing is the same as the existing ones. CA follows the different channel spacing.

Mediatek: sync raster is defined based on minimum channel bandwidth. We would like to discuss it together with sync-raster.

Moderator: we need LS to clarification the relation to the existing features and release.

**Agreement:**

* Reuse existing channel spacing formula for 3MHz channel bandwidth.
  + FFS for CA.

**Issue 2-4: Channel raster for 3MHz channel bandwidth**

**Agreement:**

* Reuse existing 100kHz channel raster for 3MHz channel bandwidth.

**Issue 2-6: Operation of legacy NR devices**

**Discussions:**

Mediatek: for legacy NR devices, it is clear that the legacy UE cannot support 3MHz channel bandwidth.

Apple: WI is not just to specify 3MHz for dedicated bandwidth but generally enable 3MHz. We should consider legacy devices. Support Option1.

Ericsson: WI clearly it is for dedicated spectrum. We should clarify this. Whether it is dedicated or not. We support sending LS to RAN.

Huawei: it is new band. There is no legacy. If it is for all bands, we should consider the general solutions.

UIC: There is no legacy. We do not see the need to consider legacy devices.

Apple: band n8 is already in the spec.

Anterix: we put band 8 for US. We will remove band 8 from WID. We are defining new band.

Qualcomm: for UIC and Anterix, there is no legacy issue. for Band 26 and 28, there are legacy UEs.

**Agreement:**

* Send LS to RAN to clarify the legacy issue and the features that should be supported for 3MHz for <5MHz WI.

**Issue 2-7: Finer synchronization raster for 3 MHz channel bandwidth**

**Discussions:**

Mediatek: with input, we can reuse the current sync raster. If RAN1 confirms the demand, we can work on it.

Qualcomm: We had agreement for channel raster. We can analyze the consequence of the option1 and share the information with RAN1.

Apple: support Option 4. We can send out to RAN1.

Intel: Support option 3 and 4.

ZTE: support option 1. Defining sync-up raster as 100KHz can minimize the number of punctured RBs.

Nokia: Option 4 and Option 5 could have some legacy issue. Option 5 has some issues to cover all the channel bandwidth.

Ericsson: it is too early to make conclude. We need wait for RAN1 feedback. We need wait for RAN answers.

Huawei: For option 5, we try to make it as similar to legacy as possible. We add three more. There is no issue for legacy.

Mediatek: in our understanding, the sync-up raster for 3Mhz should not be reachable for legacy UE. There is no energy issue.

Apple: we can have the further study.

Qualcomm: Option 5 does not work. We agree with Mediatek on the power consumption issue for legacy UE to do search for 3MHz. It is more efficient to have additional raster.

ZTE: for power consumption, defining 100KHz does not have too much impact on complexity.

Nokia: it is very hard for RAN1 to proceed if we depend on RAN1 LS. RAN4 should design the sync raster by itself.

### 9.15 Enhancement of TRP and TRS requirements and test methodologies

### 9.16 Enhancement of Multiple Input Multiple Output Over-the-Air test methodology and requirements for NR UEs

### 9.17 BS and UE EMC enhancements

### 9.18 NR demodulation performance evolution

### 9.19 Study on evolution of NR duplex operation

### 9.20 Study on low-power wake-up signal and receiver for NR

#### 9.20.1 General and work plan

**[138] Topic #1: General and Workplan**

[**R4-2301565**](file:///D:\RAN4%23106\Docs\R4-2301565.zip) **Workplan for Rel-18 low-power WUS/WUR RF**

*Type: other For: Approval  
 Source: vivo*

**Decision: Approved.**

**[138] Topic #2: LP-WUR architectures**

LS

[**R4-2301568**](file:///D:\RAN4%23106\Docs\R4-2301568.zip) **draft reply LS to RAN1 on low-power wake-up receiver architectures**

*Type: LS out For: Approval  
 to RAN1  
 Source: vivo*

**Decision: Revised to R4-2303712 (from R4-2301568).**

[**R4-2303712**](file:///D:\RAN4%23106\Docs\R4-2301568.zip) **draft reply LS to RAN1 on low-power wake-up receiver architectures**

*Type: LS out For: Approval  
 to RAN1  
 Source: vivo*

**Decision: Approved.**

[**R4-2302375**](file:///D:\RAN4%23106\Docs\R4-2302375.zip) **draft reply LS on LP-WUR architecture**

*Type: LS out For: Approval  
 to RAN1  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302428**](file:///D:\RAN4%23106\Docs\R4-2302428.zip) **LS reply on low-power wake-up receiver architectures**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution, we present our view on LS question in RAN1 [1].

**Decision: Noted.**

#### 9.20.2 Evaluation of Low power wake-up receiver architectures

**[138] Topic #2: LP-WUR architectures**

[**R4-2300499**](file:///D:\RAN4%23106\Docs\R4-2300499.zip) **Evaluation of Low power wake-up receiver architectures**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2301104**](file:///D:\RAN4%23106\Docs\R4-2301104.zip) **Views on LP-WUR architectures**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision: Noted.**

[**R4-2301252**](file:///D:\RAN4%23106\Docs\R4-2301252.zip) **Discussion on LP-WUR architecture**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301566**](file:///D:\RAN4%23106\Docs\R4-2301566.zip) **Discussions on low-power Wave-up Receiver architectures**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301623**](file:///D:\RAN4%23106\Docs\R4-2301623.zip) **Discussion on LP-WUS receiver architectures**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2302276**](file:///D:\RAN4%23106\Docs\R4-2302276.zip) **Low-power wake-up receiver RF aspects**

*Type: other For: Approval  
 Source: Qualcomm Inc.*

**Decision: Noted.**

[**R4-2302374**](file:///D:\RAN4%23106\Docs\R4-2302374.zip) **On study of LP-WUR**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302430**](file:///D:\RAN4%23106\Docs\R4-2302430.zip) **Evaluation of Low power wake-up receiver architectures**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution, we present our view on wake-up receiver architectures in RAN1 [1].

**Decision: Noted.**

[**R4-2300355**](file:///D:\RAN4%23106\Docs\R4-2300355.zip) **On RF aspects related to the LP WUR study**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

[**R4-2300456**](file:///D:\RAN4%23106\Docs\R4-2300456.zip) **Discussion paper on low-power wake-up receiver architectures**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

#### 9.20.3 Evaluation of wake-up signal designs

**[138] Topic #3: LP-WUS designs**

[**R4-2300501**](file:///D:\RAN4%23106\Docs\R4-2300501.zip) **Evaluation of wake-up signal designs**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2301567**](file:///D:\RAN4%23106\Docs\R4-2301567.zip) **Discussions on low-power Wave-up Signal designs**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2302429**](file:///D:\RAN4%23106\Docs\R4-2302429.zip) **Evaluation of wake-up signal designs**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution, we present our view on wake-up signal design based on RAN1 LS[1].

**Decision: Noted.**

#### 9.20.4 Moderator summary and conclusions

**[106][138] FS\_NR\_LPWUS, AI 9.20 – Ruixin Wang (Vivo)**

[**R4-2302831**](file:///D:\RAN4%23106\Docs\R4-2302831.zip) **Topic summary for [106][138] FS\_NR\_LPWUS**

*Type: other For: Information  
 Source: Moderator (Vivo)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303549**](file:///D:\RAN4%23106\Docs\R4-2303549.zip) **Ad hoc minutes for LP-WUS**

*Type: other For: Approval  
 Source: Moderator (Vivo)*

**Decision: Noted.**

**R4-2303711 WF on LP-WUS UE RF**

*Type: other For: Approval  
 Source: Vivo*

**Decision: Approved.**

1st Round online discussions;

**Issue 2-2-1: ACS evaluation for LP-WUR in RAN4**

**Discussions:**

Samsung: fine with all the proposals.

Apple: we should power consumption side.

Nokia: We should take care of network side. Network should not be penalized by the feature.

Qualcomm: need clarification on sensitivity in Proposal2. We need information from RAN1.

Huawei: we know that the assumptions are not determined yet in RAN1. We can have some basic assumptions in RAN4.

Ericsson: ACS is one RF requirement. But we do not decide the signal. We would like to have more clarification about the general RF requirement discussion. it is too early.

Xiaomi: similar view as Ericsson. ACS is related to RF architecture. It has very good rejection in RF domain. In digital domain UE can do well. We cannot decide which approach will be adopted.

Mediatek: This is a new architecture. Many information is required. RAN4 can collect what information is needed for ACS.

Samsung: ACS is relevant to architecture. both three options can be considered for further study. For architecture, RF-ED could be precluded.

Moderator: Agree with that some aspects which need be decided. We need figure out and align the approach how to evaluate the ACS. The requirement would be different. We prefer to reach consensus on high level agreement.

Apple: RF-ED could be precluded.

Vivo: this is the first meeting. RF-ED depends on the component and other aspects.

Nokia: agree with Samsung. RF-ED does not support general operation.

Huawei: OK to preclude RF-ED. Other aspects should be considered.

Xiaomi: it is pre-mature to preclude RF-ED. RAN1 does not have corresponding decision.

ZTE: Fine to preclude RF-ED.

Qualcomm: OK to preclude RF-ED. On the big picture, there are so many parameters on the air. We may work on which scenario we will work.

**Issue 2-2-2: Starting point for ACS**

**Discussions:**

Huawei: for #1 and #2, frequency is less than 2700Mhz. We have no clear view whether FR2 will be considered or not. based on input from RAN1, three UE architectures are not applicable for FR2.

Apple: for #1 and #2, we intentionally select the frequency <2700. FR2 can be considered as second priority.

Qualcomm: also OK with starting from low FR1. There is no need of official agreement to preclude FR2. To Apple, on using the existing parameters, the throughput concept may not be applicable.

Apple: we are fine not to preclude frequency explicitly. Different metric may be discussed.

Xiaomi: If limited to FR1, proposal 1~3 are similar. We can support all.

Samsung: whether the proposal is applied for RF-ED or other architecture.

Xiaomi: in RAN4, requirements are define based on architectures.

Samsung: the parameter could not be agnostic to architecture.

Qualcomm: signal form connector may be same for all the architecture. whether all the architectures can meet the requirement needs be discussed

Huawei: for #1 and #2, proponents can clarify for ACS we have some level degradation, can we use the similar degradation level for evaluation.

Apple: in RAN1 spec, we have requirement on ACS and IBB. There are range of requirement for architectures. We should look at the metric and relaxation of requirements to power consumption.

Moderator: it is better to cover the whole RF1 range.

ZTE: All of channel bandwidths defined for ACS are for RAN4 to study?

**Agreement:**

* Values from current specifications should be used as a starting point for the discussion.

**Issue 2-2-3: For IF based LP-WUR**

**Discussions:**

Qualcomm: we think it is quite excessive to discuss the image rejection separately. It does no mean we need operating band specific requirement.

Huawei: from LS of RAN1, they clearly mention image is studied for different architectures. based on the current spec, the requirement is not based on RF-ED. We need make decision on the UE architecture to discuss this requirement.

Apple: to #1, why do we ask for RAN1 on potential bands? The work would be done in band agnostic way. For #2, it is very good aspect to include size and cost.

Huawei: to Apple, we want to have some clarification from RAN1 on bands. For three mentioned architectures, they cannot be applied for FR2. If we just consider wearable or IoT devices, they are just related to some bands.

Nokia: we should not limit our choose based on proposal 2.

Vivo: share the similar view as Nokia. We do not define some low cost device.

Qualcomm: in our view, it makes sense to take consideration of common sense of implementation. In the end we cannot make decision based on architecture and should consider other aspects.

Ericsson: IoT is the target. The size needs be considered.

Samsung: Share the similar view as Qualcomm and Ericsson. IoT is main target for LP-WUS.

Nokia: IoT is just one of target.

**Issue 2-3-1: General evaluation framework for both ACS and ASCS**

**Discussions:**

Moderator: need clarification on CBW and guardband from RAN1.

Mediatek: do we have assumption that the same signal quality can be assumed?

Qualcomm: agree to access some parameter which is similar to ACS should be studied. We can look at the different scenario. We can feed back to RAN1 what scenario will make the design simple or difficult. We can make RF design only on those designs.

Huawei: ASCS is the new. The purpose is to evaluate the guardband. In RAN4 we can have assumptions which is used in RAN4 only. Based on it we can have discussions.

Ericsson: In NB-IoT, when transmitting signal in-band, we do not have guardband. We can assume that ASCS is just for in-band case. This is toleration issue.

**Issue 2-3-2: Adjacent subcarrier impacts**

**Discussions:**

Mediatek: for #2, if there is one car

Huawei: 5MHz is reasonable choice for evaluation.

Qualcomm: we should include 1.4MHz. There is no final agreement in RAN1. We can narrow down.

Ericsson: when we evaluate the adjacent, do we want to have blocking together. We should separate ACS and blocking issues.

Apple: We agree on defining of bandwidth range to be considered. Also we need decide the target SNR. If we have SNR range, then it helps convergence.

**Agreement:**

* Consider 1.4MHz and 5MHz WUS signal bandwidth for FR1 as the starting point.
  + FFS on how many LP-WUS RBs can be allocated in channel bandwidth
  + FFS on whether the guard band is included in 1.4MHz and 5MHz

**Issue 2-3-3: WUS location within the carrier**

**Discussions:**

Huawei: this issue is for UE part. From BS aspects, we also need to consider whether the WUS signal will be located. The example is NB-IoT. We do have some discussion where the NB-IoT will be located. refer to discussion for NB-IoT.

Apple: most of discussions now focuses on putting WUS signal in-band. But WUS can be also put in the dedicated carrier. We need indicate this aspects to RAN1.

Nokia: We need consider BS aspects. To Apple, where do we can find the spectrum?

Samsung: to Apple, it may increase the cost for BS.

Qualcomm: NB-IOT is not the best example. NB-IOT can work in guardband, which require the str requirements. We should consider the case where WUS is put in the middle of channel.

Huawei: we should align the view whether to consider in-band operation or dedicated.

Samsung: #1, WUS can be flexible. From BS, we agree Huawei and Nokia. It is similar to NB-IoT. RAN1 can consider whether the power boost can be enabled.

Nokia: to Qualcomm, when saying always putting WUS in the middle, is it the center of 5MHz or channel bandwidth center.

**Issue 2-5-1: General BS RF**

**Discussions:**

Samsung: Three proposals are not contradict with each other. #2 is aligned with #1.

Apple: boosting WUS could be considered. Wonder if it will impact the NR users.

**Issue 2-5-2: LP-WUS power boosting**

**Discussions:**

Ericsson: it is too early to discuss the power boosting feature. If the link budget is not good enough, we need pick up the discussion.

Nokia: agree with Ericsson. Quite early to discuss boosting. Let us look at the link budget and waveform first.

Huawei: REFSEN would be not good for WUS. Power boosting would be useful. We need RAN1 clarification.

### 9.21 Expanded and improved NR positioning

#### 9.21.1 General and work plan

**[139] Topic #1: General aspects and work plan**

[**R4-2300496**](file:///D:\RAN4%23106\Docs\R4-2300496.zip) **Work plan for core requirements of the Rel-18 Expanded and Improved NR Positioning WI**

*Type: Work Plan For: Approval  
 Source: Intel Corporation, Ericsson, CATT*

**Decision: Revised to** [**R4-2303569**](file:///D:\RAN4%23106\Docs\R4-2303569.zip) **(from** [**R4-2300496**](file:///D:\RAN4%23106\Docs\R4-2300496.zip)**).**

[**R4-2303569**](file:///D:\RAN4%23106\Docs\R4-2303569.zip) **Work plan for core requirements of the Rel-18 Expanded and Improved NR Positioning WI**

*Type: Work Plan For: Approval  
 Source: Intel Corporation, Ericsson, CATT*

**Decision: Approved.**

[**R4-2301852**](file:///D:\RAN4%23106\Docs\R4-2301852.zip) **General aspects for Rel-18 NR positioning**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2302380**](file:///D:\RAN4%23106\Docs\R4-2302380.zip) **On UE RF work for NR Positioning**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

#### 9.21.2 UE RF requirements

**[139] Topic #2: UE RF requirements**

[**R4-2300492**](file:///D:\RAN4%23106\Docs\R4-2300492.zip) **Expanded and Improved NR Positioning WI - RF scope**

*Type: discussion For: Discussion  
 Source: Intel Corporation*

**Decision: Noted.**

[**R4-2300589**](file:///D:\RAN4%23106\Docs\R4-2300589.zip) **Discussion on UE RF impact of expanded and improved NR positioning**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision: Noted.**

[**R4-2301732**](file:///D:\RAN4%23106\Docs\R4-2301732.zip) **Discussion on RF requirements for CA based positioning**

*Type: discussion For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301853**](file:///D:\RAN4%23106\Docs\R4-2301853.zip) **UE RF requirements for Rel-18 NR positioning**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2301854**](file:///D:\RAN4%23106\Docs\R4-2301854.zip) **Initial simulation results for DL NR carrier phase positioning**

*Type: other For: Information  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2302425**](file:///D:\RAN4%23106\Docs\R4-2302425.zip) **RF spec impact for RedCap UE positioning**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution, we present our view on the potential RF spec impact For RedCap position scheme in Rel-18[1].

**Decision: Noted.**

#### 9.21.3 RRM core requirements

#### 9.21.4 Moderator summary and conclusions

**[106][139] FS\_NR\_pos\_UERF, AI 9.21, 9.21.1, 9.21.2 – Aida L Vera Lopez (Intel)**

[**R4-2302832**](file:///D:\RAN4%23106\Docs\R4-2302832.zip) **Topic summary for [106][139] FS\_NR\_pos\_UERF**

*Type: other For: Information  
 Source: Moderator (Intel)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303570**](file:///D:\RAN4%23106\Docs\R4-2303570.zip) **WF on UE RF for expanded and improved NR positioning**

*Type: other For: Approval  
 Source: Intel*

**Decision: Approved.**

**Issue 1-2a: Overall RF scope**

**Discussions:**

Nokia: from our side, we are looking at the work plan. Some consideration on the RAN1 progress. RAN1 has some study. We should identify where the input from RAN1. Something can be done by RAN4. For a lot of impact on RF, we do not see the dependency. It should be more putting effort what can be done in RAN4 now.

**Issue 1-2b: RF scope – BS requirements**

**Discussions:**

Ericsson: it is the target that new feature should have no impact on BS RF. Or we just make the conclusion whatever the feature is.

Apple: it depends on different scheme. OTDOA may reply on TAE between BS-es.

ZTE: We have the same study. We are fine with no impact proposal.

Apple: we should draw conclusions based on some analysis.

**Issue 2-1a: RF scope for bandwidth aggregation**

**Discussions:**

Ericsson: what is the purpose for RAN4 to do the RF impairment modelling.

Nokia: We had study item. We see the major companies think the group delay should be main impairment, and also consider phase noise…

ZTE: The final requirement will be very tight. The tolerance would be very high. That is not testable.

Huawei: similar comment as Ericsson. What is the purpose of the proposal? Regarding work item, RAN4 should focus on the requirement. TAE could be too tight.

Qualcomm: to Ericsson, we are not sure the performance impact. Certainly there will RRM performance impact. #2, we should follow the agreement. We can discuss more #3. #4 is more RRM.

**Issue 2-1b: RF requirements impact**

**Discussions:**

Apple: as ZTE commented, if we find out the BS can achieve a certain level of TAE and TAE is really small, in this case we can still send information and share the value to RAN1. Based on those values, RAN1 can give us feedback.

Huawei: after conclusion of SI, we have already sent LS to RAN1. TAE is not big issue for positioning.

Ericsson: in previous study, we concluded to use the single RF chain. Discuss the multiple Tx chains?

Qualcomm: #1~4 are related to TAE. For #2, the impact on group delay is identified, which should be discussed in RAN4.

**Issue 2-2: RF scope for carrier phase positioning**

**Discussions:**

Nokia: the proposals are to do independently from the existing RAN1 design. RAN4 can do modelling and other RF work in parallel.

Huawei: Nokia proposal is not very clear what kind of RF work can be carried out.

Ericsson: in #1, what methodologies are referred to?

Nokia: to Huawei, we have to address the RF impairment study. RAN1 just lists the error sources. it is up to RAN4 to define the complete error model, including phase noise… and which one is dominant. We think that RAN4 should be developing the annex of the TR.

Intel: for #1, methodologies is what is summarized in RAN1 TR.

Ericsson: we are not sure at this stage RAN4 should do such evaluation. It must have some good triggering why we should do it.

Huawei: to Nokia, is it for feasibility study or specifying requirements? If it is for feasibility, we have done. If it is for requirement, what requirement is under consideration.

Nokia: there is dependency on the impairment. More agreement is needed to define the requirements.

**Issue 2-3a: RF impact**

**Discussions:**

Nokia: Optional no-frequency hopping should be considered.

**Issue 2-3b: Scope clarification on supported techniques**

**Discussions:**

Ericsson: we did discuss it in the redcap. We should look at the different WIDs separately. Maybe other signals will be used.

**Issue 2-4: RF impact**

**Agreement:**

* No RF impacts are expected for enabling LPHAP.

### 9.22 Multi-carrier enhancements for NR

#### 9.22.1 General and work plan

#### 9.22.2 Switching time and other RF aspects up to 3 or 4 bands

##### 9.22.2.1 UL Tx switching with single TAG

**[140] Topic #1: Tx switching across 3/4 bands with single TAG**

[**R4-2300163**](file:///D:\RAN4%23106\Docs\R4-2300163.zip) **UL Tx switching across 3/4 bands with single TAG**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Decision: Noted.**

[**R4-2300365**](file:///D:\RAN4%23106\Docs\R4-2300365.zip) **Rel-18 Further Discussions on the UE UL TX Switching for 3 or 4 bands**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

[**R4-2300817**](file:///D:\RAN4%23106\Docs\R4-2300817.zip) **UL Tx switching with single TAG**

*Type: other For: Discussion  
 Source: CMCC*

**Decision: Noted.**

[**R4-2300822**](file:///D:\RAN4%23106\Docs\R4-2300822.zip) **UE switching time in more complicated scenarios**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2301177**](file:///D:\RAN4%23106\Docs\R4-2301177.zip) **R18 Discussion on Tx switching with single TAG**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2301254**](file:///D:\RAN4%23106\Docs\R4-2301254.zip) **Further discussion on Tx switching across 3 or 4 bands for single TAG**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301541**](file:///D:\RAN4%23106\Docs\R4-2301541.zip) **Discussion on RF aspects of UL Tx switching with single TAG**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301616**](file:///D:\RAN4%23106\Docs\R4-2301616.zip) **Discussion on UL Tx switching with single TAG**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2301713**](file:///D:\RAN4%23106\Docs\R4-2301713.zip) **Discussion on multi-carrier enhancement for single-TAG Tx switching**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: MediaTek Inc.*

**Decision: Noted.**

[**R4-2302048**](file:///D:\RAN4%23106\Docs\R4-2302048.zip) **Discussion on Multi-carrier enhancements with single TAG**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302348**](file:///D:\RAN4%23106\Docs\R4-2302348.zip) **Granularity of advanced UE feature capability for Rel-18 Tx switching**

*Type: other For: Approval  
 Source: NTT DOCOMO INC.*

**Decision: Noted.**

[**R4-2302751**](file:///D:\RAN4%23106\Docs\R4-2302751.zip) **UE ON-OFF time masks for non-equal switching time cases**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

Draft CR

[**R4-2300164**](file:///D:\RAN4%23106\Docs\R4-2300164.zip) **CR for 38.101-1: Time mask for switching across three or four uplink bands**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1285 rev Cat: B (Rel-18)  
  
 Source: China Telecom, NTT DOCOMO, Huawei, Hisilicon*

**Decision: Revised to** [**R4-2303505**](file:///D:\RAN4%23106\Docs\R4-2303505.zip) **(from** [**R4-2300164**](file:///D:\RAN4%23106\Docs\R4-2300164.zip)**).**

[**R4-2303505**](file:///D:\RAN4%23106\Docs\R4-2303505.zip) **CR for 38.101-1: Time mask for switching across three or four uplink bands**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1285 rev Cat: B (Rel-18)  
  
 Source: China Telecom, NTT DOCOMO, Huawei, Hisilicon, CMCC, OPPO, ZTE*

**Decision: Revised to R4-2303719 (from R4-2303505).**

[**R4-2303719**](file:///D:\RAN4%23106\Docs\R4-2303505.zip) **CR for 38.101-1: Time mask for switching across three or four uplink bands**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1285 rev Cat: B (Rel-18)  
  
 Source: China Telecom, NTT DOCOMO, Huawei, Hisilicon, CMCC, OPPO, ZTE*

Chair: the open issues will be decided based on RAN1 conclusion and further RAN4 discussions.

**Agreement:**

* RAN4 proposes to extende the work item for Multi-carrier enhancements for NR

**Decision: Endorsed.**

LS

[**R4-2301722**](file:///D:\RAN4%23106\Docs\R4-2301722.zip) **Draft LS on Rel-18 UL Tx switching**

*Type: LS out For: Approval  
 to RAN1, RAN2  
 Source: MediaTek Inc.*

**Decision: Noted.**

**[R4-2303694](D:\\RAN4#106\\Docs\\R4-2303694.zip) Draft LS on Rel-18 UL Tx switching**

*Type: LS out For: Approval  
 to RAN1, RAN2  
 Source: MediaTek Inc.*

**Decision: Withdrawn.**

##### 9.22.2.2 UL Tx switching with multiple TAGs

**[140] Topic #2: Tx switching with dual TAGs**

[**R4-2300751**](file:///D:\RAN4%23106\Docs\R4-2300751.zip) **Time masks, switching time location and DL interruptions for uplink TX switching with dual-TAG**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution we discuss the outage time, DL interuptions and propose time masks for dual TAG

**Decision: Noted.**

[**R4-2301253**](file:///D:\RAN4%23106\Docs\R4-2301253.zip) **Further discussion on Tx switching across 3 or 4 bands for multiple TAG**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301617**](file:///D:\RAN4%23106\Docs\R4-2301617.zip) **Discussion on UL Tx switching with multiple TAG**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2301712**](file:///D:\RAN4%23106\Docs\R4-2301712.zip) **Discussion on multi-carrier enhancement for multi-TAG Tx switching**

*Type: discussion For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: MediaTek Inc.*

**Decision: Noted.**

[**R4-2302049**](file:///D:\RAN4%23106\Docs\R4-2302049.zip) **Discussion on Multi-carrier enhancements with multiple TAG**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

Draft CR

[**R4-2300752**](file:///D:\RAN4%23106\Docs\R4-2300752.zip) **Introduction of ON/OFF time mask for TX switching across two bands with dual-TAG**

*Type: draftCR For: Endorsement  
 38.101-1 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

Draft CR to introduce an ON/OFF time mask for TX switching across two bands with dual-TAG for conformance testing

**Decision: Postponed.**

[**R4-2302050**](file:///D:\RAN4%23106\Docs\R4-2302050.zip) **Draft CR for 38.101-1 to clarify the time mask for switching with multiple TAGs**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1404 rev Cat: B (Rel-18)  
  
 Source: Huawei, HiSilicon, Xiaomi*

**Decision: Postponed.**

#### 9.22.3 RRM core requirements

#### 9.22.4 Moderator summary and conclusions

**[106][140] NR\_MC\_enh\_UERF, AI 9.22, 9.22.1, 9.22.2 – Shan Yang (China Telecom)**

[**R4-2302833**](file:///D:\RAN4%23106\Docs\R4-2302833.zip) **Topic summary for [106][140] NR\_MC\_enh\_UERF**

*Type: other For: Information  
 Source: Moderator (China Telecom)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303553**](file:///D:\RAN4%23106\Docs\R4-2303553.zip) **Ad hoc minutes for Multi-carrier enhancements for NR**

*Type: other For: Approval  
 Source: Moderator (China Telecom)*

**Decision: Noted.**

[**R4-2303506**](file:///D:\RAN4%23106\Docs\R4-2303506.zip) **WF on Multi-carrier enhancements for NR**

*Type: other For: Approval  
 Source: China Telecom*

Ericsson: do not change the RAN2 fallback rule.

Apple: add the following sentence in the WF.

* UE will report the 3/4 band combination with Tx switching capability. It is expected that this gives the network sufficient information on UE capability for Tx switching across all fallback combinations.

**Decision: Revised to** [**R4-2303693**](file:///D:\RAN4%23106\Docs\R4-2303693.zip) **(from** [**R4-2303506**](file:///D:\RAN4%23106\Docs\R4-2303506.zip)**).**

[**R4-2303693**](file:///D:\RAN4%23106\Docs\R4-2303693.zip) **WF on Multi-carrier enhancements for NR**

*Type: other For: Approval  
 Source: China Telecom*

Chair: RAN4 can further discussion Issue 1-4-3.

**Decision: Approved.**

[**R4-2303507**](file:///D:\RAN4%23106\Docs\R4-2303507.zip) **LS on Rel-18 Multi-carrier enhancement for NR**

*Type: LSout For: Approval  
 Source: China Telecom*

**Decision: Approved.**

[**R4-2303508**](file:///D:\RAN4%23106\Docs\R4-2303508.zip) **WF on ambiguity issue when two Tx chains are switched between different band pairs**

*Type: other For: Approval  
 Source: Mediatek*

**Decision: Noted.**

1st round online discussions

**Issue 1-1-1: Exact value of Tx switching period for each band pair**

**Discussions:**

Mediatek: in our view, it is totally different situation. When we say band pair in Rel-18, we have two different meaning: 1) band pair for transmission in parallel 2) band pair for switching.

Apple: in our understanding, we can restrict the switching scenarios. We think given the UE feasibility, Option 2 is the way to go. Option1 complicates the RAN1 design.

OPPO: support Option 2.

Qualcomm: We do not need to discuss the flexibility. Option 1 and 2 are different issue from Option 3.

CTC: regarding Option 3, how about reporting larger value.

Ericsson: Does the switching value of Rel-18 can be applied to Rel-17 scenario with only two UL CCs?

Chair: Further discuss Option 3, which is for the issue different from issues for option 1 and 2.

Apple: is UE reporting the band pairs different for before and after switching? RAN1 had some discussions. What does Tx chain mean.

**Agreement:**

* Agree Option 2.
  + Further clarification on definition of band pair.

**Issue 1-4-3: Location of switching periods for “dualUL”**

**Discussions:**

Huawei: we disagree including the picture. RAN1 is still discussing it. We should wait for RAN1.

China Telecom: in previous RAN4 meeting, we agree to locate the switching period on one band. But in the picture, the switching period is across all the bands.

### 9.23 Further NR mobility enhancements

#### 9.23.1 General and work plan

#### 9.23.2 UE RF requirements

[**R4-2301587**](file:///D:\RAN4%23106\Docs\R4-2301587.zip) **UE RF requirements**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2301612**](file:///D:\RAN4%23106\Docs\R4-2301612.zip) **Discussion on RF requirement impacts for inter-frequency L1/L2-based mobility**

*Type: discussion For: Decision  
 Source: MediaTek Inc.*

**Decision: Noted.**

#### 9.23.3 L1/L2 based inter-cell mobility

#### 9.23.4 NR-DC with selective activation of cell groups via L3 enhancements

#### 9.23.5 Improvement on SCell/SCG setup delay

#### 9.23.6 Enhanced CHO configurations

#### 9.23.7 Moderator summary and conclusions

**[106][141] NR\_Mob\_enh2\_UERF, AI 9.23, 9.23.1, 9.23.2 – Aijun Cao (Mediatek)**

[**R4-2302834**](file:///D:\RAN4%23106\Docs\R4-2302834.zip) **Topic summary for [106][141] NR\_Mob\_enh2\_UERF**

*Type: other For: Information  
 Source: Moderator (Mediatek)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

**Issue 2-1-2: If the answer to Issue 2-1-1 is yes, is it agreeable to conclude that there is no RF requirement impact for the intra-frequency inter-cell L1/L2-based mobility enhancements?**

**Discussions:**

Ericsson: 2-1-1 needs be discussed in RRM session. There is no agreement.

Apple: think 2-1-1 may be discussed separately.

Nokia: for 2-1-1, we do not know the requirement. Rel-17 beam management can be reused. For 2-1-2, we need wait from the output of RRM.

Mediatek: 2-1-1 should be treated in RRM session. For 2-1-2, we can wait for RRM decision.

**Issue 2-2-1: Should RAN4 only consider single-panel UEs for RF requirements for inter-frequency L1/L2-based mobility?**

**Discussions:**

Ericsson: multi-Rx is not contained in this WI?

Apple: this is related RRM discussion. We need RRM conclusion first.

ZTE: have similar understanding as Apple.

Moderator: seems that some assumptions are common to RRM and RF.

**Chair: Put RF discussion on-hold until RRM has the corresponding conclusions.**

### 9.24 Dual Tx/Rx Multi-SIM for NR

### 9.25 NR NTN enhancement

#### 9.25.1 General and work plan

#### 9.25.2 Co-existence study for above 10GHz bands

#### 9.25.3 SAN RF requirements

#### 9.25.4 UE RF requirements

**[142] Topic #1: UE RF requirement**

[**R4-2301099**](file:///D:\RAN4%23106\Docs\R4-2301099.zip) **Discussion on UE RF for NTN above 10GHz bands**

*Type: other For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2301468**](file:///D:\RAN4%23106\Docs\R4-2301468.zip) **NTN enhancement: NTN UE RF requirements**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution discusses the NTN satellite UE RF requirements for NTN enhancements

**Decision: Noted.**

[**R4-2301747**](file:///D:\RAN4%23106\Docs\R4-2301747.zip) **Further discussion on UE RF requirements for NTN in Ka-band**

*Type: discussion For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2302109**](file:///D:\RAN4%23106\Docs\R4-2302109.zip) **Discussion on Ka band NTN UE**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302527**](file:///D:\RAN4%23106\Docs\R4-2302527.zip) **NTN UE Terminal Types for above 10 GHz**

*Type: discussion For: Discussion  
 Source: THALES, Inmarsat, Hispasat*

**Abstract:**

This contribution provides material for discussion with respect to NTN UE terminal types in above 10 GHz.

**Decision: Noted.**

[**R4-2302714**](file:///D:\RAN4%23106\Docs\R4-2302714.zip) **Satellite broadband user equipment**

*Type: discussion For: Discussion  
 Source: HISPASAT, Hughes Network Systems, Thales, ESA, Eutelsat, Lockheed Martin, Intelsat, Inmarsat, Airbus*

**Decision: Noted.**

#### 9.25.5 RRM core requirements

#### 9.25.6 Moderator summary and conclusions

**[106][142] NR\_NTN\_enh\_UERF, AI 9.25, 9.25.4, 6.1.3 – Fei Xue (ZTE)**

[**R4-2302835**](file:///D:\RAN4%23106\Docs\R4-2302835.zip) **Topic summary for [106][142] NR\_NTN\_enh\_UERF**

*Type: other For: Information  
 Source: Moderator (ZTE)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303533**](file:///D:\RAN4%23106\Docs\R4-2303533.zip) **WF on NTN UE RF requirements for Ka band**

*Type: other For: Approval  
 Source: ZTE*

**Decision: Approved.**

**Issue 1-1: UE types**

**Discussions:**

Inmarsat: the ESIM should be used in 3GPP. There was a proposal to use NTN UE. VSAT is used for both fixed and transportable. VSAT could be used. We do not need differentiate the scenario of UE use case.

Thales: we discuss the differentiation. We think it is better to focus on the parameters like FR2. We should keep one single name.

Qualcomm: we are not sure we agree with idea. ESIM is included in the WID. Why not to use it? I am not sure whether there is no difference between phase and parabolic.

Hispasat: we do not want to use ESIM. We are not talking about the service. We have additional paper. UEs with different antenna can perform the same. We do not want to preclude or focus any implementation.

Ericsson: we do not agree with single type of UE. We do not have strong opinion of the name. But we need consider different types of UE.

Intel: Further distinguishing is needed. Two different power classes. The regulatory would be different, which leads to different types.

Inmarsat: Agree to use power class differentiation. There are some common requirements across the regulatory requirements, e.g., monitoring…

Verizon: we prefer to use the single name.

ZTE: we extensively discussed the parameters for ESIM and VSAT. Can we use one name and have different requirements.

Qualcomm: one name is few.

Inmarsat: Second as Qualcomm. We keep the regulatory as reference. NTN VSAT as general name.

Huawei: we have concern on using power class to differentiate.

Thales: it is matter of regulatory and performance. The performance is the same. Please check the contribution of [R4-2302527](file:///D:\RAN4%23106\Docs\R4-2302527.zip). Single name is enough. We are OK to use the transmit power.

Ericsson: start with two classes.

Qualcomm: to Thales, we do not agree on the performance aspects.

**Issue 2-1: Beam correspondence requirement**

**Discussions:**

Inmarsat: I am not convinced. Even if FDD, UE needs track the direction of DL.

Qualcomm: BC requirement would be dynamic requirement if understanding Inmarsat comment correctly.

Nokia: BC is not like some beam tracking. How to verify tracking needs more discussions.

ZTE: ECC requirement has some beam tracking requirement. Currently we have no BC requirement for FDD band.

Inmarsat: BC is not correct name.

**Agreement:**

* Discuss whether and how to define the requirements for beam tracking for NTN UE.

**Issue 3-1: conductive or radiated RF requirement for NTN UE**

**Discussions:**

Qualcomm: at least for parabolic we may need conductive. Radiated requirement is difficult for test. Conductive requirement can simplify it.

Inmarsat: we can test in the chamber.

**Agreement:**

* Define the radiated requirement as the first priority.

**Issue 3-2: satellite specific RF requirements for NTN UE**

**Discussions:**

Intel: we should be careful to use term of specifying. All the requirements are based on regulatory requirement. We should say capturing the regulatory requirements.

Inmarsat: in regulatory, only off-axis requirement is included, they remove the pointing requirement.

Qualcomm: in 3GPP, we also consider performance. Pointing capability is also important.

### 9.26 Further NR coverage enhancements

#### 9.26.1 Enhancement of increasing UE power high limit for CA and DC

**[143] Topic #1: On the extension of Rel-17 increasing UE power high limit design for CA/DC**

[**R4-2300711**](file:///D:\RAN4%23106\Docs\R4-2300711.zip) **On UE signaling to enhance ULCA and DC**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

An essential component of any UL enhancement is the ability of a UE to deliver timely and actionable information about its UL power capability. This is crucial for situations where regulatory limits collide with UL demand. In this contribution we discuss

**Decision: Noted.**

[**R4-2301101**](file:///D:\RAN4%23106\Docs\R4-2301101.zip) **Discussion on enhancement of increasing UE maximum power high limit**

*Type: other For: Approval  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2301178**](file:///D:\RAN4%23106\Docs\R4-2301178.zip) **R18 increase UE power high limit for CA and DC**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2301544**](file:///D:\RAN4%23106\Docs\R4-2301544.zip) **Further discussion on enhancement of increasing UE power high limit for CA and DC**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2302448**](file:///D:\RAN4%23106\Docs\R4-2302448.zip) **Addition for PC1.5 inter-band UL CA**

*Type: discussion For: Approval  
 Source: T-Mobile USA*

**Decision: Noted.**

CR

[**R4-2301545**](file:///D:\RAN4%23106\Docs\R4-2301545.zip) **Introduce new scenario for increase higher power limit for CA**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1390 rev Cat: B (Rel-18)  
  
 Source: vivo, Xiaomi, Huawei*

**Decision: Endorsed.**

[**R4-2301546**](file:///D:\RAN4%23106\Docs\R4-2301546.zip) **Introduce new scenario for increase higher power limit for EN-DC**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0859 rev Cat: B (Rel-18)  
  
 Source: vivo, Xiaomi, Huawei*

**Decision: Endorsed.**

**[143] Topic #2: Enhancement for SAR issue mitigation**

[**R4-2300039**](file:///D:\RAN4%23106\Docs\R4-2300039.zip) **Necessity of reporting power class being used by a UE**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This paper shares reasons why report of being used power class (PC) to network is essential.

**Decision: Noted.**

[**R4-2300162**](file:///D:\RAN4%23106\Docs\R4-2300162.zip) **Discussion on enhancement of increasing UE power high limit for CA and DC**

*Type: other For: Approval  
 Source: Fujitsu Limited*

**Decision: Noted.**

[**R4-2300753**](file:///D:\RAN4%23106\Docs\R4-2300753.zip) **Power-class fallback reporting in the PHR for improved scheduling and enhanced performance with and without the high-power limit**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribuiton we propose to trigger PHR by power-class changes and include information on power-class fallback. To this end a draft Reply LS to RAN1 is attached.

**Decision: Noted.**

[**R4-2301107**](file:///D:\RAN4%23106\Docs\R4-2301107.zip) **Views on enhancement for SAR issue mitigation in FR1**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision: Noted.**

[**R4-2301761**](file:///D:\RAN4%23106\Docs\R4-2301761.zip) **On enhancements of increasing UE power high limit for CA and DC**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

LS

[**R4-2301383**](file:///D:\RAN4%23106\Docs\R4-2301383.zip) **Draft LS on enhancements to realize increasing UE power high limit for CA and DC**

*Type: other For: Approval  
 Source: NTT DOCOMO INC.*

**Abstract:**

Draft Reply LS to R1-2210739 is attached

**Decision: Noted.**

#### 9.26.2 Enhancement to reduce MPR/PAR

##### 9.26.2.1 General and work plan for Enhancement to reduce MPR/PAR

**[144] Topic #1: Scope of the WI**

[**R4-2301762**](file:///D:\RAN4%23106\Docs\R4-2301762.zip) **On further enhancements to reduce MPR/PAR**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302740**](file:///D:\RAN4%23106\Docs\R4-2302740.zip) **Measurements for transparent and non-transparent schemes**

*Type: discussion For: Discussion  
 Source: Skyworks Solutions Inc.*

**Decision: Noted.**

[**R4-2301680**](file:///D:\RAN4%23106\Docs\R4-2301680.zip) **Scope of the work for MPR/PAR -objective**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2302421**](file:///D:\RAN4%23106\Docs\R4-2302421.zip) **P-MPR for PRACH**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution, we present our view on further improvement on the P-MPR for PRACH transmission

Nokia: WID does not include any RAN4 impact on the multiple PRACH feature. We can wait for RAN1 LS or change the WID.

Qualcomm: P-MPR applies to all transmissions including RACH and multiple-RACH.

Huawei: share the similar understanding as Nokia.

**Decision: Noted.**

##### 9.26.2.2 RF simulation parameters

**[144] Topic #2: RF simulation parameters**

[**R4-2301514**](file:///D:\RAN4%23106\Docs\R4-2301514.zip) **Discussion on RF simulation parameters for enhancement to reduce MPR**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301681**](file:///D:\RAN4%23106\Docs\R4-2301681.zip) **RF simulation parameters for MPR/PAR evaluations**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2302422**](file:///D:\RAN4%23106\Docs\R4-2302422.zip) **simulation parameter discussion for transparent and non-transparent schemes**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution, we present our simulation parameters used on the transparent and non-transparent schemes.

**Decision: Noted.**

##### 9.26.2.3 RF simulation results for transparent schemes

**[144] Topic #3: RF simulation results for transparent schemes**

[**R4-2300341**](file:///D:\RAN4%23106\Docs\R4-2300341.zip) **Simulation results for transparent MPR reduction schemes**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2300710**](file:///D:\RAN4%23106\Docs\R4-2300710.zip) **On UL power enhancement from transparent techniques**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

PCmaxH is an artifical upper limit that can be revisited to increase UL power.

**Decision: Noted.**

[**R4-2301515**](file:///D:\RAN4%23106\Docs\R4-2301515.zip) **RF simulation results for transparent schemes for enhancement to reduce MPR**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301682**](file:///D:\RAN4%23106\Docs\R4-2301682.zip) **RF simulation results for transparent schemes**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2302424**](file:///D:\RAN4%23106\Docs\R4-2302424.zip) **Simulation results for the transparent scheme**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution, we present our simulation results on the transparent scheme stated in WF[1].

**Decision: Noted.**

##### 9.26.2.4 RF simulation results for non-transparent schemes

**[144] Topic #4: RF simulation results for non-transparent schemes**

[**R4-2300342**](file:///D:\RAN4%23106\Docs\R4-2300342.zip) **Simulation results for non-transparent MPR reduction schemes**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

[**R4-2301516**](file:///D:\RAN4%23106\Docs\R4-2301516.zip) **RF simulation results for non-transparent schemes for enhancement to reduce MPR**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301683**](file:///D:\RAN4%23106\Docs\R4-2301683.zip) **RF simulation results for non-transparent schemes**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2302423**](file:///D:\RAN4%23106\Docs\R4-2302423.zip) **Simulation results for the non-transparent scheme**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution, we present our simulation results on the non-transparent scheme stated in WF[1].

**Decision: Noted.**

[**R4-2302648**](file:///D:\RAN4%23106\Docs\R4-2302648.zip) **On UL power enhancement from BWE techniques**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

Views on UL power enhancement using BWE methods

**Decision: Noted.**

##### 9.26.2.5 RF specification impact

**[144] Topic #5: RF specification impact**

[**R4-2301684**](file:///D:\RAN4%23106\Docs\R4-2301684.zip) **RF specification impacts**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2302420**](file:///D:\RAN4%23106\Docs\R4-2302420.zip) **RF spec impact for MPR reduction scheme**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution, we present our view on the potential RF spec impact based on simulation results

**Decision: Noted.**

[**R4-2302491**](file:///D:\RAN4%23106\Docs\R4-2302491.zip) **Discussion on MPR/PAR reduction for UL coverage enhancements**

*Type: discussion For: Decision  
 Source: MediaTek (Chengdu) Inc.*

**Decision: Noted.**

#### 9.26.3 Moderator summary and conclusions

**[106][143] NR\_cov\_enh2\_part1, AI 9.26, 9.26.1 – Xiang Gao (Huawei)**

[**R4-2302836**](file:///D:\RAN4%23106\Docs\R4-2302836.zip) **Topic summary for [106][143] NR\_cov\_enh2\_part1**

*Type: other For: Information  
 Source: Moderator (Huawei)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303560**](file:///D:\RAN4%23106\Docs\R4-2303560.zip) **WF on coverage enhancement part 1**

*Type: other For: Approval  
 Source: Huawei*

**Decision: Approved.**

[**R4-2303564**](file:///D:\RAN4%23106\Docs\R4-2303564.zip) **Draft LS on enhancements to realize increasing UE power high limit for CA and DC**

*Type: LSout For: Approval  
 Source: NTT DOCOMO INC.*

**Decision: Revised to R4-2303699 (from R4-2303564).**

[**R4-2303699**](file:///D:\RAN4%23106\Docs\R4-2303564.zip) **Draft LS on enhancements to realize increasing UE power high limit for CA and DC**

*Type: LSout For: Approval  
 Source: NTT DOCOMO INC.*

**Decision: Revised to R4-2303701 (from R4-2303699).**

[**R4-2303701**](file:///D:\RAN4%23106\Docs\R4-2303564.zip) **Draft LS on enhancements to realize increasing UE power high limit for CA and DC**

*Type: LSout For: Approval  
 Source: NTT DOCOMO INC.*

**Decision: Approved.**

**Issue 1-1: Whether to extend the agreement for enabling high power limit enhancement for PC3+PC5 CA configuration for EN-DC case**

* Proposals
  + - Option 1: Yes, and adopt the accompany CR for CA in [R4-2301545](file:///D:\RAN4%23106\Docs\R4-2301545.zip) and for DC in [R4-2301546](file:///D:\RAN4%23106\Docs\R4-2301546.zip). (Xiaomi, vivo, Huawei)
    - Option 2: Others.

**Agreement:**

* Option 1.

**Issue 1-2: Whether to consider the extension of Rel-17 increasing UE power high limit for 3Tx UE with total PC1.5 (PC3 + PC1.5) inter-band CA/DC configuration**

Xiaomi: we are not against the work. General requirements for 3Tx is under discussions.

Mediatek: in our understanding, WI of 3Tx does not include increasing UE power. 3Tx discussion should not be here.

OPPO: During the RAN discussion, the agreement is that 3Tx will be treated in this WI. We are also OK to go with Option 2.

Vivo: We think 3Tx discussion. This has already been discussed. The same proposal was treated for 3Tx WI.

Qualcomm: It seems that there is some debate.

Apple: last RAN plenary, we did propose to include this high power feature. Finally, it was not captured in the 3Tx WID. The implementation is only based on 3Tx. It is better to bind this one to 3Tx.

Verizon: support OPPO and Qualcomm.

Nokia: we are fine to discuss 3Tx and high power limit together.

**Issue 2-1: Whether to continue the discussion for SAR mitigation issue in RAN4**

Fujitsu: In last meeting, RAN4 did not send the LS. Now both RAN1 and RAN4 discuss the same issue. The details should be discussed in RAN1.

Ericsson: We disagree with Option 1. We see no reason to provide the input to RAN1.

Samsung: Disagree with Option 1. SAR is RAN4 issue. Otherwise RAN1 may have misunderstanding.

Fujitsu: the solution based on optimization of power control. It is OK to discuss power control in RAN4.

Huawei: we think option 1 is reasonable option.

**Issue 2-2: Whether PHR reporting should be considered for a carrier that is configured for DL but not for UL (no active UL BWP)**

Qualcomm: UE has to measure all the configured DL carriers. Network can make decision which uplink is optimal.

Samsung: Both FR1 and FR2 should be applied?

Qualcomm: at this stage, it is general inter-band consideration.

Samsung: PHR should be reflected through PCMAX. We are not quite convinced.

Nokia: if UE needs transmit, UE needs the resources.

OPPO: this is most of RAN1 issue. What is the difference from SRS carrier switching.

Qualcomm: in SRS switching, you do the sum.

**Issue 2-3: Whether and how PHR reporting enhancement should be considered for FR1 carriers**

Nokia: tend to agree with Option 1a. We propose to report power class itself. The triggering mechanism can be discussed in RAN1. We agree to allow network be aware of power class being used.

Qualcomm: support Option 1. What is the information beneficial that UE needs to send? UE should choose to deal with MPE using P-MPR rather than power class.

OPPO: there are different soltuions. For PMPR, it is not needed. For Delta-P\_power class, there is any gain?

Qualcomm: we are not sure if P-MPR is not needed. It is something which can carry the information. It is good explanation why it is more relevant now where the backoff situation happens.

Huawei: OPPO raised the good question.

Ericsson: It is becoming more relevant when we deploy HPUE for CA. For TDD combination, we see the problem for CA. RAN1 is discussing a lot of protection method. It is good to know where to start. We do not know when UE changes the power class even if UE reports the duty cycle. SAR is averaged over longer time.

Nokia: two issues: 1) power class information is very important. As commented by Ericsson, it is impossible for network to know UE fallback to lower power class. 2) network avoids UE to fallback to lower power class. Network can know complementary information.

NTT DOCOMO: Support option1, a, b and d. It is difficult for network to evaluate the conditions. Regarding performance gain, we see the benefit. RAN1 can discuss the performance gain. We should send LS to RAN1 with possible solutions.

OPPO: regarding power class fall back, there is no UE to implement duty cycle.

Ericsson: If UE changes the power class, it will impact the scheduling. It is not only the cell edge. We would like to be told.

**Issue 2-4: Other proposal**

Ericsson: it is related to RAN1 discussion.

OPPO: what is energy headroom? how can network use it?

Qualcomm: the motivation is RAN1 LS asks us if there is improvement. To OPPO, if you can convey to network what kind of power you can generate and how long, then this integrated value can be given. Network can do the better signaling.

Ericsson: We are open to further discussion in RAN1. There may be often more than one UE at a time. The best information for scheduling is to give the current state of power.

**[106][144] NR\_cov\_enh2\_part2, AI 9.26.2 – Johannes Hejselbaek (Nokia)**

[**R4-2302837**](file:///D:\RAN4%23106\Docs\R4-2302837.zip) **Topic summary for [106][144] NR\_cov\_enh2\_part2**

*Type: other For: Information  
 Source: Moderator (Nokia)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303530**](file:///D:\RAN4%23106\Docs\R4-2303530.zip) **Ad hoc minutes for [106][144] NR\_cov\_enh2\_part2**

*Type: other For: Approval  
 Source: Nokia*

**Discussions:**

Chair: the agreements captured in the ad hoc minutes are agreeable to the group.

**Decision: Noted.**

[**R4-2303559**](file:///D:\RAN4%23106\Docs\R4-2303559.zip) **WF on enhancements to reduce MPR&PAR**

*Type: other For: Approval  
 Source: Nokia*

**Decision: Approved.**

[**R4-2303561**](file:///D:\RAN4%23106\Docs\R4-2303561.zip) **WF on simulation assumptions for PAPR/MPR reduction**

*Type: other For: Approval  
 Source: Qualcomm, Nokia*

**Decision: Approved.**

[**R4-2303562**](file:///D:\RAN4%23106\Docs\R4-2303562.zip) **WF on RF simulation results template**

*Type: other For: Approval  
 Source: Ericsson, Nokia*

**Discussions: for drafts**

**1.1 OBO**

Output backoff power reporting according to two options below:

- Option 1: Separate OBO reporting with different schemes and baseline reporting

- Option 2: “delta OBO” reporting compared to known baseline. The known baseline needs to be defined. i.e “DFT-s-OFDM, no filter”.

Ericsson: one option is to have absolute value.

Qualcomm: The intention is to improve the power. We just need define the delta relative MPR0 rather than call is backoff.

Nokia: enable to identify what the delta is. Whether to report absolute value and delta. Maybe we can report relative compared to baseline.

Huawei: Option 2 is preferred.

**Agreement:**

* Option 2.

**1.2 OBO Power boosting ( Yes /No)**

vivo: what is the intention of this.

Ericsson: power boosting is negative OBO number, that is what can be reported.

Qualcomm: we do not need use OBO term. We can call it as delta.

**1.3 Power boosting reference**

Apple: it should be PC3. Power boosting for PC2 seems difficult to reach. PC2 will be considered after PC3.

Qualcomm: We do not understand why we should limit to one power class.

Ericsson: In the power class definition, we set the limit. If we set PC3, there is some limit.

Skyworks: PC3, the reasons is that we see a lot gain for QPSK. PC3 is best candidate to show gain. PC2 brings some complexity.

Nokia: The intention is to find a way to justify the gain.

Qualcomm: the previous agreement refers to 4GHz which is PC2 band.

**Decision: Approved.**

### 9.27 NR Network-controlled Repeaters

### 9.28 NR MIMO evolution for downlink and uplink

#### 9.28.1 General and work plan

**[145] Topic #1: Workplan**

[**R4-2301929**](file:///D:\RAN4%23106\Docs\R4-2301929.zip) **Work plan for Rel-18 WI on MIMO evolution**

*Type: Work Plan For: Approval  
 Source: Samsung*

**Decision: Approved.**

#### 9.28.2 UE RF requirements

##### 9.28.2.1 UE power limitation for STxMP in FR2 (R1-2205639)

**[145] Topic #2: UE RF requirements**

[**R4-2300638**](file:///D:\RAN4%23106\Docs\R4-2300638.zip) **UE power limitation for STxMP in FR2 (R1-2205639)**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2300661**](file:///D:\RAN4%23106\Docs\R4-2300661.zip) **On UE power limits for STxMP mDCI case**

*Type: other For: Approval  
 Source: InterDigital Communications*

**Abstract:**

In this contribution, we share our analysis on power limitation, the importance of the TCI approach in Pcmax definition, and propose answers for the LS reply to RAN1.

**Decision: Noted.**

[**R4-2301539**](file:///D:\RAN4%23106\Docs\R4-2301539.zip) **Further discussion on UE power limitation for STxMP in FR2**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2302735**](file:///D:\RAN4%23106\Docs\R4-2302735.zip) **Discussion on UE power limitation for STxMP in FR2**

*Type: other For: Discussion  
 Source: Ericsson Limited*

**Decision: Noted.**

[**R4-2301760**](file:///D:\RAN4%23106\Docs\R4-2301760.zip) **On the RF requirement for STxMP**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302501**](file:///D:\RAN4%23106\Docs\R4-2302501.zip) **Discussion on impact of MIMO Evolution to RF requirements**

*Type: other For: Approval  
 Source: Samsung*

**Decision: Noted.**

**[145] Topic #3: Reply LS (to R1-2205639)**

[**R4-2300663**](file:///D:\RAN4%23106\Docs\R4-2300663.zip) **[Draft] Reply LS on UE power limitation for STxMP in FR2**

*Type: LS out For: Approval  
 to RAN1  
 Source: InterDigital Communications*

**Decision: Noted.**

[**R4-2300706**](file:///D:\RAN4%23106\Docs\R4-2300706.zip) **Reply LS on UE power limitation for STxMP in FR2 (R1-2205639)**

*Type: LS out For: Approval  
 to RAN1  
 Source: Qualcomm Incorporated*

**Abstract:**

We focus on the specific connotation of 'power limitation' that impacts RAN1 (Configured Tx power) and address how RAN4 may construct a requirement in the future for this feature.

**Decision: Noted.**

[**R4-2301596**](file:///D:\RAN4%23106\Docs\R4-2301596.zip) **Draft LS on UE power limitation for STxMP in FR2**

*Type: LS out For: Approval  
 to RAN1  
 Source: MediaTek Inc.*

**Decision: Noted.**

[**R4-2302502**](file:///D:\RAN4%23106\Docs\R4-2302502.zip) **[Draft] Reply LS on UE power limitation for STxMP in FR2**

*Type: LS out For: Approval  
 to RAN1  
 Source: Samsung*

**Decision: Noted.**

##### 9.28.2.2 UE RF requirement aspects

[**R4-2300639**](file:///D:\RAN4%23106\Docs\R4-2300639.zip) **UE RF requirement aspects**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2301540**](file:///D:\RAN4%23106\Docs\R4-2301540.zip) **Initial analysis on UE RF requirements for NR MIMO evolution**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301624**](file:///D:\RAN4%23106\Docs\R4-2301624.zip) **Discussion on the RF requirements for STxMP in FR2**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision: Noted.**

#### 9.28.3 RRM core requirements

#### 9.28.4 Moderator summary and conclusions

**[106][145] NR\_MIMO\_evo\_DL\_UL\_UERF, AI 9.28, 9.28.1, 9.28.2 – Taekhoon Kim (Samsung)**

[**R4-2302838**](file:///D:\RAN4%23106\Docs\R4-2302838.zip) **Topic summary for [106][145] NR\_MIMO\_evo\_DL\_UL\_UERF**

*Type: other For: Information  
 Source: Moderator (Samsung)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303494**](file:///D:\RAN4%23106\Docs\R4-2303494.zip) **Draft LS on UE power limitation for STxMP in FR2**

*Type: LS out For: Approval  
 to RAN1  
 Source: Vivo*

**Decision: Approved.**

[**R4-2303495**](file:///D:\RAN4%23106\Docs\R4-2303495.zip) **WF on NR MIMO evolution for downlink and uplink**

*Type: other For: Information  
 Source: Samsung*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Approved.**

**Issue 2-1: Applied FR2 UE power class for STxMP**

**Discussions:**

Huawei: this is aligned with WID.

**Agreement:**

* Consider PC1/PC2/PC4/PC5/[PC6] only.

**Issue 2-3: RAN4 definition of “panel” for STxMP discussion in Rel-18**

**Agreement:**

* Use Option 1 as baseline.

**Issue 2-4: Feasibility of ‘per-panel’ power limitation for STxMP & Issue 2-5: ‘Per-TCI state’ configured power for ‘per-panel’ power limitation**

**Discussions:**

Huawei: for 2-4, it is related to our one proposal skipped. That could be depended on the assumption of BS.

Qualcomm: We could derive per-TCI state configured power, which does not preclude any implementation. From RAN1 perspective, simplicity is important. Per-TCI state is preferred.

Xiaomi: per-TCI can control one beam. Per-TCI and Per-panel are the same.

InterDigital: support per-TCI. TCI make the linkage to the correct RS signals.

Vivo: per-TCI can be used as starting point.

Huawei: we think both per-UE and per-panel are feasible.

**Issue 2-6: Feasibility of ‘per-UE’ power limitation for STxMP & Issue 2-7: Method to specify ‘per-UE’ power limitation**

**Discussions**

Nokia: we support per-UE.

Qualcomm: we hesitate to support those options. Per-UE limitation will be replied in LS. But the configured power still can be per-TCI. We cannot support per-UE power limitation in this context.

**Issue 2-8: Current defined power classes shall be considered further as reference for any power limitation discussions while defining the new requirements for STxMP case.**

**Agreement:**

* Current defined power classes shall be considered further as reference for any power limitation discussions while defining the new requirements for STxMP case, if needed.

**Issue 2-9: No relaxations should be introduced for Rel-18 UL MIMO for the case if 2 active Tx chains are associated to 2 different panels.**

**Discussions:**

Nokia: this depends on the UE architecture. If two antenna modules cover different panels, there is no relaxation.

Qualcomm: Agree with the idea. How to capture it in the spec?

Nokia: it is possible to define the reference setup for the architecture. Then we can decide the requirement based on this setup.

LGE: For UL-MIMO intra-band CA, we can consider the relaxation. Is there any relation with Issue 2-9?

**Issue 2-10: STxMP scenario should be carefully considered to simultaneously handle the regulatory MPE requirements and the total radiated power requirements.**

**Agreement:**

* STxMP scenario should be carefully considered to simultaneously handle the regulatory MPE requirements and the total radiated power requirements

**Issue 2-12: Postpone 8Tx related discussion to later release in RAN4**

**Agreement:**

Postpone 8Tx related discussion to later release in RAN4.

**Issue 2-13: No UE RF discussion is expected according to the RAN1’s status**

**Agreement:**

* No UE RF discussion on the power control for uplink sDCI for multi-TRP is expected according to the RAN1’s status

**Issue 3-1: Proposed answers to Q1**

**Discussions:**

Qualcomm: the dependency on the architecture is implementation. It will not be specified.

Huawei: we should consider all the implementation to make the requirement implementation-agnostic.

Vivo: We believe the architecture may lead to different requirements. For feasibility, the answer is yes.

InterDigital: Keeping the requirement implantation-agonistic. It does not mean it is totally agnostic. It may be related to design of PCMAX…

Samsung: the question is only the feasibility. I wonder if Huawei want to add some further study.

**Agreement:**

* Option 2.

**Issue 3-2: Proposed answers to Q2**

**Agreement:**

* Option 1.

**Issue 3-3: Proposed answers to Q3**

**Agreement:**

* Option 1.

**Issue 3-4: Proposed answers to Q4**

**Discussions:**

Qualcomm: we provided the analysis that the basically the highlighted part in Option 3 is important to be shared.

Huawei: it is pre-mature to agree on the highlighted sentence.

Qualcomm: We do not agree pre-mature.

InterDigital: the TCI is basic concept. We need to agree and move on.

Huawei: from our understanding, we can see the discussion for previous topic includes UE implementation.

Samsung: TCI is the only solution. I do not think it is necessary to capture it in the spec. We can go with option 2 or 4.

InterDigital: we show PUSCH and PUCCH can contain the path loss. It is straightforward.

### 9.29 NR sidelink evolution

#### 9.29.1 General and work plan

**[146] Topic #1: General & Workplan**

[**R4-2301182**](file:///D:\RAN4%23106\Docs\R4-2301182.zip) **R18 workplan for NR SL evolution WI**

*Type: other For: Approval  
 Source: OPPO, LGE*

**Decision: Approved.**

[**R4-2300207**](file:///D:\RAN4%23106\Docs\R4-2300207.zip) **Scope and priority of NR SL evolution in Rel-18**

*Type: other For: Approval  
 Source: Meta Ireland*

**Abstract:**

we propose the RAN4 RF related scope to support SL-U operation and SL FR2 operation except NR SL CA feature since the SL CA topic is still pending in the next RAN plenary meeting. RAN4 can further discuss the SL CA issue after RAN determines whether the t

**Decision: Noted.**

[**R4-2300974**](file:///D:\RAN4%23106\Docs\R4-2300974.zip) **Discussion on support of NR sidelink on unlicensed spectrum**

*Type: discussion For: Approval  
 Source: LG Electronics Finland*

**Abstract:**

Proposals made on way forward linked with UE Tx and Rx RF requirement for supporting new features introduced in the NR SL evolution WI.

**Decision: Noted.**

[**R4-2301418**](file:///D:\RAN4%23106\Docs\R4-2301418.zip) **RRM and RF Requirements for SL LTE-NR co-channel coexistence**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2301535**](file:///D:\RAN4%23106\Docs\R4-2301535.zip) **Initial views on NR sidelink evolution**

*Type: other For: Approval  
 Source: vivo*

**Decision: Noted.**

[**R4-2301919**](file:///D:\RAN4%23106\Docs\R4-2301919.zip) **on the SL-e**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision: Noted.**

**TR 38.786**

[**R4-2301183**](file:///D:\RAN4%23106\Docs\R4-2301183.zip) **R18 TR38.786 v0.0.1 skeleton for SL evoluation**

*Type: draft TR For: Agreement  
 38.786 v0.0.1 CR- rev Cat: (Rel-18)  
  
 Source: OPPO*

*Nokia: the entire WID may not need be copied into TR and we just need refer to WID. WID may be updated in RAN.*

**Decision: Revised to** [**R4-2303566**](file:///D:\RAN4%23106\Docs\R4-2303566.zip) **(from** [**R4-2301183**](file:///D:\RAN4%23106\Docs\R4-2301183.zip)**).**

**[R4-2303566](D:\\RAN4#106\\Docs\\R4-2303566.zip) R18 TR38.786 v0.0.1 skeleton for SL evoluation**

*Type: draft TR For: Agreement  
 38.786 v0.0.1 CR- rev Cat: (Rel-18)  
  
 Source: OPPO*

**Decision: Approved.**

#### 9.29.2 UE RF requirements

**[146] Topic #2: UE RF requirements**

[**R4-2301184**](file:///D:\RAN4%23106\Docs\R4-2301184.zip) **R18 NR SL evolution impacts**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Noted.**

[**R4-2301677**](file:///D:\RAN4%23106\Docs\R4-2301677.zip) **Discussion on SL-U impact on RF requirements**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2301918**](file:///D:\RAN4%23106\Docs\R4-2301918.zip) **on the SL-e RF requirement**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2302045**](file:///D:\RAN4%23106\Docs\R4-2302045.zip) **Regulations for SL on unlicensed spectrum**

*Type: other For: Information  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302046**](file:///D:\RAN4%23106\Docs\R4-2302046.zip) **On Rel-18 NR SL evolution**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302480**](file:///D:\RAN4%23106\Docs\R4-2302480.zip) **UE RF requirements in sidelink**

*Type: other For: Approval  
 38.101-1 v CR- rev Cat: (Rel-18)  
  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

LS

[**R4-2302047**](file:///D:\RAN4%23106\Docs\R4-2302047.zip) **draft LS on co-channel coexistence**

*Type: LS out For: Approval  
 to RAN1,RAN2  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2303567**](file:///D:\RAN4%23106\Docs\R4-2303567.zip) **(from** [**R4-2302047**](file:///D:\RAN4%23106\Docs\R4-2302047.zip)**).**

**[R4-2303567](D:\\RAN4#106\\Docs\\R4-2303567.zip) draft LS on co-channel coexistence**

*Type: LS out For: Approval  
 to RAN1,RAN2  
 Source: Huawei, HiSilicon*

**Decision: Revised to R4-2303700 (from R4-2303567).**

[**R4-2303700**](file:///D:\RAN4%23106\Docs\R4-2303567.zip) **draft LS on co-channel coexistence**

*Type: LS out For: Approval  
 to RAN1,RAN2  
 Source: Huawei, HiSilicon*

**Decision: Revised to R4-2303718 (from R4-2303700).**

[**R4-2303718**](file:///D:\RAN4%23106\Docs\R4-2303567.zip) **draft LS on co-channel coexistence**

*Type: LS out For: Approval  
 to RAN1,RAN2  
 Source: Huawei, HiSilicon*

**Decision: Approved.**

#### 9.29.3 RRM core requirements

#### 9.29.4 Moderator summary and conclusions

**[106][146] NR\_SL\_enh2\_UERF, AI 9.29, 9.29.1, 9.29.2 – Sang-Wook Lee (LGE)**

[**R4-2302839**](file:///D:\RAN4%23106\Docs\R4-2302839.zip) **Topic summary for [106][146] NR\_SL\_enh2\_UERF**

*Type: other For: Information  
 Source: Moderator (LGE)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303568**](file:///D:\RAN4%23106\Docs\R4-2303568.zip) **WF on NR sidelink evolution**

*Type: other For: Approval  
 Source: LGE*

**Decision: Approved.**

1st round online discussions

**Issue 1-1: Support for NR sidelink CA operation**

**Agreement:**

* Put work linked with NR sidelink CA operation on hold until further checking in RAN#99.

**Issue 1-2: Support for NR sidelink operation in FR2 licensed spectrum**

**Agreement:**

* Based on WID, there is no RAN4 objectives for FR2 sidelink operation

**Issue 1-4-1: Concurrent operation on Uu@Licensed and SL@Un-licensed**

**Discussions:**

Meta: support the proposal.

Huawei: at least one band combination example is needed here.

OPPO: encourage operators to provide the input.

Nokia: We would like to see the BC with most supports.

**Agreement:**

* Inter-band combinations for concurrent operation for Uu @Licensed and SL @Un-licensed are to be studied based on company inputs. In order to meet the WI objectives and schedule it is requested that combinations are decided in the next RAN4 meeting.
  + One example band combination is needed. FFS on which band combination is chosen.

**Issue 1-4-2: Concurrent operation on Uu@Un-licensed and SL@Un-licensed**

**Discussions:**

Nokia: it is related to the other issue. Since we are trying to solve intra-band issue, we can first work on inter-band.

Meta: inter-band concurrent is beneficial compared to issue 1-4-2. We prefer deprioritize Uu and SL cooperation on the unlicensed bands.

OPPO: Option 2.

LGE: We would like to discuss UL CA related.

Xiaomi: For licensed band intra-band, it is strongly requested. For unlicensed band, we see less interests on unlicensed concurrent.

Huawei: Uu on unlicensed band is not in the scope.

**Issue 1-6: Co-channel coexistence for LTE sidelink and NR sidelink**

**Discussions:**

OPPO: not sure what should be done. It depends on RAN1. If some discussion is needed, option 3.

Nokia: we need wait for RAN1. Can discuss the draft LS from Huawei.

Meta: RAN4 does not consider the co-channel evaluation. RAN1 can do.

Huawei: simultaneous reception can be considered. Simultaneous Tx should be discussed in RAN1 first.

**Issue 2-1: SL-U requirements location in 38.101-1**

* Proposals
  + Option 1: Capture the requirements into Suffix E, which already contains the V2X/Side link requirements on other operating bands (Xiaomi, LGE, QC)
  + FFS on the V2X acronym replaced by V2X/SL or V2X/PC5 or PC5
  + Option 2: Capture the requirements into new Suffix J “sidelink on shared spectrum”. (Huawei, QC)

**Discussions:**

OPPO: Option 2 is clean solution.

Nokia: Option 1. We just extend the existing.

Meta: SL operation like public safety. There is no need to define new.

Vivo: New suffix is needed to the new feature.

LGE: we support Option 1.

Huawei: Support Option 2. There are a lot chapters. Option 1 will need more work.

Qualcomm: Option 1.

**Issue 2-2: Supported un-licensed bands for NR SL-U operation**

**Discussions:**

Nokia: this is related to band combination. Pick one and work there.

Huawei: out of these three bands, what do we need additional agreement.

**Agreement:**

* Focus on n46, n96, n102.

**Issue 2-3: Supported UE channel bandwidth of 20, 40, 60 and 80MHz for SL-U**

**Discussions:**

OPPO: Rel-18 for commercial use case. Scenario is different from Rel-17. Option 2.

Meta: Option 2. 100MHz is supported for NR-U.

Nokia: We are OK with Option 2. We would like to focus on 20MHz. Larger bandwidth will include the intra-band CA.

Xiaomi: For Option 2, for 40MHz legacy V2X, the frequency location is only for 40MHz. NR-U has larger CBW. We should consider larger bandwidth. Larger bandwidth has nothing to do with CA.

LGE: Compromise to Option 2.

Huawei: support Option 2.

**Agreement:**

* Support channel bandwidth of 20, 40, 60 and 80 MHz i.e. same maximum bandwidth as is mandatory for NR-U.
  + Maximum channel bandwidth of 40MHz for V2X is not impacted

**Issue 2-4: Support for 10MHz channel bandwidth for SL-U**

**Discussions:**

Nokia: 10Mhz unlicensed channel. How and where are you intending to operate?

**Agreement:**

* To put 10MHz on hold to wait for sidelink CA discussion.

**Issue 2-5: Support for 100MHz channel bandwidth for SL-U**

**Agreement:**

* Support for 100MHz is optional for SL-U

**Issue 2-10-1: Maximum output power**

**Discussions:**

OPPO: originally we propose PC2 and PC3. But we can use PC5 as starting point. If time allows, we can consider PC2 and PC3.

Nokia: we cannot finalize PC3. PC2 is far beyond.

LGE: We can start from PC5.

Meta: We support LGE starting from PC5 and extend to PC2/3.

Huawei: there are restriction on PSD. Only PC5 can meet it.

Nokia: to Huawei, that is why we define PC5. That is why we still work on other power class.

OPPO: we have different understanding why PC5 is introduced. There is no restriction on the power class.

**Agreement:**

* Power class 5 should be considered as the starting point for the sidelink operation in unlicensed spectrum.
  + FFS on other power classes

**Issue 2-10-2: Default power class**

**Agreement:**

* Use power class 5 as the default power class for SL-U.

### 9.30 Enhanced support of reduced capability NR devices

#### 9.30.1 General and work plan

[**R4-2301856**](file:///D:\RAN4%23106\Docs\R4-2301856.zip) **General aspects for Enhanced RedCap**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2302402**](file:///D:\RAN4%23106\Docs\R4-2302402.zip) **WI work plan for Rel-18 RedCap**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

WI work plan for Rel-18 RedCap for RF and RRM.

Chair: the RF part is agreeable.

**Decision: Approved.**

#### 9.30.2 UE RF requirements

[**R4-2301625**](file:///D:\RAN4%23106\Docs\R4-2301625.zip) **Discussion on UE RF requirements for eRedcap**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2301857**](file:///D:\RAN4%23106\Docs\R4-2301857.zip) **UE RF requirements for Enhanced RedCap**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2302110**](file:///D:\RAN4%23106\Docs\R4-2302110.zip) **Initial discussion on RF impacts for R18 RedCap UE**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302269**](file:///D:\RAN4%23106\Docs\R4-2302269.zip) **eRedCap UE RF impacts**

*Type: other For: Approval  
 Source: Qualcomm Inc.*

**Decision: Noted.**

[**R4-2302427**](file:///D:\RAN4%23106\Docs\R4-2302427.zip) **RF spec impact analysis**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution, we present our view on the potential RF spec impact for Rel-18 RedCap WI.

**Decision: Noted.**

#### 9.30.3 BS RF requirements

#### 9.30.4 RRM core requirements

#### 9.30.5 Moderator summary and conclusions

**[106][147] NR\_redcap\_enh\_UERF, AI 9.30, 9.30.1, 9.30.2 – Chunhui Zhang (Ericsson)**

[**R4-2302840**](file:///D:\RAN4%23106\Docs\R4-2302840.zip) **Topic summary for [106][147] NR\_redcap\_enh\_UERF**

*Type: other For: Information  
 Source: Moderator (Ericsson)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303565**](file:///D:\RAN4%23106\Docs\R4-2303565.zip) **WF on eRedCap UE RF requirements**

*Type: other For: Approval  
 Source: Ericsson*

**Decision: Approved.**

**Issue 1-1: Whether other WID RF impact on Rel-18 RedCap UE**

* Proposals
  + Option 1: There is no indication in Rel-18 RedCap enh WID considering the position WID, the RF impact should be discussed separately within each WID scope based on their own objectives. If necessary, an updated WID should be initiated in RAN plenary.
  + Option 2: Requirements that have been modified due to introduction of LPHAP and positioning for RedCap devices can also be applied to Rel-18 RedCap UE’s
  + Option 3: TBA

**Discussions**

Nokia: basically the WI is very close to positioning WI. We want to get the clarification and feedback from other companies.

Qualcomm: support Option 1.

**Agreement:**

* Option 1

**Issue 1-2: Work plan impact**

* Proposals
  + Option 1: Interworking work plan between NR positioning and this WID
  + Option 2: No interworking work plan needed.

**Agreement:**

* Option 2.

**Issue 1-3: 1 Rx prio over 2 Rx**

* Proposals
  + Option 1: Both should be investigated, no priority
  + Option 2: 1 Rx prio over 2 Rx.

**Discussions**

Qualcomm: we agree with Ericsson, i.e., no priority.

**Agreement:**

* Option 1.

**Issue 2-1: Tx requirement on new type RedCap UE**

* Proposals
  + Option 1: Reuse the Rel-17 requirements
  + Option 2: TBA

**Discussions**

Qualcomm: we agree with Option 1. Some editoral to capture the capability is needed.

**Agreement:**

* Option 1.
  + CRs to capture the redcap enhancement capability would be needed

**Issue 2-2: REFSENS for new type Redcap UE with 2Rx**

**Discussions**

Apple: do we need evaluate all the bands?

Ericsson: yes, otherwise it is not testable.

Apple: do we expect specifying requirement applies to FDD band only

Mediatek: do we consider half duplex FDD?

Ericsson: yes.

**Agreement:**

* Define the new REFSENS requirements for eRedCap UE with 2Rx for all the bands defined for RedCap in Rel-17.

**Issue 2-3: Scaling factor for REFSENS for new type Redcap UE with 1Rx/HD-FDD**

* Proposals
  + Option 1: Reuse the legacy scaling
  + Option 2: TBA

**Agreement:**

* Option 1.

**Issue 2-3: Other Rx requirement than REFSENS**

**Discussions**

Qualcomm: Would option 2 mean to define the requirement with same number of PRB?

Ericsson: Since we define the new requirement with 20MHz, 20MHz bandwidth is testable. We could consider whether to put the general statement.

Qualcomm: It depends on how to do RB restriction. Legacy requirements could be most likely reused but need checking.

Ericsson: RAN5 always takes the worst case to test. It is RAN5 task to decide the transmitted signal for the test case whether to transmit in the center or edge.

Nokia: agree with Ericsson. We do not want to have more relaxed requirements than the existing ones. The requirements should be based on simulation results.

Qualcomm: for transmitter, RAN5 will decide the position. We need some clarification further.

Qualcomm: we do see some linkage to refsens requirements.

**Agreement:**

* FFS how to specify other Rx RF requirements other than REFSENS for eRedCap UE.

### 9.31 Enhanced NR Sidelink Relay

### 9.32 Mobile IAB (Integrated Access and Backhaul) for NR

## 10 Rel-18 on-going work Items for LTE

*This agenda item is related to Rel-18 on-gong work items for LTE.*

*- Spectrum WIs are related agenda item 10.1 – 10.4.*

*- Non-spectrum WIs are related to agenda item 10.5 – 10.7.*

### 10.1 Rel-18 LTE-Advanced Carrier Aggregation for x bands (2<=x<= 6) DL with y bands (y=1, 2) UL

#### 10.1.1 Rapporteur input (WID/TR/CR)

[**R4-2300134**](file:///D:\RAN4%23106\Docs\R4-2300134.zip) **Big CR on Introduction of completed R18 x(x<=6) DL y(y<=2) UL CA band combinations to TS 36.101**

*Type: draftCR For: Agreement  
 36.101 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Huawei Technologies France*

**Decision:** The document was **for email approval**.

[**R4-2300135**](file:///D:\RAN4%23106\Docs\R4-2300135.zip) **Revised WID Rel-18 LTE-A CA for x(x<=6) DL y(y<=2) UL**

*Type: WID revised For: Approval  
 Source: Huawei Technologies France*

**Decision:** The document was **for email approval**.

[**R4-2300136**](file:///D:\RAN4%23106\Docs\R4-2300136.zip) **TR 36.718-02-01 LTE-A CA for x(x=123456) DL y(y=12) UL**

*Type: draft TR For: Approval  
 36.718-02-01 v0.0.2 CR- rev Cat: (Rel-18)  
  
 Source: Huawei Technologies France*

**Decision:** The document was **for email approval**.

#### 10.1.2 UE RF requirements for 1 UL

##### 10.1.2.1 Requirements with specific issues

##### 10.1.2.2 Requirements without specific issues

[**R4-2301084**](file:///D:\RAN4%23106\Docs\R4-2301084.zip) **TP for 36.718-02-01 to include CA\_3-67**

*Type: pCR For: Approval  
 36.718-02-01 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for 36.718-02-01 to include CA\_3-67

**Decision: Revised to** [**R4-2303647**](file:///D:\RAN4%23106\Docs\R4-2303647.zip) **(from** [**R4-2301084**](file:///D:\RAN4%23106\Docs\R4-2301084.zip)**).**

**[R4-2303647](D:\\RAN4#106\\Docs\\R4-2303647.zip) TP for 36.718-02-01 to include CA\_3-67**

*Type: pCR For: Approval  
 36.718-02-01 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT plc*

**Abstract:**

TP for 36.718-02-01 to include CA\_3-67

**Decision: Approved.**

#### 10.1.3 UE RF requirements for 2UL

##### 10.1.3.1 Requirements with specific issues

##### 10.1.3.2 Requirements without specific issues

[**R4-2301083**](file:///D:\RAN4%23106\Docs\R4-2301083.zip) **draft CR 36.101 to add dual UL to CA\_3C-20A**

*Type: draftCR For: Endorsement  
 36.101 v18.0.0 CR- rev Cat: B (Rel-18)  
  
 Source: Ericsson, BT plc*

**Abstract:**

draft CR 36.101 to add dual UL to CA\_3C-20A

**Decision: Endorsed.**

[**R4-2301085**](file:///D:\RAN4%23106\Docs\R4-2301085.zip) **TP for 36.718-02-01 to include CA\_3-20-67**

*Type: pCR For: Approval  
 36.718-02-01 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT plc*

**Abstract:**

This TP is depending on approval for fallback in TP for 36.718-02-01 to include CA\_3-67 submitted in agenda item 10.1.2.2

**Decision: Revised to** [**R4-2303648**](file:///D:\RAN4%23106\Docs\R4-2303648.zip) **(from** [**R4-2301085**](file:///D:\RAN4%23106\Docs\R4-2301085.zip)**).**

**[R4-2303648](D:\\RAN4#106\\Docs\\R4-2303648.zip) TP for 36.718-02-01 to include CA\_3-20-67**

*Type: pCR For: Approval  
 36.718-02-01 v0.2.0 CR- rev Cat: (Rel-18)  
  
 Source: Ericsson, BT plc*

**Abstract:**

This TP is depending on approval for fallback in TP for 36.718-02-01 to include CA\_3-67 submitted in agenda item 10.1.2.2

**Decision: Approved.**

#### 10.1.4 Moderator summary and conclusions

**[106][109] LTE\_Baskets, AI 10.1 – Mohammad Abdi Abyaneh (Huawei)**

[**R4-2302802**](file:///D:\RAN4%23106\Docs\R4-2302802.zip) **Topic summary for [106][109] LTE\_Baskets**

*Type: other For: Information  
 Source: Moderator (Huawei)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

### 10.2 Additional LTE bands for UE categories M1/M2/NB1/NB2 in Rel-18

#### 10.2.1 Rapporteur input (WID/TR/CR)

**[115] Topic #7: Additional LTE bands for UE categories M1/M2/NB1/NB2 in Rel-18**

[**R4-2302405**](file:///D:\RAN4%23106\Docs\R4-2302405.zip) **Adding band B54 RF impact analysis and work plan**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, the RF impact on the spec and work plan is proposed.

Qualcomm: for adding B54, which FCC emission mask should be referred to?

Ligado: reference to -13dBm. The guardband of NB cannot meet -13dBm.

Qualcomm: if it is only for US band, we are OK. Why we do not reuse the existing one rather than have better values?

Ericsson: this is legacy wayforward how to extend.

Ligado: based on the legacy way forward, there is one approach to add 1.4dB.

**Decision: Noted.**

BS CR: 36.141, 37.141

[**R4-2302530**](file:///D:\RAN4%23106\Docs\R4-2302530.zip) **CR related to Introduction of support of NB1/NB2 for LTE TDD Band 54**

*Type: CR For: Agreement  
 36.141 v18.0.0 CR-1353 rev Cat: B (Rel-18)  
  
 Source: Ericsson, Ligado Networks*

**Abstract:**

CR related to Introduction of support of NB1/NB2 for LTE TDD Band 54

**Decision: Agreed.**

[**R4-2302531**](file:///D:\RAN4%23106\Docs\R4-2302531.zip) **CR related to Introduction of support of NB1/NB2 for LTE TDD Band 54**

*Type: CR For: Agreement  
 37.141 v18.0.0 CR-1033 rev Cat: B (Rel-18)  
  
 Source: Ericsson, Ligado Networks*

**Abstract:**

CR related to Introduction of support of NB1/NB2 for LTE TDD Band 54

**Decision: Agreed.**

#### 10.2.2 UE RF requirements

CR 36.101

[**R4-2300074**](file:///D:\RAN4%23106\Docs\R4-2300074.zip) **CR related to Introduction of support of NB1/NB2/M1/M2 for LTE TDD Band 54**

*Type: CR For: Agreement  
 36.101 v18.0.0 CR-5900 rev Cat: B (Rel-18)  
  
 Source: Ligado Networks, Ericsson*

**Decision: Agreed.**

CR 36.307 for M1

[**R4-2302407**](file:///D:\RAN4%23106\Docs\R4-2302407.zip) **CR related to Introduction of support of M1 for LTE TDD Band 54**

*Type: CR For: Agreement  
 36.307 v13.15.0 CR-4474 rev Cat: B (Rel-13)  
  
 Source: Ericsson, Ligado Networks*

**Abstract:**

CR related to Introduction of support of Cat-M1 for LTE TDD Band 54

**Decision: Agreed.**

[**R4-2302408**](file:///D:\RAN4%23106\Docs\R4-2302408.zip) **CR for TS 36\_101 Support of M1 for B54\_R14A**

*Type: CR For: Agreement  
 36.307 v14.12.0 CR-4475 rev Cat: A (Rel-14)  
  
 Source: Ericsson,Ligado Networks*

**Abstract:**

CR related to Introduction of support of Cat-M1 for LTE TDD Band 54

**Decision: Agreed.**

[**R4-2302409**](file:///D:\RAN4%23106\Docs\R4-2302409.zip) **CR for TS 36\_101 Support of M1 for B54\_R15A**

*Type: CR For: Agreement  
 36.307 v15.9.0 CR-4476 rev Cat: A (Rel-15)  
  
 Source: Ericsson,Ligado Networks*

**Abstract:**

CR related to Introduction of support of Cat-M1 for LTE TDD Band 54

**Decision: Agreed.**

[**R4-2302410**](file:///D:\RAN4%23106\Docs\R4-2302410.zip) **CR for TS 36\_101 Support of M1 for B54\_R16A**

*Type: CR For: Agreement  
 36.307 v16.5.0 CR-4477 rev Cat: A (Rel-16)  
  
 Source: Ericsson,Ligado Networks*

**Abstract:**

CR related to Introduction of support of Cat-M1 for LTE TDD Band 54

**Decision: Agreed.**

[**R4-2302411**](file:///D:\RAN4%23106\Docs\R4-2302411.zip) **CR for TS 36\_101 Support of M1 for B54\_R17A**

*Type: CR For: Agreement  
 36.307 v17.3.0 CR-4478 rev Cat: A (Rel-17)  
  
 Source: Ericsson,Ligado Networks*

**Abstract:**

CR related to Introduction of support of Cat-M1 for LTE TDD Band 54

**Decision: Agreed.**

[**R4-2302540**](file:///D:\RAN4%23106\Docs\R4-2302540.zip) **CR related to Introduction of support of M1 for LTE TDD Band 54\_R18A**

*Type: CR For: Agreement  
 36.307 v17.3.0 CR-4488 rev Cat: A (Rel-18)  
  
 Source: Ericsson, Ligado Networks*

**Decision: Approved.**

CR 36.307 for M2

[**R4-2302412**](file:///D:\RAN4%23106\Docs\R4-2302412.zip) **CR related to Introduction of support of M2 for LTE TDD Band 54**

*Type: CR For: Agreement  
 36.307 v14.12.0 CR-4479 rev Cat: B (Rel-14)  
  
 Source: Ericsson, Ligado Networks*

**Abstract:**

CR related to Introduction of support of Cat-M2 for LTE TDD Band 54

**Decision: Agreed.**

[**R4-2302413**](file:///D:\RAN4%23106\Docs\R4-2302413.zip) **TS 36\_307 Support of M2 for B54\_R15A**

*Type: CR For: Agreement  
 36.307 v15.9.0 CR-4480 rev Cat: A (Rel-15)  
  
 Source: Ericsson,Ligado Networks*

**Abstract:**

CR related to Introduction of support of Cat-M2 for LTE TDD Band 54

**Decision: Agreed.**

[**R4-2302414**](file:///D:\RAN4%23106\Docs\R4-2302414.zip) **CR for TS 36\_307 Support of M2 for B54\_R16A**

*Type: CR For: Agreement  
 36.307 v16.5.0 CR-4481 rev Cat: A (Rel-16)  
  
 Source: Ericsson,Ligado Networks*

**Abstract:**

CR related to Introduction of support of Cat-M2 for LTE TDD Band 54

**Decision: Agreed.**

[**R4-2302415**](file:///D:\RAN4%23106\Docs\R4-2302415.zip) **CR for TS 36\_307 Support of M2 for B54\_R17A**

*Type: CR For: Agreement  
 36.307 v17.3.0 CR-4482 rev Cat: A (Rel-17)  
  
 Source: Ericsson,Ligado Networks*

**Abstract:**

CR related to Introduction of support of Cat-M2 for LTE TDD Band 54

**Decision: Agreed.**

[**R4-2302543**](file:///D:\RAN4%23106\Docs\R4-2302543.zip) **CR related to Introduction of support of M2 for LTE TDD Band 54\_R18A**

*Type: CR For: Agreement  
 36.307 v17.3.0 CR-4489 rev Cat: A (Rel-18)  
  
 Source: Ericsson, Ligado Networks*

**Decision: Agreed.**

CR 36.307 for NB1/NB2

[**R4-2302416**](file:///D:\RAN4%23106\Docs\R4-2302416.zip) **CR related to Introduction of support of NB1/NB2 for LTE TDD Band 54**

*Type: CR For: Agreement  
 36.307 v15.9.0 CR-4483 rev Cat: B (Rel-15)  
  
 Source: Ericsson, Ligado Networks*

**Abstract:**

CR related to Introduction of support of NB1/NB2 for LTE TDD Band 54

**Decision: Agreed.**

[**R4-2302417**](file:///D:\RAN4%23106\Docs\R4-2302417.zip) **CR for TS 36\_307 Support of NB1NB2 for B54\_R16A**

*Type: CR For: Agreement  
 36.307 v16.5.0 CR-4484 rev Cat: A (Rel-16)  
  
 Source: Ericsson,Ligado Networks*

**Abstract:**

CR related to Introduction of support of NB1/NB2 for LTE TDD Band 54

**Decision: Agreed.**

[**R4-2302418**](file:///D:\RAN4%23106\Docs\R4-2302418.zip) **CR for TS 36\_307 Support of NB1NB2 for B54\_R17A**

*Type: CR For: Agreement  
 36.307 v17.3.0 CR-4485 rev Cat: A (Rel-17)  
  
 Source: Ericsson,Ligado Networks*

**Abstract:**

CR related to Introduction of support of NB1/NB2 for LTE TDD Band 54

**Decision: Agreed.**

[**R4-2302538**](file:///D:\RAN4%23106\Docs\R4-2302538.zip) **CR related to Introduction of support of NB1/NB2 for LTE TDD Band 54\_R18A**

*Type: CR For: Agreement  
 36.307 v17.3.0 CR-4487 rev Cat: A (Rel-18)  
  
 Source: Ericsson, Ligado Networks*

**Decision: Agreed.**

#### 10.2.3 BS RF and MSR requirements

[**R4-2300075**](file:///D:\RAN4%23106\Docs\R4-2300075.zip) **CR related to Introduction of support of NB1/NB2/M1 for LTE TDD Band 54**

*Type: CR For: Agreement  
 36.133 v18.0.0 CR-7184 rev Cat: B (Rel-18)  
  
 Source: Ligado Networks, Ericsson*

**Decision: Agreed.**

[**R4-2300076**](file:///D:\RAN4%23106\Docs\R4-2300076.zip) **CR related to Introduction of support of NB1/NB2 for LTE TDD Band 54**

*Type: CR For: Agreement  
 36.104 v18.0.0 CR-4965 rev Cat: B (Rel-18)  
  
 Source: Ligado Networks, Ericsson*

**Decision: Revised to** [**R4-2303470**](file:///D:\RAN4%23106\Docs\R4-2303470.zip) **(from** [**R4-2300076**](file:///D:\RAN4%23106\Docs\R4-2300076.zip)**).**

[**R4-2303470**](file:///D:\RAN4%23106\Docs\R4-2303470.zip) **CR related to Introduction of support of NB1/NB2 for LTE TDD Band 54**

*Type: CR For: Agreement  
 36.104 v18.0.0 CR-4965 rev Cat: B (Rel-18)  
  
 Source: Ligado Networks, Ericsson*

**Decision: Agreed.**

[**R4-2300077**](file:///D:\RAN4%23106\Docs\R4-2300077.zip) **CR related to Introduction of support of NB1/NB2 for LTE TDD Band 54**

*Type: CR For: Agreement  
 37.104 v18.0.0 CR-0976 rev Cat: B (Rel-18)  
  
 Source: Ligado Networks, Ericsson*

**Decision: Revised to** [**R4-2303471**](file:///D:\RAN4%23106\Docs\R4-2303471.zip) **(from** [**R4-2300077**](file:///D:\RAN4%23106\Docs\R4-2300077.zip)**).**

[**R4-2303471**](file:///D:\RAN4%23106\Docs\R4-2303471.zip) **CR related to Introduction of support of NB1/NB2 for LTE TDD Band 54**

*Type: CR For: Agreement  
 37.104 v18.0.0 CR-0976 rev Cat: B (Rel-18)  
  
 Source: Ligado Networks, Ericsson*

**Decision: Agreed.**

[**R4-2302406**](file:///D:\RAN4%23106\Docs\R4-2302406.zip) **CR for TS 36.141 Support of NB1NB2 for B54**

*Type: CR For: Agreement  
 36.141 v18.0.0 CR-1351 rev Cat: B (Rel-18)  
  
 Source: Ericsson,Ligado Networks*

**Abstract:**

CR related to Introduction of support of NB1/NB2 for LTE TDD Band 54

**Decision: Withdrawn.**

[**R4-2302419**](file:///D:\RAN4%23106\Docs\R4-2302419.zip) **CR for TS 37.141 Support of NB1NB2 for B54**

*Type: CR For: Agreement  
 37.141 v18.0.0 CR-1032 rev Cat: B (Rel-18)  
  
 Source: Ericsson,Ligado Networks*

**Abstract:**

CR related to Introduction of support of NB1/NB2 for LTE TDD Band 54

**Decision: Withdrawn.**

### 10.3 New bands and BW allocation for 5G terrestrial broadcast - part 2

#### 10.3.1 General and work plan

#### 10.3.2 Band definition and system parameters

**[122] Topic #1: Band plan**

[**R4-2300204**](file:///D:\RAN4%23106\Docs\R4-2300204.zip) **LTE based 5G broadcast band definition**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2300633**](file:///D:\RAN4%23106\Docs\R4-2300633.zip) **Discussion on band plan for 5G Broadcast**

*Type: discussion For: Approval  
 Source: Rohde & Schwarz*

**Decision: Noted.**

[**R4-2301228**](file:///D:\RAN4%23106\Docs\R4-2301228.zip) **Discussion on band definition for LTE based broadcast**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301470**](file:///D:\RAN4%23106\Docs\R4-2301470.zip) **5G Broadcast: Bands discussion**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution discusses bands plan for 5G broadcast services

**Decision: Noted.**

[**R4-2302105**](file:///D:\RAN4%23106\Docs\R4-2302105.zip) **Discussion on UE implementation and band plan for LTE based 5G broadcast**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302703**](file:///D:\RAN4%23106\Docs\R4-2302703.zip) **UHF band definition for 5G broadcast**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

#### 10.3.3 UE RF requirements

**[122] Topic #2: UE RF requirements**

[**R4-2300205**](file:///D:\RAN4%23106\Docs\R4-2300205.zip) **LTE based 5G UE RF open issues**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Noted.**

[**R4-2300382**](file:///D:\RAN4%23106\Docs\R4-2300382.zip) **UE RF requirements for 5G terrestrial broadcast**

*Type: discussion For: Approval  
 Source: SWR*

**Decision: Noted.**

[**R4-2300634**](file:///D:\RAN4%23106\Docs\R4-2300634.zip) **Discussion on UE RF requirements for 5G Broadcast**

*Type: discussion For: Approval  
 Source: Rohde & Schwarz*

**Decision: Noted.**

[**R4-2302106**](file:///D:\RAN4%23106\Docs\R4-2302106.zip) **Discussion on UE RF requirements**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302704**](file:///D:\RAN4%23106\Docs\R4-2302704.zip) **In-channel ACS for 5G broadcast**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2302705**](file:///D:\RAN4%23106\Docs\R4-2302705.zip) **UE requirements for 5G broadcast**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

#### 10.3.4 BS RF requirements

#### 10.3.5 Moderator summary and conclusions

**[106][122] LTE\_terr\_bcast\_bands\_UERF, AI 10.3, 10.3.2, 10.3.3 – Gene Fong (Qualcomm)**

[**R4-2302815**](file:///D:\RAN4%23106\Docs\R4-2302815.zip) **Topic summary for [106][122] LTE\_terr\_bcast\_bands\_UERF**

*Type: other For: Information  
 Source: Moderator (Qualcomm)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303552**](file:///D:\RAN4%23106\Docs\R4-2303552.zip) **Ad hoc minutes for RF requirments for 5G broadcast**

*Type: other For: Approval  
 Source: Moderator (Qualcomm)*

**Decision: Noted.**

[**R4-2303489**](file:///D:\RAN4%23106\Docs\R4-2303489.zip) **WF on RF requirments for 5G broadcast**

*Type: other For: Approval  
 Source: Qualcomm*

**Decision: Approved.**

**1st round online discussions:**

**Topic #1: Band plan**

**Discussions:**

SWR: in principle we are fine with the proposal. Some information will be provided next time for filter design.

Ericsson: Regarding band plan on the filter, the prerequisite should be clear about which band needs be protected.

SWR: we should make sure that the band is only used for broadcast.

Apple: for narrow band, it is DL or UL?

**Agreement:**

* Define the band plan based on available data for BS and UE.
  + Full UHF band, i.e., 470 – 698MHz,
    - with reduced UE blocking
  + Narrow band, i.e., 612 – 652 MHz, which is the same as the downlink operating band of n105.
  + If data for other frequency ranges becomes available before the conclusion of the work item, it can be considered either as a separate band or as a modification to initially defined bands.

**Topic #2: UE RF requirements**

**Sub-topic 2-2 ACS**

**Discussions:**

SWR: We have to have 6,7,8 MHz channel raster and coordination.

Qualcomm: we propose to define the 6, 7, 8 MHz channel raster for ACS with -16dB.

Huawei: -16dB ACS can guarantee the system co-existence?

Apple: -16dB needs be checked.

SWR: we need check the impact of ACS on the operation.

Qualcomm: it is our expectation that -16dB can function the coordinated network.

### 10.4 Introduction of 900 MHz LTE Band in the US

#### 10.4.1 General and work plan

**[119] Topic #1: Work plans**

[**R4-2302706**](file:///D:\RAN4%23106\Docs\R4-2302706.zip) **Work plan for 900 MHz LTE new band**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Approved.**

#### 10.4.2 Band definition and co-existence requirements

**[119] Topic #2: Band plan**

[**R4-2301225**](file:///D:\RAN4%23106\Docs\R4-2301225.zip) **Discussion on band definition for 900 MHz LTE Band**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

#### 10.4.3 UE RF requirements

**[119] Topic #3: UE RF requirements**

[**R4-2300429**](file:///D:\RAN4%23106\Docs\R4-2300429.zip) **UE RF specification impact due to Introduction of 900 MHz LTE Band in the US**

*Type: discussion For: Discussion  
 Source: Nokia*

**Decision: Noted.**

[**R4-2301226**](file:///D:\RAN4%23106\Docs\R4-2301226.zip) **Discussion on UE RF requirements for 900 MHz LTE Band**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

**[119] Topic #4: UE RRM requirements**

[**R4-2301360**](file:///D:\RAN4%23106\Docs\R4-2301360.zip) **draft CR to TS 36.133: Introduction of 900 MHz LTE Band in the US**

*Type: draftCR For: Endorsement  
 36.133 v18.0.0 CR- rev Cat: (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Postponed.**

#### 10.4.4 BS RF requirements

**[119] Topic #5: BS RF requirements**

[**R4-2301196**](file:///D:\RAN4%23106\Docs\R4-2301196.zip) **BS requirements for 900 MHz LTE Band in the US**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision: Approved.**

[**R4-2301227**](file:///D:\RAN4%23106\Docs\R4-2301227.zip) **Discussion on BS RF requirements for 900 MHz LTE Band**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision: Noted.**

#### 10.4.5 Moderator summary and conclusions

### 10.5 NB-IoT/eMTC core & perf. requirements for NTN

#### 10.5.1 General

**[148] Topic #1: General & workplan (10.5.1)**

[**R4-2302450**](file:///D:\RAN4%23106\Docs\R4-2302450.zip) **CR to TS 36.307: release independence requirements introduction for IoT NTN, Rel-18**

*Type: CR For: Agreement  
 36.307 v17.3.0 CR-4486 rev Cat: A (Rel-18)  
  
 Source: Huawei, HiSilicon, Mediatek*

**Abstract:**

CR to trigger Rel-18 version of the TS 36.307 specification, based on the Rel-17 CR content Approved during RAN#98-e in RP-223546.

Sony: come back meeting adding RRM spec.

**Decision: Agreed.**

#### 10.5.2 SAN RF requirement maintenance

#### 10.5.3 SAN RF conformance testing

#### 10.5.4 UE RF requirement maintenance

**[148] Topic #2: UE RF requirements maintenance (10.5.4)**

[**R4-2302252**](file:///D:\RAN4%23106\Docs\R4-2302252.zip) **Maintenance on IoT NTN UE RF**

*Type: other For: Approval  
 Source: Sony*

**Decision: Noted.**

[**R4-2302272**](file:///D:\RAN4%23106\Docs\R4-2302272.zip) **Handling of ETSI requirements**

*Type: other For: Approval  
 Source: Qualcomm Inc.*

**Decision: Noted.**

[**R4-2302336**](file:///D:\RAN4%23106\Docs\R4-2302336.zip) **Discussion on UE RF requirements for IoT NTN**

*Type: discussion For: Approval  
 36.102 v CR- rev Cat: (Rel-18)  
  
 Source: Mediatek India Technology Pvt.*

**Decision: Noted.**

[**R4-2302381**](file:///D:\RAN4%23106\Docs\R4-2302381.zip) **A-MPR for NB-IoT NS\_24**

*Type: other For: Agreement  
 Source: Sony*

**Decision: Noted.**

[**R4-2302431**](file:///D:\RAN4%23106\Docs\R4-2302431.zip) **A-MPR simulation for NS\_24 for B256**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution, we present our simulation on the A-MPR for NS\_24 for protection of B34

**Decision: Noted.**

CR

[**R4-2300078**](file:///D:\RAN4%23106\Docs\R4-2300078.zip) **Updates to the additional emissions requirements related to NS\_02N**

*Type: CR For: Agreement  
 36.102 v18.0.0 CR-0001 rev Cat: F (Rel-18)  
  
 Source: Ligado Networks*

**Discussions:**

Huawei: what is the gain to change 100 to 80 considering 100KHz raster

Ligado: Handle higher Doppler.

Qualcomm: the number of kHz should be aligned with Sony CR. Revise the CR to capture the Sony CR.

**Decision: Revised to** [**R4-2303534**](file:///D:\RAN4%23106\Docs\R4-2303534.zip) **(from** [**R4-2300078**](file:///D:\RAN4%23106\Docs\R4-2300078.zip)**).**

[**R4-2303534**](file:///D:\RAN4%23106\Docs\R4-2303534.zip) **Updates to the additional emissions requirements related to NS\_02N**

*Type: CR For: Agreement  
 36.102 v18.0.0 CR-0001 rev Cat: F (Rel-18)  
  
 Source: Ligado Networks, Sony, Qualcomm, MediaTek*

**Decision: Agreed.**

[**R4-2300983**](file:///D:\RAN4%23106\Docs\R4-2300983.zip) **CR to 36.102 for NTN IoT UE RF requirements corrections**

*Type: CR For: Agreement  
 36.102 v18.0.0 CR-0002 rev Cat: F (Rel-18)  
  
 Source: Mediatek India Technology Pvt.*

**Decision: Revised to** [**R4-2303537**](file:///D:\RAN4%23106\Docs\R4-2303537.zip) **(from** [**R4-2300983**](file:///D:\RAN4%23106\Docs\R4-2300983.zip)**).**

[**R4-2303537**](file:///D:\RAN4%23106\Docs\R4-2303537.zip) **CR to 36.102 for NTN IoT UE RF requirements corrections**

*Type: CR For: Agreement  
 36.102 v18.0.0 CR-0002 rev Cat: F (Rel-18)  
  
 Source: Mediatek India Technology Pvt.*

**Decision: Agreed.**

[**R4-2302271**](file:///D:\RAN4%23106\Docs\R4-2302271.zip) **CR to 36.102 for MPR and A-MPR**

*Type: CR For: Agreement  
 36.102 v18.0.0 CR-0003 rev Cat: F (Rel-18)  
  
 Source: Qualcomm Inc.*

*Sony: propose to capture the MPR for NB-IoT*

*Mediatek: Put the value in [] for NB.*

*Ericsson: we also have CR for A\_MPR. In the simulation, we do not need the whole range for 3.5dB. This is NTN the power is critical.*

*Sony: we are fine with direction to define A-MPR for a certain frequency and put them in [].*

*Qualcomm: we do not agree with the specific range in this meeting.*

**Decision: Revised to** [**R4-2303535**](file:///D:\RAN4%23106\Docs\R4-2303535.zip) **(from** [**R4-2302271**](file:///D:\RAN4%23106\Docs\R4-2302271.zip)**).**

[**R4-2303535**](file:///D:\RAN4%23106\Docs\R4-2303535.zip) **CR to 36.102 for MPR and A-MPR**

*Type: CR For: Agreement  
 36.102 v18.0.0 CR-0003 rev Cat: F (Rel-18)  
  
 Source: Qualcomm Inc., Sony*

**Decision: Agreed.**

[**R4-2302432**](file:///D:\RAN4%23106\Docs\R4-2302432.zip) **Update A-MPR for NS\_24 for Cat-M1**

*Type: CR For: Agreement  
 36.102 v18.0.0 CR-0004 rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

A-MPR for NS-24 needs updates accoridng to simulation and other maintenance CR

**Decision: Withdrawn.**

[**R4-2302532**](file:///D:\RAN4%23106\Docs\R4-2302532.zip) **Update A-MPR for NS\_24 for Cat-M1**

*Type: CR For: Agreement  
 36.102 v18.0.0 CR-0005 rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

A-MPR for NS-24 needs updates accoridng to simulation and other maintenance CR

**Decision: Revised to** [**R4-2303536**](file:///D:\RAN4%23106\Docs\R4-2303536.zip) **(from** [**R4-2302532**](file:///D:\RAN4%23106\Docs\R4-2302532.zip)**).**

[**R4-2303536**](file:///D:\RAN4%23106\Docs\R4-2303536.zip) **Update A-MPR for NS\_24 for Cat-M1**

*Type: CR For: Agreement  
 36.102 v18.0.0 CR-0004 rev Cat: F (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

A-MPR for NS-24 needs updates accoridng to simulation and other maintenance CR

**Decision: Agreed.**

#### 10.5.5 RRM core requirement maintenance

#### 10.5.6 RRM performance requirements

#### 10.5.7 Demodulation requirements

#### 10.5.8 Moderator summary and conclusions

**[106][148] LTE\_NBeMTC\_NTN\_UERF, AI 10.5, 10.5.1, 10.5.4, 10.6.2 – Daniel Hsieh (Mediatek)**

[**R4-2302841**](file:///D:\RAN4%23106\Docs\R4-2302841.zip) **Topic summary for [106][148] LTE\_NBeMTC\_NTN\_UERF**

*Type: other For: Information  
 Source: Moderator (Mediatek)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303538**](file:///D:\RAN4%23106\Docs\R4-2303538.zip) **WF on IoT NTN UE RF requirement**

*Type: other For: Approval  
 Source: Mediatek*

**Decision: Approved.**

1st round online discussions

**Issue 2-3-2: NS\_02N guard band values for category NB1/NB2**

**Discussions:**

Ligado: we have CR. we look at the interpolation value.

Sony: our proposal to clarify the guardband. We share the wording how to clarify.

**Issue 2-4: ETSI masks**

**Discussions:**

Ericsson: for second proposal, it is for . That is from ESTI. We have the other harmonic band. There are different requirement needed.

Inmarsat: Two edge of bands are different. At edge the requirement is not 100KHz,

Qualcomm: the first batch is related whether to capture the requirement in spec. We cannot check only one case.

Mediatek: for proposal 2, it is specific for L band. Proposal 1 for S band n256.

Inmarsat: we still need to look closely into the issue.

Mediatek: proposal 2 can be modified to address Inmarsat comment. We should not apply for NB1 and NB2. The guardband should be applied for all categories.

Qualcomm: Agree with Inmarsat. Capturing EN 301 681 is OK and need come back on the details how to capture in the next meeting.

**Issue 2-5: NS values and the corresponding bits in RRC NS signalling**

**Discussions:**

Ligado: option1, are we going to change the requirement? There is discussion to use NS\_xN for NTN.

Mediatek: first agree on reusing LTE and then discuss the NS value.

Ericsson: support mediatek.

**Need further discussion:**

* Reuse LTE method, i.e., using global value and choose the particular value for NTN band. Further discussion on NS value.

**Issue 2-6: RF requirements verification**

**Discussions:**

Qualcomm: we agree with the proposal. Need to capture it in the spec.

**Agreement:**

* Zero doppler shall be applied for all RF requirements unless otherwise stated (i.e., except for frequency error at least with NGSO)

### 10.6 IoT (Internet of Things) NTN (non-terrestrial network) enhancements

#### 10.6.1 General and work plan

#### 10.6.2 UE RF requirements

**[148] Topic #3: UE RF requirements (10.6.2)**

[**R4-2302426**](file:///D:\RAN4%23106\Docs\R4-2302426.zip) **RF spec impact analysis**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution, we present our view on the potential RF spec impact for new Rel-18 NTN IoT enhancement feature based on WID[1].

**Discussions:**

Huawei: we need wait for RAN2 progress.

Qualcomm: for IoT, the scope does not consider mobility. How long the position reporting time is valid as the minimum time 10s? It is very short processing time. In principle Ericson proposal is valid. But the number is so small.

Ericsson: to Huawei, it is valid point to wait from RAN1/2 conclusion. They discuss whether or not to have the loop for frequency control. There is a valid point how the network tolerate the compensate error. From our understand, the new UE behaviour is introduced in Rel-18 enhancement. UE is not required to update the position for GNSS server. Even though UE does the pre-compensation, the position used for pre-compensation may not be valide. This is not mandatory.

**Decision: Noted.**

#### 10.6.3 SAN RF requirements

#### 10.6.4 RRM core requirements

#### 10.6.5 Moderator summary and conclusions

### 10.7 MPR for LTE Intra-band CA with CC gap larger than 35 MHz

#### 10.7.1 General and work plan

[**R4-2302500**](file:///D:\RAN4%23106\Docs\R4-2302500.zip) **Work Plan for MPR Evaluation for PC3 UEs LTE Intra-Band NC CA with Frequency Separation Higher Than 35MHz**

*Type: Work Plan For: Approval  
 Source: Huawei Technologies France*

**Decision: Approved.**

#### 10.7.2 MPR requirements

[**R4-2302495**](file:///D:\RAN4%23106\Docs\R4-2302495.zip) **MPR Evaluation for PC3 UEs LTE Intra-Band NC CA with Frequency Separation Higher than 35MHz**

*Type: discussion For: Discussion  
 Source: Huawei Technologies France*

**Decision: Noted.**

#### 10.7.3 Identify and specify capability signaling

#### 10.7.4 Moderator summary and conclusions

**[106][149] LTE\_intra\_CA\_MPR\_35MHz\_gap, AI 10.7 – Mohammad Abdi Abyaneh (Huawei)**

[**R4-2302842**](file:///D:\RAN4%23106\Docs\R4-2302842.zip) **Topic summary for [106][149] LTE\_intra\_CA\_MPR\_35MHz\_gap**

*Type: other For: Information  
 Source: Moderator (Huawei)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303496**](file:///D:\RAN4%23106\Docs\R4-2303496.zip) **CR on MPR for LTE Intra-band CA with CC gap larger than 35 MHz**

*Type: CR For: Agreement  
 36.101 v CR- rev Cat: B (Rel-18)  
  
 Source: Huawei*

**Decision: Agreed.**

**Issue 2-1: MPR values when Wgap >35 MHz**

Apple: We should not define the MPR for non-existing combination.

Huawei: because the concrete band combination is put on hold without the generic requirement.

Apple: prefer to introduce the MPR requirement together with band combination.

**Agreement:**

* Approve proposal 1.

## 11 Liaison and output to other groups

### 11.1 R17 related

**[150] Topic #1: RAN4 Rel-17 features list**

[**R4-2300819**](file:///D:\RAN4%23106\Docs\R4-2300819.zip) **Updated RAN4 Rel-17 features list**

*Type: other For: Approval  
 Source: CMCC*

**Decision: Revised to** [**R4-2303687**](file:///D:\RAN4%23106\Docs\R4-2303687.zip) **(from** [**R4-2300819**](file:///D:\RAN4%23106\Docs\R4-2300819.zip)**).**

[**R4-2303687**](file:///D:\RAN4%23106\Docs\R4-2303687.zip) **Updated RAN4 Rel-17 features list**

*Type: other For: Approval  
 Source: CMCC*

**Decision: Approved.**

LS

[**R4-2300820**](file:///D:\RAN4%23106\Docs\R4-2300820.zip) **LS on updated Rel-17 RAN4 feature list for NR**

*Type: LS out For: Approval  
 to RAN2, cc RAN1  
 Source: CMCC*

**Decision: Approved.**

#### 11.1.1 LS reply for NR\_pos\_enh

#### 11.1.2 On the ue-PowerClassPerBandPerBC-r17(R4 16-8) (R2-2211023)

**[150] Topic #2: On the ue-PowerClassPerBandPerBC-r17(R4 16-8) (R2-2211023)**

[**R4-2300714**](file:///D:\RAN4%23106\Docs\R4-2300714.zip) **Reply LS on per-band per-BC power class**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2301173**](file:///D:\RAN4%23106\Docs\R4-2301173.zip) **R17 on per band per BC power class**

*Type: other For: Approval  
 Source: OPPO*

**Decision: Noted.**

LS

[**R4-2301110**](file:///D:\RAN4%23106\Docs\R4-2301110.zip) **Reply LS on clarification for ue-PowerClassPerBandPerBC-r17**

*Type: LS out For: Approval  
 to RAN2  
 Source: Samsung*

**Decision: Revised to** [**R4-2303630**](file:///D:\RAN4%23106\Docs\R4-2303630.zip) **(from** [**R4-2301110**](file:///D:\RAN4%23106\Docs\R4-2301110.zip)**).**

[**R4-2303630**](file:///D:\RAN4%23106\Docs\R4-2303630.zip) **Reply LS on clarification for ue-PowerClassPerBandPerBC-r17**

*Type: LS out For: Approval  
 to RAN2  
 Source: Samsung*

**Decision: Approved.**

[**R4-2301263**](file:///D:\RAN4%23106\Docs\R4-2301263.zip) **Reply LS on clarification for ue-PowerClassPerBandPerBC-r17**

*Type: LS out For: Approval  
 to RAN2  
 Source: ZTE Corporation*

**Decision: Noted.**

[**R4-2301595**](file:///D:\RAN4%23106\Docs\R4-2301595.zip) **Draft reply LS on ue-PowerClassPerBandPerBC-r17**

*Type: LS out For: Approval  
 to RAN2  
 Source: MediaTek Inc.*

**Decision: Noted.**

#### 11.1.3 On support of per FR PRS gap (R2-2213350)

#### 11.1.4 On new contiguous BW classes for legacy networks (R2-2213312)

**[150] Topic #3: On new contiguous BW classes for legacy networks (R2-2213312)**

[**R4-2301626**](file:///D:\RAN4%23106\Docs\R4-2301626.zip) **Discussion on the request of FR2 new CA BW classes**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2301925**](file:///D:\RAN4%23106\Docs\R4-2301925.zip) **Discussion on fallback ambiguitiy for CA\_46O/N/M**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision: Noted.**

[**R4-2302730**](file:///D:\RAN4%23106\Docs\R4-2302730.zip) **Views on potential issue for Fallback Group requirement**

*Type: other For: Approval  
 Source: Apple*

**Decision: Noted.**

LS

[**R4-2302729**](file:///D:\RAN4%23106\Docs\R4-2302729.zip) **Draft Reply LS on potential issue for Fallback Group requirement**

*Type: LS out For: Approval  
 to RAN2  
 Source: Apple*

**Decision: Noted.**

[**R4-2300430**](file:///D:\RAN4%23106\Docs\R4-2300430.zip) **Reply LS to RAN2 on new contiguous BW classes for legacy networks**

*Type: other For: Approval  
 Source: Nokia*

**Decision: Revised to** [**R4-2303631**](file:///D:\RAN4%23106\Docs\R4-2303631.zip) **(from** [**R4-2300430**](file:///D:\RAN4%23106\Docs\R4-2300430.zip)**).**

[**R4-2303631**](file:///D:\RAN4%23106\Docs\R4-2303631.zip) **Reply LS to RAN2 on new contiguous BW classes for legacy networks**

*Type: LSout For: Approval  
 Source: Nokia*

**Decision: Approved.**

Draft CR/CR

[**R4-2300431**](file:///D:\RAN4%23106\Docs\R4-2300431.zip) **CR 38.101-1: Correction to FBG3 CA configurations**

*Type: draftCR For: Agreement  
 38.101-1 v16.14.0 CR- rev Cat: (Rel-16)  
  
 Source: Nokia*

**Decision: Not pursued.**

[**R4-2303632**](file:///D:\RAN4%23106\Docs\R4-2303632.zip) **CR 38.101-1: Correction to FBG3 CA configurations**

*Type: draftCR For: Agreement  
 38.101-1 v16.14.0 CR- rev Cat: (Rel-16)  
  
 Source: Nokia*

**Decision: Withdrawn.**

[**R4-2301627**](file:///D:\RAN4%23106\Docs\R4-2301627.zip) **CR for Rel-17 38.101-2 to correct the notation for FBG5 CA BW class**

*Type: CR For: Approval  
 38.101-2 v17.8.0 CR-0578 rev Cat: F (Rel-17)  
  
 Source: Xiaomi*

**Discussions:**

*Apple: I cannot see the reason.*

*ZTE: support Xiaomi changes.*

**Decision: Not pursued.**

[**R4-2301628**](file:///D:\RAN4%23106\Docs\R4-2301628.zip) **CR for Rel-18 38.101-2 to correct the notation for FBG5 CA BW class**

*Type: CR For: Approval  
 38.101-2 v18.0.0 CR-0579 rev Cat: A (Rel-18)  
  
 Source: Xiaomi*

**Decision: Withdrawn.**

#### 11.1.5 Others

### 11.2 R15, R16 related

#### 11.2.1 Lower humidity limit in normal temperature test environment (R5-221604)

**[150] Topic #4: Lower humidity limit in normal temperature test environment (R5-221604)**

[**R4-2301582**](file:///D:\RAN4%23106\Docs\R4-2301582.zip) **On humidity limit inconsistency**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

[**R4-2302573**](file:///D:\RAN4%23106\Docs\R4-2302573.zip) **Discussion on the relative humidity limit**

*Type: discussion For: Agreement  
 Source: ZTE Corporation*

**Decision: Noted.**

LS

[**R4-2302503**](file:///D:\RAN4%23106\Docs\R4-2302503.zip) **Reply LS on humidity inconsistency among specifications**

*Type: LS out For: Approval  
 to RAN5  
 Source: Samsung, LG Electronics, Nokia, KDDI, SK Telecom, KT Corp.*

**Decision: Noted.**

[**R4-2302574**](file:///D:\RAN4%23106\Docs\R4-2302574.zip) **Draft Reply LS on lower humidity limit in normal temperature test environment**

*Type: response For: Approval  
 Source: ZTE Corporation*

**Decision: Revised to** [**R4-2303632**](file:///D:\RAN4%23106\Docs\R4-2303632.zip) **(from** [**R4-2302574**](file:///D:\RAN4%23106\Docs\R4-2302574.zip)**).**

[**R4-2303632**](file:///D:\RAN4%23106\Docs\R4-2303632.zip) **Draft Reply LS on lower humidity limit in normal temperature test environment**

*Type: LSout For: Approval  
 Source: ZTE Corporation*

**Decision: Approved.**

CR for 38.101-1

[**R4-2302504**](file:///D:\RAN4%23106\Docs\R4-2302504.zip) **CR to TS 38.101-1 on humidity condition for normal temperature**

*Type: CR For: Agreement  
 38.101-1 v15.20.0 CR-1433 rev Cat: F (Rel-15)  
  
 Source: Samsung*

**Decision: Agreed.**

[**R4-2302506**](file:///D:\RAN4%23106\Docs\R4-2302506.zip) **CR to TS 38.101-1 on humidity condition for normal temperature**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1434 rev Cat: A (Rel-16)  
  
 Source: Samsung*

**Decision: Agreed.**

[**R4-2302508**](file:///D:\RAN4%23106\Docs\R4-2302508.zip) **CR to TS 38.101-1 on humidity condition for normal temperature**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1435 rev Cat: A (Rel-17)  
  
 Source: Samsung*

**Decision: Agreed.**

[**R4-2302510**](file:///D:\RAN4%23106\Docs\R4-2302510.zip) **CR to TS 38.101-1 on humidity condition for normal temperature**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1436 rev Cat: A (Rel-18)  
  
 Source: Samsung*

**Decision: Agreed.**

CR for 38.101-2

[**R4-2302505**](file:///D:\RAN4%23106\Docs\R4-2302505.zip) **CR to TS 38.101-2 on humidity condition for normal temperature**

*Type: CR For: Agreement  
 38.101-2 v15.20.0 CR-0588 rev Cat: F (Rel-15)  
  
 Source: Samsung*

**Decision: Agreed.**

[**R4-2302507**](file:///D:\RAN4%23106\Docs\R4-2302507.zip) **CR to TS 38.101-2 on humidity condition for normal temperature**

*Type: CR For: Agreement  
 38.101-2 v16.14.0 CR-0589 rev Cat: A (Rel-16)  
  
 Source: Samsung*

**Decision: Agreed.**

[**R4-2302509**](file:///D:\RAN4%23106\Docs\R4-2302509.zip) **CR to TS 38.101-2 on humidity condition for normal temperature**

*Type: CR For: Agreement  
 38.101-2 v17.8.0 CR-0590 rev Cat: A (Rel-17)  
  
 Source: Samsung*

**Decision: Agreed.**

[**R4-2302511**](file:///D:\RAN4%23106\Docs\R4-2302511.zip) **CR to TS 38.101-2 on humidity condition for normal temperature**

*Type: CR For: Agreement  
 38.101-2 v18.0.0 CR-0591 rev Cat: A (Rel-18)  
  
 Source: Samsung*

**Decision: Agreed.**

#### 11.2.2 On 15dBm output power requirement for NS\_41 (R5-227958)

**[150] Topic #5: On 15dBm output power requirement for NS\_41 (R5-227958)**

LS

[**R4-2302693**](file:///D:\RAN4%23106\Docs\R4-2302693.zip) **Reply LS on 15 dBm output power requirement for NS\_41**

*Type: LS out For: Agreement  
 to RAN5  
 Source: Qualcomm Incorporated*

**Decision: Approved.**

CR for 36.101

[**R4-2302694**](file:///D:\RAN4%23106\Docs\R4-2302694.zip) **Output power for NS\_38, NS\_40, and NS\_41**

*Type: CR For: Agreement  
 36.101 v15.20.0 CR-5933 rev Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Decision: Agreed.**

[**R4-2302695**](file:///D:\RAN4%23106\Docs\R4-2302695.zip) **Output power for NS\_38, NS\_40, and NS\_41**

*Type: CR For: Agreement  
 36.101 v16.15.0 CR-5934 rev Cat: A (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Decision: Agreed.**

[**R4-2302696**](file:///D:\RAN4%23106\Docs\R4-2302696.zip) **Output power for NS\_38, NS\_40, and NS\_41**

*Type: CR For: Agreement  
 36.101 v17.8.0 CR-5935 rev Cat: A (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Decision: Agreed.**

[**R4-2302697**](file:///D:\RAN4%23106\Docs\R4-2302697.zip) **Output power for NS\_38, NS\_40, and NS\_41**

*Type: CR For: Agreement  
 36.101 v18.0.0 CR-5936 rev Cat: A (Rel-18)  
  
 Source: Qualcomm Incorporated*

**Decision: Agreed.**

CR for 38.101-1

[**R4-2302698**](file:///D:\RAN4%23106\Docs\R4-2302698.zip) **Output power for NS\_38, NS\_40, and NS\_41**

*Type: CR For: Agreement  
 38.101-1 v15.20.0 CR-1456 rev Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Decision: Agreed.**

[**R4-2302699**](file:///D:\RAN4%23106\Docs\R4-2302699.zip) **Output power for NS\_38, NS\_40, and NS\_41**

*Type: CR For: Agreement  
 38.101-1 v16.14.0 CR-1457 rev Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Decision: Agreed.**

[**R4-2302700**](file:///D:\RAN4%23106\Docs\R4-2302700.zip) **Output power for NS\_38, NS\_40, and NS\_41**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1458 rev Cat: F (Rel-17)  
  
 Source: Qualcomm Incorporated*

**Decision: Agreed.**

[**R4-2302701**](file:///D:\RAN4%23106\Docs\R4-2302701.zip) **Output power for NS\_38, NS\_40, and NS\_41**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1459 rev Cat: F (Rel-18)  
  
 Source: Qualcomm Incorporated*

**Decision: Agreed.**

#### 11.2.3 Others

**[150] Topic #6: Impact of SRS antenna switching for TDD-FDD band combinations**

[**R4-2302376**](file:///D:\RAN4%23106\Docs\R4-2302376.zip) **Clarification on impact of SRS antenna switching for TDD-FDD band combinations**

*Type: other For: Approval  
 Source: Huawei, HiSilicon*

**Decision: Noted.**

LS

[**R4-2302377**](file:///D:\RAN4%23106\Docs\R4-2302377.zip) **draft LS on clarification on impact of SRS antenna switching for TDD-FDD band combinations**

*Type: LS out For: Approval  
 to RAN1, cc RAN2  
 Source: Huawei, HiSilicon*

**Decision: Revised to** [**R4-2303633**](file:///D:\RAN4%23106\Docs\R4-2303633.zip) **(from** [**R4-2302377**](file:///D:\RAN4%23106\Docs\R4-2302377.zip)**).**

**[R4-2303633](D:\\RAN4#106\\Docs\\R4-2303633.zip) draft LS on clarification on impact of SRS antenna switching for TDD-FDD band combinations**

*Type: LS out For: Approval  
 to RAN1, cc RAN2  
 Source: Huawei, HiSilicon*

**Discussions:**

Skyworks: this is for FDD+TDD band. This week we did not discuss TDD+TDD band with simultaneous Rx-Tx. Should we can consdier TDD+TDD, e.g., CA\_n40\_n41.

Huawei: Generally the signaling does not preclude such scenario.

Skyworks: should the LS be extended to TDD+TDD cases.

**Decision: Approved.**

### 11.3 Moderator summary and conclusions

**[106][150] NR\_reply\_LS\_UE\_RF, AI 11 – Steven Chen (Apple)**

[**R4-2302843**](file:///D:\RAN4%23106\Docs\R4-2302843.zip) **Topic summary for [106][150] NR\_reply\_LS\_UE\_RF**

*Type: other For: Information  
 Source: Moderator (Apple)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

**Issue 2-1: Whether R4 16-8 is applicable to only inter-band CA?**

Samsung: support Option1. For inter-band DL CA with single UL or intra-band UL CA, there is no ambiguity issue. We can indicate the correct power class by existing signalings.

Mediatek: from RAN2 signaling, non-contiguous intra-band is treated as inter-band. This IE can be used for intra-band non-contiguous CA. From RAN4, for some cases, for future proof, it can be applicable to power imbalance.

Huawei: support option 1. To Mediatek, RAN2 is asking for clarification of Rel-17 IE. At least in Rel-17, the IE is targeted at inter-band CA. If the future, if it applicable to other features, we can have discussions. For LS, we should limit to Rel-17.

Ericsson: Support Option1. IE is intended with case for HPUE with 2Tx. It can also be applied to case of inter-band with intra-band component. If we intend to extend, it requires further work.

OPPO: OK with Option 1. For intra-band non-contiguous CA, it is for future use. Keep open for future.

Apple: Option 1.

Nokia: Option 1. Companies proposed actually single band in uplink or intra-band.

Apple: Clarify inter-band UL CA

Huawei: In the inter-band CA case, two cells are in the intra-band CA and the other is in the inter-band CA. This IE applies to this case. Another case is that if CA is DL only the IE cannot be applied to UL.

**Agreement:**

* Only applicable to inter-band UL CA
  + FFS on the wording to clarify definition of inter-band UL CA in LS
  + Discuss the potential extension of IE in the future if the use case is identified

**Issue 2-2: What is the interaction between R4 16-8 and the existing power class capabilities (i.e. ue-PowerClass/ue-PowerClass-v1610/ue-PowerClass-1700, powerClassNRPart-r16 (if R4 16-8 is also applicable to the cases other than inter-band CA) and powerClass/powerClass-v1610)?**

* Proposals
  + Option 1: ue-PowerClassPerBandPerBC-r17 indicates the power class that a UE supports for each individual band within a given band combination, while powerClass or powerClass-v1610 indicates the power class for this band combination, in other words, the maximum total output power. If indicated, ue-PowerClassPerBandPerBC-r17 shall supersede other power class capabilities such as ue-PowerClass/powerClass and its extensions in determining the power class of the individual bands within a band combination.
  + Option 2: ue-PowerClassPerBandPerBC-r17 indicates the power class that a UE supports for each individual band within a band combination when operating according to the band combination. The maximum Tx power available in an individual band within the band combination is determined by ue-PowerClassPerBandPerBC-r17 if indicated. The powerClass/powerClass-v1610 indicates the power class for this band combination. If the power class of the band combination is higher than the power class that the UE supports on the individual bands (ue-PowerClass in BandNR or ue-PowerClassPerBandPerBC-r17 if indicated), the latter determines maximum TX power available in each band.
  + Option 3: The interaction between the existing power class capabilities and the R4 16-8 can be shown as:
  + ue-PowerClass/ue-PowerClass-v1610/ue-PowerClass-1700 always represents the maximum output power availability of each component band in a band combination, and
  + if ue-PowerClassPerBandPerBC-r17 is absent, the actual functioning power class of each component band is capped to the minimum of {powerClass/powerClass-v1610, ue-PowerClass/ue-PowerClass-v1610/ue-PowerClass-1700} if higherPowerLimit-r17 is absent, otherwise, ue-PowerClass/ue-PowerClass-v1610/ue-PowerClass-1700 applies if it is higher than powerClass /powerClass-v1610, and
  + if ue-PowerClassPerBandPerBC-r17 is present, the actual functioning power class of each component band is capped to the minimum of {powerClass/powerClass-v1610, ue-PowerClass/ue-PowerClass-v1610/ue-PowerClass-1700, ue-PowerClassPerBandPerBC-r17} if higherPowerLimit-r17 is absent, otherwise, the minimum of {ue-PowerClass/ue-PowerClass-v1610/ue-PowerClass-1700, ue-PowerClassPerBandPerBC-r17} applies.
  + The existing powerClassNRPart-r16 represent the power class of the NR band in an EN-DC band combination, since the R4 16-8 does not apply to EN-DC/NE-DC, powerClassNRPart-r16 is independent from the R4 16-8.S

**Discussions:**

Samsung: we also see Qualcomm has CR. Ericsson has CR. We tend to agree with Ericsson proposal. The only issue is the if the new IE is absent, which IE will be used.

Huawei: companies submitted contributions in different AIs. If the new IE is not present, per-band power class is limited by CA total power. We tend to agree the minimum between single band UE power class and CA power class to the component band. What RAN2 asked is not about the legacy IEs. It is about the new IE to the previous one. In the reply, we do not need to provide RAN2 what they did not ask. We just keep replied LS simple. If the new IE is present, it can override the legacy one.

Oppo: agree that the new one apply if it is present. The minimum value applies.

Mediatek: The other IE is power limit. The point is if we want to describe it, we should go through all the combinations. For RAN2 questions, we could provide the simple answer. It is a good opportunity to clarify the common understanding on the ambiguity.

Ericsson: agree with Samsung. The missing part is to discuss the behavior if the new IE absent. We should not go to details. RAN2 just describes the relation between capability elements. The rest of relation between band power class and BC power class should be captured in RAN4 spec.

Huawei: share the similar view on the proposal to prepare the draft LS. If the new IE is not present, the legacy behavior, which we can discuss in RAN4. For high power limit, that does not change power class per band. Introduction of this new IE to indicate which band is PC2/3, the per–band class is not changed.

Qualcomm: Agree with Ericsson to clarify in RAN4. We can say the same thing to RAN2 as in RAN4 spec.

Apple: we can clarify the UE behavior if the IE is present or absent.

Mediatek: for higher power limit, it does not change the power class but in RAN4 it will impact the sum of configured power.

Samsung: agree with Ericsson to provide the simple answer.

**Agreement:**

* Agree Option 1.

**Issue 3-1-1: If there is inconsistency?**

**Discussions:**

Nokia: there is inconsistency. The simple change is to change from 80Mhz to 60MHz. But the change is NBC.

Ericsson: agree to we need fix it.

Mediatek: adding 80MHz causes a new issue. That is not good approach. New BCS is a good approach.

Apple: we have different view. The bandwidth size defined in the spec does not represent the UE capability rather than the network deployment. I am OK to revise the set.

Xiaomi: We prefer changing 80MHz to 60MHz for BCS0.

CHTTL: we share the similar view as Apple. We look at the BCS from the lower side.

Nokia: Disagree with CHTTL and Apple. It is not true from BS point of view. The legacy BS does not know. We need create the new BCS.

ZTE: Support Option 1 to change the 80 t0 60. BCS is not our preference.

OPPO: support Option 1.

Nokia: Option 1 is also OK if it is BCS1.

Apple: if the original proponent, we can get idea whether there is error or on purpose.

**Agreement:**

* There is inconsistency as pointed out in RAN2 LS.

**Issue 4-1: Which solution to pick**

**Discussions:**

ZTE: we can compromise to Option 1. We have one concern. We want to change does not impact BS side. Since change is related to both NR and LTE. We need be consistent for both NR and LTE.

Apple: we would like to support Samsung proposal.

OPPO: which relative humidity is used if Option 1 is chosen.

Samsung: It does not means impact on the legacy test.

**Agreement:**

* With relative humidity up to 75 %.
  + There is no impact on BS side.
  + Have the same change for both NR and LTE

**Issue 5-1-1: Is the proposal agreeable: It is proposed to have some clarification in RAN1 spec with possible mitigation schemes for impact on both UL and DL for the affected bands caused by SRS antenna switching.**

**Discussions:**

Mediatek: We have the same understanding and similar changes for NR.

Ericsson: in our view, it is also beneficial to have clear specified behaviour in 3GPP.

## 12 RAN task

### 12.1 BWP without restriction

### 12.2 Study of 2Rx exception for U6GHz

**[151] Topic #1: 2Rx Exception Study**

[**R4-2300306**](file:///D:\RAN4%23106\Docs\R4-2300306.zip) **2RX exception for the 6GHz band**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision: Noted.**

### 12.3 Inconsistency issue for intra-band EN-DC band combinations

**[151] Topic #2: Inconsistency issue for intra-band EN-DC band combinations**

[**R4-2300754**](file:///D:\RAN4%23106\Docs\R4-2300754.zip) **The inconsistency issue for intra-band EN-DC band combinations**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution we propose a resolution of the inconsistency issue with minimal impact on existing specifications

**Decision: Noted.**

[**R4-2301590**](file:///D:\RAN4%23106\Docs\R4-2301590.zip) **Further discussion on intra-band ENDC support capability**

*Type: discussion For: Decision  
 Source: MediaTek Inc.*

**Decision: Noted.**

[**R4-2301629**](file:///D:\RAN4%23106\Docs\R4-2301629.zip) **Discussion on intrabandENDC-Support**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision: Noted.**

[**R4-2302067**](file:///D:\RAN4%23106\Docs\R4-2302067.zip) **Discussion on Intra-Band EN-DC band combinations**

*Type: discussion For: Approval  
 Source: Google Inc.*

**Decision: Noted.**

[**R4-2302482**](file:///D:\RAN4%23106\Docs\R4-2302482.zip) **On Inconsistency issue for intra-band EN-DC band combinations**

*Type: other For: Approval  
 Source: Huawei Technologies France*

**Decision: Noted.**

[**R4-2302567**](file:///D:\RAN4%23106\Docs\R4-2302567.zip) **Discussion on intra-band EN-DC band combination support**

*Type: discussion For: Agreement  
 Source: ZTE Corporation*

**Decision: Noted.**

LS

[**R4-2302568**](file:///D:\RAN4%23106\Docs\R4-2302568.zip) **Draft LS on intra-band EN-DC band combination support**

*Type: LS out For: Approval  
 to RAN2  
 Source: ZTE Corporation*

**Discussions:**

Ericsson: defer the LS until RAN2 reply is received.

Google: second to Ericsson.

ZTE: RAN4 requirement should be provided to RAN2. Otherwise, RAN2 would not be clear.

Huawei: agree with Ericsson and Google. In LS to RAN2, we provided the clear solutions.

Mediatek: RAN2 capability value is already the full set. RAN2 needs to update the usage of the values. We think we could forward RAN4 understanding.

ZTE: in our proposal, we mentioned that there are still some requirement unclear in RAN4. We should provide more clear view to RAN2.

**Decision: Noted.**

38.101-3 CRs

[**R4-2300379**](file:///D:\RAN4%23106\Docs\R4-2300379.zip) **CR to 38.101-3 for corrections on intra-band EN-DC configurations**

*Type: CR For: Agreement  
 38.101-3 v16.14.0 CR-0817 rev Cat: F (Rel-16)  
  
 Source: Apple*

**Decision: Revised to R4-2303702 (from R4-2300379).**

[**R4-2303702**](file:///D:\RAN4%23106\Docs\R4-2300379.zip) **CR to 38.101-3 for corrections on intra-band EN-DC configurations**

*Type: CR For: Agreement  
 38.101-3 v16.14.0 CR-0817 rev Cat: F (Rel-16)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300380**](file:///D:\RAN4%23106\Docs\R4-2300380.zip) **CR to 38.101-3 for corrections on intra-band EN-DC configurations**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0818 rev Cat: A (Rel-17)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2300381**](file:///D:\RAN4%23106\Docs\R4-2300381.zip) **CR to 38.101-3 for corrections on intra-band EN-DC configurations**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0819 rev Cat: A (Rel-18)  
  
 Source: Apple*

**Decision: Agreed.**

[**R4-2301591**](file:///D:\RAN4%23106\Docs\R4-2301591.zip) **CR to TS 38.101-3 on intra-band ENDC support**

*Type: CR For: Approval  
 38.101-3 v16.14.0 CR-0863 rev Cat: F (Rel-16)  
  
 Source: MediaTek Inc.*

**Decision: Not pursued.**

[**R4-2302542**](file:///D:\RAN4%23106\Docs\R4-2302542.zip) **CR to TS 38.101-3 on intra-band ENDC support**

*Type: CR For: Approval  
 38.101-3 v16.14.0 CR-0863 rev 1 Cat: F (Rel-16)  
  
 Source: MediaTek Inc.*

(Replaces [R4-2301591](file:///D:\RAN4%23106\Docs\R4-2301591.zip))

**Decision: Not pursued.**

[**R4-2301592**](file:///D:\RAN4%23106\Docs\R4-2301592.zip) **CR to TS 38.101-3 on intra-band ENDC support**

*Type: CR For: Approval  
 38.101-3 v17.8.0 CR-0864 rev Cat: A (Rel-17)  
  
 Source: MediaTek Inc.*

**Decision: Withdrawn.**

[**R4-2301630**](file:///D:\RAN4%23106\Docs\R4-2301630.zip) **CR for 38.101-3 Rel-16 to delete the invalid cases and modify some intra-band ENDC**

*Type: CR For: Approval  
 38.101-3 v16.14.0 CR-0865 rev Cat: F (Rel-16)  
  
 Source: Xiaomi*

**Decision: Not pursued.**

[**R4-2301631**](file:///D:\RAN4%23106\Docs\R4-2301631.zip) **CR for 38.101-3 Rel-17 to delete the invalid cases and modify some intra-band ENDC**

*Type: CR For: Approval  
 38.101-3 v17.8.0 CR-0866 rev Cat: A (Rel-17)  
  
 Source: Xiaomi*

**Decision: Withdrawn.**

[**R4-2301632**](file:///D:\RAN4%23106\Docs\R4-2301632.zip) **CR for 38.101-3 Rel-18 to delete the invalid cases and modify some intra-band ENDC**

*Type: CR For: Approval  
 38.101-3 v18.0.0 CR-0867 rev Cat: A (Rel-18)  
  
 Source: Xiaomi*

**Decision: Withdrawn.**

[**R4-2302085**](file:///D:\RAN4%23106\Docs\R4-2302085.zip) **CR to 38.101-3 Rel-16 intra-band EN-DC band combination for Case 3 and Case 4 configuration**

*Type: CR For: (not specified)  
 38.101-3 v16.14.0 CR-0874 rev Cat: F (Rel-16)  
  
 Source: Google Inc.*

**Decision: Not pursued.**

[**R4-2302112**](file:///D:\RAN4%23106\Docs\R4-2302112.zip) **CR to 38.101-3 Rel-17 intra-band EN-DC band combination for Case 3 and Case 4 configuration**

*Type: CR For: (not specified)  
 38.101-3 v17.8.0 CR-0875 rev Cat: A (Rel-17)  
  
 Source: Google Inc.*

**Decision: Withdrawn.**

[**R4-2302139**](file:///D:\RAN4%23106\Docs\R4-2302139.zip) **CR to 38.101-3 Rel-18 intra-band EN-DC band combination for Case 3 and Case 4 configuration**

*Type: CR For: (not specified)  
 38.101-3 v18.0.0 CR-0876 rev Cat: A (Rel-18)  
  
 Source: Google Inc.*

**Decision: Withdrawn.**

[**R4-2302560**](file:///D:\RAN4%23106\Docs\R4-2302560.zip) **CR for TS 38.101-3 on intra-band EN-DC band combination support for DC\_(n)41**

*Type: CR For: Agreement  
 38.101-3 v15.20.0 CR-0887 rev Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Decision: Agreed.**

[**R4-2302561**](file:///D:\RAN4%23106\Docs\R4-2302561.zip) **CR for TS 38.101-3 on intra-band EN-DC band combination support for DC\_(n)41 (R16\_CAT\_A)**

*Type: CR For: Agreement  
 38.101-3 v16.14.0 CR-0888 rev Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Decision: Agreed.**

[**R4-2302562**](file:///D:\RAN4%23106\Docs\R4-2302562.zip) **CR for TS 38.101-3 on intra-band EN-DC band combination support for DC\_(n)41 (R17\_CAT\_A)**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0889 rev Cat: A (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Agreed.**

[**R4-2302563**](file:///D:\RAN4%23106\Docs\R4-2302563.zip) **CR for TS 38.101-3 on intra-band EN-DC band combination support for DC\_(n)41 (R18\_CAT\_A)**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0890 rev Cat: A (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Agreed.**

[**R4-2302564**](file:///D:\RAN4%23106\Docs\R4-2302564.zip) **CR for TS 38.101-3 on mixed intra-band contiguous and non-contiguous EN-DC band combination for DC\_(n)48**

*Type: CR For: Agreement  
 38.101-3 v16.14.0 CR-0891 rev Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Decision: Not pursued.**

[**R4-2302565**](file:///D:\RAN4%23106\Docs\R4-2302565.zip) **CR for TS 38.101-3 on mixed intra-band contiguous and non-contiguous EN-DC band combination for DC\_(n)48 (R17\_CAT\_A)**

*Type: CR For: Agreement  
 38.101-3 v17.8.0 CR-0892 rev Cat: A (Rel-17)  
  
 Source: ZTE Corporation*

**Decision: Withdrawn.**

[**R4-2302566**](file:///D:\RAN4%23106\Docs\R4-2302566.zip) **CR for TS 38.101-3 on mixed intra-band contiguous and non-contiguous EN-DC band combination for DC\_(n)48 (R18\_CAT\_A)**

*Type: CR For: Agreement  
 38.101-3 v18.0.0 CR-0893 rev Cat: A (Rel-18)  
  
 Source: ZTE Corporation*

**Decision: Withdrawn.**

### 12.4 CRs for Canada and US band n77

**[151] Topic #3: CRs for Canada band n77**

CR

[**R4-2300755**](file:///D:\RAN4%23106\Docs\R4-2300755.zip) **Corrections to the specification of network signaling value NS\_57**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1337 rev Cat: F (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

CR to clarify the CA\_NS indication and remaing cases for NS\_57

**Decision: Revised to** [**R4-2303634**](file:///D:\RAN4%23106\Docs\R4-2303634.zip) **(from** [**R4-2300755**](file:///D:\RAN4%23106\Docs\R4-2300755.zip)**).**

[**R4-2303634**](file:///D:\RAN4%23106\Docs\R4-2303634.zip) **Clarification of the CA\_NS indication and NS values for n77 in Canada [n77 Canada]**

*Type: CR For: Agreement  
 38.101-1 v17.8.0 CR-1337 rev Cat: F (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

CR to clarify the CA\_NS indication and remaing cases for NS\_57

**Decision: Agreed.**

[**R4-2300756**](file:///D:\RAN4%23106\Docs\R4-2300756.zip) **Clarification of the CA\_NS indication and NS values for n77 in Canada [n77 Canada]**

*Type: CR For: Agreement  
 38.101-1 v18.0.0 CR-1338 rev Cat: A (Rel-18)  
  
 Source: Ericsson*

**Abstract:**

CR to clarify the CA\_NS indication and remaing cases for NS\_57

**Decision: Agreed.**

### 12.5 Moderator summary and conclusions

**[106][151] RAN\_task\_UERF, AI 12 – Ronald Borsato (AT&T)**

[**R4-2302844**](file:///D:\RAN4%23106\Docs\R4-2302844.zip) **Topic summary for [106][151] RAN\_task\_UERF**

*Type: other For: Information  
 Source: Moderator (AT&T)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Noted.**

**Discussions of issues and conclusions**

[**R4-2303635**](file:///D:\RAN4%23106\Docs\R4-2303635.zip) **WF on inconsistency issue for intra-band EN-DC band combinations**

*Type: other For: Approval  
 Source: AT&T*

**Decision: Approved.**

**Issue 1-1:** **Conditions for 2Rx Support in Band n104**

**Discussions:**

Ericsson: We expect further contribution in the next meeting. What type of critical requirement requirements needs be considered? EU regulation.

Huawei: OK to keep FFS. It should not be linked with regulatory requirement. Support Ericsson.

CHTTL: keep FFS in this meeting.

ZTE: Support CHTTL.

Charter: agree with Option 1.

Google: Option 1.

Apple: at some point, if we identify.

Chair: no agenda for this in the meetings until WRC-23.

**Agreement:**

* Keep condition(s) as FFS until the completion of Rel-18 core.

**Issue 1-2: Signalling Solutions to Indicate 2Rx Support in Band n104**

**Agreement:**

* Defer discussions concerning signalling solutions for 2Rx support in band n104 until the completion of Rel-18 core.

**Issue 2-1: RAN4 contribution handling**

**Discussions:**

Google: we have good progress in the last meeting. The agreed options are captured in the way forward. We hope to continue to discuss how to update the spec.

OPPO: RAN2 signaling is very important. Discussion is OK. We need RAN2 LS before making decision.

Ericsson: RAN2 may be reluctant to change the field description in Rel-17. It is also understanding for RAN2 to change it in future release, e.g., Rel-18, to extend.

Mediatek: Since inconsistency issue, RAN4 can do our job.

Apple: share the similar view as Google and Meditek. We agree at least from RAN4 perspective, signalling solution can support both. We can capture RAN4 agreements in RAN4 spec.

Huawei: We agree with OPPO. We need unified solution between RAN2 and RAN4. We notice that several CRs and we can discuss them based on the previous agreement.

**Issue 2-2: Case 3 solutions/updates**

**Discussions:**

Google: Option 3 to combine Option 2 and extend the meaning of “both”. both means to support intra-band contiguous DL EN-DC with intra-band non-C UL EN-DC

Mediatek: In our understanding, IE does no differentiate UL and DL. It can be applicable to both UL and DL. Combination of three options can be done.

Ericsson: Op1 and Op3 are the same and applicable to case 3. For case 2, we are in favour of change of something of interpretation of RAN4 specification. Network should precisely understand.

**Issue 2-3: Case 4 solutions/updates**

**Discussions:**

Google: for case 4, we want to propose to use Option 2 to extend the meaning of both.

Ericsson: for case 4, our preference is option 1 which is consistent with field description in RAN2. The original defination in RAN2 was intended for two sub-blocks one LTE and one NR. Not intended to treat cases with more than two sub-blocks. For case 4, if we have three sub-blocks for combinations and indicate both, it also means UE support three sub-block. It is said operating in non-contiguous. We can follow that interpretation.

Apple: show the sympathy to Ericsson. In current spec, we have BC containing three sub-blocks. If we limit to two sub-block, can BC with three sub-blocks be supported? In our view, UE wants to support such case in the current situation.

ZTE: RAN4 should tell RAN2 which cases should be considered. If we do not have the clear requirements to RAN2, then RAN2 cannot do the right decision.

**Issue 2-4: RAN4 Specification Updates**

**Discussions:**

Mediatek: The meaning of NC applies to both DL and UL.

Google: How to update the spec by intra-band contiguous or non-contiguous? how to create the spec.

Ericsson: Agree with MTK. Moreover, the band is combination bandwidth set. We should make it sure that bandwidth sets are consistent.

ZTE: new sub-clause of mix of contiguous and non-contiguous are clear. Prefer to Option 3. We can first conclude the change for band 41 which is already concluded in previous meeting.

Huawei: agree at least the new table for case 3 and case 4 are separate for contiguous and non-contiguous. We can try a new table for these cases.

Apple: in the current spec, we have already had the table. We do have the third table to mix contiguous and non-contiguous. We have case 4 in the third table. From signalling wise, it should be to report both.

## 13 Revision of the Work Plan

This agenda item is categorized for [106][100] Main Session.

[**R4-2300166**](file:///D:\RAN4%23106\Docs\R4-2300166.zip) **Draft new WID on NR power class 2 RedCap (Reduced Capability) UE in FR1**

*Type: WID new For: Information  
 Source: China Telecom, MediaTek*

**Decision:** The document was **not treated**.

[**R4-2300288**](file:///D:\RAN4%23106\Docs\R4-2300288.zip) **Motivation of SID revision for LP-WUS**

*Type: other For: Information  
 38.133 v CR- rev Cat: (Rel-18)  
  
 Source: Apple*

**Decision:** The document was **not treated**.

[**R4-2300289**](file:///D:\RAN4%23106\Docs\R4-2300289.zip) **Motivation of WID revision for R18 eFeRRM**

*Type: other For: Information  
 38.133 v CR- rev Cat: (Rel-18)  
  
 Source: Apple*

**Decision:** The document was **not treated**.

[**R4-2300307**](file:///D:\RAN4%23106\Docs\R4-2300307.zip) **New WID on high-power UE for the FR1 NTN bands**

*Type: WID new For: Information  
 Source: Apple*

**Decision:** The document was **not treated**.

[**R4-2300432**](file:///D:\RAN4%23106\Docs\R4-2300432.zip) **New WID on bands 31 and 72 for New Radio**

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

**Decision:** The document was **not treated**.

[**R4-2300562**](file:///D:\RAN4%23106\Docs\R4-2300562.zip) **New WID: R18 NR inter-band combinations for Low-Low bands**

*Type: WID new For: Information  
 Source: CATT, China Telecom*

**Decision:** The document was **not treated**.

[**R4-2301594**](file:///D:\RAN4%23106\Docs\R4-2301594.zip) **Introduction of a new FDD band (L+S band) for IoT NTN operation**

*Type: WID new For: Information  
 Source: MediaTek Inc.*

**Decision:** The document was **not treated**.

[**R4-2302111**](file:///D:\RAN4%23106\Docs\R4-2302111.zip) **New WID on Introduction of high power UE for satellite access**

*Type: WID new For: Information  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

## 14 Any other business

This agenda item is categorized for [106][100] Main Session.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| TDoc | Title | Source | Type | For | Agenda item | TDoc Status | Related WIs |
| [R4-2300500](file:///D:\RAN4%23106\Docs\R4-2300500.zip) | Discussion on new frequency allocation in Japan | Rakuten Mobile, Inc, KDDI Corporation, NTT DOCOMO, INC., Softbank Corp. | discussion | Decision | 14 | available |  |

[**R4-2300500**](file:///D:\RAN4%23106\Docs\R4-2300500.zip) **Discussion on new frequency allocation in Japan**

*Type: discussion For: Decision  
 Source: Rakuten Mobile, Inc, KDDI Corporation, NTT DOCOMO, INC., Softbank Corp.*

**Decision: Noted.**

## 15 Close of the E-meeting

BACKUP

**R4-23ABABA Big CR for TS 3x.1xx (Rel-13)**

*Type: CR For: Agreement  
 38.1xx-0y v16.2.0 CR- rev Cat: F (Rel-1x)  
  
 Source: XXXX*

**Decision: Return to.**

**R4-23AAABA Email discussion summary for [106][10x] x**

*Type: other For: Information  
 Source: Moderator (xxx)*

**Abstract:**

This contribution provides the summary of email discussion and recommended summary.

**Decision: Return to.**

**R4-23AAAAA WF on**

*Type: other For: Approval  
 Source: XXXX*

**Decision: Return to.**