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

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for  
TSG RAN WG4  
meeting: e**

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## 1 Opening of the E-meeting

The Chairman Steven Chen (Apple) opened the meeting on RAN4 reflector on /11/2020.

**Intellectual Property Rights 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 Chairman and Vice-Chairmen and were invited to seek any clarification needed with their legal counsel. The leadership would conduct the present meeting with impartiality and in the interests of 3GPP. Delegates were reminded that timely submission of work items in advance of TSG/WG meetings was important to allow for full and fair consideration of such matters.

**Meeting Arrangements**

The meeting was conducted on three parallel sessions; Main session, RRM session and BS RF Test Demod session. The Main session was chaired by RAN4 Chairman Steven Chen (Apple), RRM session was chaired by RAN4 Vice Chairman Andrey Chervyakov (Intel) and BS RF Test Demod session was chaired by RAN4 ViceChairman Haijie Qiu (Samsung). The sessions were further broken down into separate email threads to address specific technical topics lead by assigned discussion moderators. Webinar sessions were used to summarize progress, resolve controversial issues and decide way forward.

## 2 Approval of the agenda

**R4-2014000 Agenda for RAN4 #97-e**

*Type: agenda For: Approval  
 Source: Apple (UK) Limited*

**Decision:** The document was **not treated**.

**R4-2014001 RAN4#96-e Meeting Report**

*Type: report For: Approval  
 Source: ETSI MCC*

**Decision:** The document was **not treated**.

## 3 Letters / reports from other groups / meetings

**R4-2014147 LS on updated Rel-16 RAN1 UE features lists for NR**

*Type: LS in For: Information  
 Original outgoing LS: R1-2007136, to RAN2, RAN4, cc -  
 Source: RAN1*

**Decision:** The document was **not treated**.

**R4-2014148 LS on updated Rel-16 RAN1 UE features list for LTE**

*Type: LS in For: Information  
 Original outgoing LS: R1-2007139, to RAN2, RAN4, cc -  
 Source: RAN1*

**Decision:** The document was **not treated**.

**R4-2014149 LS on updated Rel-16 RAN1 UE features lists for NR**

*Type: LS in For: Information  
 Original outgoing LS: R1-2007327, to RAN2, RAN4, cc -  
 Source: RAN1*

**Decision:** The document was **not treated**.

**R4-2014150 LS on updated Rel-16 RAN1 UE features lists for LTE**

*Type: LS in For: Information  
 Original outgoing LS: R1-2007329, to RAN2, RAN4, cc -  
 Source: RAN1*

**Decision:** The document was **not treated**.

**R4-2014151 Reply LS on UE capability**

*Type: LS in For: Information  
 Original outgoing LS: R1-2007339, to RAN2, cc RAN4  
 Source: RAN1*

**Decision:** The document was **not treated**.

**R4-2014152 LS on evaluation methodology for connected mode UE power saving enhancements**

*Type: LS in For: Information  
 Original outgoing LS: R1-2007419, to RAN2, cc RAN4  
 Source: RAN1*

**Decision:** The document was **not treated**.

**R4-2014153 Reply LS on UE declaring beam failure due to LBT failures during active TCI switching**

*Type: LS in For: Information  
 Original outgoing LS: R1-2007424, to RAN2, cc RAN4  
 Source: RAN1*

**Decision:** The document was **not treated**.

**R4-2014154 LS on evaluation methodology for UE power saving enhancements**

*Type: LS in For: Information  
 Original outgoing LS: R1-2007425, to RAN2, cc RAN4  
 Source: RAN1*

**Decision:** The document was **not treated**.

**R4-2014155 Reply LS on Rel-16 UE feature lists for NR DAPS**

*Type: LS in For: Information  
 Original outgoing LS: R2-2008149, to RAN1, cc RAN4  
 Source: RAN2*

**Decision:** The document was **not treated**.

**R4-2014156 Reply LS on exchange of information related to SRS-RSRP measurement resource configuration for UE-CLI**

*Type: LS in For: Information  
 Original outgoing LS: R2-2008220, to RAN3, cc RAN1, RAN4  
 Source: RAN2*

**Decision:** The document was **not treated**.

**R4-2014157 LS to RAN4 on measurement requirement for eMTC UE in RRC\_INACTIVE**

*Type: LS in For: Information  
 Original outgoing LS: R2-2008234, to RAN4, cc -  
 Source: RAN2*

**Decision:** The document was **not treated**.

**R4-2014158 LS on UE capability for V2X**

*Type: LS in For: Information  
 Original outgoing LS: R2-2008350, to RAN1, cc RAN4  
 Source: RAN2*

**Decision:** The document was **not treated**.

**R4-2014159 LS on simultaneous Rx/Tx for inter-band NR-DC**

*Type: LS in For: Information  
 Original outgoing LS: R2-2008635, to RAN4, cc -  
 Source: RAN2*

**Decision:** The document was **not treated**.

**R4-2014160 LS on cell-grouping UE capability for synchronous NR-DC**

*Type: LS in For: Information  
 Original outgoing LS: R2-2008662, to RAN1, RAN4, cc -  
 Source: RAN2*

**Decision:** The document was **not treated**.

**R4-2016598 FREQUENCY ARRANGEMENTS FOR IMT IN THE BAND 470 – 703 MHZ**

*Type: LS in For: Information  
 Original outgoing LS: -, to RAN, RAN4, cc -  
 Source: APT Wireless Group*

**Decision:** The document was **not treated**.

## 4 Rel-15 New radio access technology

### 4.1 System Parameters Maintenance [NR\_newRAT-Core]

**R4-2015176 CR to TS 38.307 Release independence support of new channel bandwidth from Rel-15**

*Type: CR For: Agreement  
 38.307 v15.6.0 CR-0039 Cat: F (Rel-15)  
  
 Source: ZTE Wistron Telecom AB*

**Abstract:**

There is no requirement specified for a new channel bandwidth added to an existing operating band introduced in Rel-15 in a manner of release independent from Rel-15. This is the formal CR for the endorsed draft CR R4-2011685 with additional corrections on the captions of the new tables.

**Decision:** The document was **not treated**.

**R4-2016001 Draft reply LS on simultaneous Rx/Tx for inter-band NR-DC**

*Type: LS out For: (not specified)  
 to RAN2  
 Source: ZTE Wistron Telecom AB*

**Decision:** The document was **not treated**.

**R4-2016524 On channel space for CA**

*Type: other For: Approval  
 38.101-1 v..  
 Source: Huawei, HiSilicon*

**Abstract:**

Proposal 1: Agree on the CR[3][4] for revision of CA channel space.

**Decision:** The document was **not treated**.

**R4-2016525 CR on channel space for CA**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0578 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

In sentence “GBChannel(i) is the minimum guard band for channel bandwidth i according to Table 5.3.3-1 for the said μ value with μ as defined in TS 38.211.”, the “said μ” is not clearly defined.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2016526 CR for 38.101-1 channel space for CA\_Rel16**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0579 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016527 CR on channel space for CA**

*Type: CR For: Agreement  
 38.101-2 v15.11.0 CR-0304 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

In sentence “GBChannel(i) is the minimum guard band for channel bandwidth i according to Table 5.3.3-1 for the said μ value with μ as defined in TS 38.211.”, the “said μ” is not clearly defined.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2016528 CR for 38.101-2 channel space for CA\_Rel16**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0305 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

### 4.2 UE RF requirements maintenance [NR\_newRAT]

#### 4.2.1 [FR1] Maintenance for 38.101-1 [NR\_newRAT-Core]

**R4-2015031 CR to TS 38.101-1: Correction on the Aggregated Channel Bandwidth**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0530 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

During the discussion on the Tx RF requirements for intra-band contiguous CA in Rel-16, the parameters such as SCSlow, SCShigh, NRB,low, NRB,high and BWGB,Channel(k) in the equation are fixed to avoid the variable BWChannel\_CA values, and more importantly, it can avoid the cases that the BWChannel\_CA is larger than the sum of the channel bandwidth of the CCs.

In currently Rel-15 spec, there are some intra-band contiguous CA Rx requirements are defined associate with BWChannel\_CA .It is important to guarantee the BWChannel\_CA is not larger than the sum of the channel bandwidth of the CCs. Therefore, the methods agreed in Rel-16 spec shall be also applied to Rel-15 spec.

In addition, it was agreed in RAN4 #95e meeting that μ=1 is selected for some cases without common μ to calculate the CA nominal channel spacing.

**Decision:** The document was **not treated**.

**R4-2015032 CR to TS 38.101-1: Correction on the Aggregated Channel Bandwidth**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0531 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016041 CR Removal of Band 10 protection 38101-1 Rel15**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0555 Cat: F (Rel-15)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

Band 10 protection removal has been agreed for LTE in R4-2011521. This CR applies this correction to relevant NR bands and NR CA combinations.

**Decision:** The document was **not treated**.

##### 4.2.1.1 Maintenance for Transmitter characteristics [NR\_newRAT-Core]

**R4-2014254 CR to 38.101-1: UL MIMO EVM and emission requirements update**

*Type: CR For: Endorsement  
 38.101-1 v15.11.0 CR-0494 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

For a UE configured for 2L UL:

Agreement that emissions requirements apply at a UE level are captured in Rel-16, but not in Rel-15

Existing EVM requirement is not consistent with RAN1 design of allowing UE freedom to map logical port to antenna connector. This is also inconsistent with FR2 Tx modulation quality requirements, which are specific per layer

(See

R4-2014256 for further details. See also R4-2011762 and CR433)

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked on the coversheet, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2014255 CR to 38.101-1: UL MIMO EVM and emission requirements update**

*Type: CR For: Endorsement  
 38.101-1 v16.5.0 CR-0495 Cat: A (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

(Mirror) Insert NS\_203 framework, requirements goes into effect shortly after RAN4#97-e.

**Decision:** The document was **not treated**.

**R4-2014256 FR1 transmitter requirements for 2-layer UL**

*Type: discussion For: Agreement  
 Source: Qualcomm Incorporated*

**Abstract:**

Intent of EVM test, reference plane for EVM test, clarification that emissions requirements are per-UE.

Proposal 1: The 2L UL MIMO RAN4 EVM requirement shall be evaluated per layer.

Proposal 2: Use the linear zero-forcing 2L MIMO equalizer to define and measure the transmit EVM for multi-layer MIMO transmission

Proposal 3: Change the emissions definition in Rel-15 TS 38.101-1 to reflect Rel-16 TS 38.101-1.

**Decision:** The document was **not treated**.

**R4-2014307 Clarification of additional spurious emission requirements on two bands uplink Inter-band CA(R15)**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0496 Cat: F (Rel-15)  
  
 Source: SoftBank Corp.*

**Abstract:**

As current UE co-ex table for two bands uplink Inter-band CA(Table 6.5A.3.2.3-1) only specifies general spurious emission, applicability of additional requirements (using NS\_XX) has not been clearly specified.

**Decision:** The document was **not treated**.

**R4-2014308 Clarification of additional spurious emission requirements on two bands uplink Inter-band CA(R16)**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0497 Cat: A (Rel-16)  
  
 Source: SoftBank Corp.*

**Abstract:**

As current UE co-ex table for two bands uplink Inter-band CA(Table 6.5A.3.2.3-1) only specifies general spurious emission, applicability of additional requirements (using NS\_XX) has not been clearly specified.

**Decision:** The document was **not treated**.

**R4-2014402 CR for TS38.101-1 Rel-15, Correction for definition of P-MPR**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0501 Cat: F (Rel-15)  
  
 Source: CATT*

**Abstract:**

In clause 3.2 and 6.2.4, the definitions of P-MPR are incorrect.

**Decision:** The document was **not treated**.

**R4-2014403 CR for TS38.101-1 Rel-16, Correction for definition of P-MPR**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0502 Cat: A (Rel-16)  
  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014404 CR for TS38.101-2 Rel-15, Correction for definition of P-MPR**

*Type: CR For: Agreement  
 38.101-2 v15.11.0 CR-0268 Cat: F (Rel-15)  
  
 Source: CATT*

**Abstract:**

In clause 6.2.4, the definitions of P-MPR are incorrect.

**Decision:** The document was **not treated**.

**R4-2014405 CR for TS38.101-2 Rel-16, Correction for definition of P-MPR**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0269 Cat: A (Rel-16)  
  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014718 CR to TS38.101-1 on DC location correction**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0511 Cat: F (Rel-15)  
  
 Source: Samsung*

**Abstract:**

txDirectCurrentLocation is a parameter of UplinkTxDirectCurrent IE. But txDirectCurrentLocation is mistakenly used as IE

**Decision:** The document was **not treated**.

**R4-2014719 CR to TS38.101-1 on DC location correction**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0512 Cat: A (Rel-16)  
  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014898 Coexistence cleanup for 38.101-1 Rel15**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0517 Cat: F (Rel-15)  
  
 Source: Apple Inc.*

**Abstract:**

Rel-15 features several band protection requirements which are not technical possible or contains contradicting protection requirements.

**Decision:** The document was **not treated**.

**R4-2014905 CR for TS 38.101-1: Correction to FR1 time mask for SRS antenna switching**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0519 Cat: F (Rel-15)  
  
 Source: Apple Inc.*

**Abstract:**

FR1 time mask for the case when consecutive SRS switching usage is between antenna switching & other sets as shown in Figure 6.3.3.6-5 in TS 38.101-1 includes both usage sets for between antenna switching and between antenna switching and other sets where the former usage set should have a guard symobl allocated between SRS (Ant. “y”, Ant. switch) and SRS (Ant. “x”, Ant. switch) according to RAN1 specifications in TS 38.214 clause 6.2.1.2.

**Decision:** The document was **not treated**.

**R4-2014906 CR for TS 38.101-1: Correction to FR1 time mask for SRS antenna switching**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0520 Cat: A (Rel-16)  
  
 Source: Apple Inc.*

**Decision:** The document was **not treated**.

**R4-2015998 Correction to spurious co-existence requirements for n28 and n83**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0554 Cat: F (Rel-15)  
  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

In R4-1910289, some corrections were done in spurious co-existence requirements to align with 36.101 LTE core requirements. As part of those corrections, protection to frequency band n66 from bands n28 and n83 became misleading as NOTE 2 applicability is not clear. This issue was already corrected for Rel-16 in R4-2009939.

**Discussion:**

The secretary wondered what is the correct Release? It reads Rel-16 on the coversheet but the CR is allocated for Rel-15.

**Decision:** The document was **not treated**.

**R4-2016470 CR for TS 38.101-3: correction CR for simultaneous Tx/Rx operation (R15)**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0564 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Simultaneous Rx/Tx capability for TDD-TDD and TDD-FDD inter-band NR CA, SUL or inter-band EN-DC configurations should be a per band combination per band pair capability rather than a per BC capability. Two-band combination is the basis for reporting such a capability.

**Decision:** The document was **not treated**.

**R4-2016471 CR for TS 38.101-1: correction CR for simultaneous Tx/Rx operation (R16)**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0565 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016490 CR for TS 38.101-1: correction of delta Tib for UE supporting multiple band combinations (R15)**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0570 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

For UE supporting multiple band combinations, ∆TIB,c could be different for these combinations. Unlike ∆RIB,c , how to use ∆TIB,c in this case is not clearly specified.

**Decision:** The document was **not treated**.

**R4-2016491 CR for TS 38.101-1: correction of delta Tib for UE supporting multiple band combinations (R16)**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0571 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016494 Update of configured transmitted power to remove ambiguity in TL,C (Rel-15)**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0572 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

For the requirements of MOP in Table 6.2.1-1, the lower tolerance limit might be relax by 1.5dB according to NOTE 3:

NOTE 3:Refers to the transmission bandwidths confined within FUL\_low and FUL\_low + 4 MHz or FUL\_high – 4 MHz and FUL\_high, the maximum output power requirement is relaxed by reducing the lower tolerance limit by 1.5 dB.

In 6.2.4 the 1.5dB relaxation is considered as ∆TC,c when calculating PCMAX\_L,f,c. But when deciding T(PCMAX,f,c) the tolerance TL,c refers to Table 6.2.1-1 directly, which is ambiguous whether the 1.5dB relaxation needs to be counted twice.

Same problem also exists in CA and UL-MIMO test cases.

**Decision:** The document was **not treated**.

**R4-2016495 Update of configured transmitted power to remove ambiguity in TL,C (Rel-16)**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0573 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

For the requirements of MOP in Table 6.2.1-1, the lower tolerance limit might be relax by 1.5dB according to NOTE 3:

NOTE 3:Refers to the transmission bandwidths confined within FUL\_low and FUL\_low + 4 MHz or FUL\_high – 4 MHz and FUL\_high, the maximum output power requirement is relaxed by reducing the lower tolerance limit by 1.5 dB.

In 6.2.4 the 1.5dB relaxation is considered as ∆TC,c when calculating PCMAX\_L,f,c. But when deciding T(PCMAX,f,c) the tolerance TL,c refers to Table 6.2.1-1 directly, which is ambiguous whether the 1.5dB relaxation needs to be counted twice.

Same problem also exists in CA and UL-MIMO test cases.

**Discussion:**

The secretary wondered what is the correct Release? It reads Rel-15 on the coversheet but the CR is allocated for Rel-16.

**Decision:** The document was **not treated**.

**R4-2016521 CR for TS 38.101-1 Pcmax**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0576 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

‘DL-only carrier’ is not aligned with RAN1/RAN2 spec terminology.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2016522 CR on TS 38.101-1 Pcmax**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0577 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016531 on 5MHz AMPR for NS\_38**

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

**Abstract:**

Observation 1: UE could transmit power >15dBm in the real network on Band n74 with NS\_38 signaling, but no AMPR is defined for 5MHz CBW.

Observation 2: UE is allowed to transmit power of >15dBm, but there is no AMPR defined for 5MHz.

Observation 3: when AMPR is larger than 8dB, the Pcmax would be lower than 15dBm.

Proposal 1: Revise AMPR and ASE requirement as in Table 1 and Table 2, the corresponding CR is as in [1].

**Decision:** The document was **not treated**.

**R4-2016534 CR on correction for AMPR NS\_38,NS\_40 and NS\_41**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0580 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

ASE requirement for NS\_38,NS\_40 and NS\_41 requires transmission power of 15dBm, but AMPR for these NS is larger than 8dB for some RB allocations. For NS\_38, there is no 5MHz AMPR definition.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2016535 CR for 38.101-1 on corrections for AMPR-Rel-16**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0581 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016569 EVM Measurement for 2-Layer Uplink MIMO**

*Type: discussion For: Agreement  
 Source: Lenovo, Motorola Mobility*

**Decision:** The document was **not treated**.

**R4-2016578 CR to DMRS position in UL RMC for FR1**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0582 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

DM-RS symbol positions for 11 UL OFDM symbols in UL RMC tables are not consistent with RAN1 spec of TS38.211.

**Decision:** The document was **not treated**.

##### 4.2.1.2 Maintenance for Receiver characteristics [NR\_newRAT-Core]

**R4-2015016 CR to TS 38.101-1[R15]: Clarification of non-simultaneous Rx/Tx operation for CA\_n77-n79 and CA\_n78-n79 in TS 38.101-1.**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0526 Cat: F (Rel-15)  
  
 Source: NTT DOCOMO, INC.*

**Abstract:**

It is unclear whether it is synchronous operation or asynchronous operation when proposing new configuration that include CA\_n77-n79 or CA\_n78-n79. Also, it is not good to have to mention this every time we propose a higher order configurations.

**Decision:** The document was **not treated**.

**R4-2015017 CR to TS 38.101-1[R16]: Clarification of non-simultaneous Rx/Tx operation for CA\_n77-n79 and CA\_n78-n79 in TS 38.101-1.**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0527 Cat: A (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015029 CR to TS 38.101-1: Correction on applicability of 4Rx requirements for CA**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0528 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

For diversity charateristics, requirements for two Rx antenna ports are the baseline, also it applies when the band is used as a standalone band or as part of a band combination, as stated in the spec.

However, some bands such as band n41/n77/n78/n79 supporting four Rx antenna ports, also for some band combination such as CA n3A-n78A and n8A-n78A, MSD values have already considered the four Rx antenna ports.

Therefore, the additional requirements for four Rx ports, same as two Rx antenna ports, shall be applied for supported band combinations for which the UE can operate using up to four Rx ports while configured with carrier aggregation.

**Decision:** The document was **not treated**.

**R4-2015030 CR to TS 38.101-1: Correction on applicability of 4Rx requirements for CA**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0529 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015558 Discussion and reply draft LS on structure of NR CA reference sensitivity requirements in 38.101-1**

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

**Abstract:**

Proposal 1: It’s proposed to inform RAN5 that the requirement structure in both clause 7.3A.4 and 7.3A.6 listing only aggressor and victim will be retained in future.

Proposal 2: It’s proposed to inform RAN5 that band combination specific manner will be used to specify IMD exception requirements in clause 7.3A.5.

Proposal 3: It’s proposed to move the SDL requirements in 7.3A.2.4 to 7.3. The exceptions for SDL band combinations can be specified in clause 7.3A.4, 7.3A.5 and 7.3A.6.

**Decision:** The document was **not treated**.

**R4-2015559 CR for 38.101-1 to adjust the structure of NR CA REFSENS**

*Type: CR For: Agreement  
 38.101-1 v15.11.0 CR-0541 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

There are some reasons to move the SDL requirements in 7.3A.2.4 to 7.3.

Firstly, the REFSENS for SDL bands are band combination independent. RAN4 don’t need to list SDL band REFSENS one by one for different inter-band CA combinations.

Secondly, it’s helpful to reduce the coupling between clause 7.3 and clause 7.3A.2.4. It can cause some misalignment between 7.3A.2.4 and 7.3 that the REFSENS other than SDL bands are also listed in clause 7.3A.2.4.

Thirdly, the requirements in clause 7.3A.2.4 are totally same with REFSENS requirements for inter-band CA in clause 7.3A.2.3. For SDL bands, the reference sensitivity requirements can be verified by inter-band CA combinations with SDL band.

IMD exception is the only one that depends on specific DL configuration for all the NR CA requirements. From RF technical perspective, the different configurations of NR CA band combinations have the same IMD exception requirements. Listing all the different configurations not only brings the risks of missing and errors, but also makes spec redundant because of no additional information.

**Decision:** The document was **not treated**.

**R4-2015560 CR for 38.101-1 to adjust the structure of NR CA REFSENS (Rel-16)**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0542 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

#### 4.2.2 [FR2] Maintenance for 38.101-2 [NR\_newRAT-Core]

**R4-2016053 Frequency separation class alignment**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0294 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Alignment of Frequency Separation classes to TS38.331.

At RAN2#111-e (August 2020) two Rel-16 CRs to TS38.331 (R2-2008463) and TS38.306 (R2-2008462) where agreed.

Those CRs makes the needed uppdates to the specifications according to an RAN4 agreement stated in an LS to RAN2 in (R2-2006174 (R4-2009294)) Titled “LS on Frequency separation class for DL-only spectrum for FR2”

In TS38.331 previously stated:

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FreqSeparationClass ::= ENUMERATED {c1, c2, c3, ...}

Where the values c1, c2, c3 correspond to the values defined in TS38.101-2, Table 5.3A.4-2.

-----------------------------

After the change the I.E now indicates explicit values:

FreqSeparationClass ::= ENUMERATED { mhz800, mhz1200, mhz1400, ...}

And the new I.E for Frequency separation Class DL is added as:

FreqSeparationClassDL-Only-r16 ::= ENUMERATED {mhz200, mhz400, mhz600, mhz800, mhz1000, mhz1200}

----------------------------

In this paper 38.101-2 is aligned with the updated signaling.

**Decision:** The document was **not treated**.

##### 4.2.2.1 Regulatory Tx/Rx spurious emission limits handling [NR\_newRAT-Core]

**R4-2014054 EESS protection related requirements for FR2 bands**

*Type: CR For: Agreement  
 38.101-2 v15.11.0 CR-0262 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction of EESS protection based on WRC-19.

**Decision:** The document was **not treated**.

**R4-2014055 EESS protection related requirements for FR2 bands**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0263 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Cat A CR of

R4-2014054.

**Decision:** The document was **not treated**.

**R4-2014257 draft LS to RAN5 on new emissions requirements**

*Type: LS out For: Approval  
 to RAN5  
 Source: Qualcomm Incorporated*

**Abstract:**

Editor’s note captures applicability (emissions changeover) date for a new NS flag. The intent is to convey to RAN5 that the recommended date for introduction of requirement in RAN5 spec

**Decision:** The document was **not treated**.

**R4-2014258 On introduction of new emissions requirements to existing bands**

*Type: discussion For: Agreement  
 Source: Qualcomm Incorporated*

**Abstract:**

We discuss the general problem of keeping 3GPP requirements consistent with regulation changes that become applicable at calendar dates, rather than at the close of a release cycle.

Observation 1: Existing 3GPP processes cause undue reduction in UL performance of legacy UEs when faced with new emissions regulations, despite any exemptions for legacy UE.

Observation 2: There is no RAN2 impact from introducing new NS to existing bands due to available NS slots and existing framework.

Observation 3: To incorporate a new emissions requirement, RAN4 cannot wait to insert NS framework just prior to an emissions requirement applicability date.

Observation 4: A RAN4 solution that allows completion of requirements well in advance of applicability dates is much more practical than one involving long-term calendar-monitoring.

Proposal 1: RAN4 to introduce NS\_203 immediately. Applicability date information is not necessary to be captured.

Proposal 2a: RAN4 to implement new NS per Option 3 described in Table 2.3-1 => introduce new NS into standard immediately with applicability (‘mandatory from’) date as a normative element.

Proposal 2b: RAN4 to implement new NS per Option 4 described in Table 2.3-1 => introduce new NS into standard immediately with applicability (‘mandatory from’) dates in Editor’s Notes.

**Decision:** The document was **not treated**.

**R4-2014259 CR to 38.101-2: Introduction of NS\_203**

*Type: CR For: Endorsement  
 38.101-2 v15.11.0 CR-0264 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Some WRC19 emissions resolutions become applicable 1/1/2021. For 3GPP to pro-actively incorporate the new requirements, new NS framework is needed in standard.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked on the coversheet, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2014260 CR to 38.101-2: Introduction of NS\_203**

*Type: CR For: Endorsement  
 38.101-2 v16.5.0 CR-0265 Cat: A (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

(Mirror) NS\_203 goes into effect shortly after RAN4#97-e.

**Decision:** The document was **not treated**.

**R4-2014885 CR for introduction of EESS protection applied after 2021**

*Type: CR For: Agreement  
 38.101-2 v15.11.0 CR-0277 Cat: F (Rel-15)  
  
 Source: NTT DOCOMO INC.*

**Abstract:**

1dBm/200MHz EESS protection for n258 and 7dBm/GHz and -13dBm/MHz for n260 will apply from 1 January 2021 according to WRC-19 decision

Reflect the following agreements in R4-2009141:

1dBm/200MHz protection requirements is specified with NS\_203 for n258

7dBm/1GHz and -13dBm/MHz are specified with NS\_205 for n260.

Explicit signaling for a UE to report newly supported NS value(s) for a legacy band to the network (reuse modifiedMPR bits)

A-MPR values proposed in R4-2006788 apply

**Decision:** The document was **not treated**.

**R4-2014886 CR for introduction of EESS protection applied after 2021**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0278 Cat: A (Rel-16)  
  
 Source: NTT DOCOMO INC.*

**Decision:** The document was **not treated**.

**R4-2014925 Further consideration on EESS protection**

*Type: other For: Approval  
 Source: NTT DOCOMO INC.*

**Decision:** The document was **not treated**.

**R4-2014926 Further consideration on EESS protection**

*Type: other For: Approval  
 Source: NTT DOCOMO INC.*

**Decision:** The document was **not treated**.

**R4-2015211 Remaining issues on WRC-19**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution mainly addresses how to handle the other NS(s) other than NS\_203.

Proposal 1: Make NS\_201/CA\_NS\_201 not applicable in the following ways.

- Add a NOTE such that “the NS(s) is not applicable in the present release of specifications” to NS mapping tables.

- Replace the relevant subclauses on the NS(s) with “void”.

Proposal 2: Introduce NS\_203/CA\_NS\_203 with a bit for modifiedMPR for the NS(s) as mandatory

Observation: Since it is challenging for 3GPP to uniquely define “UE brought into use” as a single 3GPP phrase applicable all over the world, regardless of whatever options RAN4 takes, ambiguity still remains.

Proposal 3: Consider a following possible compromised alternative as one of the options

- Capture the new NS(s), but make them not available by making A-MPR TBD

- Capture an informative NOTE outside the relevant table to explain the situation

- Specific examples are captured in Annex

**Decision:** The document was **not treated**.

**R4-2015255 on FR2 spurious emission NS handling**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Abstract:**

Observation 1: More stringent requirement after the change-over date apply to UE/chipset who went on the market before the change-over date is the main problem on introducing the EESS protection into specification.

Observation 2: The requirements applicable after 2024/2027 are part of current requirements so UE need to have the capability with these requirements.

Observation 3: We have no clue weather a UE will be used after change-over date, so the capability should be added before the change over date

Proposal: Choose option 2 above for introducing the all foreseen NS values.

**Decision:** The document was **not treated**.

**R4-2016532 on FR2 EESS protection emission requirement**

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

**Abstract:**

Observation 1: even UE is mandatory to support newly introduced NS after change over date, UE is not mandatory to behave with newly NS.

Observation 2: From “2 stage emission requirement” and “NS signalling”, even we push it as mandatory to support, the tight NS may only a requirement shown up in verification test but never implemented by UE in real network.

Observation 3: Modified MPR solution actually equals to: directly specify UE is mandatory to support 1dBm/200MHz on n258 from Rel-15.

Proposal 1: Do not introduce modified MPR solution for indicating on NS support.

Proposal 2: For 1dBm/200MHz for n258, UE is mandatory to support it from Rel-15, regardless of the “brought into use” date.

Proposal 3: Leave -5dBm/200MHz requirement for the future work of RAN4.

**Decision:** The document was **not treated**.

##### 4.2.2.2 Maintenance for Transmitter characteristics [NR\_newRAT-Core]

**R4-2014261 CR to 38.101-2: ULCA clarifications**

*Type: CR For: Endorsement  
 38.101-2 v15.11.0 CR-0266 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

During the work phase for the Rel-16 FR2 intra-band non-contiguous UL CA feature, R4-2011511 identified some conflicts, need for clarifications and editorial reoriganization in TS38.101-2. These changes were adopted for Rel-16 in the feature CR for FR2 NC UL CA. This CR is a ‘reverse mirror’ to back-port those changes to Rel-15.

Also included are some editorial changes

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked on the coversheet, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2014262 CR to 38.101-2: ULCA clarifications**

*Type: CR For: Endorsement  
 38.101-2 v16.5.0 CR-0267 Cat: A (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

(Mirror) Resolve spec conflict, introduce clarifications as identified in Rel-16 NC ULCA feature CR

**Decision:** The document was **not treated**.

**R4-2014684 Transmission gap for relative power tolerance in FR2**

*Type: CR For: Agreement  
 38.101-2 v15.11.0 CR-0273 Cat: F (Rel-15)  
  
 Source: Anritsu corporation*

**Abstract:**

In sub-clause 6.3.4.3, definition of transmission gap for relative power tolerance is not aligned with the associated requirement for FR1 nor E-UTRA requirement.

In 6.3A.4.3, expression of transmission gap is not aligned with 6.3.4.3.

**Decision:** The document was **not treated**.

**R4-2014685 Transmission gap for relative power tolerance in FR2**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0274 Cat: A (Rel-16)  
  
 Source: Anritsu corporation*

**Decision:** The document was **not treated**.

**R4-2014711 PCC SCC prioritization issue solution**

*Type: discussion For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

Proposal: Add a note to the TS 38.101-2 that MPR’s were derived with equal PSD in the analysis

**Decision:** The document was **not treated**.

**R4-2014720 CR to TS38.101-2 on DC location correction**

*Type: CR For: Agreement  
 38.101-2 v15.11.0 CR-0275 Cat: F (Rel-15)  
  
 Source: Samsung*

**Abstract:**

txDirectCurrentLocation is a parameter of UplinkTxDirectCurrent IE. But txDirectCurrentLocation is mistakenly used as IE

**Decision:** The document was **not treated**.

**R4-2014721 CR to TS38.101-2 on DC location correction**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0276 Cat: A (Rel-16)  
  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014907 CR for TS 38.101-2: Clarification for NS\_202 emission requirements**

*Type: CR For: Agreement  
 38.101-2 v15.11.0 CR-0279 Cat: F (Rel-15)  
  
 Source: Apple Inc.*

**Abstract:**

NS\_202 contains two emission requirements, one is for additional spurious emission requirement at -10 dBm/100 MHz, the other at 1 dBm/200 MHz is meant for protection of satellite passive services. Since the former requirement is tighter and also covers the frequency range of the latter requirement, without clarification on the purpose of the latter requirement, it would look to be redudant for the latter requirement in NS\_202.

**Decision:** The document was **not treated**.

**R4-2014908 CR for TS 38.101-2: Clarification for NS\_202**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0280 Cat: A (Rel-16)  
  
 Source: Apple Inc.*

**Decision:** The document was **not treated**.

**R4-2015334 Discussion on FR2 equal PSD in CA and draft LS**

*Type: discussion For: Approval  
 Source: OPPO*

**Abstract:**

Observation 1: Equal PSD restriction was introduced into spec without much explanation why this is needed for Pcmax and the comments are from UE implementation rather than from testing point of view.

Observation 2: No such equal PSD restriction was introduced into other RAN4 specs like FR1 CA or EN-DC.

Observation 3: Usually MPR are derived based on some precondition (the worst case), however, it applies to all the scenarios and there is no need to mention about the precondition in spec.

Proposal 1: It is proposed to remove the equal PSD restriction from Pcmax section.

Observation 4: Requirements related to max power in CA are also impacted and derive of worst case in testing is this is up to RAN5.

Observation 5: RF tests are verifying UE hardware performance, and what matters is the status that is targeted to be verified, therefore there is no need to always follow the UE behaviour in the NW.

Observation 6: Test mode or test commands can be adopted to derive the equal PSD status from testing point of view.

Proposal 2: It is proposed to inform RAN5 about the updates and backgrounds in RAN4 specs to facilitate test case design.

**Decision:** The document was **not treated**.

**R4-2015335 CR on FR2 equal PSD in UL CA**

*Type: CR For: Endorsement  
 38.101-2 v15.11.0 CR-0285 Cat: F (Rel-15)  
  
 Source: OPPO*

**Abstract:**

As discussed in

R4-2015334, the equal PSD restriction in Pcmax is not needed and it has caused confusions in interpretation of requirements.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2015970 Correction to Pcmax: total radiated power**

*Type: CR For: Agreement  
 38.101-2 v15.11.0 CR-0288 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The total radiated power for CA is undefined. The defintion of the index i of the active serving cells c(i) is missing.

**Decision:** The document was **not treated**.

**R4-2015971 Correction to Pcmax: total radiated power**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0289 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

CR to add definition and requirements for total radiated power

**Decision:** The document was **not treated**.

**R4-2016056 Correction of transmission gap definition for Relative power tolerance**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0295 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The defined transmission gap between sub-frames for relative power tolerance is not correctly defined. It is set to 20ms, corrrect definition schould be “less than or equal to 20ms”

**Decision:** The document was **not treated**.

**R4-2016057 Correction of transmission gap definition for Relative power tolerance**

*Type: CR For: Agreement  
 38.101-2 v15.11.0 CR-0296 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The defined transmission gap between sub-frames for relative power tolerance is not correctly defined. It is set to 20ms, corrrect definition schould be “less than or equal to 20ms”

**Discussion:**

The secretary wondered what is the correct Release? It reads Rel-16 on the coversheet but the CR is allocated for Rel-15.

**Decision:** The document was **not treated**.

**R4-2016459 CR for 38.101-2: IBB and ACS corrections**

*Type: CR For: Agreement  
 38.101-2 v15.11.0 CR-0298 Cat: F (Rel-15)  
  
 Source: T-Mobile USA*

**Abstract:**

There is an error in the symbols for channel bandwidths of carrier k fpor IBB and ACS

**Decision:** The document was **not treated**.

**R4-2016460 Mirror CR for 38.101-2: IBB and ACS corrections**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0299 Cat: A (Rel-16)  
  
 Source: T-Mobile USA*

**Decision:** The document was **not treated**.

**R4-2016579 CR to DMRS position in UL RMC for FR2**

*Type: CR For: Agreement  
 38.101-2 v15.11.0 CR-0306 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

DM-RS symbol positions for 11 UL OFDM symbols in UL RMC tables are not consistent with RAN1 spec of TS38.211.

**Decision:** The document was **not treated**.

##### 4.2.2.3 Maintenance for Receiver characteristics [NR\_newRAT-Core]

**R4-2016031 Correction to EIS definition**

*Type: CR For: Agreement  
 38.101-2 v15.11.0 CR-0292 Cat: F (Rel-15)  
  
 Source: Rohde & Schwarz*

**Abstract:**

The abbreviation for EIS is explained inconsitently in the specification. In chapter 3.3 and throughout chapter 7 it is defined as “effective isotropic sensitivity”, but in chapter 3.1 it is mentioned as “equivalent isotropic sensitivity”. The definition in chapter 3.1 needs to be aligned with the other usages of the term in the specifiation.

**Decision:** The document was **not treated**.

**R4-2016032 Correction to EIS definition**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0293 Cat: A (Rel-16)  
  
 Source: Rohde & Schwarz*

**Decision:** The document was **not treated**.

**R4-2016499 CR to 38.101-2: Frequency separation class update**

*Type: CR For: Endorsement  
 38.101-2 v15.11.0 CR-0300 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

During the Rel-16 FR2 RF enhancement work item, two categories of new frequency separation classes were introduced:

Rel-16 enhancement, FS>1400 MHz

Rel-15 compliant FS = 1000 MHz

Unfortunately, both categories were implemented by RAN2 exclusively as a Rel-16 enhancement due to lack of clarity in LS from RAN4 on this aspect.

FS = 1000 MHz is contained inside the range of FS that is supportable by Rel-15 infra hardware (800 to 1400 MHz). Consequently there would be network benefit to enhancing the Rel-15 list of FS class for UEs by introduction of FS = 1000 MHz

Cat A (mirror) CR not required because this is a case of Rel-15 catching up to Rel-16

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2016545 draft LS to RAN2 on Rel-15 frequency separation class update**

*Type: LS out For: Approval  
 to RAN2  
 Source: Qualcomm Incorporated*

**Abstract:**

Introduce intermediate value of FS class

**Decision:** The document was **not treated**.

#### 4.2.3 Maintenance for 38.101-3 [NR\_newRAT-Core]

**R4-2014914 CR for TS 38.101-3: Corrections for intra-band contiguous EN-DC configurations**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0380 Cat: F (Rel-15)  
  
 Source: Apple Inc.*

**Abstract:**

Intra-band contiguous EN-DC combinations cannot have non-contiguous UL configurations.

**Decision:** The document was **not treated**.

**R4-2016238 CR 38101-3 R15 Band 10 protection and DC\_42\_n79 correction**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0411 Cat: F (Rel-15)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

Band 10 protection removal has been agreed for LTE in R4-2011521. This CR applies this correction to relevant EN-DC combinations.

DC\_42\_n79 Simultaneous Tx/Rx operation is ambiguous.

**Decision:** The document was **not treated**.

**R4-2016241 CR 38101-3 R16 Band 10 protection and DC\_42\_n79 correction**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0412 Cat: A (Rel-16)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

Mirror R16 CR to R15 CR0411 in

R4-2016238

**Decision:** The document was **not treated**.

##### 4.2.3.1 [FR1] Maintenance for Transmitter characteristics within FR1 [NR\_newRAT-Core]

**R4-2014309 Clarification of additional spurious emission requirements on Inter-band EN-DC(R15)**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0360 Cat: F (Rel-15)  
  
 Source: SoftBank Corp.*

**Abstract:**

As current UE co-ex table for Inter-band EN-DC(Table 6.5B.3.3.2-1) only specifies general spurious emission, applicability of additional requirements (using NS\_XX) has not been clearly specified.

**Decision:** The document was **not treated**.

**R4-2014310 Clarification of additional spurious emission requirements on Inter-band EN-DC(R16)**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0361 Cat: A (Rel-16)  
  
 Source: SoftBank Corp.*

**Abstract:**

As current UE co-ex table for Inter-band EN-DC(Table 6.5B.3.3.2-1) only specifies general spurious emission, applicability of additional requirements (using NS\_XX) has not been clearly specified.

**Decision:** The document was **not treated**.

**R4-2014900 Coexistence cleanup for 38.101-3 Rel15**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0378 Cat: F (Rel-15)  
  
 Source: Apple Inc.*

**Abstract:**

Rel-15 features several band protections which are not technical possible due to sometimes TDD bands with overlapping regions are protected or similar issues. The CR focuses on correcting false protections so that a UE will not face technical impossible emission requirements.

**Decision:** The document was **not treated**.

**R4-2015337 CR on simultaneous Tx-Rx for EN-DC**

*Type: CR For: Endorsement  
 38.101-3 v15.11.0 CR-0393 Cat: F (Rel-15)  
  
 Source: OPPO*

**Abstract:**

In RAN4#96e, the discussion of simultaneous Tx/Rx in EN-DC band combination DC\_42\_n79 happens and it was recognoized that it is unclear whether a band combination is mandatory or optional to support simultaneous Tx/Rx.

In current spec, for example in Table 5.5B.4.1-1(Inter-band EN-DC configurations within FR1 (two bands)), following two notes are defined for simultaneous Tx/Rx. In which NOTE3 means non-simultaneous Tx/Rx is only supported for the band combination, and NOTE7 means simultaneous Rx/Tx is only supported for the band combination.

NOTE 3: The minimum requirements apply only when there is non-simultaneous Tx/Rx operation between E-UTRA and NR carriers. This restriction applies also for these carriers when applicable EN-DC configuration is part of a higher order EN-DC configuration.

NOTE 7: Applicable for UE supporting inter-band EN-DC with mandatory simultaneous Rx/Tx capability.

However, it is not clear for band combinations which neither have NOTE3 nor NOTE7 for example in Table 5.5B.4.1-1. For these band combinations it should be interpretated as the simultaneous Rx/Tx is optionally supported. This is also aligned with the UE capability below in 38.306.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2015805 Correction of CR0325 implementation**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0399 Cat: F (Rel-15)  
  
 Source: ETSI MCC*

**Abstract:**

Table 6.5B.3.3.2-1 is missing a correction of -38dB to -36dB in Notes as proposed in approved CR0325.

**Decision:** The document was **not treated**.

**R4-2015992 CR to TS 38.101-3 clarifications on indication of Single Uplink allowed for intra-band EN-DC and NE-DC**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0405 Cat: F (Rel-15)  
  
 Source: CHTTL*

**Abstract:**

For the intra-band EN-DC and NE-DC combinations, as the indication of single UL allowed is due to potential emission issues, there is no need to check whether the IM2 or IM3 falls into own primary downlink channel bandwidth or not when determining dual uplink is mandatory support or not.

The description for the equation of the self IM interference includes the intra-band configuration tables in the current specification, which might cause confusion.

**Decision:** The document was **not treated**.

**R4-2015999 CR to TS 38.101-3 clarifications on indication of Single Uplink allowed for intra-band EN-DC and NE-DC**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0406 Cat: A (Rel-16)  
  
 Source: CHTTL*

**Decision:** The document was **not treated**.

**R4-2016054 Correction of p-Max I.E and corresponding references**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0407 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Some references related to the IE p-maxUE-FR1 points wrongly to TS38.331 instead of TS36.331.

The definition/meaning of the I.E is different between TS36.331 and TS38.331. In TS38.331, the p-maxUE-FR1 is a field used for inter-node signaling (CG-ConfigInfo), so does not really belong to 38.101-3

The corresponding parameter to p-maxUE-FR1 for NR-DC in TS38.331 is p-UE-FR1.

**Discussion:**

The secretary wondered what is the correct Category? It reads F on the coversheet but the CR is allocated for A.

**Decision:** The document was **not treated**.

**R4-2016055 Correction of p-Max I.E and corresponding references**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0408 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Some references related to the IE p-maxUE-FR1 points wrongly to TS38.331 instead of TS36.331.

The definition/meaning of the I.E is different between TS36.331 and TS38.331. In TS38.331, the p-maxUE-FR1 is a field used for inter-node signaling (CG-ConfigInfo), so does not really belong to 38.101-3

The corresponding parameter to p-maxUE-FR1 for NR-DC in TS38.331 is p-UE-FR1.

There is an incorrect reference to p-maxUE-FR1 in the NE-DC clause, this needs to change to p-UE-FR1.

**Discussion:**

The secretary wondered what is the correct Release? It reads Rel-16 on the coversheet but the CR is allocated for Rel-15.

**Decision:** The document was **not treated**.

**R4-2016469 On simultaneous Rx/Tx UE capability**

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

**Abstract:**

Proposal 1: If the simultaneous capability of the fallback mode is different from that of the higher order combination, the network shall also refer to the fallback mode capability to decide the UL/DL scheduling for the band combination. Some clarification may be needed in RAN2 specification. Draft LS should be sent to RAN2 for the clarification.

Proposal 2: For FDD-TDD CA/EN-DC band combinations, remove the indication of mandatory simultaneous Rx/Tx operation condition in the spec, instead, only indicate non-simultaneous Rx/Tx for the band combination if identified, and by default UE shall report simultaneous Rx/Tx capability for two-band FDD-TDD band combinations.

Proposal 3: The restriction note similar to non-simultaneous Tx/Rx operation should also be considered for fall back mode to support mandatory simultaneous Tx/Rx operation.

Proposal 4: Revise the Notes in the spec to make the capability consistent for all of the fall back and higher order combinations for TDD-TDD and TDD-FDD CA/EN-DC combinations.

**Decision:** The document was **not treated**.

**R4-2016472 CR for TS 38.101-3: correction CR for simultaneous Tx/Rx operation (R15)**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0415 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Simultaneous Rx/Tx capability for TDD-TDD and TDD-FDD inter-band NR CA, SUL or inter-band EN-DC configurations should be a per band combination per band pair capability rather than a per BC capability. Two-band combination is the basis for reporting such a capability.

**Decision:** The document was **not treated**.

**R4-2016473 CR for TS 38.101-3: correction CR for simultaneous Tx/Rx operation (R16)**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0416 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016482 CR for TS 38.101-3: correction of power class for EN-DC**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0418 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

As clarified in the specifcation if UE indicates IE maxNumberSRS-Ports-PerResource = n2 in NR standalone operation mode, the said UE shall meet the NR requirements for either power class 2 or power class 3 in EN-DC within FR1 if UE indicates IE maxNumberSRS-Ports-PerResource = n1 for EN-DC on this NR band. However, there is no UE capabiliity to indicate the power class if it is different from that of SA mode. Since the requirements should be implementation agnostic, the lower bound of PCMAX\_L,f,c,,NR can only take that for PC3.

**Decision:** The document was **not treated**.

**R4-2016485 CR for 38.101-3 Correction on EN-DC synchronous carriers (R15)**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0419 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The statement (note 10 and note 11) specifies some conditions for UE to meet corresponding EN-DC requirements. However, such conditions can only be met under co-located deployment scenario.

According to agreed WF in R4-1711964, add an additional Note to make it clear that band combination with Note 10 and Note 11 can only work under co-located scenario in this release of the specification.

**Decision:** The document was **not treated**.

**R4-2016486 CR for 38.101-3 Correction on EN-DC synchronous carriers (R16)**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0420 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016492 CR for TS 38.101-3: correction of delta Tib for UE supporting multiple band combinations (R15)**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0421 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

For UE supporting multiple band combinations, ∆TIB,c could be different for these combinations. Unlike ∆RIB,c , how to use ∆TIB,c in this case is not clearly specified.

**Decision:** The document was **not treated**.

**R4-2016493 CR for TS 38.101-3: correction of delta Tib for UE supporting multiple band combinations (R16)**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0422 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016496 CR for TS 38.101-3: correction of spurious emission band UE co-existence (R15)**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0423 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

For Rel-15 EN-DC combos listed in summary of change, the requirements for spurious emission band UE co-existence are incorrect.

**Decision:** The document was **not treated**.

**R4-2016497 CR for TS 38.101-3: correction of spurious emission band UE co-existence (R16)**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0424 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

For Rel-16 DC\_13\_n66, The requirements for spurious emission UE co-existence was incorrect.

Corrections to Rel-15 combos need to be mapped in Rel-16 specification.

**Decision:** The document was **not treated**.

**R4-2016498 Adding delta TIB requirement for DC\_2-7-7-13\_n66**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0425 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The delta TIB requirement for DC\_2-7-7-13\_n66 was missing in 38.101-3.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2016595 on UE capability for intra-band ENDC and LS to RAN2**

*Type: LS out For: Approval  
 to RAN2  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

##### 4.2.3.2 [FR1+FR2] Maintenance for Transmitter characteristics involving both FR1 and FR2 [NR\_newRAT-Core]

**R4-2015034 CR to TS 38.101-3: Some corrections on the ENDC**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0384 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

First, the requirements clauses with suffix D in TS38.101-2 are defined for UL-MIMO, which means it is no need to be considered for NR CA operation.

Second, for spectrum emission mask requirements for intra-band non-contiguous EN-DC should be defined generally, which is for sub-block, rather than CC.

Last, for intra-band non-contiguous EN-DC, no need to consider TS38.101-2 for ACLR requirements.

**Decision:** The document was **not treated**.

**R4-2015035 CR to TS 38.101-3: Some corrections on the ENDC**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0385 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

##### 4.2.3.3 [FR1] Maintenance for Receiver characteristics within FR1 [NR\_newRAT-Core]

**R4-2014165 CR CatF Cross Band Noise DC\_1\_n40\_highBW**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0356 Cat: F (Rel-15)  
  
 Source: Qualcomm*

**Abstract:**

Missing cross band noise MSD for various interband ENDC band combinations with large NR UL BW

**Decision:** The document was **not treated**.

**R4-2014166 CR CatA Cross Band Noise DC\_1\_n40\_hignBW**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0357 Cat: A (Rel-16)  
  
 Source: Qualcomm*

**Abstract:**

Missing cross band noise MSD for various interband ENDC band combinations with large NR UL BW

**Decision:** The document was **not treated**.

**R4-2014682 UL output power for spurious response and general Rx**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0369 Cat: F (Rel-15)  
  
 Source: Anritsu corporation, Apple Inc.*

**Abstract:**

Closely associated to the previously agreed CR to OoBB requirements (R4-2011936/2010047), same definitions of UL output power need to be applied also to the following spurious response requirements:

7.7B.3 Inter-band EN-DC within FR1

7.7B.3a Inter-band NE-DC within FR1

Related to above, there is an inconsistency that the current definitions of 7.7B.3a spurious response for inter-band NE-DC within FR1 are not aligned with 7.6B.3.3a (OoBB) Inter-band NE-DC within FR1.

Similar output power setting also needs to be updated for intra-band non-contiguous EN-DC Rx requirements in clause 7.1.

Incorrect clause referencing numbers for inter-band EN-DC/NE-DC combinations.

**Decision:** The document was **not treated**.

**R4-2014683 UL output power for spurious response and general Rx**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0370 Cat: A (Rel-16)  
  
 Source: Anritsu corporation, Apple Inc.*

**Decision:** The document was **not treated**.

**R4-2015796 CR to correct MSD of DC\_1A-41A\_n77A&n78A**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0397 Cat: F (Rel-15)  
  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2016085 CR to 38.101-3 DC\_1A-20A\_n28A Missing MSD**

*Type: draftCR For: Endorsement  
 38.101-3 v15.11.0  
 Source: VODAFONE Group Plc*

**Abstract:**

MSD test points for intermodulation interference due to dual uplink operation for PC3 in DC\_1A-20A\_n28A are missing.

**Decision:** The document was **not treated**.

**R4-2016225 Correction of applicability of 2Rx requirements**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0409 Cat: F (Rel-15)  
  
 Source: vivo*

**Abstract:**

In RAN4#96-e meeting, it’s agreed that UE supporting 4Rx can skip 2Rx requirement testing for Rx cases except for single carrier REFSENS. The corresponding CR R4-2011752 was agreed for SA Rx cases, but NSA Rx cases have not been updated yet.

**Decision:** The document was **not treated**.

**R4-2016226 CR to TS38.101-3[R16] Applicability of 2Rx requirements**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0410 Cat: A (Rel-16)  
  
 Source: vivo*

**Decision:** The document was **not treated**.

##### 4.2.3.4 [FR1+FR2] Maintenance for Receiver characteristics involving both FR1 and FR2 [NR\_newRAT-Core]

### 4.3 UE EMC [NR\_newRAT-Core]

#### 4.3.1 General [NR\_newRAT-Core]

#### 4.3.2 Emission requirements [NR\_newRAT-Core]

#### 4.3.3 Immunity requirements [NR\_newRAT-Core]

### 4.4 BS RF [NR\_newRAT-Core]

#### 4.4.1 General [NR\_newRAT-Core]

**R4-2014313 Support of Japan regulation for 2.5GHz(BWA) in NR BS**

*Type: other For: Information  
 Source: SoftBank Corp., KDDI Corporation, NEC Corporation*

**Abstract:**

Explanation of BS-RF modifications needed for n41 for Japan

**Decision:** The document was **not treated**.

#### 4.4.2 Transmitter characteristics maintenance [NR\_newRAT-Core]

**R4-2016345 CR to 38.104 on Category B OTA spurious emissions for Band n257**

*Type: CR For: Agreement  
 38.104 v15.11.0 CR-0260 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

An LS from ETSI TFES updates RAN4 on the process of completing Rel-15 of the European Harmonised Standard EN 301 908. The LS clarifies that NR BS should support also band n257 in Europe.

**Decision:** The document was **not treated**.

**R4-2016346 CR to 38.104 on Category B OTA spurious emissions for and n257**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0261 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The LS from ETSI TFES makes clear that NR BS should support also band n257 in Europe. The CR adds Band n257 to Category B limits for OTA spurious emissions.

**Decision:** The document was **not treated**.

**R4-2016347 CR to 38.141-2 on Category B OTA spurious emissions for Band n257**

*Type: CR For: Agreement  
 38.141-2 v15.7.0 CR-0254 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

An LS from ETSI TFES updates RAN4 on the process of completing Rel-15 of the European Harmonised Standard EN 301 908. The LS clarifies that NR BS should support also band n257 in Europe.

**Decision:** The document was **not treated**.

**R4-2016348 CR to 38.141-2 on Category B OTA spurious emissions for Band n257**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0255 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The LS from ETSI TFES makes clear that NR BS should support also band n257 in Europe. The CR adds Band n257 to Category B limits for OTA spurious emissions.

**Decision:** The document was **not treated**.

#### 4.4.3 Receiver characteristics maintenance [NR\_newRAT-Core]

### 4.5 BS conformance testing [NR\_newRAT-Perf]

#### 4.5.1 General [NR\_newRAT-Perf]

#### 4.5.2 BS specifications clean-ups (including conformance testing and core) [NR\_newRAT-Perf/Core]

##### 4.5.2.1 eAAS specifications [NR\_newRAT-Perf/Core]

**R4-2015949 CR to TS 37.145-1: correction of manufacturer's declarations for test signal configurations, Rel-13**

*Type: CR For: Agreement  
 37.145-1 v13.10.0 CR-0221 Cat: F (Rel-13)  
  
 Source: Huawei*

**Abstract:**

It was observed that there are still undefined terms "DUID" and “AUTC” mistakenly used instead of proper manufacturer's declaration and test signal confugration numbers in the test signal configuration sections.

Furthermore, related ATC2/ANTC2 as well as ATC3/ANTC3 text was aligned for consistency purposes.

**Decision:** The document was **not treated**.

**R4-2015950 CR to TS 37.145-1: correction of manufacturer's declarations for test signal configurations, Rel-14**

*Type: CR For: Agreement  
 37.145-1 v14.8.0 CR-0222 Cat: A (Rel-14)  
  
 Source: Huawei*

**Abstract:**

Undefined terms "DUID" and “AUTC” mistakenly used instead of proper manufacturer's declaration and test signal confugration numbers in the test signal configuration sections. Furthermore, related ATC2/ANTC2 as well as ATC3/ANTC3 text was aligned for consi

**Decision:** The document was **not treated**.

**R4-2015951 CR to TS 37.145-1: correction of manufacturer's declarations for test signal configurations, Rel-15**

*Type: CR For: Agreement  
 37.145-1 v15.7.0 CR-0223 Cat: A (Rel-15)  
  
 Source: Huawei*

**Abstract:**

Undefined terms "DUID" and “AUTC” mistakenly used instead of proper manufacturer's declaration and test signal confugration numbers in the test signal configuration sections. Furthermore, related ATC2/ANTC2 as well as ATC3/ANTC3 text was aligned for consi

**Decision:** The document was **not treated**.

**R4-2015952 CR to TS 37.145-1: correction of manufacturer's declarations for test signal configurations, Rel-16**

*Type: CR For: Agreement  
 37.145-1 v16.4.0 CR-0224 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

Undefined terms "DUID" and “AUTC” mistakenly used instead of proper manufacturer's declaration and test signal confugration numbers in the test signal configuration sections. Furthermore, related ATC2/ANTC2 as well as ATC3/ANTC3 text was aligned for consi

**Decision:** The document was **not treated**.

**R4-2015953 CR to TS 37.145-2: correction of manufacturer's declarations for test signal configurations, Rel-13**

*Type: CR For: Agreement  
 37.145-2 v13.12.0 CR-0246 Cat: F (Rel-13)  
  
 Source: Huawei*

**Abstract:**

It was observed that there are still undefined terms "DUID" and “AUTC” mistakenly used instead of proper manufacturer's declaration and test signal confugration numbers in the test signal configuration sections.

**Decision:** The document was **not treated**.

**R4-2015954 CR to TS 37.145-2: correction of manufacturer's declarations for test signal configurations, Rel-14**

*Type: CR For: Agreement  
 37.145-2 v14.10.0 CR-0247 Cat: A (Rel-14)  
  
 Source: Huawei*

**Abstract:**

Undefined terms "DUID" and “AUTC” mistakenly used instead of proper manufacturer's declaration and test signal confugration numbers in the test signal configuration sections.

**Decision:** The document was **not treated**.

**R4-2015955 CR to TS 37.145-2: correction of manufacturer's declarations for test signal configurations, Rel-15**

*Type: CR For: Agreement  
 37.145-2 v15.8.0 CR-0248 Cat: A (Rel-15)  
  
 Source: Huawei*

**Abstract:**

Undefined terms "DUID" and “AUTC” mistakenly used instead of proper manufacturer's declaration and test signal confugration numbers in the test signal configuration sections.

**Decision:** The document was **not treated**.

**R4-2015956 CR to TS 37.145-2: correction of manufacturer's declarations for test signal configurations, Rel-16**

*Type: CR For: Agreement  
 37.145-2 v16.5.0 CR-0249 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

Undefined terms "DUID" and “AUTC” mistakenly used instead of proper manufacturer's declaration and test signal confugration numbers in the test signal configuration sections.

**Decision:** The document was **not treated**.

**R4-2016068 CR to TS 37.145-2 - Update CLTA definition, Rel-15**

*Type: CR For: Agreement  
 37.145-2 v15.8.0 CR-0251 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

The current CLTA definition can lead to unfeasibly large low band CLTA when testing high band systems. The definition has been added to maintain test integrety with smaller antennas.

**Decision:** The document was **not treated**.

**R4-2016069 CR to TS 37.145-2 - Update CLTA definition, Rel-16**

*Type: CR For: Agreement  
 37.145-2 v16.5.0 CR-0252 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

Implement changes to CLTA height

**Decision:** The document was **not treated**.

**R4-2016073 CR to TS 37.145-1: Corrections to conformance requirements, Rel-15**

*Type: CR For: Agreement  
 37.145-1 v15.7.0 CR-0226 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

During TFES drafting of the harmonized standard for AAS (EN 301 908 part 23) which is based on the AAS conformance specification a number or errors in 37.145-1 were identified. These need to be corrected so part 23 and 37.145-1 are aligned.

**Decision:** The document was **not treated**.

**R4-2016074 CR to TS 37.145-1: Corrections to conformance requirements, Rel-16**

*Type: CR For: Agreement  
 37.145-1 v16.4.0 CR-0227 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

Corrections to conformance specification based on errors identified while drafting the European harmonized standard

**Decision:** The document was **not treated**.

**R4-2016075 CR to TS 37.145-2: Corrections to conformance requirements including UEM additional requirements, Rel-15**

*Type: CR For: Agreement  
 37.145-2 v15.8.0 CR-0253 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

During TFES drafting of the harmonized standard for AAS (EN 301 908 part 23) which is based on the AAS conformance specification a number or errors in 37.145-2 were identified. These need to be corrected so part 23 and 37.145-2 are aligned.

**Decision:** The document was **not treated**.

**R4-2016076 CR to TS 37.145-2: Corrections to conformance requirements including UEM additional requirements, Rel-16**

*Type: CR For: Agreement  
 37.145-2 v16.5.0 CR-0254 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

Corrections to conformance specification based on errors identified while drafting the European harmonized standard

**Decision:** The document was **not treated**.

**R4-2016077 CR to TS 37.105: Corrections to core requirements including UEM additional requirements, Rel-15**

*Type: CR For: Agreement  
 37.105 v15.10.0 CR-0205 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

During drafting of the Eurpopean harmonized standard for AAS (EN 301 908 part 23) which is based on the AAS conformance specification a number or errors in 37.145-2 were identified. A number of these relate back to the core specification TS 37.105.

**Decision:** The document was **not treated**.

**R4-2016078 CR to TS 37.105: Corrections to core requirements including UEM additional requirements, Rel-16**

*Type: CR For: Agreement  
 37.105 v16.5.0 CR-0206 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

Corrections to core specification based on errors identified while drafting the European harmonized standard

**Decision:** The document was **not treated**.

**R4-2016079 Discussion on AAS UEM additional requirements**

*Type: discussion For: Discussion  
 Source: Huawei*

**Abstract:**

There is an error between the MSR and single RAT E-UTRA UEM additional requirements. The referenced core requirements are identical but the AAS implementation is different. This is discussed and correcting proposal made.

Proposal 1: Update the E-UTRA core requirement so the referenced requirements are basic limits like the MSR reference.

Proposal 2: The missing UEM addition requirements (MSR and SR E-UTRA) in 37.145-2 are copied from the MSR requirements in 37.105.

**Decision:** The document was **not treated**.

**R4-2016080 CR to TS 37.145-2: Corrections to single RAT E-UTRA additional requirements for band 89, Rel-16**

*Type: CR For: Agreement  
 37.145-2 v16.5.0 CR-0255 Cat: F (Rel-16)  
  
 Source: Huawei*

**Abstract:**

The SUL band, band 89 has been given the wrong value for coexistence requirements.

**Decision:** The document was **not treated**.

**R4-2016127 CR to 37.145-2: Correction on NR REFSENS**

*Type: CR For: Agreement  
 37.145-2 v15.8.0 CR-0256 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

NR REFSENS is not aligned with TS 38.104, this should be corrected

**Decision:** The document was **not treated**.

**R4-2016128 CR to 37.145-2: Correction on NR REFSENS**

*Type: CR For: Agreement  
 37.145-2 v16.5.0 CR-0257 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016202 CR to 37.145-1: Correction to applicability of additional BC3 requirement (Rel-15)**

*Type: CR For: Agreement  
 37.145-1 v15.7.0 CR-0228 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

On top of generic Tx IM and blocking requirement, there is additional requirement for BC3 base stations which uses 1.28Mcps UTRA TDD signal. Since this signal is not used anymore in any deployment, it is not clear why such requirement would need to be applicable. This CR is proposing to remove this requirement for CSA3A, CRs to remove this requirement for CS16/17 base stations were agreed at RAN4#96-e.

**Decision:** The document was **not treated**.

**R4-2016203 CR to 37.145-1: Correction to applicability of additional BC3 requirement (Rel-16)**

*Type: CR For: Agreement  
 37.145-1 v16.4.0 CR-0229 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016204 CR to 37.145-2: Correction to applicability of additional BC3 requirement (Rel-15)**

*Type: CR For: Agreement  
 37.145-2 v15.8.0 CR-0258 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

On top of generic Tx IM and blocking requirement, there is additional requirement for BC3 base stations which uses 1.28Mcps UTRA TDD signal. Since this signal is not used anymore in any deployment, it is not clear why such requirement would need to be applicable. This CR is proposing to remove this requirement for RCSA3A, CRs to remove this requirement for CS16/17 base stations were agreed at RAN4#96-e.

**Decision:** The document was **not treated**.

**R4-2016205 CR to 37.145-2: Correction to applicability of additional BC3 requirement (Rel-16)**

*Type: CR For: Agreement  
 37.145-2 v16.5.0 CR-0259 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016282 CR to TS 37.145-2: Out-of-band co-location test antenna definition**

*Type: CR For: Agreement  
 37.145-2 v15.8.0 CR-0260 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

There exist cases where testing becomes impractical with the current CLTA definition.

**Decision:** The document was **not treated**.

**R4-2016283 CR to TS 37.145-2: Out-of-band co-location test antenna definition**

*Type: CR For: Agreement  
 37.145-2 v16.5.0 CR-0261 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The vertical radiating dimension definition is added to the out-of-band CLTA.

**Decision:** The document was **not treated**.

**R4-2016502 TS 37.145-2: Corrections OTA SEM, OTA Rx intermod and OTA ACS**

*Type: CR For: Agreement  
 37.145-2 v15.8.0 CR-0265 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

There are a number of wrong references and editorial mistakes in the specifications

**Decision:** The document was **not treated**.

**R4-2016503 TS 37.145-2: Corrections OTA SEM, OTA Rx intermod and OTA ACS**

*Type: CR For: Agreement  
 37.145-2 v16.5.0 CR-0266 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Diverse corrections in OTA SEM, OTA Rx intermod and OTA ACS

**Decision:** The document was **not treated**.

##### 4.5.2.2 MSR specifications [NR\_newRAT-Perf/Core]

**R4-2015957 CR to TS 37.104: addition of missing note for BC1/BC3 OBUE applicability table for WA BS, Rel-16**

*Type: CR For: Agreement  
 37.104 v16.7.0 CR-0912 Cat: F (Rel-16)  
  
 Source: Huawei*

**Abstract:**

It was observed, that the Rel-16 version of the TS 37.104 specification is missing the note for BC1/BC3 OBUE applicability table for WA BS, which should be same as captured in Rel-15 version of the TS 37.141 test specification. The referred note was introduced by the MSR\_GSM\_UTRA\_LTE\_NR-Core WI.

The referred note was still present in version 16.2.0 of TS 37.104 (based on CR in R4-1905014), but not in version 16.3.0 and onwards (there was CR in R4-1908049 which was Voiding Note1, but Note2 shall still be kept in the spec, while it is missing).

**Decision:** The document was **not treated**.

**R4-2016184 CR to 37.104: Correction to ACLR limit in non-contiguous spectrum (Rel-15)**

*Type: CR For: Agreement  
 37.104 v15.11.0 CR-0913 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

NR Base Station ACLR limit in non-contiguous spectrum is tested with NTC21. Since this test configuration has one NR carrier in the first sub-block and E-UTRA carrier in the second sub-block, NOTE 3 in Table 6.6.4.6-2a may be misleading.

**Decision:** The document was **not treated**.

**R4-2016185 CR to 37.104: Correction to ACLR limit in non-contiguous spectrum (Rel-16)**

*Type: CR For: Agreement  
 37.104 v16.7.0 CR-0914 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016186 CR to 37.141: Correction to ACLR limit in non-contiguous spectrum (Rel-15)**

*Type: CR For: Agreement  
 37.141 v15.12.0 CR-0953 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

NR Base Station ACLR limit in non-contiguous spectrum is tested with NTC21. Since this test configuration has one NR carrier in the first sub-block and E-UTRA carrier in the second sub-block, NOTE 3 in Table 6.6.4.5.6-2a may be misleading.

**Decision:** The document was **not treated**.

**R4-2016187 CR to 37.141: Correction to ACLR limit in non-contiguous spectrum (Rel-16)**

*Type: CR For: Agreement  
 37.141 v16.7.0 CR-0954 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016349 CR to 37.104 on Removal of additional limit for Band 1**

*Type: CR For: Agreement  
 37.104 v15.11.0 CR-0916 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

An LS from ETSI TFES explains that the additional limit for operation in Band 1 (2110 – 2170 MHz downlink), providing a “slope” in the region 5-10 MHz outside the operating band, can be removed. The additional limit is not part of the ECC or EC regulation for operation in the bands 1920-1980 MHz and 2110-2170 MHz. This view has been confirmed through an LS exchange with ECC PT1. The limit was removed from the ETSI Harmonised Standard EN 301 908.

**Decision:** The document was **not treated**.

**R4-2016350 CR to 37.104 on Removal of additional limit for Band 1**

*Type: CR For: Agreement  
 37.104 v16.7.0 CR-0917 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The LS from ETSI TFES explains that the additional limit for operation in Band 1 (2110 – 2170 MHz downlink) , providing a “slope” in the region 5-10 MHz outside the operating band, can be removed. The additional limit is not part of the ECC or EC regulati

**Decision:** The document was **not treated**.

**R4-2016351 CR to 37.141 on Removal of additional limit for Band 1**

*Type: CR For: Agreement  
 37.141 v15.12.0 CR-0955 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

An LS from ETSI TFES explains that the additional limit for operation in Band 1 (2110 – 2170 MHz downlink), providing a “slope” in the region 5-10 MHz outside the operating band, can be removed. The additional limit is not part of the ECC or EC regulation for operation in the bands 1920-1980 MHz and 2110-2170 MHz. This view has been confirmed through an LS exchange with ECC PT1. The limit was removed from the ETSI Harmonised Standard EN 301 908.

**Decision:** The document was **not treated**.

**R4-2016352 CR to 37.141 on Removal of additional limit for Band 1**

*Type: CR For: Agreement  
 37.141 v16.7.0 CR-0956 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The LS from ETSI TFES explains that the additional limit for operation in Band 1 (2110 – 2170 MHz downlink) , providing a “slope” in the region 5-10 MHz outside the operating band, can be removed. The additional limit is not part of the ECC or EC regulati

**Decision:** The document was **not treated**.

**R4-2016353 CR to 37.105 on Removal of additional limit for Band 1**

*Type: CR For: Agreement  
 37.105 v15.10.0 CR-0208 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

An LS from ETSI TFES explains that the additional limit for operation in Band 1 (2110 – 2170 MHz downlink), providing a “slope” in the region 5-10 MHz outside the operating band, can be removed. The additional limit is not part of the ECC or EC regulation for operation in the bands 1920-1980 MHz and 2110-2170 MHz. This view has been confirmed through an LS exchange with ECC PT1. The limit was removed from the ETSI Harmonised Standard EN 301 908.

**Decision:** The document was **not treated**.

**R4-2016354 CR to 37.105 on Removal of additional limit for Band 1**

*Type: CR For: Agreement  
 37.105 v16.5.0 CR-0209 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The LS from ETSI TFES explains that the additional limit for operation in Band 1 (2110 – 2170 MHz downlink) , providing a “slope” in the region 5-10 MHz outside the operating band, can be removed. The additional limit is not part of the ECC or EC regulati

**Decision:** The document was **not treated**.

**R4-2016355 CR to 37.145-1 on Removal of additional limit for Band 1**

*Type: CR For: Agreement  
 37.145-1 v15.7.0 CR-0230 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

An LS from ETSI TFES explains that the additional limit for operation in Band 1 (2110 – 2170 MHz downlink), providing a “slope” in the region 5-10 MHz outside the operating band, can be removed. The additional limit is not part of the ECC or EC regulation for operation in the bands 1920-1980 MHz and 2110-2170 MHz. This view has been confirmed through an LS exchange with ECC PT1. The limit was removed from the ETSI Harmonised Standard EN 301 908.

**Decision:** The document was **not treated**.

**R4-2016356 CR to 37.145-1 on Removal of additional limit for Band 1**

*Type: CR For: Agreement  
 37.145-1 v16.4.0 CR-0231 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The LS from ETSI TFES explains that the additional limit for operation in Band 1 (2110 – 2170 MHz downlink) , providing a “slope” in the region 5-10 MHz outside the operating band, can be removed. The additional limit is not part of the ECC or EC regulati

**Decision:** The document was **not treated**.

**R4-2016357 CR to 37.145-2 on Removal of additional limit for Band 1**

*Type: CR For: Agreement  
 37.145-2 v15.8.0 CR-0262 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

An LS from ETSI TFES explains that the additional limit for operation in Band 1 (2110 – 2170 MHz downlink), providing a “slope” in the region 5-10 MHz outside the operating band, can be removed. The additional limit is not part of the ECC or EC regulation for operation in the bands 1920-1980 MHz and 2110-2170 MHz. This view has been confirmed through an LS exchange with ECC PT1. The limit was removed from the ETSI Harmonised Standard EN 301 908.

**Decision:** The document was **not treated**.

**R4-2016358 CR to 37.145-2 on Removal of additional limit for Band 1**

*Type: CR For: Agreement  
 37.145-2 v16.5.0 CR-0263 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The LS from ETSI TFES explains that the additional limit for operation in Band 1 (2110 – 2170 MHz downlink) , providing a “slope” in the region 5-10 MHz outside the operating band, can be removed. The additional limit is not part of the ECC or EC regulati

**Decision:** The document was **not treated**.

**R4-2016359 CR to 36.104 on Removal of additional limit for Band 1**

*Type: CR For: Agreement  
 36.104 v15.9.0 CR-4918 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

An LS from ETSI TFES explains that the additional limit for operation in Band 1 (2110 – 2170 MHz downlink), providing a “slope” in the region 5-10 MHz outside the operating band, can be removed. The additional limit is not part of the ECC or EC regulation for operation in the bands 1920-1980 MHz and 2110-2170 MHz. This view has been confirmed through an LS exchange with ECC PT1. The limit was removed from the ETSI Harmonised Standard EN 301 908.

**Decision:** The document was **not treated**.

**R4-2016360 CR to 36.104 on Removal of additional limit for Band 1**

*Type: CR For: Agreement  
 36.104 v16.7.0 CR-4919 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The LS from ETSI TFES explains that the additional limit for operation in Band 1 (2110 – 2170 MHz downlink) , providing a “slope” in the region 5-10 MHz outside the operating band, can be removed. The additional limit is not part of the ECC or EC regulati

**Decision:** The document was **not treated**.

**R4-2016361 CR to 36.141 on Removal of additional limit for Band 1**

*Type: CR For: Agreement  
 36.141 v15.10.0 CR-1286 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

An LS from ETSI TFES explains that the additional limit for operation in Band 1 (2110 – 2170 MHz downlink), providing a “slope” in the region 5-10 MHz outside the operating band, can be removed. The additional limit is not part of the ECC or EC regulation for operation in the bands 1920-1980 MHz and 2110-2170 MHz. This view has been confirmed through an LS exchange with ECC PT1. The limit was removed from the ETSI Harmonised Standard EN 301 908.

**Decision:** The document was **not treated**.

**R4-2016362 CR to 36.141 on Removal of additional limit for Band 1**

*Type: CR For: Agreement  
 36.141 v16.7.0 CR-1287 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The LS from ETSI TFES explains that the additional limit for operation in Band 1 (2110 – 2170 MHz downlink) , providing a “slope” in the region 5-10 MHz outside the operating band, can be removed. The additional limit is not part of the ECC or EC regulati

**Decision:** The document was **not treated**.

**R4-2016363 CR to 37.104 on MSR Blocking correction**

*Type: CR For: Agreement  
 37.104 v15.11.0 CR-0918 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The table reference for the general blocking requirement frequency range is incorrect and needs to be corrected.

**Decision:** The document was **not treated**.

**R4-2016364 CR to 37.104 on MSR Blocking correction**

*Type: CR For: Agreement  
 37.104 v16.7.0 CR-0919 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The table reference for the general blocking requirement frequency range is incorrect and needs to be corrected.

**Decision:** The document was **not treated**.

**R4-2016365 CR to 37.141 on MSR Blocking correction**

*Type: CR For: Agreement  
 37.141 v15.12.0 CR-0957 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The table reference for the general blocking requirement frequency range is incorrect and needs to be corrected.

**Decision:** The document was **not treated**.

**R4-2016366 CR to 37.141 on MSR Blocking correction**

*Type: CR For: Agreement  
 37.141 v16.7.0 CR-0958 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The table reference for the general blocking requirement frequency range is incorrect and needs to be corrected. The cross-reference for OOB blocking also needs to be corrected.

**Decision:** The document was **not treated**.

**R4-2016367 CR to 37.105 on NR+UTRA support for AAS**

*Type: CR For: Agreement  
 37.105 v15.10.0 CR-0210 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

When AAS BS specs were developed fully in Rel-15, there was support included for LTE and UTRA and multi-RAT operation with LTE+UTRA. GSM/EDGE was implicitly excluded. NR support was later introduced in 2018-12 (CR in R4-1808429), but only in combination with LTE. It is not explicitly stated which RATs or RAT combinations that are not covered.

**Decision:** The document was **not treated**.

**R4-2016368 CR to 37.105 on NR+UTRA support for AAS**

*Type: CR For: Agreement  
 37.105 v16.5.0 CR-0211 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Presently, it is not explicitly explained in TS 37.105 what RATs and RAT combinations that are not supported by AAS BS. This is clarified by the CR.

**Decision:** The document was **not treated**.

##### 4.5.2.3 NR conformance testing specifications [NR\_newRAT-Perf]

**R4-2015378 On PN23 sequence generation for data content for NR test models**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Observation 1: Current specification is ambiguous and generation of PN23 is not clear. It can be noticed that 2 different interpretation (options) of PN23 sequence generation can exist.

Observation 2: It is not clear how PN sequence should be generated for TDD.

Proposal: It is proposed to clarify PN sequence generation for NR TMs to avoid ambiguity as proposed in CRs [10-13].

**Decision:** The document was **not treated**.

**R4-2015379 CR to TS 38.141-1 clarification on PN23 sequence generation**

*Type: CR For: Agreement  
 38.141-1 v15.7.0 CR-0160 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR introduces clarification to PN23 sequence generation in data content section for NR test models describes in [1], and clarify whether the same PN23 sequence is used for all PDCCH/PDSCH or individual PN23 sequence is used for each PDCCH/PDSCH in TMs with multi-users. Also clarification for TDD case is added.

[1]

R4-2015378 On PN23 sequence generation for data content for NR test models, Nokia, Nokia Shanghai Bell

**Decision:** The document was **not treated**.

**R4-2015380 CR to TS 38.141-1 clarification on PN23 sequence generation**

*Type: CR For: Agreement  
 38.141-1 v16.5.0 CR-0161 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015381 CR to TS 38.141-2 clarification on PN23 sequence generation**

*Type: CR For: Agreement  
 38.141-2 v15.7.0 CR-0237 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR introduces clarification to PN23 sequence generation in data content section for NR test models describes in [1], and clarify whether the same PN23 sequence is used for all PDCCH/PDSCH or individual PN23 sequence is used for each PDCCH/PDSCH in TMs with multi-users. Also clarification for TDD case is added.

[1]

R4-2015378 On PN23 sequence generation for data content for NR test models, Nokia, Nokia Shanghai Bell

**Decision:** The document was **not treated**.

**R4-2015382 CR to TS 38.141-2 clarification on PN23 sequence generation**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0238 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016067 Discussion on CLTA maximum height**

*Type: discussion For: Discussion  
 Source: Huawei*

**Abstract:**

Discuss remaining options on CLTA height modification form WF last meeting.

Proposal 1: Update CLTA definition according to option 1.

**Decision:** The document was **not treated**.

**R4-2016070 CR to TS 38.141-2 - Update CLTA definition, Rel-15**

*Type: CR For: Agreement  
 38.141-2 v15.7.0 CR-0247 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

The current CLTA definition can lead to unfeasibly large low band CLTA when testing high band systems. The definition has been added to maintain test integrety with smaller antennas.

**Decision:** The document was **not treated**.

**R4-2016071 CR to TS 38.141-2 - Update CLTA definition, Rel-16**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0248 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

Implement changes to CLTA height

**Decision:** The document was **not treated**.

**R4-2016072 Discussion on co-location for adjacent bands**

*Type: discussion For: Discussion  
 Source: Huawei*

**Abstract:**

Discuss issue with co-location requirements for adjacent bands.

Proposal 1: Update CLTA definition according to option 1.

**Decision:** The document was **not treated**.

**R4-2016284 On selecting CLTA maximum height**

*Type: other For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

At the last RAN4#96-e meeting, a way forward on selecting CLTA maximum height [1] was approved with two possible options for down selecting.

This document evaluates the two options and concludes with our proposal.

**Decision:** The document was **not treated**.

**R4-2016286 CR to TS 38.141-2: Out-of-band co-location test antenna definition**

*Type: CR For: Agreement  
 38.141-2 v15.7.0 CR-0252 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

There exist cases where testing becomes impractical with the current CLTA definition.

**Decision:** The document was **not treated**.

**R4-2016287 CR to TS 38.141-2: Out-of-band co-location test antenna definition**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0253 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The vertical radiating dimension definition is added to the out-of-band CLTA.

**Decision:** The document was **not treated**.

#### 4.5.3 Conducted conformance testing (38.141-1) [NR\_newRAT-Perf]

#### 4.5.4 Radiated conformance testing (38.141-2) [NR\_newRAT-Perf]

**R4-2014394 Discussion on out of band CLTA maximum height**

*Type: discussion For: Discussion  
 Source: CATT*

**Abstract:**

Observation 1: The availability condition for option 1 is not clear, which may affect the selection of out-of-band CLTA and requirement verification.

Observation 2: For option 1, two candidate out-of-band CLTAs might be available for a specific co-located band, which will result in different out-of-band CLTA selection and different test results.

Observation 3: For option 1, there is the case that no candidate out-of-band CLTA for a specific co-located band is available.

Observation 4: 1.5m height limit could be used as the height limit for option 2.

**Decision:** The document was **not treated**.

**R4-2014395 CR for TS 38.141-2: Correction on half-power vertical beam width for the out of band CLTA**

*Type: CR For: Agreement  
 38.141-2 v15.7.0 CR-0226 Cat: F (Rel-15)  
  
 Source: CATT*

**Abstract:**

When the out of band is much lower than the operating band of test object antenna, the existing half-power vertical beam width definition for the out of band CLTA will result in unrealistic antenna height.

**Decision:** The document was **not treated**.

**R4-2014396 CR for TS 38.141-2: Correction on half-power vertical beam width for the out of band CLTA**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0227 Cat: A (Rel-16)  
  
 Source: CATT*

**Abstract:**

When the out of band is much lower than the operating band of test object antenna, the existing half-power vertical beam width definition for the out of band CLTA will result in unrealistic antenna height.

**Decision:** The document was **not treated**.

**R4-2015716 CR to TS 38.141-2: Improvement of out-of-band CLTA characteristics**

*Type: CR For: Agreement  
 38.141-2 v15.7.0 CR-0242 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Correction to the CLTA length

**Decision:** The document was **not treated**.

**R4-2015717 CR to TS 38.141-2: Improvement of out-of-band CLTA characteristics**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0243 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Correction to the CLTA length

**Decision:** The document was **not treated**.

**R4-2015844 Adding MCS12 and 30% throughput requirements and corresponding FRC tables for FR2 PUSCH performance in TS38.141-2 v15.7.0**

*Type: CR For: Agreement  
 38.141-2 v15.7.0 CR-0244 Cat: B (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Rel-16 has added MCS12 and 30% throghput requirements for 2-O PUSCH performance which previous target SNR values are very close or over 20dB test limit. Rel-15 should align these requirements with Rel-16 to let these cases testable.

**Discussion:**

The secretary commented that the CR number 0244 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2016152 CR to 38.141-2: Annex C correction on frequency range of FR2 TT table (C.2)**

*Type: CR For: Agreement  
 38.141-2 v15.7.0 CR-0249 Cat: F (Rel-15)  
  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

During study to prepare MU and TT value in TR 38.817-02 documents, study was conducted up to 40GHz. Also with n259 WI, it was looked at up to 43.5GHz. However, in 38.141-2, TT tables for FR2 Rx was left as frequency range up to upper FR2 range which is not correct because study wasn’t done up to such high frequency. Studied value up to 43.5G should not be applied up to 52.6GHz, it is large enough difference to use existing value. Also, during discussion, it was agreed that MU/TT study would be conducted when new band will be added.

**Decision:** The document was **not treated**.

**R4-2016153 CR to 38.141-2: Annex C correction on frequency range of FR2 TT table (C.2)**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0250 Cat: A (Rel-16)  
  
 Source: Keysight Technologies UK Ltd*

**Decision:** The document was **not treated**.

**R4-2016289 Discussions on TRP procedures**

*Type: other For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution discusses the open issue related two TRP measurement procedures, namely two orthogonal cuts with pattern multiplication and beam-based directions.

Proposal 1: A numerical form of the TRP integral for the two orthogonal cuts with pattern multiplication is defined to allow computation of TRP estimate from discrete data samples.

Proposal 2: Criteria for determining whether correlation exists before applying the beam-based directions procedure should be added to the TR 37.941 as background information, which are as follows:

(a) Maximum radiation of unwanted emissions occurs in the same direction as the wanted signal.

(b) The main lobe of the wanted signal and the unwanted emissions with respect to the axis of maximum radiation should have the same symmetry.

(c) HPBW in the azimuth and elevation direction for the unwanted emissions should correspond to those of the wanted signal.

(d) The directivity-beamwidth product of the unwanted emissions should correspond to that for the wanted signal.

**Decision:** The document was **not treated**.

### 4.6 BS EMC [NR\_newRAT-Core]

**R4-2015958 CR to TS 38.113: correction of the scope and other technical improvements, Rel-15**

*Type: CR For: Agreement  
 38.113 v15.11.0 CR-0029 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

Multiple technical improvements were incorporated into TS 38.113, e.g. clarifiaction to the scope and redundant text, clarification on the test methodology for RF electromagnetic field, and more.

**Decision:** The document was **not treated**.

**R4-2015959 CR to TS 38.113: correction of the scope and other technical improvements, Rel-16**

*Type: CR For: Agreement  
 38.113 v16.1.0 CR-0030 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

Multiple technical improvements were incorporated into TS 38.113, e.g. clarifiaction to the scope and redundant text, clarification on the test methodology for RF electromagnetic field, and more.

**Decision:** The document was **not treated**.

#### 4.6.1 Core requirements [NR\_newRAT-Core]

##### 4.6.1.1 Emission requirements [NR\_newRAT-Core]

##### 4.6.1.2 Immunity requirements [NR\_newRAT-Core]

**R4-2015568 CR to TS 38.113 correcting Exclusion Bands Title, Release 15**

*Type: CR For: Agreement  
 38.113 v15.11.0 CR-0027 Cat: D (Rel-15)  
  
 Source: Ericsson Inc.*

**Abstract:**

Correction to include missing title in section 4.4 (Exclusion Bands).

**Decision:** The document was **not treated**.

**R4-2015569 CR to TS 38.113 correcting Exclusion Bands Title, Release 16**

*Type: CR For: Agreement  
 38.113 v16.1.0 CR-0028 Cat: A (Rel-16)  
  
 Source: Ericsson Inc.*

**Abstract:**

Correction to include missing title in section 4.4 (Exclusion Bands).

**Decision:** The document was **not treated**.

#### 4.6.2 Performance requirements [NR\_newRAT-Perf]

**R4-2015100 CR to TS 37.113 on Voltage dips and interruptions, Release 15**

*Type: CR For: Agreement  
 37.113 v15.9.0 CR-0110 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Specification of the Voltage dips and interruptions (Test method and levels) requirement is not aligned with IEC 61000411, nor with the NR BS EMC specification. Performance criteria is updated to reflect considerations on the test levels.

**Decision:** The document was **not treated**.

**R4-2015101 CR to TS 37.113 on Voltage dips and interruptions, Release 16**

*Type: CR For: Agreement  
 37.113 v16.0.0 CR-0111 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Specification of the Voltage dips and interruptions (Test method and levels) requirement is not aligned with IEC 61000411, nor with the NR BS EMC specification. Performance criteria is updated to reflect considerations on the test levels.

**Decision:** The document was **not treated**.

**R4-2015102 CR to TS 38.113 on Voltage dips and interruptions, Release 15**

*Type: CR For: Agreement  
 38.113 v15.11.0 CR-0023 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Performance criteria is updated to reflect considerations on the test levels.

**Decision:** The document was **not treated**.

**R4-2015103 CR to TS 38.113 on Voltage dips and interruptions, Release 16**

*Type: CR For: Agreement  
 38.113 v16.1.0 CR-0024 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Performance criteria is updated to reflect considerations on the test levels.

**Decision:** The document was **not treated**.

**R4-2015104 CR to TS 38.113 on Performance criteria for transient phenomena, Release 15**

*Type: CR For: Agreement  
 38.113 v15.11.0 CR-0025 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Performance criteria for transient phenomena is updated to reflect alignment both with TS 37.113 MSR EMC (which includes also NR) standard and ETSI considerations.

**Decision:** The document was **not treated**.

**R4-2015105 CR to TS 38.113 on Performance criteria for transient phenomena, Release 16**

*Type: CR For: Agreement  
 38.113 v16.1.0 CR-0026 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Performance criteria for transient phenomena is updated to reflect alignment both with TS 37.113 MSR EMC (which includes also NR) standard and ETSI considerations.

**Decision:** The document was **not treated**.

### 4.7 RRM core requirements maintenance (38.133/36.133) [NR\_newRAT-Core]

**R4-2014237 Discussion on RRC based BWP switch for Scell**

*Type: discussion For: Discussion  
 Source: Apple*

**Abstract:**

Observation #1: RRC based BWP switch by RRC re-configuration of firstActiveUplinkBWP-Id is not allowed for Scell.

Proposal #1: Update applicability of current RRC based BWP switch to only PCell or PScell.

Proposal #2: Discuss further on how to extend RRC based switching delay requirement to be applicable to SCell

Proposal#3: Send LS to RAN2 to clarify how RRC based BWP switch can be applicable to SCell.

**Decision:** The document was **not treated**.

**R4-2014238 CR on Applicability of RRC based BWP switch requirements - Rel15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1141 Cat: F (Rel-15)  
  
 Source: Apple*

**Abstract:**

RRC based BWP switch is not allowed for SCell with change to firstActiveDownlinkBWP-Id via RRC configuration. The current requirements for RRC based TCI state switch are only applicable to PCell and PScell. We need to capture that current requirements are only applicable to PCell and PSCell. More details are captured in

R4-2014237.

Remove Editor’s note.

**Decision:** The document was **not treated**.

**R4-2014239 CR on Applicability of RRC based BWP switch requirements - Rel16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1142 Cat: A (Rel-16)  
  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014268 CR on CSI-RS BW condition for BFD/CBD R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1145 Cat: F (Rel-15)  
  
 Source: Apple*

**Abstract:**

In Previous RAN4 discussion, the CSI-RS based CBD/BFD requirement applies when CSI-RS BW≥24 PRBs, however, this side condition has not been captured explicitly in the TS38.133. Some companies thought it’s not necessary to capture this condition because the minimum configurable BW for CSI-RS BW is 24PRBs. However, it’s not correct since RAN2 has clarification in the CSI-RS configuration IE, as duplicated below,

RAN2 agreed that if the configured CSI-RS BW is larger than UE corresponding BWP size, UE shall assume the actual CSI-RS BW is same as the width of the that BWP; here the “corresponding BWP” in CBD/BFD scenario is the active BWP.

Based on the above defintion, if we don’t specify it explicitly in the spec, it would mislead engineers to assume that CSI-RS BW can be smaller than 24PRB for BFD/CBD requirement in case the UE active BWP size is smaller than 24 PRBs. We need to solve this ambiguity in the spec.

**Decision:** The document was **not treated**.

**R4-2014269 CR on CSI-RS BW condition for BFD/CBD R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1146 Cat: A (Rel-16)  
  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014270 On AP-CSI-RS based L1-RSRP measurement**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Apple, Huawei, HiSilicon*

**Abstract:**

Proposal 1: AP CSI-RS based L1-RSRP measurement shall not be performed within MG duration. But outside MG, if this AP CSI-RS for L1-RSRP measurement is overlapped with L3 RRM measurement RS, the AP CSI-RS based L1-RSRP measurement shall be prioritized.

Proposal 2:

- in TS38.133, RAN4 clarifies that scaling factor P=1 for AP CSI-RS based L1-RSRP measurement outside MG regardless of whether this AP CSI-RS is overlapped with L3 measurement RS or not.

- in TS38.133, RAN4 clarifies that longer SSB based L3 measurement period would be expected if SSB symbols for L3 measurement are colliding with AP CSI-RS for L1-RSRP.

- in TS38.133, RAN4 clarifies that AP CSI-RS based L1-RSRP measurement requirement is not applied for the case that AP CSI-RS is overlapped with MG.

**Decision:** The document was **not treated**.

**R4-2014271 CR on AP-CSI-RS based L1-RSRP measurement R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1147 Cat: F (Rel-15)  
  
 Source: Apple, Huawei, HiSilicon*

**Abstract:**

The AP CSI-RS based L1-RSRP measurement delay requirement is not accurate, as discussed in

R4-2014270.

**Decision:** The document was **not treated**.

**R4-2014272 CR on AP-CSI-RS based L1-RSRP measurement R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1148 Cat: A (Rel-16)  
  
 Source: Apple, Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014273 On CSSF for R15 EN-DC**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Apple*

**Abstract:**

Proposal 1: the NR inter-RAT MO on NR serving CC configured by LTE MN shall be captured into CSSF outside MG:

Proposal 2: RAN4 CSSF outside MG design uses option 3, i.e., in EN-DC the CSSF without MG is determined by the number of MOs without MG configured from both LTE MN and NR SN, and if any two MOs from LTE MN and NR SN meet MO merging rule, they shall be counted as one single MO in MO number counting.

Proposal 3: the CSSF outside MG shall be updated as in this contribution.

Proposal 4: the NR inter-RAT MO configured by LTE MN shall be further divided into following types for CSSF inside MG,

Proposal 5: RAN4 CSSF inside MG design uses option 3, i.e., Mtot,i,j = Mintra,i,j + Minter,i,j : Total number of intra-frequency, inter-frequency and inter-RAT measurement objects which are candidates to be measured in gap j where the measurement object i is also a candidate. If any two MOs from LTE MN and NR SN meet MO merging rule, they shall be counted as one single MO in MO number counting. Otherwise Mtot,i,j equals 0.

**Decision:** The document was **not treated**.

**R4-2014274 CR on CSSF for R15 EN-DC**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1149 Cat: F (Rel-15)  
  
 Source: Apple*

**Abstract:**

The CSSF design for EN-DC shall consider the MOs configured from both LTE MN and NR SN in EN-DC.

**Decision:** The document was **not treated**.

**R4-2014565 Discussion of RRC based BWP switching on single CC**

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

**Abstract:**

Proposal 1: Current single RRC based BWP switch delay requirement in Rel-15 is only applied for PCell or PScell.

Proposal 2: RRC based single BWP switch delay for SCell needs more discussion.

**Decision:** The document was **not treated**.

**R4-2014693 CR on carrier frequency range of PCell/PSCell for the maximum number of RLM-RS resources**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1195 Cat: F (Rel-15)  
  
 Source: CMCC*

**Abstract:**

In RAN#89-e meeting, CR (RP-201715, RP-201716) to TS 38.213 has been approved to extend 8 SSB support to the unpaired spectrum with carrier frequencies within FR1 larger than 1.88GHz.

In current TS 38.133, carrier frequency range of PCell/PSCell for the maximum number of RLM-RS resources (Table 8.1.1-2) is not aligned with RAN/RAN1 agreements.

**Decision:** The document was **not treated**.

**R4-2014694 CR on carrier frequency range of PCell/PSCell for the maximum number of RLM-RS resources**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1196 Cat: A (Rel-16)  
  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2014760 Remaining issues on RRM in R15**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014761 CR on active BWP switch in R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1197 Cat: F (Rel-15)  
  
 Source: MediaTek inc.*

**Abstract:**

RRC-based BWP switch cannot apply for SCell.

**Decision:** The document was **not treated**.

**R4-2014762 CR on active BWP switch in R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1198 Cat: A (Rel-16)  
  
 Source: MediaTek inc.*

**Abstract:**

RRC-based BWP switch cannot apply for SCell.

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

**R4-2014763 CR on active TCI state switching delay in R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1199 Cat: F (Rel-15)  
  
 Source: MediaTek inc.*

**Abstract:**

On 8.10.3,

The requirement doesn’t specify for L1-RSRP measurement once NW configures both SSB and CSI-RS for measurement.

On 8.10.6,

For active TCI state list update, TOk is redundant and equals to 1, because the new target TCI state should not be in the old active TCI state list. Otherwise, this update is not necessary.

**Decision:** The document was **not treated**.

**R4-2014764 CR on active TCI state switching delay in R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1200 Cat: A (Rel-16)  
  
 Source: MediaTek inc.*

**Abstract:**

On 8.10.3,

The requirement doesn’t specify for L1-RSRP measurement once NW configures both SSB and CSI-RS for measurement.

On 8.10.6,

For active TCI state list update, TOk is redundant and equals to 1, because the new target TCI state should not be in the old active TCI state list. Otherwise, this update is not necessary.

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

**R4-2014765 CR on MO merge in R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1201 Cat: F (Rel-15)  
  
 Source: MediaTek inc.*

**Abstract:**

When both MN and SN configures MOs and the configured NR frequency layers shall be counted only once, UE will be confused on the Klayer1\_measurement with different SSB-ToMeasure indications.

**Decision:** The document was **not treated**.

**R4-2014766 CR on MO merge in R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1202 Cat: A (Rel-16)  
  
 Source: MediaTek inc.*

**Abstract:**

When both MN and SN configures MOs and the configured NR frequency layers shall be counted only once, UE will be confused on the Klayer1\_measurement with different SSB-ToMeasure indications.

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

**R4-2015159 Addition of symbol definitions**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1231 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Symbols have not been defineded in section 3.2 of 38.133 even though they are used in the other parts of the spec.

**Decision:** The document was **not treated**.

**R4-2015160 Addition of symbol definitions**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1232 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

There are very few of the symbols used in 38.133 which are defined in section 3.1 (only Tc and Ts are specified). This CR aligns with symbols in 36.133 while taking into account NR differences

**Decision:** The document was **not treated**.

**R4-2015208 CR on BWP switch**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1248 Cat: A (Rel-16)  
  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2015209 CR on TCI state**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1249 Cat: A (Rel-16)  
  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2015210 CR on MO merge**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1250 Cat: A (Rel-16)  
  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2015300 CR to TS 38.133 on DCI based BWP switch requirements applicability**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1251 Cat: F (Rel-15)  
  
 Source: NEC*

**Abstract:**

DCI based BWP switch requirements are not applicable for DCI received through cross-carrier scheduling. This is not reflected in current specification.

**Decision:** The document was **not treated**.

**R4-2015306 CR to TS 38.133 on clarification of applicability of SCell activation requirements for unknown FR1 cell**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1253 Cat: F (Rel-15)  
  
 Source: NEC*

**Abstract:**

Applicability of SCell activation requirements for unknown FR1 cell are not clear in the specification as time for L1-RSRP measurement and report is NOT included in SCell activation requirements

**Decision:** The document was **not treated**.

**R4-2015445 Correction to CSSF calculation R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1256 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

In TS 36.133 clause 8.17.4.1 it is specified that the when UE is configured with EN-DC the intra-RAT NR measurement on NR serving carrier should obey requirements for NR intra-frequency measurements. On the other hand. Intra-frequency measurement shall be performed without MG if SSB is completely contained by active BWP. As a result, it implies that intra-RAT measurement on NR serving carrier shall also be performed without MG in some cases.

However, It conflicts with the calculation of CSSFoutside\_gap given in 38.133. cl. 9.1.5.1. One can observe that in RAN4’s understanding only intra-frequency meansurements are considered in CSSFoutside\_gap in Rel-15. Then UE don’t know how to calculate CSSF for inter-RAT NR measurments on serving carriers. Measurement delay requirement for inter-RAT measurement on serving carrier is unclear.

The carrier-specific scaling factor CSSFoutside\_gap,i for measurement object i derived in this chapter is applied to following measurement types:

-Intra-frequency measurement with no measurement gap in clause 9.2.5, when none of the SMTC occasions of this intra-frequency measurement object are overlapped by the measurement gap.

-Intra-frequency measurement with no measurement gap in clause 9.2.5, when part of the SMTC occasions of this intra-frequency measurement object are overlapped by the measurement gap.

UE is expected to conduct the measurement of this measurement object i only outside the measurement gaps.

For UE configured with the E-UTRA-NR dual connectivity operation, the carrier-specific scaling factor CSSFoutside\_gap,i for intra-frequency SSB-based measurements performed outside measurements gaps will be as specified in Table 9.1.5.1.1-1.

Table 9.1.5.1.1-1: CSSFoutside\_gap,i scaling factor for EN-DC mode

Scenario

CSSFoutside\_gap,i for FR1 PSCC

CSSFoutside\_gap,i for FR1 SCC

CSSFoutside\_gap,i for FR2 PSCC

CSSFoutside\_gap,i for FR2 SCC where neighbour cell measurement is required Note 2

CSSFoutside\_gap,i for FR2 SCC where neighbour cell measurement is not required

EN-DC with FR1 only CA

1

Number of configured FR1 SCell(s)

N/A

N/A

N/A

EN-DC with

FR2 only intra band CA

N/A

N/A

1

N/A

Number of configured FR2 SCells

EN-DC with

FR1 +FR2 CA (FR1 PSCell) Note 1

1

2×(Number of configured SCell(s)-1)

N/A

2

2×(Number of configured SCell(s)-1)

EN-DC with

FR1 +FR2 CA (FR2 PSCell) Note 1

N/A

Number of configured SCell(s)

1

N/A

Number of configured SCell(s)

Note 1:Only one NR FR1 operating band and one NR FR2 operating band are included for FR1+FR2 inter-band EN-DC.

Note 2:Selection of FR2 SCC where neighbour cell measurement is required follows clause 9.2.3.2.

So we purpose to take inter-RAT measurement on serving carrier into account in the calculation of CSSFoutside\_gap. To be more specific, the baseline assumption for CSSFoutside\_gap calculation is changed to:

UE equips two searchers;

One searcher is dedicated for intra-frequency measurement on PSCC if no inter-RAT measurement is configured on PSCC. If both inter-frequency and inter-RAT measurement on PSCC are configured, searcher is equally shared between intra-frequency and inter-RAT measurement on PSCC;

If a FR2 SCC is configured to UE and it is the first activated serving carrier in that band, it will use half the measurement capability of the second searcher.

All the intra-frequency measurements on other SCells and inter-RAT measurements on SCCs equally share the rest measurement capability of the second searcher.

In EN-DC, inter-frequency measurement and inter-RAT measurement on the same frequencies are always counted as two candidates when calculating CSSF\_within\_gap. However, when MO merging condition are satisfied they shall only be counted once. CSSF\_within\_gap is unneccessarily relexed. Same issue also exists in NR-DC when PCell and PSCell both configure inter-frequency measurements on the same frequency.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2015446 Correction to CSSF calculation R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1257 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

In TS 36.133 clause 8.17.4.1 it is specified that the when UE is configured with EN-DC the intra-RAT NR measurement on NR serving carrier should obey requirements for NR intra-frequency measurements. On the other hand. Intra-frequency measurement shall be performed without MG if SSB Is completely contained by active BWP. As a result, it implies that intra-RAT measurement on NR serving carrier shall also be performed without MG in some cases.

However, It conflicts with the calculation of CSSFoutside\_gap given in 38.133. cl. 9.1.5.1. One can observe that in RAN4’s understanding only intra-frequency meansurements are considered in CSSFoutside\_gap in Rel-15. Then UE don’t know how to calculate CSSF for inter-RAT NR measurments on serving carriers. Measurement delay requirement for inter-RAT measurement on serving carrier is unclear.

The carrier-specific scaling factor CSSFoutside\_gap,i for measurement object i derived in this chapter is applied to following measurement types:

-Intra-frequency measurement with no measurement gap in clause 9.2.5, when none of the SMTC occasions of this intra-frequency measurement object are overlapped by the measurement gap.

-Intra-frequency measurement with no measurement gap in clause 9.2.5, when part of the SMTC occasions of this intra-frequency measurement object are overlapped by the measurement gap.

UE is expected to conduct the measurement of this measurement object i only outside the measurement gaps.

For UE configured with the E-UTRA-NR dual connectivity operation, the carrier-specific scaling factor CSSFoutside\_gap,i for intra-frequency SSB-based measurements performed outside measurements gaps will be as specified in Table 9.1.5.1.1-1.

Table 9.1.5.1.1-1: CSSFoutside\_gap,i scaling factor for EN-DC mode

Scenario

CSSFoutside\_gap,i for FR1 PSCC

CSSFoutside\_gap,i for FR1 SCC

CSSFoutside\_gap,i for FR2 PSCC

CSSFoutside\_gap,i for FR2 SCC where neighbour cell measurement is required Note 2

CSSFoutside\_gap,i for FR2 SCC where neighbour cell measurement is not required

EN-DC with FR1 only CA

1

Number of configured FR1 SCell(s)

N/A

N/A

N/A

EN-DC with

FR2 only intra band CA

N/A

N/A

1

N/A

Number of configured FR2 SCells

EN-DC with

FR1 +FR2 CA (FR1 PSCell) Note 1

1

2×(Number of configured SCell(s)-1)

N/A

2

2×(Number of configured SCell(s)-1)

EN-DC with

FR1 +FR2 CA (FR2 PSCell) Note 1

N/A

Number of configured SCell(s)

1

N/A

Number of configured SCell(s)

Note 1:Only one NR FR1 operating band and one NR FR2 operating band are included for FR1+FR2 inter-band EN-DC.

Note 2:Selection of FR2 SCC where neighbour cell measurement is required follows clause 9.2.3.2.

So we purpose to take inter-RAT measurement on serving carrier into account in the calculation of CSSFoutside\_gap. To be more specific, the baseline assumption for CSSFoutside\_gap calculation is changed to:

UE equips two searchers;

One searcher is dedicated for intra-frequency measurement on PSCC if no inter-RAT measurement is configured on PSCC. If both inter-frequency and inter-RAT measurement on PSCC are configured, searcher is equally shared between intra-frequency and inter-RAT measurement on PSCC;

If a FR2 SCC is configured to UE and it is the first activated serving carrier in that band, it will use half the measurement capability of the second searcher.

All the intra-frequency measurements on other SCells and inter-RAT measurements on SCCs equally share the rest measurement capability of the second searcher.

In EN-DC, inter-frequency measurement and inter-RAT measurement on the same frequencies are always counted as two candidates when calculating CSSF\_within\_gap. However, when MO merging condition are satisfied they shall only be counted once. CSSF\_within\_gap is unneccessarily relexed. Same issue also exists in NR-DC when PCell and PSCell both configure inter-frequency measurements on the same frequency.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2015527 CR on BFD and CBD requirements**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1293 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Compared with the CSI-RS based RLM requirements, the condition that the CSI-RS resources are over the bandwidth ≥ 24 PRBs is missing. We had submitted corresponding CRs in RAN4#94-e-bis meeting, and some companies pointed that the minimum configurable BW of CSI-RS resource is 24 PRBs. In RAN4#95e meeting, the similar discussion was triggered and companies argued that the condition was needed to guaranteed that the CSI-RS resource for BFD and CBD within the active BWP is at least over 24 PRBs not only the configured CSI-RS BW. Thus, we propose the changes for CSI-RS based BFD and CBD to clarify the condtion.

**Decision:** The document was **not treated**.

**R4-2015528 CR on BFD and CBD requirements\_R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1294 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015529 CR on RRC-based BWP switch requirements**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1295 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

One of the remaining issues in the RAN4#96-e about BWP switching requirements is whether it is applicable for RRC-based BWP switch on SCell with more than one BWP configurations. After check the TS 38.133, it is only possible for an sPCell to change the active BWP by the firstActiveDownlinkBWP-Id or firstActiveUplinkBWP-Id via the RRC reconfiguration. For a actived SCell, the active BWP could be changed by RRC reconfiguration by reconfiguring the parameters of the active BWP without changing the ID. Thus, it is also applicable for an SCell to change the acitve BWP through RRC with more than one BWP configurations.

**Decision:** The document was **not treated**.

**R4-2015530 CR on RRC-based BWP switch requirements\_R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1296 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015570 CR to 38.133: Correction to SCell activation delay requirements**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1301 Cat: F (Rel-15)  
  
 Source: ZTE*

**Abstract:**

It is based on mandatory UE capability whether UE supports configuration of SCell without SSB.

scellWithoutSSB

Defines whether the UE supports configuration of SCell that does not transmit SS/PBCH block. This is conditionally mandatory with capability signalling for intra-band CA but not supported for inter-band CA.

The UE capability has no differentiation of FR1 and FR2. However in TS38.133, the requirements for SCell activation without SSB are only specified for FR2 intra-band CA. So the corresponding requirements for FR1 intra-band CA should be added either.

**Decision:** The document was **not treated**.

**R4-2015571 CR to 38.133 correction to SCell activation delay requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1302 Cat: A (Rel-16)  
  
 Source: ZTE*

**Decision:** The document was **not treated**.

**R4-2015572 CR to 38.133: Correction to RRC based BWP switch requirements**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1303 Cat: F (Rel-15)  
  
 Source: ZTE*

**Abstract:**

In TS38.133 the requirements for RRC based BWP switch delay are specified for BWP switch triggered by RRC reconfiguration. However, according to TS38.331, the BWP switch can be triggered by RRC reconfiguration and RRC configuration (including RRCsetup message and RRCresume message).

The BWP switch delay, excluding RRC processing time, should be the same for both RRC configuration and RRC reconfiguration. So the current requirements are applicable to BWP switch triggered RRC configuration.

**Decision:** The document was **not treated**.

**R4-2015573 CR to 38.133 correction to RRC based BWP switch requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1304 Cat: A (Rel-16)  
  
 Source: ZTE*

**Decision:** The document was **not treated**.

**R4-2015672 [CR] Specify RRC processing delay in TCI state switching delay**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1310 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

In clause 8.10.5, the value of TRRC\_processing is not given nor defined.

**Decision:** The document was **not treated**.

**R4-2015673 [CR] Specify RRC processing delay in TCI state switching delay (Cat A)**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1311 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015731 CR to remove intra-frequency ECID requirements for NE-DC 36133 R15**

*Type: CR For: Agreement  
 36.133 v15.11.0 CR-6974 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

In current 36.133 measurement requirements are defined for Intra-frequency E-CID when UE is under NE-DC. However, in NE-DC NGC is connected to NR MN, and there is no LPP or NRPPa between NGC and LTE SN. In addition, in clause 5.5.3 of 36.331 it is specified that LTE UE Rx-Tx time difference measurement is only measured for PCell. Therefore, the Intra-frequency E-CID measurement requirements for NE-DC should be removed.

**Decision:** The document was **not treated**.

**R4-2015732 CR to remove intra-frequency ECID requirements for NE-DC 36133 R16**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6975 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015733 CR to remove inter-RAT ECID requirements for NE-DC 38133 R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1314 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

In clause 9.4.1 of 38.133, the applicabalbe requirements for NR – LTE inter-RAT ECID measurement are defined. For measurements performed on LTE serving frequency, the intra-frequency requirements defined in 8.19.5 of 36.133 apply. However, there is no intra-frequency E-CID measurement that can be configured by LTE SN in NE-DC. Therefore, applicable requirements should be updated.

**Decision:** The document was **not treated**.

**R4-2015734 CR to remove inter-RAT ECID requirements for NE-DC 38133 R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1315 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015735 Discussion on remaining issues in Rel-15 SCell activation requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Proposal 1: The current FR1 SCell activation requirements apply provided that

- ‘ssb-PositionInBurst’ indicates only one SSB is being actually transmitted, or

- ‘ssb-PositionInBurst’ indicates multiple SSBs and TCI indication is provided in same MAC PDU with SCell activation, or

- the SCell is known and UE has reported the SCell with SSB index before the activation, or

- the Es/Iot for at least one CSI-RS for CSI that UE is configured to measure is >= -2dB.

Proposal 2: The current SCell activation requirements apply provided that the SSB of the to-be-activated SCell is within the first active DL BWP of the SCell.

**Decision:** The document was **not treated**.

**R4-2015736 CR on SCell activation requirements R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1316 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

As agreed in R4-2012240, RAN4 needs to capture the applicability of FR1 SCell activation requirements. In addition, the scenario where Scell SSB is outside SCell first active BWP needs to be addressed.

**Decision:** The document was **not treated**.

**R4-2015737 CR on SCell activation requirements R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1317 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015876 Introducing reference to the source of the Lmax and NRLM.**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1335 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The number of RLM-RS resources UE is required to be able to monitor is specified in TS38.213. Also the Lmax value for different frequency ranges is specified in 38.213. These numbers have been copied to RAN4 specification in Table 8.1.1-2. Currently there is no reference to the source of these numbers resulting risk of ambiquity on the requirement.. As defined in TR21.801, Annex C.1.4, duplication of concepts is not preferred and if cannot be avoided, reference should be provided. .

This change is not changing any UE requirement or behaviour.

**Decision:** The document was **not treated**.

**R4-2015877 Introducing reference to the source of the Lmax and NRLM.**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1336 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016022 CR 36.133 Removal of brackets for SFTD measurements**

*Type: CR For: Agreement  
 36.133 v15.11.0 CR-6989 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The measurement period for SFTD measurements between E-UTRA PCell and NR PSCell in non-DRX has already been agreed to be Tmeasure\_SFTD1 = max(200,5 x SMTC period) ms since many meetings back. In the specification text there is however stray brackets, [5] x SMTC period, which signals that the measurement period would only be tentatively agreed.

**Decision:** The document was **not treated**.

**R4-2016023 CR 36.133 Removal of brackets for SFTD measurements (Rel-16)**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6990 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The measurement period for SFTD measurements between E-UTRA PCell and NR PSCell in non-DRX has already been agreed to be Tmeasure\_SFTD1 = max(200,5 x SMTC period) ms since many meetings back. In the specification text there is however stray brackets, [5]

**Decision:** The document was **not treated**.

**R4-2016162 HARQ delay during RRC based BWP, CBW and TCI switching procedures**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

The paper discussed impact of ACK delay on RRC based switching delay requirements (BWP, CBW and TCI state change).

Observation 1: RRC based BWP switching and UE specific CBW are serving cell procedure performed typically under higher SNR. Therefore, HARQ ACK may be delayed in rare circumstances.

Proposal 1: Clarify in the core requirement that if the ACK transmission for the received RRC takes longer than the RRC procedure delay for a procedure then the overall switching delay for that procedure may be extended.

Proposal 2: Proposal 1 is applicable for the following requirements:

- RRC based BWP switching delay

-UE specific CBW change delay and

- RRC based active TCI state switching delay.

**Decision:** The document was **not treated**.

**R4-2016373 CR to 38.133 on Active BWP switch and Active TCI State Switching requirements - Rel15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1371 Cat: F (Rel-15)  
  
 Source: Apple*

**Abstract:**

Currently during RRC based active BWP switch and TCI state switch UE behavior for case when THARQ > TRRCProcessing is not captured. When THARQ > TRRCProcessing , UE might need additional time to send ACK/NACK and network might wait to switch BWP or TCI state after ACK is received. A longer switching delay is expected in this case.

**Decision:** The document was **not treated**.

**R4-2016374 CR to 38.133 on Active BWP switch and Active TCI State Switching requirements - Rel16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1372 Cat: A (Rel-16)  
  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2016580 CR to TCI activation in FR1**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1398 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

‘TCI indication’ is not included in FR1 SCell activation procedure and time for ‘L1-RSRP measurement and report’ is not include in unknown FR1 SCell activation requirement in the current version 38.133 spec.

**Decision:** The document was **not treated**.

**R4-2016581 CR to SSB-less SCell activation delay requirement for deactivated FR1 SCell**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1399 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

SSB-less SCell activation delay requirement for deactivated FR1 SCell is not defined in the current version 38.133 spec, whereas FR2 SCell activation requirements include SSB-less SCell activation latency.

**Decision:** The document was **not treated**.

### 4.8 RRM perf. requirements maintenance (38.133/36.133) [NR\_newRAT-Perf]

**R4-2014017 RB allocation and Noc level in RLM Test cases**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1118 Cat: F (Rel-15)  
  
 Source: ANRITSU LTD*

**Abstract:**

a) RLM test cases that use AoA Setup 3 and Spherical Coverage directions require a total power Io above the capability of current test equipment.

b) Test cases A.5.5.1.5, A.5.5.1.6, A.7.5.1.5, and A.7.5.1.6 with CSI-RS-based RLM in non-DRX mode do not specify the Noc level.

c) Some table note references are wrong and some [ ] remain.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked on the coversheet, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2014018 RB allocation and Noc level in RLM Test cases**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1119 Cat: A (Rel-16)  
  
 Source: ANRITSU LTD*

**Abstract:**

a) Change RLM test cases that use AoA Setup 3 and Spherical Coverage directions to use 24RBs to reduce the Io, and define a new OCNG pattern OP.5.

b) Specify missing Noc -92.1dBm/15kHz for Test cases A.5.5.1.5, A.5.5.1.6, A.7.5.1.5, and A.7.5.1.6.

c) Corr

**Decision:** The document was **not treated**.

**R4-2014019 Update FR2 event-triggered reporting Test cases in A.5.6, A.7.6**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1120 Cat: F (Rel-15)  
  
 Source: ANRITSU LTD*

**Abstract:**

a) FR2 Intra-frequency Event-triggered reporting Test cases do not specify the subcarrier spacing for the PDSCH and PDCCH Data channels.

b) The test configuration is missing from Io for A.5.6.1.2, A.5.6.1.4, A.7.6.1.2 and A.7.6.1.4.

**Decision:** The document was **not treated**.

**R4-2014020 Update FR2 event-triggered reporting Test cases in A.5.6, A.7.6**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1121 Cat: A (Rel-16)  
  
 Source: ANRITSU LTD*

**Abstract:**

Specify the subcarrier spacing as 120kHz for the PDSCH and PDCCH Data channels in Intra-frequency Event-triggered reporting Test cases.

Add test configurations to Io for A.5.6.1.2, A.5.6.1.4, A.7.6.1.2 and A.7.6.1.4.

**Decision:** The document was **not treated**.

**R4-2014021 240kHz SSB SCS Configuration for FR2 SS-RSRP Test cases**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1122 Cat: F (Rel-15)  
  
 Source: ANRITSU LTD*

**Abstract:**

a) The FR2 Inter-frequency SS-RSRP RRM Test cases are missing parameters for configurations with 240 kHz SSB SCS.

b) The FR2 Inter-frequency SS-RSRP RRM Test cases do not specify the subcarrier spacing for the PDSCH and PDCCH Data channels.

c) The UE Beam assumption is wrongly stated in Table A.7.7.1.1.2-3.

**Decision:** The document was **not treated**.

**R4-2014022 240kHz SSB SCS Configuration for FR2 SS-RSRP Test cases**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1123 Cat: A (Rel-16)  
  
 Source: ANRITSU LTD*

**Abstract:**

a) Add parameters for configurations with 240 kHz SSB SCS in Tables A.5.7.1.2.2-2 and A.7.7.1.2.2-2.

b) Specify the subcarrier spacing as 120kHz for the PDSCH and PDCCH Data channels.

**Decision:** The document was **not treated**.

**R4-2014023 Correct UE beam assumption for Test Cases in A.5.6**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1124 Cat: F (Rel-15)  
  
 Source: ANRITSU LTD*

**Abstract:**

a) For some test cases in A.5.6 the Cell 2 UE beam assumption is stated to be “Rough”, but Cell 2 is FR1 and the UE beam assumption is not applicable.

b) Some test cases in A.5.6 state that two FR1 NR carrier frequencies are used, but one of the NR carriers is FR2.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked on the coversheet, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2014024 Correct UE beam assumption for Test Cases in A.5.6**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1125 Cat: A (Rel-16)  
  
 Source: ANRITSU LTD*

**Abstract:**

a) Correct the FR1 Cell 2 UE beam assumption from "Rough" to N/A (not applicable).

b) As one NR cell is in FR2, update the misleading statement that both NR cells are FR1, and align with equivalent A.7.6 test cases.

**Decision:** The document was **not treated**.

**R4-2014025 Modification of AG level in CORESET for RMC scheduling**

*Type: discussion For: Approval  
 Source: ANRITSU LTD*

**Abstract:**

In this contribution we report an identified issue with the CORESET for RMC scheduling in TS 38.133 clause A.3.1.3. With the current definitions in these RMC tables for both FDD and TDD, there is an issue with transmission of PUSCH (e.g. measurement report).

Proposal 1: Adjust the AG level of CORESET for RMC scheduling to enable transmitting 2 DCIs per slot.

Proposal 2: Keep the definitions of CORESET for RMC scheduling in A.3.1.3 in a same form from the current ones and do not separate them for SA and NSA.

**Decision:** The document was **not treated**.

**R4-2014026 Aggregation level of CORESET for RMC scheduling**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1126 Cat: F (Rel-15)  
  
 Source: ANRITSU LTD*

**Abstract:**

Under the current definitions of RMC tables for both FDD and TDD in clause A.3.1.3, there is an issue with a transmission of PUSCH (e.g. measurement report) from a UE due to a lack of resources for PDCCH (DCI format 0-1, UL grant) from a test equipment.

Following conditions are causing the issue above.

DL RMC is allocated to all the DL slot.

Based on the aggregation level/ CORESET, only 1 grant per 1 slot can be transmitted. Thus simultaneous scheduling of PDSCH/PUSCH is unviable.

In a case that the standalone UE needs to transmit PUSCH (such as measurement report), simultaneous scheduling of PDSCH/ PUSCH is mandatory. Thus there is a need to correct AG level which enables sending 2 grants in 1 slot.

**Decision:** The document was **not treated**.

**R4-2014027 Aggregation level of CORESET for RMC scheduling**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1127 Cat: A (Rel-16)  
  
 Source: ANRITSU LTD*

**Abstract:**

We propose to reduce the Aggregation level of CORESET for RMC scheduling to enable transmission of 2 DCIs per slot. The reasoning is provided in

R4-2014025.

**Decision:** The document was **not treated**.

**R4-2014028 Clarify FR1 NSA SS-SINR measurement TCs**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1128 Cat: F (Rel-15)  
  
 Source: ANRITSU LTD*

**Abstract:**

Test Parameters table format is misleading, and is inconsistent with SS-RSRP, SS-RSRQ TCs.

Clause A.4.7.3.2.2 states that measurement gap is provided, but Table A.4.7.3.2.2-1 is missing gap configuration

**Decision:** The document was **not treated**.

**R4-2014029 Claify FR1 NSA SS-SINR measurement TCs**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1129 Cat: A (Rel-16)  
  
 Source: ANRITSU LTD*

**Abstract:**

Update the Test Parameters table format to show that:

- TRS config is only for Cell 2

- Time offset with Cell 2 is only for Cell 3

**Decision:** The document was **not treated**.

**R4-2014046 FR1 Inter-frequency Event triggered Reporting tests in DRX**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1130 Cat: F (Rel-15)  
  
 Source: ANRITSU LTD*

**Abstract:**

Incorrect Test Requirements:

-Test Purpose and Environment states that test 1&2 use per-UE gap, and test 3&4 use per-FR gap. However, in Test Requiments, it states that test 2 is with per-FR gap, and test 3 is with per-UE gap.

Format of Table A.4.6.2.6.1-3 is misleading:

-It seems that TRS is configured in both Cell 2 and Cell 3

**Decision:** The document was **not treated**.

**R4-2014047 FR1 Inter-frequency Event triggered Reporting tests in DRX**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1131 Cat: A (Rel-16)  
  
 Source: ANRITSU LTD*

**Abstract:**

Update Test Requirements:

- Test 2: change per-FR gap to per-UE gap

- Test 3: change per-UE gap to per-FR gap

- Update Table A.4.6.2.6.1-3 format to show that TRS config is only for Cell 2

**Decision:** The document was **not treated**.

**R4-2014048 E-UTRAN – NR FR1 interruptions at transitions between active and non-active during DRX EN-DC**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1132 Cat: F (Rel-15)  
  
 Source: ANRITSU LTD*

**Abstract:**

DRX configuration for E-UTRAN – NR Interruptions asynchronous test case is incorrect. Current spec setting is for NR DRX (DRX.6) instead of LTE DRX, but purpose of test states that LTE is in DRX. Similar to synchronous test equivalent (DRX.4). RAN5 test case 4.5.2.2 is already updated with correct setting.

In Table A.4.5.2.1.1-3 and A.4.5.2.2.1-3, Initial BWP Configurations are mistakenly defined as DLBWP.0 and there is no corresponding configuration.

Similar configurations for FR2 such as in Table A.5.5.2.1.1-3 should be applied to Table A.4.5.2.1.1-3 and A.4.5.2.2.1-3.

**Decision:** The document was **not treated**.

**R4-2014049 E-UTRAN – NR FR1 interruptions at transitions between active and non-active during DRX EN-DC**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1133 Cat: A (Rel-16)  
  
 Source: ANRITSU LTD*

**Abstract:**

Corrects DRX config parameter in Table A.4.5.2.2.1-2: DRX.6 -> DRX.4 (applicable to LTE)

Specifies BWP configurations fully

**Decision:** The document was **not treated**.

**R4-2014181 [CR] NR Perf Maintenance R15 Cat F**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1134 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

The following errors exist in the current test cases which mislead readers:

- In multiple tables, such as Table A.6.6.4.1.2-1, the Note shall be for Cell 1 not both cells.

- In clause A.7.5.8.1.1.1 and A.7.5.8.2.1.1, the configuration mentioned a second cell in EN-DC. However, the test is for NR SA and only one cell is configured.

- In Table A.7.6.2.1.1-3, the configurations should be for Cell 1 and Cell 2, separately.

- In Clause A.7.5.3.2.2, [TBD] exists.

**Discussion:**

The secretary asked what is the correct Release? It reads Rel-16 on the coversheet but the CR is allocated for Rel-15.

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

**R4-2014182 [CR] NR Perf Maintenance R16 Cat A**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1135 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2014183 [CR] NR Perf Maintenance R16 Cat F**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1136 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

The following errors exist in the current test cases which mislead readers:

- In Table A.6.5.6.1.2.1-3, the configuration is for Cell 1 not Cell 2. The note should be for Cell 1 only since there is only one cell in the test.

Note that those errors are not in the R15 specifications, thus a separate R16 Category F CR is submitted to correct them.

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

**R4-2014231 Maintenance CR on SA inter-frequency event triggered reporting tests for FR1 – R16 (A.6.6.2)**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1139 Cat: F (Rel-16)  
  
 Source: Apple*

**Abstract:**

There are some typos in FR1 SA inter-frequency event triggered reporting test cases.

**Decision:** The document was **not treated**.

**R4-2014372 CR on TS38.133 for cell activation and deactivation test case**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1159 Cat: F (Rel-15)  
  
 Source: MediaTek inc.*

**Abstract:**

For the SCell activation and deactivation, in current specificaiton, the UE can only report the CSI report in slot (m+k) or slot ( However, the interruption would not impact other serving cell all the time between slot (m+k) and slot (. Thus, the UE shall be allowed to report the first CSI report in slot (m+k) or in the next available uplink resource for CSI reporting if slot (m+k) was subject to interruption. On the other hand, the similar problem is fixed in A.6.5.3.1.

According to TS 38.331 as follows, for SCS 15kHz, the shortest of CSI report periodicity is 4 slots, i.e. 2ms or 4 subframes.

CSI-ReportPeriodicityAndOffset ::= CHOICE {

slots4 INTEGER(0..3),

slots5 INTEGER(0..4),

slots8 INTEGER(0..7),

slots10 INTEGER(0..9),

slots16 INTEGER(0..15),

slots20 INTEGER(0..19),

slots40 INTEGER(0..39),

slots80 INTEGER(0..79),

slots160 INTEGER(0..159),

slots320 INTEGER(0..319)

}

However, the CSI report periodicity in Table A.4.5.3.1.1-2 and Table A.6.5.3.1.1-2 is 2 subframes for 15 kHz. Thus, it is corrected in this CR.

**Decision:** The document was **not treated**.

**R4-2014373 CR on TS38.133 for cell activation and deactivation test case**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1160 Cat: A (Rel-16)  
  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014374 CR on TS38.133 for cell reselection test case**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1161 Cat: F (Rel-15)  
  
 Source: MediaTek inc.*

**Abstract:**

In order to UE can measure the intra-frequency cell, the value of SintrasearchP in Table A.6.1.1.1.2-3 shall be set to 60.

The parameter names, e.g. Sintrasearch, Threshx, high, Threshserving, low, Threshx, low, shall align with TS 38.304 and TS 36.304.

In NR SA, the terminology “Tracking area update procedure” is replaced by “Registration procedure for mobility and periodic registration update” and the wording is corrected in clause A.6.1.1.1, A.6.1.1.2, A.7.1.1.1 and A.7.1.1.2 in this CR.

**Decision:** The document was **not treated**.

**R4-2014375 CR on TS38.133 for cell reselection test case**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1162 Cat: A (Rel-16)  
  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014376 Correction of active BWP switch test case**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1163 Cat: F (Rel-15)  
  
 Source: MediaTek inc.*

**Abstract:**

In active BWP switching test case, i.e. A.7.5.6.1.1 and A.7.5.6.1.2, PCell is configured with two BWPs (BWP-1 and BWP-2). However, in current specification, the sentence “UE shall be continuously scheduled on PSCell’s BWP-1 during T3” is incorrect. It is fixed in this CR.

**Decision:** The document was **not treated**.

**R4-2014377 CR on TS38.133 for active BWP switch test cases**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1164 Cat: A (Rel-16)  
  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014406 CR for TS38.133 Rel-15, Correction for RRM core and test cases**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1167 Cat: F (Rel-15)  
  
 Source: CATT*

**Abstract:**

In A.6.1.2.2, second time duration is marked as “T2T3”, in A.6.1.2.2.2, the number of time periods is incorrect.

In A.7.1.1.2, the Io for 240kHz SSB SCS are incorrect.

In Table A.6.1.2.1.2-3, Initial DL BWP configuration and Initial UL BWP configuration are incorrect.

**Decision:** The document was **not treated**.

**R4-2014407 CR for TS38.133 Rel-16, Correction for RRM core and test cases**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1168 Cat: A (Rel-16)  
  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014591 Draft CR on correcting SSB and RACH configuration in CSI-RS based beam failure detection and link recovery tests**

*Type: draftCR For: Endorsement  
 38.133 v15.11.0  
 Source: Qualcomm CDMA Technologies*

**Abstract:**

The tables for some of FR2 PRACH configurations are not indexed.

The existing sections of CSI-RS based BFD/CBD tests do not mention RACH configurations.

The configured CSI-RS resources in test follow CSI-RS.1.2/CSI-RS.2.2/CSI-RS.3.2 resource configurations. Those CSI-RS resources are QCLed to TCI state 0 (SSB 0) and TCI state 1 (SSB 1). But, SSB config only allows one SSB in the SS burst set (SSB.3 FR1, SSB.1 FR2).

**Decision:** The document was **not treated**.

**R4-2014592 Draft CR on correcting SSB and RACH configuration in CSI-RS based beam failure detection and link recovery tests**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Qualcomm CDMA Technologies*

**Abstract:**

The tables for some of FR2 PRACH configurations are not indexed.

The existing sections of CSI-RS based BFD/CBD tests do not mention RACH configurations.

The configured CSI-RS resources in test follow CSI-RS.1.2/CSI-RS.2.2/CSI-RS.3.2 resource configurations. Those CSI-RS resources are QCLed to TCI state 0 (SSB 0) and TCI state 1 (SSB 1). But, SSB config only allows one SSB in the SS burst set (SSB.3 FR1, SSB.1 FR2).

**Decision:** The document was **not treated**.

**R4-2014601 CR on TS 38.133 for radio link monitoring test case R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1188 Cat: F (Rel-15)  
  
 Source: MediaTek inc.*

**Abstract:**

In radio link monitor test case, test equipment may check the CSI report from UE to identify whether radio link is failure or not. However, in the test case A.4.5.1.8, A.5.5.1.8, A.6.5.1.8 and A.7.5.1.8, the measure gap pattern is fully overlapped with on duration period of the DRX cycle. Thus, it may cause UE cannot transmit the CSI report to test equipment during duration ON. As a result, we propose a new DRX configuration to guarantee the CSI report can be received by test equipment.

**Decision:** The document was **not treated**.

**R4-2014602 CR on TS 38.133 for radio link monitoring test case R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1189 Cat: A (Rel-16)  
  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014865 Correction on beamFailureInstanceMaxCount for test case of availability restriction during FR2 BFR in R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1208 Cat: F (Rel-15)  
  
 Source: MediaTek inc.*

**Abstract:**

The beamFailureInstanceMaxCount = n1 in all other cases but not in 5.5.5.5/7.5.5.5. However, the T2 and T3 in 5.5.5.5/7.5.5.5 are based on the beamFailureInstanceMaxCount = n1, as in 5.5.5.1/7.5.5.1. Therefore the T2/T3 are incorrect.

However, the correct T2/T3 should be long enough to accomdate the 2nd indication and need more testing time. Thus, to save test time, it proposes to align beamFailureInstanceMaxCount with other cases, instead of introduce long T2/T3.

**Decision:** The document was **not treated**.

**R4-2014866 Correction on beamFailureInstanceMaxCount for test cases of availability restriction during FR2 BFR in R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1209 Cat: A (Rel-16)  
  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014947 Correction of RRM tests**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1215 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

After V15.03 Table 7.1.2-3 was removed, and a new Table 7.1.2.1-1 with the same content was created. After this modification the RRM tests did not update the reference to the table containing Autonomous Time Adjustment requirements.

**Decision:** The document was **not treated**.

**R4-2014948 Correction of RRM tests**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1216 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

After V15.03 Table 7.1.2-3 was removed, and a new Table 7.1.2.1-1 with the same content was created. After this modification the RRM tests did not update the reference to the table containing Autonomous Time Adjustment requirements.

**Decision:** The document was **not treated**.

**R4-2015148 Correction of beam assumptions in interfrequency EN-DC FR1+FR2 tests**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1220 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

In some tests UE beam assumption is incorrectly stated for an FR1 PSCell as rough. FR1 cell should not have a beam assumption.

**Decision:** The document was **not treated**.

**R4-2015149 Correction of beam assumptions in interfrequency EN-DC FR1+FR2 tests**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1221 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

In some tests UE beam assumption is incorrectly stated for an FR1 PSCell as rough. FR1 cell should not have a beam assumption.

**Decision:** The document was **not treated**.

**R4-2015150 Correction of TBD values in EN-DC PSCell addition and release delay test**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1222 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

TBDs remain in PSCell addition and release delay test

**Decision:** The document was **not treated**.

**R4-2015151 Correction of TBD values in EN-DC PSCell addition and release delay test**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1223 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Correcting TBDs which remain in PSCell addition and release delay test

**Decision:** The document was **not treated**.

**R4-2015152 Correction to types of requirements in annex A**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1224 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

R4-2013035 (CR 1112) removed a sentence “In RRC\_IDLE state mobility (clause A.4.x, A.5.x, A.6.x and A.7.x) there is cell re-selection delay”. The purpose of this CR was to replace all .x references with the proper section numbering. It was stated on the cover page of R4-2013035 that “Test cases for cell re-selection delays are not defined so the statement is deleted.”. It is true that there are no reselection tests for EN-DC (A.4.x and A.5.x) however reselection delay tests and test requirements exist for SA NR and should be described in section A.2.1.1 to avoid a mistunderstanding that only RRC connected and RRC connection control delays are tested

Also the example given later in the text of section A.2.1.1 All have in common that the UE is required to perform an action observable in higher layers (e.g. camp on the correct cell) within a certain time after a specific event (e.g. when a new strong pilot or reference signal appears).” is explicitly an idle mode reselection example, so it is better not to delete this sentence

**Decision:** The document was **not treated**.

**R4-2015153 Correction to types of requirements in annex A**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1225 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

R4-2013035 (CR 1112) removed a sentence “ In RRC\_IDLE state mobility (clause A.4.x, A.5.x, A.6.x and A.7.x) there is cell re-selection delay”. The purpose of this CR was to replace all .x references with the proper section numbering. It was stated on the

**Decision:** The document was **not treated**.

**R4-2015154 Corrections to frequency range in interfrequency measurement procedures tests**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1226 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Some EN-DC FR2 interfrequency measurement procedure testcases incorrectly state that two FR1 cells are used. Depending on case, either 2 FR2 cells are used, or one FR1 and one FR2 cell are used.

**Discussion:**

The secretary commented that the CR coversheet is missing 'Reason for change', 'Summary of change and Consequences if not approved' fields. The CR coversheet should be written by using the CR template.

**Decision:** The document was **not treated**.

**R4-2015155 Corrections to frequency range in interfrequency measurement procedures tests**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1227 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Some EN-DC FR2 interfrequency measurement procedure testcases incorrectly state that two FR1 cells are used. Depending on case, either 2 FR2 cells are used, or one FR1 and one FR2 cell are used.

**Decision:** The document was **not treated**.

**R4-2015157 Correction on TBD values in FR1+FR2 interfrequency RSRP accuracy tests**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1229 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

All OTA parameters and levels in interfrequency RSRP accuracy tests for the FR2 cell are TBD

**Decision:** The document was **not treated**.

**R4-2015158 Correction on TBD values in FR1+FR2 interfrequency RSRP accuracy tests**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1230 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Interfrequency OTA test cases still have TBDs for some cell specific parameters. CR proposes values for TBDs

**Decision:** The document was **not treated**.

**R4-2015161 Correction of TBD value in Radio Link Monitoring Out-of-sync Tests for FR2 configured with CSI-RS-based RLM**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1233 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Replace TBD Noc in OTA CSI-RS test cases for RLM OOS with proposed values

**Discussion:**

The secretary commented that the CR coversheet is missing 'Reason for change', 'Summary of change and Consequences if not approved' fields. The CR coversheet should be written by using the CR template.

**Decision:** The document was **not treated**.

**R4-2015162 Correction of TBD value in Radio Link Monitoring Out-of-sync Tests for FR2 configured with CSI-RS-based RLM**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1234 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Replace TBD Noc in OTA CSI-RS test cases for RLM OOS with proposed values

**Decision:** The document was **not treated**.

**R4-2015163 Square bracket removal in 38.133 section A.1 to A.5**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1235 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Square bracket values in specifications should be confirmed

**Decision:** The document was **not treated**.

**R4-2015164 Square bracket removal in 38.133 section A.1 to A.5**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1236 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Removal of square brackets

**Decision:** The document was **not treated**.

**R4-2015165 Square bracket removal in 38.133 section A.6 to A.8**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1237 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Removal of square brackets

**Discussion:**

The secretary commented that the CR coversheet is missing 'Reason for change', 'Summary of change and Consequences if not approved' fields. The CR coversheet should be written by using the CR template. If neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2015166 Square bracket removal in 38.133 section A.6 to A.8**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1238 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Removal of square brackets

**Decision:** The document was **not treated**.

**R4-2015447 Correction to CSI-RS RMC configuration R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1258 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

CSI-RS of density 3 is used in CSI-RS RMC configuration CSI-RS.X.2/3/4 TDD and CSI-RS.X.2/3/4 FDD. So the length of bitmap configured in frequencyDomainAllocation can only be 4 according to 38.211 Table 7.4.1.5.3-1. It is unable to set frequencyDomainAllocation = 000001.

We purpose to change frequencyDomainAllocation = 0001 for CSI-RS.X.2/3/4.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2015448 Correction to CSI-RS RMC configuration R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1259 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015449 Correction to cell reselection test cases R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1260 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

1. Cell power level settings in intra-frequency reselection TCs don't take measurement restriction rule into account. For example, In 6.1.1.1.UE is supposed to reselect to better ranked neighbour cell. However, S-value for UE's serving cell = RSRP measurement value(-85 dBm) - Qrxlevmin(-140dBm) - QrxlevminOffset (0dB) -Pcompensation (0dB) - Qoffsettemp (0dB) = 55 dB > intraSearchP(50dB). As a result, UE may choose not to perform intra-frequency measurement according to 38.304. Then it will fail the test.

So we propose to change Qrxlevmin to ensure: S value of serving cell < intraSearchP - margin.

2. intraSearchP and non-intraSearchP are mandatory fields in NR according to 38.331. They can't be set to "not sent".

3. Qhysts and Qoffsets, n in Table A.6.1.1.2.2-3 are redundant since A.6.1.1.2 isn't a rank-based cell reselection TC.

4. Cell power setting in A.7.1.1.2 doesn't take 7.5dB margin into account.

5. Comments of initial condition in A.8.2.1.1 is wrong. It should be "UE camps on Cell 2" rather than "UE camps on Cell 1", Otherwise TC can't be looped.

6. Io calculation in A.8.2.1.1 is wrong.

7. Typos.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2015450 Correction to cell reselection test cases R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1261 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015451 Correction to inter-RAT handover test cases R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1262 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

1. B2 thresholds used in A.8.3.1.1 don't leave enough margin for absolute accuracy.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2015452 Correction to inter-RAT handover test cases R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1263 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015453 Correction to NR measurement under LTE SA test cases R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1264 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

LTE serving cell is wrongly powered off in T1.

Fading channel is used as propagation condition in TCs. However, no margin are reserved for channel fading. As a result, measurement reporting may not be correctly triggered. According analysis in RAN5 2dB margin are needed as depicted below:

Io calculation is wrong.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2015454 Correction to NR measurement under LTE SA test cases R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1265 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015455 Correction to inter-RAT SFTD measurement test cases R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1266 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

To correct wrong Io calculations

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2015456 Correction to inter-RAT SFTD measurement test cases R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1267 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015457 CR on maintaining antenna configurations in TS38.133**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1268 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

According to the agreements in [RF-172788], UE equiped with 4 Rx ports is allowed to fall back to 2Rx for the purpose of power saving, which means that UE equiped with 4Rx ports supports using both 2Rx and 4Rx for these bands. For the tests specified in clause A.4.7 or A.6.7, based on the current description in A.3.6.1, the UE equiped with 4 Rx needs to be tested using both 2Rx and 4Rx. However, the UE shall be required to be tested using one of them.

**Decision:** The document was **not treated**.

**R4-2015458 CR on maintaining Antenna configurations in TS38.133 R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1269 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015459 CR on maintaining BFD/CBD measurements test cases R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1270 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

For BFD and link recovery tests in FR2, the SNR and RSRP values of q1 are still TBD.

**Decision:** The document was **not treated**.

**R4-2015460 CR on maintaining BFD/CBD measurements test cases in TS38.133 R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1271 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015503 Correction on SA inter-RAT measurement FR1 test case**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1282 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The values for Ês/Noc, SS-RSRP and Io are not correct in SA inter-RAT measurement FR1 test case.

**Decision:** The document was **not treated**.

**R4-2015531 CR on RRC-based active TCI state switch test case Rel-15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1297 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

In the RRC-based active TCI state switch test cases, UE is configured to perform L1-RSRP within T2 of the target TCI state, and then the requirements for known case is tested. However, the test configuration for L1-RSRP is not provided and the T2 period configuration is not correct.

There is error is the test procedure that at the beginning of T2, the SSB corresponding to TCI-state1 should starts transmitting instead of TCI-state 0 in the current spec.

There is no need to configure Cell2 in A.7.5.8.2 which is for EN-DC

There are some typos need to be fixed.

**Decision:** The document was **not treated**.

**R4-2015532 CR on RRC-based active TCI state switch test case Rel-16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1298 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015674 [CR] NR Perf Maintenance R15 Cat F**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1312 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Abstract:**

The following errors exist in the current test cases which mislead readers:

- In multiple tables, such as Table A.6.6.4.1.2-1, the Note shall be for Cell 1 not both cells.

- In clause A.7.5.8.1.1.1 and A.7.5.8.2.1.1, the configuration mentioned a second cell in EN-DC. However, the test is for NR SA and only one cell is configured.

- In Table A.7.6.2.1.1-3, the configurations should be for Cell 1 and Cell 2, separately.

- In Clause A.7.5.3.2.2, [TBD] exists.

**Decision:** The document was **not treated**.

**R4-2015738 CR on FR2 unkown SCell activation test cases R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1318 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The current test case for FR2 unknown SCell activation are incomplete.

The test procedure related to L1-RSRP reporting, TCI activation and CSI-RS for CSI configuration are missing, which makes the test impossible to be implemented.

The test requirements are missing, e.g. when UE is expected to report valid L1-RSRP and CSI.

**Decision:** The document was **not treated**.

**R4-2015739 CR on FR2 unkown SCell activation test cases R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1319 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015740 CR on BWP in L1-RSRP delay and accuracy test cases R15**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1320 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

In current test case for FR2 CSI-RS based L1-RSRP delay, the BWP configuration is DLBWP.1.3, which is 32 RB. However, the CSI-RS based L1-RSRP measurement requirements are defined based on 48 RB.

**Decision:** The document was **not treated**.

**R4-2015741 CR on BWP in L1-RSRP delay and accuracy test cases R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1321 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015823 CR: Correction of CFRA test in FR2 SA**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1333 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The number of preamble receptions by TE to transmit RAR is missing.

**Decision:** The document was **not treated**.

**R4-2015993 CR to TS 38.133: Corrections to inter-RAT FR1 test cases (Rel-15)**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1341 Cat: F (Rel-15)  
  
 Source: Rohde & Schwarz*

**Abstract:**

TC A.6.7.6.1 (Table A.6.7.6.1.2-2)

There are two sets of Es/Noc, RSRP and SSB\_RP parameters for the configuration of the NR Cell. However, there is no reference to different subtests and no clear indication when to use the second set of parameters. Furthermore, the NR Cell is just the serving cell in these tests, the target cell is the E-UTRA cell.

Row RSRQ is wrongly named, since the value is in dBm/SCS, and RSRQ is a quantity in dB.

TC A.6.7.7.1 (Table A.6.7.7.1.2-3)

The CRS Es/Noc for Test 2 is incorrect.

The Noc values for subcarriers with and without CRS are different. The RS-SINR, according to the definition in TS 36.214, is measured only in the CRS subcarriers. The configuration of the Noc in the non-CRS subcarriers should not influence the RS-SINR according to the measurement definition. In addition subcarrier specific Noc greatly complicates the test case implementation in RAN5 unnecessarily.

**Decision:** The document was **not treated**.

**R4-2015994 CR to TS 38.133: Corrections to inter-RAT FR1 test cases (Rel-16)**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1342 Cat: A (Rel-16)  
  
 Source: Rohde & Schwarz*

**Decision:** The document was **not treated**.

**R4-2015995 CR to TS 38.133: Corrections to inter-RAT FR2 test cases (Rel-15)**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1343 Cat: F (Rel-15)  
  
 Source: Rohde & Schwarz*

**Abstract:**

In TCs for FR2 inter-RAT measurement accurycy there are several inconsistencies:

SSB Configuration is missing.

UE beam assumption is missing.

OTA parameters (Noc, Es, Es/Noc) not given explicitely in the table, but through Notes, which are also not consistent since they refer to spherical coverage and do not account for 1dB band relaxation or UE internal noice when close to Refsens .

Bandgroups are redundant since test parameters are defined band agnostic.

Redundant / missleading table Notes.

Relative accuracy mentioned in the test purpose, though only one cell is measured in the test.

Editorial inconsistencies

**Decision:** The document was **not treated**.

**R4-2015996 CR to TS 38.133: Corrections to inter-RAT FR2 test cases (Rel-16)**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1344 Cat: A (Rel-16)  
  
 Source: Rohde & Schwarz*

**Decision:** The document was **not treated**.

**R4-2016024 CR 38.133 Corrections to test cases for TCI state switching**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1349 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Stray references to a non-existing cell 2. The test cases are based on single cell, but parameters for a second cell, timing offset between Cell2 and Cell1, are provided in the tables for general test parameters. Moreover, despite being based on only a single cell, the NR cell specific test parameter tables mention that "OCNG shall be used suchs that both cells [...]". This causes confusion. This CR removes the incorrect references to a second cell.

**Decision:** The document was **not treated**.

**R4-2016025 CR 38.133 Correction to test case for TCI state switching (Rel-16)**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1350 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The test cases are based on single cell, but parameters for a second cell, timing offset between Cell2 and Cell1, are provided in the table for general test parameters. Moreover, despite being based on only a single cell, the NR cell specific test paramet

**Decision:** The document was **not treated**.

**R4-2016160 Removal of annex B.2.6 on one shot timing adjustment in 38.133**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1363 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

To annex B.2.6 containing side conditiions for one shot timing adjustment requirements.

**Discussion:**

The secretary wondered what is the correct Specification? It reads 36.133 on the coversheet but the CR is allocated for 38.133.

**Decision:** The document was **not treated**.

**R4-2016161 Removal of annex B.2.6 on one shot timing adjustment in 38.133**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1364 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The side conditions are related to one shot timing adjustment, which was removed. The annex is no more applicable and is removed.

**Decision:** The document was **not treated**.

**R4-2016163 Correction to NR FR1 DL active BWP switch of Cell with non-DRX in SA (A.6.5.6.2.1)**

*Type: CR For: Agreement  
 38.133 v15.11.0 CR-1365 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

To correct parameters in in the test case NR FR1 DL active BWP switch of Cell with non-DRX in SA

**Decision:** The document was **not treated**.

**R4-2016164 Correction to NR FR1 DL active BWP switch of Cell with non-DRX in SA (A.6.5.6.2.1)**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1366 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

To correct parameters in in the test case NR FR1 DL active BWP switch of Cell with non-DRX in SA

**Decision:** The document was **not treated**.

**R4-2016582 Missing TRS Configurations in Test Cases**

*Type: discussion For: Agreement  
 38.133 v..  
 Source: Qualcomm Incorporated*

**Abstract:**

Proposal 1: In principle, RAN4 agrees that TRS configuration should be added to the following test cases. And the correction for each test case will be made by one big CR.

**Decision:** The document was **not treated**.

### 4.9 Demodulation and CSI requirements maintenance (38.101-4/38.104) [NR\_newRAT-Perf]

#### 4.9.1 UE demodulation requirements [NR\_newRAT-Perf]

**R4-2014015 Update of Noc for NR operating bands in FR2**

*Type: CR For: Agreement  
 38.101-4 v15.7.0 CR-0079 Cat: F (Rel-15)  
  
 Source: ANRITSU LTD*

**Abstract:**

The Rel-15 FR2 multi-band requirement framework was updated in R4-2006352, and introduces a maximum cap to the per-band relaxation factors. Clause 4.5.3 needs to be aligned to these changes.

**Decision:** The document was **not treated**.

**R4-2014016 Update of Noc for NR operating bands in FR2**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0080 Cat: A (Rel-16)  
  
 Source: ANRITSU LTD*

**Decision:** The document was **not treated**.

**R4-2015824 CR: Correction of FRC for PDSCH demodulation requirements**

*Type: CR For: Agreement  
 38.101-4 v15.7.0 CR-0106 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Information bit payload in PDSCH Reference Channel for 64QAM in slots where TRS is trasmittted is not correct.

**Decision:** The document was **not treated**.

**R4-2015825 CR: Correction of FRC for PDSCH demodulation requirements**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0107 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

This CR corrects the FRC for PDSCH demodulation requirements

**Decision:** The document was **not treated**.

**R4-2016424 CR: Updates to OCNG pattern reference**

*Type: CR For: Agreement  
 38.101-4 v15.7.0 CR-0116 Cat: F (Rel-15)  
  
 Source: Huawei Technologies Sweden AB*

**Abstract:**

OCNG FDD pattern 1 and OCNG TDD pattern 2 are defined in Annex A.5, but ‘OCNG’ is wrongly configured for “Symbols for all unused REs” in the test parameters instead of OCNG pattern, it is easy to create confusion for testing.

**Discussion:**

The secretary commented that (on the coversheet) the version should read 15.7.0 instead of 15.07.0.

**Decision:** The document was **not treated**.

**R4-2016425 CR: Updates OCNG pattern reference (Rel-16)**

*Type: CR For: (not specified)  
 38.101-4 v16.2.0 CR-0117 Cat: A (Rel-16)  
  
 Source: Huawei Technologies Sweden AB*

**Decision:** The document was **not treated**.

**R4-2016448 CR: Correction on OCNG pattern**

*Type: CR For: Agreement  
 38.101-4 v15.7.0 CR-0118 Cat: F (Rel-15)  
  
 Source: Qualcomm, Inc.*

**Decision:** The document was **not treated**.

**R4-2016449 CR: Correction on OCNG pattern**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0119 Cat: A (Rel-16)  
  
 Source: Qualcomm, Inc.*

**Abstract:**

When data is not FDMed with DMRS, RAN1 spec requires power boosting on PDSCH DMRS to keep the same power across symbols. If OCNG is padded into the empty REs on PDSCH DMRS symbols, power across data and PDSCH DMRS symbols are different. Text is added to clarify that OCNG pattern is not applied to PDSCH DMRS symbols to avoid this power difference across symbols.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

#### 4.9.2 CSI requirements [NR\_newRAT-Perf]

**R4-2014050 Correction to FR1 Aperiodic CSI Reporting**

*Type: CR For: Agreement  
 38.101-4 v15.7.0 CR-0081 Cat: F (Rel-15)  
  
 Source: ANRITSU LTD*

**Abstract:**

Incorrect Aperiodic Report Slot Offset. Current values will NOT schedule Aperiodic CSI Reports in an UL slot.

**Decision:** The document was **not treated**.

**R4-2014051 Correction to FR1 Aperiodic CSI Reporting**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0082 Cat: A (Rel-16)  
  
 Source: ANRITSU LTD*

**Abstract:**

Change Aperiodic Report Slot Offset value from 9 to 8

**Decision:** The document was **not treated**.

**R4-2014052 Correction to FR2 PMI Aperiodic CSI Reporting**

*Type: CR For: Agreement  
 38.101-4 v15.7.0 CR-0083 Cat: F (Rel-15)  
  
 Source: ANRITSU LTD*

**Abstract:**

Incorrect Aperiodic Report Slot Offset. Current values will NOT schedule Aperiodic CSI Reports in an UL slot.

Test 1:

Test 2:

**Decision:** The document was **not treated**.

**R4-2014053 Correction to FR2 PMI Aperiodic CSI Reporting**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0084 Cat: A (Rel-16)  
  
 Source: ANRITSU LTD*

**Abstract:**

Correct Aperiodic Report Slot Offset values for Test 1 and Test 2:

Test 1: change 7 to 6, Test 2: change 9 to 8

**Decision:** The document was **not treated**.

#### 4.9.3 BS demodulation requirements [NR\_newRAT-Perf]

**R4-2014494 CR for 38.141-2: Add error-free feedback in demodulation requirement test setup**

*Type: CR For: Agreement  
 38.141-2 v15.7.0 CR-0229 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

OTA test setup section is missing the error-free feedback link.

**Decision:** The document was **not treated**.

**R4-2014509 CR for 38.141-2: Add error-free feedback in demodulation requirement test setup**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0230 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Added note in PUSCH minimum performance requirement OTA test setup, following the text agreed in TR 37.941 (section 15.3) on HARQ feedback, to allow HARQ feedback on an error-free feedback link in OTA testing.

Note adapted from TS 38.141-1.

**Decision:** The document was **not treated**.

**R4-2015843 Adding MCS12 and 30% throughput requirements and corresponding FRC tables for FR2 PUSCH performance in TS38.104 v15.11.0**

*Type: CR For: Agreement  
 38.104 v15.11.0 CR-0256 Cat: B (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Rel-16 has added MCS12 and 30% throghput requirements for 2-O PUSCH performance which previous target SNR values are very close or over 20dB test limit. Rel-15 should align these requirements with Rel-16 to let these cases testable.

**Discussion:**

The secretary commented that the CR number 0256 is missing on the coversheet.

**Decision:** The document was **not treated**.

### 4.10 Positioning specs maintenance (36.171, 37.171 and 38.171) [NR\_newRAT-Perf or TEI]

### 4.11 Testability Maintenance (38.810) [FS\_NR\_test\_methods]

## 5 LTE maintenance (up to Rel15) [WI code or TEI]

### 5.1 BS RF requirements [WI code or TEI]

**R4-2014469 CR to TS 36.141: Clarification on manufacturer's declaration of the number of supported NB-IoT carriers**

*Type: CR For: Agreement  
 36.141 v13.14.0 CR-1276 Cat: F (Rel-13)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

It is not clear whether the manufacturer’s declaration on ‘the number of supported NB-IoT carriers’ applies to NB-IoT in-band or guard band operation only, or also applies to NB-IoT standalone operation. For TS 37.141, it was agreed in R4#96-e (R4-2012573) to keep the existing manufacturer’s declaration on ‘the number of supported PRBs’ for NB-IoT in-band or guard band operation, and add the manufacturer’s declaration on ‘the number of supported NB-IoT carriers’ for NB-IoT standalone operation.

**Decision:** The document was **not treated**.

**R4-2014470 CR to TS 36.141: Clarification on manufacturer's declaration of the number of supported NB-IoT carriers**

*Type: CR For: Agreement  
 36.141 v14.11.0 CR-1277 Cat: A (Rel-14)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Change the existing manufacturer’s declaration to ‘the number of supported PRBs’ for NB-IoT in-band or guard band operation and add the manufacturer’s declaration on ‘the number of supported NB-IoT carriers’ for NB-IoT standalone operation.

**Decision:** The document was **not treated**.

**R4-2014471 CR to TS 36.141: Clarification on manufacturer's declaration of the number of supported NB-IoT carriers**

*Type: CR For: Agreement  
 36.141 v15.10.0 CR-1278 Cat: A (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Change the existing manufacturer’s declaration to ‘the number of supported PRBs’ for NB-IoT in-band or guard band operation and add the manufacturer’s declaration on ‘the number of supported NB-IoT carriers’ for NB-IoT standalone operation.

**Decision:** The document was **not treated**.

**R4-2014472 CR to TS 36.141: Clarification on manufacturer's declaration of the number of supported NB-IoT carriers**

*Type: CR For: Agreement  
 36.141 v16.7.0 CR-1279 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Change the existing manufacturer’s declaration to ‘the number of supported PRBs’ for NB-IoT in-band or guard band operation and add the manufacturer’s declaration on ‘the number of supported NB-IoT carriers’ for NB-IoT standalone operation.

**Decision:** The document was **not treated**.

**R4-2015375 Further discussion on additional optional EDT level for test**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution, we further discuss issue of additional optional energy detection threshold in conformance tests for LAA/eLAA.

Observation: Changes of EDT threshold by adding additional optional value that is declared by BS vendor would not relax EDT requirements, but only would allow to use specific regulatory requirements for EDT test.

Proposal: It is proposed to introduce changes for EDT level in TS 37.107 by adding alternative option 1 from WF that is declared by BS vendor and introduce it from Rel-15 onwards.

**Decision:** The document was **not treated**.

**R4-2015376 CR to 37.107 with update of EDT level**

*Type: CR For: Agreement  
 37.107 v15.3.0 CR-0008 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR introduces update for interfering signal of energy detection accuracy (EDT) to align with RAN1 specification TS 37.213. Details of this changes are described in [1].

[1]

R4-2015375, Further discussion on additional optional EDT level for test, Nokia, Nokia Shaghai Bell.

**Decision:** The document was **not treated**.

**R4-2015377 CR to 37.107 with update of EDT level**

*Type: CR For: Agreement  
 37.107 v16.1.0 CR-0009 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR introduces update for interfering signal of energy detection accuracy (EDT) to align with RAN1 specification TS 37.213.

**Decision:** The document was **not treated**.

### 5.2 UE RF requirements [WI code or TEI]

**R4-2014311 Clarifications and corrections on UE co-ex requirements(R15)**

*Type: CR For: Agreement  
 36.101 v15.12.0 CR-5681 Cat: F (Rel-15)  
  
 Source: SoftBank Corp.*

**Abstract:**

UE co-ex table for 2-bands CA(Table 6.6.3.2A-0) includes additional requirements (A-MPR required) and errors remain in UE co-ex tables.

**Decision:** The document was **not treated**.

**R4-2014312 Clarifications and corrections on UE co-ex requirements(R16)**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5682 Cat: A (Rel-16)  
  
 Source: SoftBank Corp.*

**Abstract:**

UE co-ex table for 2-bands CA(Table 6.6.3.2A-0) includes additional requirements (A-MPR required) and errors remain in UE co-ex tables.

**Decision:** The document was **not treated**.

**R4-2014896 Coexistence cleanup for 36101 Rel15**

*Type: CR For: Agreement  
 36.101 v15.12.0 CR-5685 Cat: F (Rel-15)  
  
 Source: Apple Inc.*

**Abstract:**

Rel-15 features several band protections which are not technical possible due to sometimes TDD bands with overlapping regions are protected or similar issues. The CR focuses on correcting false protections so that a UE will not face technical impossible emission requirements.

**Decision:** The document was **not treated**.

**R4-2015549 CR for 36.101 to clarify the SCS supports for LTE MBMS (Rel-14)**

*Type: CR For: Agreement  
 36.101 v14.16.0 CR-5688 Cat: F (Rel-14)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Based on the agreement in R4-2012604, UE doesn’t have to support all of the SCS, if UE support LTE MBMS.

For MBMS feature, there is no need to meet the minimum requirements of transmitter characteristics for UE.

**Decision:** The document was **not treated**.

**R4-2015550 CR for 36.101 to clarify the SCS supports for LTE MBMS (Rel-15)**

*Type: CR For: Agreement  
 36.101 v15.12.0 CR-5689 Cat: A (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015551 CR for 36.101 to clarify the SCS supports for LTE MBMS (Rel-16)**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5690 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015807 Test frequencies for NB-IOT UE in standalone operation**

*Type: other For: Discussion  
 Source: Sony*

**Abstract:**

Observation 1: TS 36.104 test conditions (test frequencies) for both stand-alone and guard-band NB-IoT operation may conflict with FCC band-edge spectrum emission requirements.

Observation 2: 100 kHz offset for NB-IoT network deployments may solve the violation of the FCC regulation.

Proposal 1: Send an LS to RAN5 with proposal to exclude the first and last EARFCNs in TS 36.104 test frequencies for both stand-alone and guard-band IoT operation modes for all frequency bands were FCC regulation applies.

**Decision:** The document was **not treated**.

**R4-2016035 CR Correction to B72 coex - CA\_NS\_08 - Band 10 protection 36.101 Rel15**

*Type: CR For: Agreement  
 36.101 v15.12.0 CR-5702 Cat: F (Rel-15)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

Three combined CR according to meeting guidelines:

- Restore Band 72 list of protected bands, ie B72 and B31,

- Band 10 protection removal has been agreed in R4-2011521. This CR applies this correction to Release 15,

- Allow CA A-MPR for inner region CA\_NS\_08 allocations

**Decision:** The document was **not treated**.

### 5.3 RRM requirements [WI code or TEI]

**R4-2015461 CR on maintaining V2X test cases in TS36.133 R14**

*Type: CR For: Agreement  
 36.133 v14.16.0 CR-6965 Cat: F (Rel-14)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

In V2X synchronization reference Selection/Reselection tests, there are some errors in refering section number. In congestion control test, the value of PSSCH-RSRP is not correct.

**Decision:** The document was **not treated**.

**R4-2015462 CR on maintaining V2X test cases in TS36.133 R15**

*Type: CR For: Agreement  
 36.133 v15.11.0 CR-6966 Cat: A (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015463 CR on maintaining V2X test cases in TS36.133 R16**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6967 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015838 CR: Correction of eMTC early-OOS/early-IS tests (Rel-14)**

*Type: CR For: Agreement  
 36.133 v14.16.0 CR-6981 Cat: F (Rel-14)  
  
 Source: Ericsson*

**Abstract:**

Correction of eMTC early-OOS/early-IS tests

**Decision:** The document was **not treated**.

**R4-2015839 CR: Correction of eMTC early-OOS/early-IS tests**

*Type: CR For: Agreement  
 36.133 v15.11.0 CR-6982 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

Correction of eMTC early-OOS/early-IS tests

**Decision:** The document was **not treated**.

**R4-2015840 CR: Correction of eMTC early-OOS/early-IS tests**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6983 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

This CR corrects TBD and removes [] from Rel-14 eMTC early-OOS/early-IS tests.

**Decision:** The document was **not treated**.

**R4-2016012 CR 36.133 Corrections to test cases for SCell Hibernation**

*Type: CR For: Agreement  
 36.133 v15.11.0 CR-6986 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

References to tables for test case parameters are incorrect and pointing at tables for another test case.

**Decision:** The document was **not treated**.

**R4-2016013 CR 36.133 Correction to test cases for SCell Hibernation (Rel-16)**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6987 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Correction of references that currently are incorrect and pointing at tables for another test case.

**Decision:** The document was **not treated**.

**R4-2016548 Correction to test parameters for FDD and TDD intra-frequency RSRP for Cat-M1 UE in CEModeA**

*Type: CR For: Agreement  
 36.133 v13.20.0 CR-7002 Cat: F (Rel-13)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Correct inconsistency of Es/Iot requirement for target cell in RSRP intra-frequecy tests for UE Cat M1 in CE ModeA vs UE Cat 1bis. For intra-frequency cell re-selection, the Es/Iot condition for UE Cat 1bis specified in TS 36.133 Table B.1.6-1 is Es/Iot ≥ -5 dB. In contrast, the equivalent requirement for UE Cat M1 is specified in TS 36.133 Table B.1.3-1 as Es/Iot ≥ -6 dB. Since both UE Cat M1 and Cat 1bis feature 1 Rx the two requirements should be reconciled.

In addition, we have added cell 2 timing offset information for consistency with other similar tests.

**Decision:** The document was **not treated**.

**R4-2016549 Correction to test parameters for FDD and TDD intra-frequency RSRP for Cat-M1 UE in CEModeA**

*Type: CR For: Agreement  
 36.133 v14.16.0 CR-7003 Cat: A (Rel-14)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Correct inconsistency of Es/Iot requirement for target cell in RSRP intra-frequecy tests for UE Cat M1 in CE ModeA vs UE Cat 1bis.

**Decision:** The document was **not treated**.

**R4-2016550 Correction to test parameters for FDD and TDD intra-frequency RSRP for Cat-M1 UE in CEModeA**

*Type: CR For: Agreement  
 36.133 v15.11.0 CR-7004 Cat: A (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Correct inconsistency of Es/Iot requirement for target cell in RSRP intra-frequecy tests for UE Cat M1 in CE ModeA vs UE Cat 1bis.

**Decision:** The document was **not treated**.

### 5.4 Demodulation and CSI requirements [WI code or TEI]

#### 5.4.1 UE demodulation and CSI requirements [WI code or TEI]

**R4-2015589 CR on cleanup for LTE FeMBMS(Rel-14)**

*Type: CR For: Agreement  
 36.101 v14.16.0 CR-5691 Cat: F (Rel-14)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Remove square brackets in LTE FeMBMS performance requirements.

**Discussion:**

The secretary commented that the CR number 5691 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2015590 CR on cleanup for LTE FeMBMS(Rel-15)**

*Type: CR For: Agreement  
 36.101 v15.12.0 CR-5692 Cat: A (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Remove square brackets in LTE FeMBMS performance requirements.

**Discussion:**

The secretary commented that the CR number 5692 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2015591 CR on cleanup for LTE FeMBMS(Rel-16)**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5693 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Remove square brackets in LTE FeMBMS performance requirements.

**Discussion:**

The secretary commented that the CR number 5693 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2015630 CR: Updates to LTE V2X performance requirements**

*Type: CR For: Agreement  
 36.101 v14.16.0 CR-5695 Cat: F (Rel-14)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The square bracket of SNR point @ 10% BLER for soft buffer test requirement in Table 14.7-2 is still existing.

For PSCCH/PSSCH decoding test, this test can’t verify the maximum number of bits per TTI and it is verified on soft buffer test.

**Decision:** The document was **not treated**.

**R4-2015835 CR: Addition of applicability for MTC UE capable of 64QAM DL**

*Type: CR For: Agreement  
 36.101 v15.12.0 CR-5699 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

No applicability rule is specified for PDSCH demodulation requirements with 64QAM for MTC UE

**Decision:** The document was **not treated**.

#### 5.4.2 BS demodulation requirements [WI code or TEI]

**R4-2014944 Correction of eLAA FRC table**

*Type: CR For: Agreement  
 36.141 v14.11.0 CR-1280 Cat: F (Rel-14)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Fixed reference channel table of eLAA contains wrong reference channel identification. In the current version of the specification, there are duplicated FRCs identified by A18-1 and A.18-2.

**Decision:** The document was **not treated**.

**R4-2014945 Correction of eLAA FRC table**

*Type: CR For: Agreement  
 36.141 v15.10.0 CR-1281 Cat: A (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Fixed reference channel table of eLAA contains wrong reference channel identification. In the current version of the specification, there are duplicated FRCs identified by A18-1 and A.18-2.

**Decision:** The document was **not treated**.

**R4-2014946 Correction of eLAA FRC table**

*Type: CR For: Agreement  
 36.141 v16.7.0 CR-1282 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Fixed reference channel table of eLAA contains wrong reference channel identification. In the current version of the specification, there are duplicated FRCs identified by A18-1 and A.18-2.

**Decision:** The document was **not treated**.

**R4-2015668 CR for 36.101: Cleanup for performance requirements of sTTI (Rel-15)**

*Type: CR For: Agreement  
 36.101 v15.12.0 CR-5697 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

SNR test points and CQI reporting requirements are in []

**Decision:** The document was **not treated**.

**R4-2015669 CR for 36.101: Cleanup for performance requirements of sTTI (Rel-16)**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5698 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

SNR test points and CQI reporting requirements are in []

**Decision:** The document was **not treated**.

## 6 Rel-16 Work Items for LTE

### 6.1 Additional MTC enhancements for LTE [LTE\_eMTC5]

#### 6.1.1 RF core requirements maintenance [LTE\_eMTC5-Core]

#### 6.1.2 RRM core requirements maintenance [LTE\_eMTC5-Core]

**R4-2015778 [LS] Discussion on remaining issues in RSS measurement and eMTC in RRC\_Inactive state**

*Type: LS out For: Approval  
 to RAN2, cc RAN1  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015779 CR on RSS measurement requirements**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6979 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

There are several issues in current RSS measurement requirements

1. rmax\*G is not considered in measurement period for Connected mode

2. Time relation between MG and RSS is unclear

3.RSRQ measurement may be required but it is not defined for RSS

4.Determination of time location of neighbour cell RSS is unclear

**Decision:** The document was **not treated**.

**R4-2015780 CR to introduce measurement requirements for eMTC in RRC\_Inactive**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6980 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

RAN2 has introduced support of Inactive state for eMTC in Rel-16, and asks RAN4 to define correpsonding measurement requirements.

**Decision:** The document was **not treated**.

**R4-2016141 Discussions on measurement requirement for eMTC UE in RRC\_INACTIVE**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

RAN4 has received a LS from RAN2 regarding the measurement requirements for eMTC UE in RRC\_INACTIVE state, and this LS is discussed in this contribution.

**Decision:** The document was **not treated**.

**R4-2016142 Measurement requirement for eMTC UE in RRC\_INACTIVE**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6991 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

RAN4 has received a LS [R2-2008234] stating that RRC\_INACTIVE state is supported for eMTC UE (BL UE and UE in CE) connected to 5GC. This CR contains changes to define the requirements that apply in RRC\_INACTIVE state.

**Decision:** The document was **not treated**.

**R4-2016143 Corrections to RSS based measurement requirements**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6992 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The conditions for RSS based intra-frequency neighbour cell requirements are currently specified as function of MPDCCH bandwidth. Since these requirements apply to IDLE mode UEs, the use of “MPDCCH bandwidth” shall be avoided since the UE is not configured with MPDCCH in IDLE mode.

**Decision:** The document was **not treated**.

**R4-2016547 RRM requirements for eMTC UE in RRC\_INACTIVE state**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-7001 Cat: B (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Rel-16 adds support of RRC\_INACTIVE state for eMTC UE connected to 5GC. Corresponding measurement requirements in RRC\_INACTIVE state have not been specified.

**Decision:** The document was **not treated**.

**R4-2016587 Correction to RSS based measurement requirements**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-7009 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

CR 6949 was agreed at RAN4 #96-e in R4-2012187 on the matter of finalizing RSS based measurement requirements for LTE-MTC.

One error and few ambiguities were discovered in the review of these sections.

**Decision:** The document was **not treated**.

#### 6.1.3 RRM perf. requirements [LTE\_eMTC5-Perf]

##### 6.1.3.1 General [LTE\_eMTC5-Perf]

##### 6.1.3.2 Test cases [LTE\_eMTC5-Perf]

**R4-2015781 draftCR to introduce RSS related test cases**

*Type: draftCR For: Endorsement  
 36.133 v16.7.0  
 Source: Huawei, HiSilicon*

**Abstract:**

Based on R4-2012192, RRM test cases are to be introduced to 1) Verify the cell reselection requirements when UE performs measurements based on RSS based RSRP, and to 2) Verify RSS based RSRP measurement accuracy requirements.

**Decision:** The document was **not treated**.

**R4-2015841 Test cases of RLM for MPDCCH performance improvement**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the test cases of RLM for MPDCCH performance improvement.

Proposal 1: Introduce new Out-of-synch test cases for MPDDCH performance improvement with FD-FDD/HD-FDD/TDD for BL UE CE Mode A.

Proposal 2: Introduce new Early out-of-synch test cases for MPDDCH performance improvement with FD-FDD/HD-FDD/TDD for BL UE CE Mode B.

Proposal 3: Set SNR2/SNR3 1dB lower compared with the existing out-of-synch/early out-of-synch test cases.

**Decision:** The document was **not treated**.

**R4-2015842 Draft CR: Test cases of RLM for MPDCCH performance improvement**

*Type: draftCR For: Endorsement  
 36.133 v16.7.0  
 Source: Ericsson*

**Abstract:**

Addition of test cases of RLM for MPDCCH performance improvement

**Decision:** The document was **not treated**.

**R4-2016144 Discussions on testing serving cell measurement relaxation requirements**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

In this contribution we discuss the methods for testing serving cell measurement relaxation requirements, further discuss the coverage level impact on the test delay.

Proposal: Serving cell measurement relaxation test is introduced only for normal coverage.

**Decision:** The document was **not treated**.

**R4-2016145 Test case on serving cell relaxation for eMTC**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6993 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Relaxed serving cell measurement requirements are introduced in release 16 for eMTC, and test case is needed to veirfy thhose requirements.

**Decision:** The document was **not treated**.

**R4-2016551 Correction to test parameters for FDD and TDD intra-frequency RSRP for Cat-M1 UE in CEModeA**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-7005 Cat: A (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Correct inconsistency of Es/Iot requirement for target cell in RSRP intra-frequecy tests for UE Cat M1 in CE ModeA vs UE Cat 1bis.

**Decision:** The document was **not treated**.

**R4-2016552 Test cases for DLchannel quality report accuracy for eMTC UE**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-7006 Cat: B (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Rel-16 adds support for DL channel quality report for eMTC UE. Test cases to verify DL channel quality report accuracy requirements need to be defined.

**Decision:** The document was **not treated**.

#### 6.1.4 Demodulation and CSI requirements maintenance (36.101) [LTE\_eMTC5-Perf]

##### 6.1.4.1 UE demodulation requirements [LTE\_eMTC5-Perf]

**R4-2015836 Clean up of enhanced MPDCCH demodulation requirements**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5700 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Removal of [] from the requirements.

**Decision:** The document was **not treated**.

##### 6.1.4.2 CSI requirements [LTE\_eMTC5-Perf]

**R4-2015837 Clean up of CSI-RS based PMI reporting test for non-BL UEs**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5701 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Correction of CSI-RS based PMI reporting test for non-BL UEs.

**Decision:** The document was **not treated**.

### 6.2 Additional enhancements for NB-IoT [NB\_IOTenh3]

#### 6.2.1 RF core requirements maintenance [NB\_IOTenh3-Core]

#### 6.2.2 RRM core requirements maintenance [NB\_IOTenh3-Core]

**R4-2015512 CR on PUR requirements for NB-IoT**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6970 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The CR is the resubmitted CR of R4-2012193, which is not implemented due to some changes without change mark.

There are some issues with requirements in 4.6.3 related to PUR:

timing alignment validation and NRSRP changed validation are two independent mechanisms, so when only NRSRP-ChangeThresh-NB-r16 is configured, the TA validation should not depend on timing alignment validation

TA validation with NRSRP1 and NRSRP2 are also defined in clause 5.3.3.19 of 36.331, instead of RAN4 36.133.

N value is not defined for the case when relaxed serving cell monitoring is not in use.

**Decision:** The document was **not treated**.

**R4-2015513 CR on RRM requirements for short DRX with eDRX configured for Rel-16 NB-IoT**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6971 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon, Mediatek Inc.*

**Abstract:**

In the current requirements for the new introduced short DRX cycle length 320 ms and 640 ms, the measurement requirement Tmeasure for neighbor cell measurement and ECID is scaled, which means UE does not need to perform measurement too frequently with the short DRX cycles. However, when eDRX is configured, the corresponding requirements are not relaxed in order to let UE complete the measurement within the same PTW as possible. It could be observed that the minimum configurable PTW length is 2.56 s, which allows multiple measurement occasions when DRX is 320 ms. It is proposed in this paper to also scale the requirements when eDRX is configured, as the benefit to let UE perform measurement every short DRX when eDRX is configured is not significant but it will lead to unnecessary power consumption and UE’s efforts. The same changes are made in ECID.

There are some typos and misalignments in the spec need to be fixed.

**Decision:** The document was **not treated**.

#### 6.2.3 RRM perf. requirements [NB\_IOTenh3-Perf]

##### 6.2.3.1 General [NB\_IOTenh3-Perf]

##### 6.2.3.2 Test cases [NB\_IOTenh3-Perf]

**R4-2015514 Draft CR on test cases for UE specific DRX cycles for Rel-16 NB-IoT**

*Type: draftCR For: Endorsement  
 36.133 v16.7.0  
 Source: Huawei, HiSilicon*

**Abstract:**

The test cases for UE specifc DRX cycle length is missing.

**Decision:** The document was **not treated**.

**R4-2015816 Test cases of MSG3 channel quality report on non-anchor carrier**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the test cases of MSG3 channel quality report on non-anchor carrier.

Proposal 1: Reuse the Rel-14 MSG3-based channel quality report test on anchor for Rel-16 MSG3-based channel quality report test on non-anchor.

Proposal 2: Configure NPDCCH carrier index (ndpcch-CarrierIndex-r14) for Rel-16 MSG3-based channel quality report test on non-anchor.

**Decision:** The document was **not treated**.

**R4-2015817 Draft CR: MSG3 based channel quality reporting on non-anchor carrier**

*Type: draftCR For: Endorsement  
 36.133 v16.7.0  
 Source: Ericsson*

**Abstract:**

Introduction of test case of MSG3-based channel quality reporting on non-anchor carrier

**Decision:** The document was **not treated**.

**R4-2016553 Test cases for DLchannel quality report accuracy in RRC\_CONNECTED for UE Cat-NB1 Standalone mode**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-7007 Cat: B (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Rel-16 adds support for DLchannel quality report in RRC\_CONNECTED for UE Cat-NB1. Test cases to verify DL channel quality report accuracy requirements in RRC\_CONNECTED need to be defined.

**Decision:** The document was **not treated**.

#### 6.2.4 Demodulation and CSI requirements maintenance (36.101/36.104) [NB\_IOTenh3-Perf]

##### 6.2.4.1 UE demodulation requirements [NB\_IOTenh3-Perf]

**R4-2015631 CR: Cleanup for NPDSCH performance requirements for multi-TB interleaved transmission in TS 36.101**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5696 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The square bracket of SNR point @ 70% Throughput for NPDSCH with multi-TB interleaved transmission in Table 8.12.1.1.4-2 is still existing.

**Decision:** The document was **not treated**.

##### 6.2.4.2 BS demodulation requirements [NB\_IOTenh3-Perf]

**R4-2015632 CR: Addition of NPUSCH format1 performance requirements for multi-TB interleaved transmission in TS 36.104**

*Type: CR For: Agreement  
 36.104 v16.7.0 CR-4915 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Performance requirements part for NPUSCH format 1 with multi-TB interleaved transmission agreed in R4-2012600 was not implemented in latest TS 36.104 version 16.7.0.

**Decision:** The document was **not treated**.

**R4-2015633 CR: Cleanup for NPUSCH format 1 conformance testing for multi-TB interleaved transmission in TS 36.141**

*Type: CR For: Agreement  
 36.141 v16.7.0 CR-1284 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The square bracket of SNR point @ 70%of maximum throughput in Table 8.5.1.5-4 is still exsiting

**Decision:** The document was **not treated**.

### 6.3 Even further Mobility enhancement in E-UTRAN [LTE\_feMob]

#### 6.3.1 RRM core requirements maintenance [LTE\_feMob-Core]

**R4-2015502 Correction on the synchronous condition for DAPS handover**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6969 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Aligning with the agreement for NR mobility enhancement [R4-2012265], the synchronous condition are revised

In current specification, Notes 2/3 clairfies to leave enough time for UE performing DL-to-UL and UL-to-DL switching only from single cell perspective. However, the UE shall be allowed to switching time between both source cell and target cell.

**Decision:** The document was **not treated**.

**R4-2016385 Correction on LTE conditional handover**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6997 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The equation of conditional handover delay in LTE is not readable and not aligned with NR conditional handover.

**Decision:** The document was **not treated**.

#### 6.3.2 RRM perf. requirements [LTE\_feMob-Perf]

##### 6.3.2.1 General [LTE\_feMob-Perf]

##### 6.3.2.2 Test cases [LTE\_feMob-Perf]

**R4-2015501 Test cases for inter-frequency DAPS handover**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6968 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Define the test cases for inter-frequency DAPS

**Decision:** The document was **not treated**.

**R4-2016384 Test cases for LTE conditional handover**

*Type: draftCR For: Endorsement  
 36.133 v16.7.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Add test cases for LTE conditional handover

**Decision:** The document was **not treated**.

**R4-2016554 Introduction of intra-frequency sync and async LTE DAPS HO test cases**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-7008 Cat: B (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Per work split agreement in RAN4#95-e meeting, the test cases for intra-frequency LTE DAPS HO are introduced in this CR. To avoid having multiple test cases, FDD-FDD test case is specified in async mode and TDD-TDD test case is specified in sync mode. Per agreements in RAN4#96-e for NR mobility WI, the tests consist of 5 intervals and the last interval is used to verify the CSI reporting to source cell is stopped.

**Decision:** The document was **not treated**.

### 6.4 R16 LTE maintenance [WI code]

#### 6.4.1 BS RF requirements [WI code]

#### 6.4.2 UE RF requirements [WI code]

**R4-2014045 Correction of B88 UL EARFCN**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5676 Cat: F (Rel-16)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

In LTE, the EARFCN should be unique for each band. However, in the current spec the UL starting EARFCN of band 88 equals to the UL end EARFCN of band 87.

**Decision:** The document was **not treated**.

**R4-2014162 LTE CA\_NS\_04 PC2 256QAM AMPR**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5677 Cat: F (Rel-16)  
  
 Source: Qualcomm Inc.*

**Decision:** The document was **not treated**.

**R4-2014163 LTE CA\_NS\_04 PC2 256QAM AMPR**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5678 Cat: F (Rel-16)  
  
 Source: Qualcomm Inc.*

**Decision:** The document was **not treated**.

**R4-2014164 CR CatF LTE CA\_NS\_04 PC2 256QAM AMPR**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5679 Cat: F (Rel-16)  
  
 Source: Qualcomm*

**Abstract:**

CA\_NS\_04 256QAM AMPR is missing.

**Decision:** The document was **not treated**.

**R4-2014510 LTE CA corrections**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5683 Cat: F (Rel-16)  
  
 Source: Nokia*

**Abstract:**

R4-2006725 was not implemented properly.

CA\_13A-48A-48A-66A disappeared from Table 5.6A.1-2a in v16.6.0 with out a CR and is stil in clasue 7 and errors to other configurations emerged.

CA\_2A-48E-66A-66A has wrong aggregated BW. CA\_1A-18A-41C has invalid BCS reference.

**Decision:** The document was **not treated**.

**R4-2014511 Band 88 and 87 bracket removal**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5684 Cat: F (Rel-16)  
  
 Source: Nokia*

**Abstract:**

RAN5 is developping test cases for bands 87 and 88 but those these bands have brackets in RAN4 M2 REFSENS requirement which means that the requriement is untestable.

**Decision:** The document was **not treated**.

**R4-2014897 Coexistence cleanup for 36101 Rel16**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5686 Cat: F (Rel-16)  
  
 Source: Apple Inc.*

**Abstract:**

Rel-16 features several band protections which are not technical possible due to sometimes TDD bands with overlapping regions are protected or similar issues. The CR focuses on correcting false protections so that a UE will not face technical impossible emission requirements.

**Decision:** The document was **not treated**.

**R4-2016008 LTE CA\_NS\_08 A-MPR Correction**

*Type: discussion For: Approval  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this paper we propose a correction to the inner 0dB A-MPR region which is captured in subsequent Change Requests. Since all B42 networks are synchronized, we intend in future meetings to pursue the removal of CA\_NS\_08 requirements [1] in coordination with the relevant regulatory bodies, e.g. CEPT.

**Decision:** The document was **not treated**.

**R4-2016040 CR Correction to B72 coex - CA\_NS\_08 - Band 10 protection 36.101 Rel16**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5703 Cat: A (Rel-16)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

Three combined CR according to meeting guidelines:

- Restore Band 72 list of protected bands, ie B72 and B31,

- Band 10 protection removal has been agreed in R4-2011521. This CR applies this correction to Release 15,

- Allow CA A-MPR for inner region CA\_NS\_08 allocations

**Decision:** The document was **not treated**.

**R4-2016129 CR to TS 36.101 clarifications on supported SCS for UE supporting LTE MBMS**

*Type: CR For: Agreement  
 36.101 v14.16.0 CR-5704 Cat: F (Rel-14)  
  
 Source: ZTE Corporation*

**Abstract:**

In the existing spec TS36.101, there was some ambiguity existing for UE supporting LTE MBMS that whether all SCS should be supported. Basd on the agreement in R4-2012604, MBMS UE doesn’t have to support all of the SCS, if UE support LTE MBMS.

**Discussion:**

The secretary wondered what is the correct Release? It reads Rel-15 on the coversheet but the CR is allocated for Rel-14.

**Decision:** The document was **not treated**.

**R4-2016130 CR to TS 36.101 clarifications on supported SCS for UE supporting LTE MBMS**

*Type: CR For: Agreement  
 36.101 v15.12.0 CR-5705 Cat: A (Rel-15)  
  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016131 CR to TS 36.101 clarifications on supported SCS for UE supporting LTE MBMS**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5706 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016340 CR for editorial corrections 36.101**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5707 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Editorial corrections 36.101

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2016426 LTE CA\_NS\_04 PC2 256QAM AMPR**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Abstract:**

Observation 1: The LTE 256QAM CA\_NS\_04 back-off should be at least be allowed the same back-off as the single CC NR DFT-s-OFDM 256QAM back-off within the similar RB boundary condition. Both back-off is calculated as max (MPR, AMPR).

Proposal: Modify Power Class 2 LTE CA\_NS\_04 AMPR as in Table 2.1

**Decision:** The document was **not treated**.

**R4-2016450 CR for 36.101: Corrections for UL CA\_41D**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5708 Cat: F (Rel-16)  
  
 Source: T-Mobile USA*

**Abstract:**

There is an incorrect reference to a void section

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

#### 6.4.3 RRM requirements [WI code]

**R4-2015879 CR on performance requirements tests for euCA.**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6984 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Missing accuracy requirements for the euCA RSRP and RSRQ measurements.

**Decision:** The document was **not treated**.

#### 6.4.4 Demodulation and CSI requirements [WI code]

##### 6.4.4.1 UE demodulation and CSI requirements [WI code]

**R4-2015613 CR on cleanup for LTE-based 5G terrestrial broadcast**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5694 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Remove square brackets in LTE-based 5G terrestrial broadcast performance requirements.

**Discussion:**

The secretary commented that the CR number 5694 is missing on the coversheet.

**Decision:** The document was **not treated**.

##### 6.4.4.2 BS demodulation requirements [WI code]

## 7 Rel-16 non-spectrum related work items for NR

### 7.1 NR-based access to unlicensed spectrum [NR\_unlic]

#### 7.1.1 System Parameters [NR\_unlic-Core]

**R4-2014496 [NRU] Justification of band n96 channelization**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution, we provide justification for the band n96 channelization in order to remove brackets in 38.101-1.

Proposal: Brackets can be removed from 38.101-1 Table 5.4.2.3-3 values.

**Decision:** The document was **not treated**.

##### 7.1.1.1 60kHz SCS [NR\_unlic-Core]

**R4-2014887 NR-U 60kHz SCS**

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

**Abstract:**

Proposal: For 60kHz SCS, adopt alternative 1 for intra-carrier guard bands (i.e. 5 RBs for in-carrier guard band with 23-5-23 pattern).

**Decision:** The document was **not treated**.

**R4-2015694 On remaining issues for system parameters**

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

**Abstract:**

Proposal 1: It is proposed to revise channel raster, GSCN and transmission bandwidth configuration as proposed in section 2.

**Decision:** The document was **not treated**.

##### 7.1.1.2 Wideband operation related [NR\_unlic-Core]

**R4-2014621 Discussion on LS on UE capability on wideband carrier operation for NR-U**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Abstract:**

Proposal 1: UL wide-band transmission mode 1 assumes that LBT is successful in all LBT sub-bands of BWP, irrespective of which sub-bands are scheduled with data.

Proposal 2: For UL WB operation, only Mode 1 is introduced as a basic feature, while Mode 2A and 2B should be removed according to Section 4.2.1.0.4 of TS 37.213.

Proposal 3: For DL WB operation, Mode 1 is introduced as a basic feature, while Mode 2 and 3 are introduced as optional features.

**Decision:** The document was **not treated**.

**R4-2014888 NR-U wideband capabilities**

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

**Abstract:**

Proposal 1a: DL wide-band mode 1 can be construed as the baseline NR-U functionality.

Proposal 1b: DL wide-band mode 2 and 3 must be differentiated from mode 1.

Proposal 1c: Discuss further whether DL mode 2 and 3 should have separate capabilities or they can be covered by the same "mode 2/3" capability.

Proposal 1c: DL wide-band mode 1 UE performance requirements apply only if sub-bands of the configured channel contain serving gNB transmission.

Proposal 2a: A UE should perform LBT only for those sub-bands where data is scheduled.

Proposal 2b: If Proposal 2a is agreeable, then UL wide-band mode 1 is not needed as the UE behaviour will always correspond to UL mode 2A/2B.

Proposal 2c: It is preferable to have differentiation between 2A and 2B accounting for different UE LBT capabilities.

Proposal 3: Add the corresponding NR-U capabilities into the RAN WG4 feature list and inform other WGs about it.

**Decision:** The document was **not treated**.

**R4-2015251 NR-U - On wideband operation**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Proposal 1: Agree that there is no difference in UE capability between DL Cases 2a/2b/3 and DL Case 4.

Proposal 2: No UE capabilities are needed for DL wideband operation.

Observation 1: RAN2 did not reserve any bits for non-agreed UE capabilities based on the RAN1 request.

Proposal 3: Further discus UE capabilities for UL wideband operation.

**Decision:** The document was **not treated**.

**R4-2015972 Correction to the intra-cell guard band definition for wideband operation**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0550 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

For operations with shared spectrum access, the UE is configured with intra-cell guard bands by the IE intraCellGuardBandsDL-List and intraCellGuardBandsUL-List for the DL and UL, respectively. If these IEs as defined din 38.331 are absent, the guard-band sizes specified in sub-clause 5.3.3 of 38.101-1 applies, from 38.331,

intraCellGuardBandsDL-List, intraCellGuardBandsUL-List

List of intra-cell guard bands in a serving cell for operation with shared spectrum channel access. If not configured, the guard bands are defined according to 38.101-1 [15], see TS 38.214 [19], clause 7. For operation in licensed spectrum, and no UE action is required.

The 38.101-1 defines ‘wideband operation’ as

Wideband operation: For a UE that supports shared spectrum channel access, wideband operation refers to operation within a channel larger than 20 MHz in which intra-cell guard bands may be configured to distinguish individual RB-sets

hence not including operations with the 10 MHz and 20 MHz channel bandwidths. However, it is not obvious from sub-clause 5.3.3 that that there are no intra-cell GB for these bandwidths; the 20 MHz channel bandwidth is nevertheless included in Table 5.3.3-2 defining the nominal GB for wideband operations.

Since 38.331 refers to 38.101-1 for the guard-band sizes when the above IEs are absent, the intra-cell GB configuration must be clearly defined for all channel bandwidths.

**Decision:** The document was **not treated**.

**R4-2016438 Wideband capability for NR-U**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

Proposal: From a RAN4 perspective, none of the feature groups is needed for Rel-16 since requirements are not available or the feature group is already part of the baseline assumption that all UE’s are expected to support.

**Decision:** The document was **not treated**.

##### 7.1.1.3 Others [NR\_unlic-Core]

**R4-2014889 NR-U CA bandwidth classes**

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

**Abstract:**

Proposal 1: Revise NR CA BW classes definition based on the changes shown in Table 2.1-3 to support NR-U intra-band contiguous CA.

Proposal 2: Merge NR-U CA configurations CA\_n46G, CA\_n46H, and CA\_n46I into CA\_n46M, n46N, and n46O respectively as shown in Table 2.2-2.

Proposal 3: Remove CA BW class “I” from NR-U DL CA Rx requirements for ACS, in-band blocking, and out-of-band blocking as it can be covered by CA BW class “O”.

**Decision:** The document was **not treated**.

**R4-2015973 Correction to CA bandwidth classes M, N and O**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0551 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The aggregated bandwidth of CA BW classes M, N and O should support bandwidth combinations down to 10 + 2\*20 MHz, 3\*20 MHz and 4\*20 MHz, respectively. This is not allowed by the strict inequalities in the lower limits for M and N.

The upper limits of the aggregated bandwidths are within square brackets, the tentative limits based on \*60 MHz. Aggregation of up to four carriers with 80 MHz and 100 MHz channel bandwidths is covered by the respective classes B, C, D and E. To that end, the square brackets for M and N can be removed. For 5 CC a new (general) CA BW class applicable for all relevant bands can be defined when needed.

Use of BCS is likely regardless of the value of the upper limit.

**Decision:** The document was **not treated**.

**R4-2016123 Discussion on NR-U channel arrangement for 6GHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Abstract:**

Proposal 1: further discuss how to apply the FCC requirements and AFC or non-AFC policy for the carriers across U-NII bands;

Observation: it is very challenging to achieve the required attenuation for lower edge and upper edge of 6GHz assuming -27dBm/MHz emission limit needed out of 6GHz band in FCC report.

Proposal 2: to achieve emission limit -27dBm/MHz required by FCC, either lower the BS output power or reserve more guard band or reserve guard band and put the fitter within the 6GHz band.

**Decision:** The document was **not treated**.

**R4-2016501 NRU small enhancement and exception sheet leftovers beyond RAN4#97e**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution we discuss the options to continue the work next year on some of the Release 16 NRU topics that are leftovers from the last NRU WI exception sheet.

Proposal: Companies views on NRU continuation work in 2021/Release 17 should be collected in order to enable small enhancement steps from Release 16 and devise a strategy for December plenary RAN#90e.

**Decision:** The document was **not treated**.

#### 7.1.2 UE RF requirements [NR\_unlic-Core]

**R4-2014916 CR for TS 38.101-1: NR-U UE RF open requirements**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0521 Cat: F (Rel-16)  
  
 Source: Apple Inc.*

**Abstract:**

To finalize the NR-U UE RF open requirements which were left in square brackets in current technical specifications.

**Decision:** The document was **not treated**.

**R4-2015018 Architecture and REFSENS discussion for NR-U 6GHz**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: MediaTek Inc.*

**Abstract:**

Observation 1: There’s no agreed FE architecture for NR-U evaluation assumption

Observation 2: FE architecture for NR-U bands would be similar to the existing L/M/H bands

Observation 3: Band switch shall be considered for the NR-U bands that was not mentioned/accounted in LAA FE architecture assumption

**Decision:** The document was **not treated**.

**R4-2015927 CR to add NR-U EN-DC combinations**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0402 Cat: B (Rel-17)  
  
 Source: Ericsson, Charter Communication, T-Mobile US*

**Abstract:**

CR to add NR-U EN-DC combinations. Same CR as R4-2008431 that was endorsed at RAN4 95-e

**Discussion:**

The secretary wondered what is the correct Release? It reads Rel-16 on the coversheet but the CR is allocated for Rel-17. If neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

##### 7.1.2.1 Transmitter characteristics [NR\_unlic-Core]

**R4-2014903 PC5 NR-U MPR for NS\_53 and NS\_54**

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

**Abstract:**

Proposal: Remove brackets for all A-MPR found in NS\_53 and NS\_54

**Decision:** The document was **not treated**.

**R4-2015697 A-MPR evaluation for NR-U**

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

**Abstract:**

Proposal 1: A-MPR for NS\_54 is defined in Table 2-2.

**Decision:** The document was **not treated**.

**R4-2016436 Removal of square brackets for 38.101-1 NR-U**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0558 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Some requirements were placed in square brackets in the agreed RP-202117 to allow an opportunity for companies to further check.

**Discussion:**

The secretary commented that (on the coversheet) the specification number should read 38.101-1 instead of TS38.101-1.

**Decision:** The document was **not treated**.

##### 7.1.2.2 Receiver characteristics [NR\_unlic-Core]

**R4-2014185 Discussion and TP for NR-U UE ACS**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: MediaTek Inc.*

**Abstract:**

Observation 1: First, Interferer to signal ratio could be adopted and calculated, and then converted into NR-U ACS and WiFi ACR.

Observation 2: In terms of NR-U UE and WiFi STA interferer to signal ratio, the performance comparison over channel bandwidths in Table 2 can be adopted to define NR-U UE ACS requirement.

Proposal 1: ACS for NR-U UE is 25dB for 20MHz channel bandwidth

**Decision:** The document was **not treated**.

**R4-2014497 [NRU] UE REFSENS for NRU Band n96**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution, we provide justification for REFSENS values for n96 in order to remove bracket in 38.101-1.

**Decision:** The document was **not treated**.

**R4-2015799 UE Reference Sensitivity considerations for band n96**

*Type: Work Plan For: Approval  
 Source: Charter Communications, Inc*

**Decision:** The document was **not treated**.

**R4-2015803 CR to add NR-DC\_n48-n46 combinations**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Charter Communications, Inc*

**Abstract:**

Adding NR-U band combination

**Decision:** The document was **not treated**.

**R4-2015974 Correction to receiver requirements for shared spectrum channel access**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0552 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Correct the in-band and out-of-band blocking requirement and add requirements for spurious response.

It has been agreed that the in-band blocking (IBB) requirements should be verified with a 20 MHz interferer bandwidth, the nominal channel bandwidth assumed for the 5 GHz and 6 GHz band in regulatory provisions and that typical for an interferer in these bands for unlicensed operations. For wanted channel bandwidths greater than 20 MHz, the wanted signal level is scaled with the said channel bandwidth.

For intra-band contigous CA IBB requirements, both the wanted signal level and the interferer bandwidth are scaled.

The spurious response requirement in clause 7.7 for licensed bands do not apply for operations with shared spectrum channel access (different blocker interferer range).

**Decision:** The document was **not treated**.

**R4-2016294 REFSENS for n96**

*Type: discussion For: Approval  
 Source: Apple Inc.*

**Abstract:**

Observation 1: The wider bandwidth will lower the Q-factor, which will increase the noise figure of the receiver. Consequentially the increase of the NF will affect directly the REFSENS

Proposal 1: For band n96 a margin of 0.5 dB should be considered compared to band n46 for the REFSENS requirement, as shown in Table 1.

**Decision:** The document was **not treated**.

**R4-2016437 Reference sensitivity for NR-U band n96**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Discussion:**

s

**Decision:** The document was **not treated**.

#### 7.1.3 Band combination related (Analysis, TPs, etc.) [NR\_unlic-Core]

**R4-2014954 Discussion on NR-U CA bandwidth classes**

*Type: discussion For: Approval  
 Source: ZTE Corporation*

**Abstract:**

The notation of NR-U CA BW class is still unclear and need further clarifications.

Observation 1: The fallback group for NR CA bandwidth class “D” and “E” in the current specification does not match the agreement captured in [4].

Proposal 1: Keep the description of FBG 3 for NR CA bandwidth classes D and E unchanged in the current specification as it is.

Proposal 2: It is reasonable for classes M and N to capture sign “=” in the lower limits of aggregated channel bandwidth 50MHz and 80MHz respectively.

Proposal 3: It is suggested not to use notation N for NR CA BW class in FR1.

**Decision:** The document was **not treated**.

**R4-2014955 CR to TS 38.101-1 on NR CA bandwidth classes for unlicensed spectrum (Rel-16)**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0522 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

The NR bandwidth classes in Table 5.3A.5-1 have been extended with fallback group 3 (FBG 3) for shared spectrum operating bands in RP-202117. However, for the lower limits of NR CA bandwidth classes “M”, 50MHz should cover one 10MHz channel bandwidth (10 + 20 + 20 MHz to cover 50 MHz allocation). And for class N, the lower limit 80MHz should be set for supporting (4cc x 20MHz) CA combinations. Furthermore, for the newly introduced CA BW class “N”, since NR band number begins with the letter “n”, CA BW class “N” is absent in FR2 to avoid unnecessary confusion. Therefore, it is suggested not to introduce CA BW class “N” in FR1 simlar to FR2.

**Decision:** The document was **not treated**.

#### 7.1.4 BS RF requirements [NR\_unlic-Core]

##### 7.1.4.1 General [NR\_unlic-Core]

**R4-2015371 CR to TS 38.104 with NR-U remaining open issues updates**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0247 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR introduces updates to NR-U, removes brackets, introduce requirments for remaining open issues.

**Decision:** The document was **not treated**.

**R4-2015372 On band n96 remaining issues**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution discuss open issues for band n96.

Proposal 1: It is proposed to removed brackets for NR-ARFCN for band n96 in table 5.4.2.3-1 in Note 2 in TS 38.104 (BS core spec)

Proposal 2: It is proposed to removed brackets for GSCN for band n96 in Note 6 in table 5.4.3.3-1 of TS 38.104.

Proposal 3. It is proposed to introduce Medium Range BS for band n96.

Proposal 4: It is proposed to define 50 MHz ΔfOBUE for band n96 for BS type 1-C and BS type 1-H.

Proposal 5: It is proposed to define 70 MHz ΔfOOB offset for band n96 for BS type 1-C and BS type 1-H.

**Decision:** The document was **not treated**.

**R4-2015698 CR for TS 38.104: Corrections for NR-U**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0254 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

To solve the remaining open issues for NR-U BS

**Decision:** The document was **not treated**.

**R4-2016124 Discussions on remaining issue of NR-U BS RF requirements**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Abstract:**

Proposal 1: further discuss how to apply the FCC requirements and AFC or non-AFC policy for the carriers across U-NII bands;

Proposal 2: for LA BS IBB/OOBB requirements for n96, IBB interfering signal power level should be -34dBm and OOBB requirement should be -15dBm;

Observation 1: it is very challenging to achieve the required attenuation for lower edge and upper edge of 6GHz assuming -27dBm/MHz emission limit needed out of 6GHz band in FCC report.

Proposal 3 : to remove LO leakage exception requirements for NR-U BS.

Proposal 4: to restrict the entire band to indoor only deployment or further discuss the channel arrangement for upper edge of 6GHz bands to meet the required emission limits.

**Decision:** The document was **not treated**.

**R4-2016125 CR to 38.104: Corrections on NR-U BS RF requirements**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0259 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

Some of NR-U BS RF requirements is not correct and therefore some further corrections are needed.

**Decision:** The document was **not treated**.

**R4-2016188 CR to 36.104: Introduction of n96 medium range requirements**

*Type: CR For: Agreement  
 36.104 v16.7.0 CR-4917 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction of n96 medium range requirements.

**Discussion:**

The secretary wondered what is the correct Release? It reads Rel-17 on the coversheet but the CR is allocated for Rel-16.

**Decision:** The document was **not treated**.

**R4-2016189 CR to 37.104: Introduction of n96 medium range requirements**

*Type: CR For: Agreement  
 37.104 v16.7.0 CR-0915 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction of n96 medium range requirements.

**Decision:** The document was **not treated**.

**R4-2016190 CR to 37.105: Introduction of n96 medium range requirements**

*Type: CR For: Agreement  
 37.105 v16.5.0 CR-0207 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction of n96 medium range requirements.

**Decision:** The document was **not treated**.

##### 7.1.4.2 Transmitter characteristics [NR\_unlic-Core]

**R4-2015374 BS OBUE mask for NR-U**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribtion discusses OBUE mask details for NR-U.

Proposal: It is proposed to remove LO leakage exception requirements for NR-U BS OBUE.

**Decision:** The document was **not treated**.

**R4-2015695 On remaining issues for BS TX**

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

**Abstract:**

Proposal 1: It is proposed to define the boundary between OBUE and spurious emission in a separate Table for NR-U n46 and n96.

**Decision:** The document was **not treated**.

**R4-2015725 Discussion on remaining NR-U BS RF Requirements**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

During last RAN4 meeting, RAN4 #96-e, some proponent companies brought forward open issues relating to NR-U BS requirements which needed further discussion. In-band / Out of band boundary and requirement. LO leakage for NR-U punctured channels.

Proposal: Align both NR-U 1-C and NR-U 1-O OBUE and OOBB offsets to NR for n46

Proposal: No offset is needed for OOB and OBUE requirements, removal of offset for OBUE and OOB

Proposal: Remove the [ ] in order to align with ETSI BRAN mask as previous agreement states

**Decision:** The document was **not treated**.

**R4-2015726 CR to TS 38.104: Removal of ΔfOBUE for wider than 900 MHz**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0255 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Frequency offset for OBUE is not needed.

Further explianation is detailed in

R4-2015725

Only NR-U (n96) contains operating band larger than 900 MHz. However, n96 is only applicable in the USA only subject to FCC Report and Order [FCC 20-51]”. The offset is not required for USA region, as there is no category B emissions requirement.

**Decision:** The document was **not treated**.

##### 7.1.4.3 Receiver characteristics [NR\_unlic-Core]

**R4-2015373 On interfering signals for NR-U Rx requirements**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution discuss interfering signal levels.

Proposal 1: It is proposed to align (with 1dB difference due to NF change) interfering signal levels for LA BS for band n96 and remove brackets from specification tables 7.3.2-3c (Dynamic range) and 7.8.2-3c (In-channel selectivity).

Proposal 2: It is proposed to define interfering signal levels for n96 MR BS for dynamic range and in-channel selectivity with 1dB adjustment due to NF change.

Proposal 3: It is proposed to define -15 dBm interfering signal power for out-of-band blocking requirement for band n96.

Proposal 4. It is proposed to remove brackets for LA BS interfering signal for general blocking requirements and define requirement with interfering signal power of -35 dBm.

Proposal 5. It is proposed to reuse legacy NR FR1 interfering signal for MR BS for band n96 of -38 dBm.

**Decision:** The document was **not treated**.

**R4-2015696 On remaining issues for BS RX**

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

**Abstract:**

Proposal 1: It is proposed to define the boundary between in-band blocking and out of band blocking in a separate Table for NR-U n46 and n96.

Proposal 2: For NR-U n46 and n96, -35 dBm CW interfering signal applies to the frequency range of ΔfOOB to 500 MHz outside the band edge.

**Decision:** The document was **not treated**.

#### 7.1.5 BS conformance testing [NR\_unlic-Perf]

##### 7.1.5.1 General [NR\_unlic-Perf]

**R4-2015384 Discussion on NR-U BS RF conformance tests**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Proposal 1: It is proposed to split responsibility for drafting big CRs to given BS test specification between interested companies.

Proposal 2: Companies responsible for drafting big CRs should provide changes required to specification for RAN4#98-e meeting.

Proposal 3: Companies are encouraged to provide their views on above mentioned test requirements and test tolerances to be applicable up to 7125 MHz.

**Decision:** The document was **not treated**.

**R4-2016126 CR to TS 38.141-1: introduction of NR-U into TS 38.141-1**

*Type: CR For: Agreement  
 38.141-1 v16.5.0 CR-0165 Cat: B (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

NR-U BS conformance testing requirement is provided and therefore the corresponding requirements should be specified.

**Decision:** The document was **not treated**.

##### 7.1.5.2 Transmitter characteristics [NR\_unlic-Perf]

**R4-2015383 Draft CR to TS 37.107 With NR-U intorduction for perfromance part**

*Type: draftCR For: Endorsement  
 37.107 v16.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This is draft CR to TS 37.107 with updates related to NR-U introduction for perfromance part.

The aim of this CR is to collect companies views and comments on proposed updates.

**Decision:** The document was **not treated**.

##### 7.1.5.3 Receiver characteristics [NR\_unlic-Perf]

#### 7.1.6 RRM core requirements maintenance (38.133) [NR\_unlic-Core]

##### 7.1.6.1 General [NR\_unlic-Core]

**R4-2014867 Discussion on clarification for NR-U RRM requirements with DRX in use**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Abstract:**

Proposal 1: For the requirements with DRX in use, to add notes “X is the number of DRX cycles with at least one SMTC where there are no SSBs available at the UE during … period when DRX is used”, where

• X shall be replaced depending on the requirement with:

• RLM-RS SSB in RLM requirements,

• CBD-RS SSB in CBD requirements,

• SSB in L1-RSRP measurement requirements,

• SMTC in measurement requirements other than RSSI requirements and L1-RSRP,

• and … shall be replaced with what is appropriate:

• evaluation,

• detection,

• identification,

**Decision:** The document was **not treated**.

**R4-2014868 Clarification for NR-U RRM requirements with DRX in use**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1210 Cat: F (Rel-16)  
  
 Source: MediaTek inc.*

**Abstract:**

If DRX is in use, NR-U RRM requirements are unclear when LBT failures occur. The current clarification notes are for no DRX scenarios but not for the cases with DRX in use.

**Decision:** The document was **not treated**.

**R4-2015515 Discussion on monitoring capability in cell detection for NR-U**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Huawei, HiSilicon*

**Abstract:**

Proposal 1: For cell detection the requirements are defined under assumption that UE monitors at least 1 candidate SSB position in one SSB block burst.

Proposal 2: The exact candidate SSB positions that UE is required to monitor shall be further clarified.

**Decision:** The document was **not treated**.

**R4-2016408 On the terminology and SSB monitoring in NR-U**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

On the terminology and SSB monitoring in NR-U.

**Decision:** The document was **not treated**.

**R4-2016409 Terminology updates for NR-U**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1384 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

RAN4 agreed on the definition of SMTC/SSB not available at the UE and the signal/channel occasion unavailable for UE transmission, which need to be captured in the specification

**Decision:** The document was **not treated**.

**R4-2016410 Terminology updates for NR-U**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6999 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

RAN4 agreed on the definition of SMTC/SSB not available at the UE and the signal/channel occasion unavailable for UE transmission, which need to be captured in the specification

**Decision:** The document was **not treated**.

##### 7.1.6.2 Cell re-selection [NR\_unlic-Core]

##### 7.1.6.3 Handover [NR\_unlic-Core]

##### 7.1.6.4 RRC connection mobility control [NR\_unlic-Core]

**R4-2015202 CR to 38.133 - Introducing NR-U random access requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1244 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction of NR-U random access requirements in TS 38.133.

**Decision:** The document was **not treated**.

**R4-2015386 NR-U Random access**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discusses the random access requirements in NR-U, both with 4 step RA and 2 step RA types.

Proposal 1: RAN4 to create a new clause in TS 38.133, 6.2.2A, which is based on 6.2.2, but has adapted content in clauses that describe the correct behaviour when transmitting signals, clarifying that transmissions are only possible if the UL CCA is successful.

Proposal 2: For the 4-step RA type, agree on the clauses and proposed modifications considering the NR random access requirements baseline as described in Table 1.

Proposal 3: For the 2-step RA type, agree on the clauses and proposed modifications considering the NR random access requirements baseline as described in Table 2.

**Decision:** The document was **not treated**.

**R4-2016175 Analysis of requirements for known cell in RRC re-establishment with CCA**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

The cell search requirement when Es/Iot < -8 dB is still TBD for unknown cell.

Observation 1: When the serving cell SSB Ês/Iot < -8 dB, the UE typically searches unknown cell once every 20 ms.

Proposal 1: The cell search delay for unknown intra-frequency cell when serving cell SSB Ês/Iot < -8 dB is (800+ 20 x K1 )

Proposal 2: The cell search delay for unknown inter-frequency cell when serving cell SSB Ês/Iot < -8 dB is (800+ 20 x K2,i)

**Decision:** The document was **not treated**.

**R4-2016176 Requirements for known cell in RRC re-establishment with CCA**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1369 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Cell identification delay for unknown cell with CCA when serving cell Es/Iot < -8 dB is TBD

**Decision:** The document was **not treated**.

##### 7.1.6.5 SCell activation/deactivation (delay and interruption) [NR\_unlic-Core]

**R4-2014013 Remaining issues on SCell activation in NR-U**

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

**Abstract:**

Proposal 1: For inter-band CA, the interruption is not the same as for intra-band case and a single interruption applies.

**Decision:** The document was **not treated**.

**R4-2014284 On SCell activation requirement for NR-U**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Apple*

**Abstract:**

Proposal: UE always attempts to measure P/SP CSI-RS for CSI reporting during the activation period regardless of the configuration of CO-DurationPerCell-r16, SlotFormatIndicator, or CSI-RS-ValidationWith-DCI-r16. No need to consider the requirement applicability associated with the configuration of CO-DurationPerCell-r16, SlotFormatIndicator, or CSI-RS-ValidationWith-DCI-r16.

**Decision:** The document was **not treated**.

**R4-2014285 Draft CR on SCell activation requirement for NR-U**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Apple*

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

**R4-2015203 CR to 38.133 - NR-U SCell activation and deactivation requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1245 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Remove editor notes related to applicability of requirements when the sCellDeactivationTimer is not configured in NR-U, clarifying that the requirements are also applicable when the timer is not configured.

**Decision:** The document was **not treated**.

**R4-2015385 Scell activation and deactivation delay requirements in NR-U**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discusses the FFS points in the scell activation and deactivation delay requirements in NR-U.

Proposal 1: In NR-U, the sCell activation delay requirement applies regardless of the sCellDeactivationTimer being configured or not.

Proposal 2: Remove the editor’s notes in clause 8.3A.2 in TS 38.133 corresponding to the applicability of the requirements and UE behaviour when the sCellDeactivationTimer is not configured.

Proposal 3: In NR-U, the sCell deactivation delay requirement applies regardless of the sCellDeactivationTimer being configured or not.

Proposal 4: Remove the editor’s notes in clause 8.3A.3 in TS 38.133 corresponding to the applicability of the requirements and UE behaviour when the sCellDeactivationTimer is not configured.

**Decision:** The document was **not treated**.

**R4-2015516 CR on SCell activation and deactivation requirements for NR-U**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1287 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The interruption windows cased by SCell activation for an unknown SCell shall be 2+L3,1, which is not correctly defined in the existing requirements.

**Decision:** The document was **not treated**.

**R4-2015517 Discussion on SCell activation and deactivation requirements for NR-U**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Huawei, HiSilicon*

**Abstract:**

Proposal 1: For inter-band CA when there is at least one active serving Cell in the band where the SCell is being activated, it will cause two interruption windows for each AGC failure.

Proposal 2: For the interruptions to the serving cells in the same band, whether to include the addition RF tuning should be further discussed.

Proposal 3: When there is no active serving Cell in the band where the SCell is being activated, whether to consider the additional RF tuning should be further discussed.

Proposal 4: If RAN4 is to define requirements only when sCellDeactivationTimer is configured, necessary clarification is needed that UE shall not stop sCellDeactivationTimer before UE successfully transmits the HARQ feedback for the deactivation command when sCellDeactivationTimer has not expired.

Proposal 5: For intra-band CA, while the SCell being activated is known or unknown with measurement cycle greater than 160ms, up to 1+L interruption windows are allowed during SCell activation, where L = L2,1 for known SCell and L = 1+L3,1 for unknown SCell. For a single interruption (L=0), interruption window length at SCell activation does not depend on DL CCA failures.

**Decision:** The document was **not treated**.

**R4-2016411 On remaining issues for SCell activation in NR-U**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

On remaining issues for SCell activation in NR-U.

Proposal 1: For inter-band CA, the interruption is not the same as for intra-band case and a single interruption applies.

Proposal 2: The SCell activation requirements for NR-U do not apply when the sCellDeactivationTimer is not configured.

Proposal 3: The SCell deactivation requirements for NR-U do not apply when the sCellDeactivationTimer is not configured.

**Decision:** The document was **not treated**.

**R4-2016412 Updates in SCell activation in NR-U**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1385 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Editor’s notes are remaining in SCell activation requirements

**Decision:** The document was **not treated**.

**R4-2016565 Remaining Issues On SCell activation and deactivation requirements in NR-U**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

In this paper, we discuss the remaining issues on Scell activation and deactivation requirements in NR-U.

Proposal 1. For inter-band CA, a single interruption window is allowed during the Scell activation

Proposal 2. For intra-band CA, while the SCell being activated is known with measurement cycle <160ms, a single interruption window is allowed during SCell activation

Proposal 5. The SCell activation requirements for NR-U do not apply when the sCellDeactivationTimer is not configured.

Proposal 6a. No new specification is needed for SCell deactivation requirements when SCellDeactivationTimer is not configured.

Proposal 6b. The SCell deactivation requirements for NR-U do not apply when the SCellDeactivationTimer is not configured.

Proposal 7. No such clarification is needed, even if the requirements apply only when sCellDeactivationTimer is configured

**Decision:** The document was **not treated**.

**R4-2016591 Interruption windows and applicability of Scell activation/deactivation requirements for SCells operating with CCA**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1403 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

The CR updates clause 8.3A based on agreements related to interruption windows and applicability of Scell activation/deactivation requirements.

**Decision:** The document was **not treated**.

##### 7.1.6.6 Active TCI state switching [NR\_unlic-Core]

**R4-2014190 On TCI state switching failure in NR-U**

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

**Abstract:**

Proposal 1: Do not introduce enhancement into R16 specifications. Further study how to handle TCI state switching failures in R17.

**Decision:** The document was **not treated**.

**R4-2015518 CR on TCI state switching requirements for NR-U**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1288 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

According to the agreed CR R4-2012239, the L1-RSRP is not needed in FR1 which is for Rx beam refinement. Therefore, the corresponding requirements related to L1-RSRP is not needed for NR-U.

**Decision:** The document was **not treated**.

**R4-2016585 CR to MAC-CE based TCI State Switching requirements for NR-U**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1402 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

In the current version of MAC-CE based TCI state switch requirement, there is a discrepancy between RAN1 spec and RAN4 requirement. Additional delay introduced by RAN4 should be removed so that it can be consistent with UE behaviour specified in RAN1 spec.

**Decision:** The document was **not treated**.

##### 7.1.6.7 Active BWP switching [NR\_unlic-Core]

##### 7.1.6.8 RLM [NR\_unlic-Core]

**R4-2015519 CR on RLM requirements for NR-U**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1289 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

1. The agreement when Lin exceeds Lin,max is not captured that UE shall not indicate IS to higher layer for this evalaution period.

2. The CSI-RS based RLM descriptions shall be removed.

3. It is stated in the spec that the UE shall not perform CCA procedure on any of the serving carrier frequencies with CCA after the expiry of T310. However, after the T310 expiries, UE will initiate RRC re-establishment procedure or go to IDLE mode, and UE may trigger UL transmission with CCA for re-establishment or random access. Thus, the description here is not needed and which is conflict with the potential UE behavior.

**Decision:** The document was **not treated**.

**R4-2016413 Updates in RLM requirements for NR-U**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1386 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Misaligned notation.

The agreement “For both LBE and FBE, RLM requirements shall not rely on COT” (WF in R4-2005367) is not captured in RLM requirements for NR-U in 38.133.

The agreement “UE behaviour when Lin,max is exceeded: For this evaluation period, UE layer 1 shall not send any in-sync indication to higher layers.” (WF in R4-1912851) is not captured.

**Decision:** The document was **not treated**.

##### 7.1.6.9 Beam management [NR\_unlic-Core]

**R4-2015389 Remaining issues in beam management in NR-U**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discusses the issue with CSI reporting when the HARQ ACK for the MAC-CE with the deactivation command is blocked by UL LBT failure.

Proposal 1: RAN4 to wait for the reply LS from RAN1 on the UE behaviour when the transmission of HARQ-ACK for MAC CE deactivation for semi-persistent CSI reporting is blocked by UL LBT failure.

**Decision:** The document was **not treated**.

**R4-2015520 CR on Beam mangement requirements for NR-U**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1290 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

1. The condition for BFD and CBD is that the SSB configured for beam failure is actually transmitted within the UE active DL BWP during the entire evaluation period, where the CCA operation is not considered.

2. It is stated in the current spec that If LCBD>LCBD,max, UE assumes no new candidate beams found. Similar clarification in RLM is needed that UE should assume no new candidate beam found only for this evaluation period. UE shall keep measurement on the configured CBD-RS until the beamFailureRecoveryTimer expires.

3.There are some typos need to be fixed.

**Decision:** The document was **not treated**.

**R4-2015818 Open issues on beam management for NR-U**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the open issues on BM for NR-U.

Proposal 1: Introduce new clause 9.5A in TS38.133 for L1-RSRP reporting under CCA.

Proposal 2: RAN4 should wait for LS response from RAN1 on the UE behavior when UE cannot transmit HARQ-ACK for MAC CE deactivation for semi-persistent CSI reporting. Once RAN4 receives the LS response from RAN1, RAN4 should restart the discussion and capture the UE behavior in TS38.133 if necessary.

**Decision:** The document was **not treated**.

**R4-2015819 CR: Beam management requirements with CCA**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1332 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Clarification of applicability of link recovery requirements with CCA

Clean up of link recovery requirements.

Restrucuring the spec structure of L1-RSRP reporting with CCA

**Decision:** The document was **not treated**.

##### 7.1.6.10 Measurement requirements [NR\_unlic-Core]

**R4-2014012 Remaining issues in intra and inter-frequency measurements**

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

**Abstract:**

Proposal 1: Confirm the definition that a reference cell is available at the UE provided at least one SSB is available at the UE during the last 160 ms; otherwise it is unavailable at the UE.

Proposal 2: The RSSI measurement bandwidth shall be the LBT bandwidth.

Proposal 3: If UE cannot transmit HARQ-ACK on MAC-CE deactivation due to UL CCA failure, UE continues to be in its previous state, i.e., it should measure and report L1-RSRP until it successfully transmits HARQ-ACK.

**Decision:** The document was **not treated**.

**R4-2014869 Discussion on measurement requirements for NR-U**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Abstract:**

Proposal 1: For the UEs which supporting NR-U SCell but not NR-U PCell/PSCell, the requirements of NR intra-/inter- frequency measurements with CCA are not applicable if the measurement target NR-U cells are asynchronized to the UE’s NR PCell/PSCell.

Proposal 2: Add an optional UE capability for supporting SFTD measurement for NR neighbor cell in unlicensed band.

Proposal 3: CSSF outside gaps (CSSFoutside\_gap,i ) should be additionally increased if one MO configured both for RSSI measurement with gap and SSB-based measurement gap.

Proposal 4: CSSF within measurement gaps (CSSFwithin\_gap,i ) needs also to be adapted to account for inter-frequency RSSI/CO measurements and intra-frequency RSSI/CO measurements with gaps.

Proposal 5: Regarding the CSSF within measurement gaps (CSSFwithin\_gap,i ), a MO should be counted twice, if the MO with both SSB based measurerment and RSSI/CO measurement which are candidates to be measured in gap j where the measurement object i is also a candidate

Proposal 6: It is not necessary to include the restriction on 1 data symbol before the first RSSI measurement symbol configured by RMTC, and 1 data symbol after the last RSSI measurement symbol configured by RMTC.

Proposal 7: Add clarification for UL scheduling restriction as “The UE is not expected to transmit PUCCH/PUSCH/SRS on the UL symbols which are overlapping in time with the RSSI measurement symbols configured by RMTC”.

**Decision:** The document was **not treated**.

**R4-2014870 CR on intra-frequency and inter-frequency measurement with CCA and RSSI measurements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1211 Cat: F (Rel-16)  
  
 Source: MediaTek inc.*

**Abstract:**

This CR includes 3 parts:

(change #1) Carrier-specific scaling factor for RSSI measurements need to be defined.

(change #2 &#4) For the UEs which supporting NR-U SCell (Scenario A) but not NR-U PCell/PSCell (Scenario B, C), the requirement should not applicable when the measurement target NR-U cells are asynchronized to NR PCell/PSCell.

(change #3) Regarding the UL scheduling restriction due to RSSI measurement, it needs to clarify the exact UL symbols that UE is not expected to transmit. As illustrated below, there would be 2 UL symbols will be impacted by the RSSI symbols.

**Decision:** The document was **not treated**.

**R4-2015205 CR to 38.133 on NR-U intra-frequency measurements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1247 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Remove editor notes related to scheduling restriction during RSSI and channel occupancy measurements in NR-U

**Decision:** The document was **not treated**.

**R4-2015387 Remaining aspects in measurement requirements in NR-U**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discusses remaining aspects in measurement requirements in NR-U.

Proposal 1: For cell detection, UE is required to monitor at least the same number of candidate SSB positions as in other RRM measurements.

Observation 3: In intra-frequency RSSI measurements, the UE performs the measurement using the numerology of the active DL bandwidth part.

Proposal 2: For RSSI measurements, it is not necessary to extend the scheduling restriction for 1 data symbol before the RMTC, and for 1 data symbol after the RMTC.

**Decision:** The document was **not treated**.

**R4-2015521 CR on intra-frequency measurement requirements for NR-U**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1291 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

There is an editor’s note about whether to intorduce additional 1 symbol before and after RMTC.Based on analysis in our accompanied paper, there is no need to introduce additional 1 symbol before and after RMTC.

There is a typo need to be fixed.

**Decision:** The document was **not treated**.

**R4-2015522 Discussion on measurement requirements for NR-U**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Huawei, HiSilicon*

**Abstract:**

Proposal 1: In FR1 inter-band CA, the scheduling restriction due to one CC shall not apply to other CCs on the other bands.

Proposal 2: It is suggested not to include the scheduling restriction on 1 data symbol before the first RSSI measurement symbol configured by RMTC, and 1 data symbol after the last RSSI measurement symbol configured by RMTC

**Decision:** The document was **not treated**.

**R4-2016419 Measurement requirements for NR-U**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1390 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

In R4-1915777 (RAN4#93), it was agreed that Rel-15 accuracy apply for RSRP/RSRQ/SINR/L1-RSRP measurements in NR-U.

**Decision:** The document was **not treated**.

**R4-2016564 Remaining issues on measurement requirements in NR-U**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

In this paper, we discuss the remaining issues on measurement requirements in NR-U.

Proposal 1. For cell detection the requirements are defined under assumption that UE monitors at least 1 candidate SSB position in one SSB block burst.

Proposal 2. In FR1 inter-band CA, the scheduling restriction due to one CC shall not apply to other CCs on the other bands.

Proposal 3. At least from MAC (RAN2) layer perspective, UE follows the actions related to MAC-CE activation/deactivation command immediately after decoding the MAC-CE command regardless of whether UE is able to send HARQ-ACK feedback or not.

Proposal 4a. It is necessary to include the restriction on 1 data symbol before the first RSSI measurement symbol configured by RMTC, and 1 data symbol after the last RSSI measurement symbol configured by RMTC.

Proposal 4b. It is not necessary to include the restriction on 1 data symbol before the first RSSI measurement symbol configured by RMTC, and 1 data symbol after the last RSSI measurement symbol configured by RMTC if the reference timing for intra-frequency RSSI/CO measurements in unlicensed spectrum is based on UE serving cell’s timing.

**Decision:** The document was **not treated**.

##### 7.1.6.11 Measurement capability and reporting criteria [NR\_unlic-Core]

**R4-2014283 On measurement capability of NR-U**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Apple*

**Abstract:**

Observation: for a certain SSB index which has only one single candidate SSB position in the SSB burst, UE cannot monitor 2 candidate SSB position for this SSB in one SSB burst.

Proposal 1: Except cell detection, RRM core requirements are defined under assumption what UE monitors the first 2 successive QCL’ed candidate SSB positions (i.e. N1 = N2 = 2). For a certain SSB index which has only one single candidate SSB position in the SSB burst, UE monitors 1 candidate SSB position for this SSB in one SSB burst.

Proposal 2: For cell detection the requirements are defined under assumption that UE monitors at least 1 candidate SSB position in one SSB block burst.

**Decision:** The document was **not treated**.

**R4-2015523 CR on CSSF RSSI/CO measurement for NR-U**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1292 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The CSSF for RSSI/CO measurement on a carrier frequency with CCA is missing. The CSSF for intra-frequency RSSI/CO measurement without gap when SMTC and RMTC are overlapping shall be considered. The CSSF for measurement within gap shall be consiered for RSSI/CO measurement with measurement gaps.

It should be noticed that there are also changes on the CSSF part in other parallel discussions for other features. So the changes for NR-U is proposed based on our CR for CSI-RS measurement [

R4-2015491]. The changes for NR-U only is with the change mark of “Huawei-NR-U”

**Decision:** The document was **not treated**.

**R4-2016414 Clause numbering correction**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1387 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The clause numbering for two new NR-U clauses is according to the earlier agreed specification structure in R4-1914628, but is currently missing the corresonding necessary top-level and preceding clauses in TS 38.133. Namely: we have 9.1A.3.2 and 9.1A.3.2a but there are no top-level clauses for them, e.g., 9.1A.3 or even 9.1A and we have no 9.1A.3.1 either. Introducing these missing top-level sections (approach 1) is not optimal and will result in a lot of redundancy, therefore we propose (approach 2) to just change to 9.1.3A.1 and 9.1.3A.1A and introduce 9.1.3A.

**Decision:** The document was **not treated**.

##### 7.1.6.12 Timing [NR\_unlic-Core]

**R4-2014014 Definition of an available reference cell**

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

**Abstract:**

Proposal 1: Confirm the definition that a reference cell is available at the UE provided at least one SSB is available at the UE during the last 160 ms; otherwise it is unavailable at the UE.

**Decision:** The document was **not treated**.

**R4-2015204 CR to 38.133 - Clarification of NR-U timing requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1246 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Clarify the definition of an available timing reference cell in NR-U

**Decision:** The document was **not treated**.

**R4-2015388 On NR-U Timing requirements**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discusses the clarification of the definition of an available timing reference cell in carrier frequencies with CCA.

Proposal 1: For NR-U, as in NR, a reference cell is available at the UE provided at least one SSB is available at the UE during the last 160 ms; otherwise it is unavailable at the UE.

Proposal 2: Clarify in the specification the definition of an available reference timing cell in carrier frequencies with CCA.

Proposal 3: If the proposed clarification is agreed, remove the Editor Note in clause 7.1.2 in TS 38.133.

**Decision:** The document was **not treated**.

**R4-2015524 Discussion on Timing requirements for NR-U**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Huawei, HiSilicon*

**Abstract:**

Proposal 1: The available reference cell shall be defined based on the same conclusion for RLM/RRM.

**Decision:** The document was **not treated**.

**R4-2016177 Correction to timing requirements in NR-U**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Ericsson*

**Abstract:**

To clarify gradual timing adjustment also applied to CCA

**Decision:** The document was **not treated**.

**R4-2016563 Definition of Available Reference Cell for Timing Requirements in NR-U**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

In this paper, we discuss remaining open issues for Timing requirements in NR-U.

Proposal 1. The availability/unavailability of a reference cell for timing purposes should be treated similar to the availability/unavailability of ‘X’s as in other RRM/RLM cases.

**Decision:** The document was **not treated**.

##### 7.1.6.13 Other requirements [NR\_unlic-Core]

**R4-2015170 Updates to general section for NR-U in 38.133**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1241 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

NR-U bands not included for band grouping table

**Decision:** The document was **not treated**.

#### 7.1.7 RRM perf. requirements (38.133) [NR\_unlic-Perf]

##### 7.1.7.1 General [NR\_unlic-Perf]

**R4-2014871 Discussion on general test setting for NR-U test cases**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Abstract:**

Proposal 1: For RRM test cases for NR-U, exceeding Lmax should be avoided.

Proposal 2: For the cell-reselection test cases, Mp consecutive DRX cycles with LBT failures of the serving cell should be avoided.

Proposal 3: For test cases with DRX in use, the LBT can be modelled as either all SMTCs are with available SSBs or all SMTCs are with no SSBs available during one DRX cycle.

Proposal 4: It is assumed DL wideband operation Mode 1 is used during RRM tests for NR-U.

**Decision:** The document was **not treated**.

**R4-2015391 On NR-U RRM performance**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discusses general topics in NR-U RRM performance.

Proposal 1: RAN4 to differentiate LBE and FBE DL LBT models.

Proposal 2: For LBE test cases: RAN4 to adopt the following DL LBT model: 1) Define a probability of P=0.75 for the transmission of the DRS in the first candidate position. 2) In case of LBT failure for transmission in the first candidate position, define a probability of P = 0.75 for the transmission in the second candidate position for a given SSB index.

Proposal 3: For FBE test cases: RAN4 to define a DL LBT model that considers a probability of P = 0.75 for the transmission of each DRS. Only the first SSB candidate position for a given SSB index shall be considered in these tests.

Proposal 4: RAN4 to discuss a methodology to test UL LBT failures in RRM tests.

Proposal 5: The RSSI measurement bandwidth is the LBT bandwidth.

Proposal 6: Define RSSI measurement accuracy requirements in NR-U to be the same as in LTE-LAA.

**Decision:** The document was **not treated**.

**R4-2015525 CR on RSSI and CO performance requirements for NR-U**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

The RSSI measurement report mapping and accuracy requirements are missing.

**Decision:** The document was **not treated**.

**R4-2015526 Discussion on performance requirements for RSSI measurement for NR-U**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Huawei, HiSilicon*

**Abstract:**

Proposal 1: The RSSI measurement shall be performed over unified measurement BW.

Proposal 2: The RSSI measurement accuracy requirements shall follow the same requirements for LAA.

**Decision:** The document was **not treated**.

**R4-2016415 General discussion on NR-U RRM test cases**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

General discussion on NR-U RRM test cases.

Proposal 1: The work on NR-U RRM test cases is divided into at least two phases.

Proposal 2: RAN4 will develop test cases for all scenarios applicable for a given requirement.

Proposal 3: RAN4 will discuss applicability rules when test cases have sufficiently progressed, e.g.:

o FFS: for a UE capable of multiple scenarios, the UE shall pass the test to verify the same requirements on the same type of cell (e.g. UE timing accuracy) in only one scenario.

**Decision:** The document was **not treated**.

**R4-2016418 Measurement accuracy requirements for NR-U**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1389 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

In R4-1915777 (RAN4#93), it was agreed that Rel-15 accuracy apply for RSRP/RSRQ/SINR/L1-RSRP measurements in NR-U, but the requirements are currently missing for the NR-U bands.

**Decision:** The document was **not treated**.

**R4-2016566 RSSI Measurement Accuracy Requirements in NR-U**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

In this paper, we discuss the RSSI measurement accuracy requirements in NR-U.

Proposal 1. There is no need to specify RSSI measurement bandwidth for the UE.

Proposal 2. The RSSI measurement accuracy requirements for NR-U are the same as for CLI-RSSI as specified in Section 10.1.22.2 in TS 38.133 (and for RSSI measurements in Section 9.1.18.5 in TS 36.133)

**Decision:** The document was **not treated**.

##### 7.1.7.2 Test cases [NR\_unlic-Perf]

**R4-2014872 Discussion on RRM test cases in NR-U**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Abstract:**

Proposal 1: Regarding cell reselection and handover, new TCs are not needed if the target cell is not in CCA.

Proposal 2: Regarding random access, new dedicated TCs are not necessary.

Proposal 3: Regarding interruption, new TCs are not necessary except for the scenario would have multiple interruption windows, e.g. SCell activation/deactivation and PCell addition/release.

Proposal 4: Regarding active BWP switch delay, new TCs are not necessary, but new TCs are needed for BWP switch delay on consistent UL LBT recovery.

Proposal 5: Regarding RSSI, FFS the TCs when CSSF for RSSI is concluded.

Proposal 6: Regarding measurements procedure and accuracy requirements, new TCs are not needed if the target MO is not in CCA.

Proposal 7: Regarding SS-RSRQ/SS-SINR, the new TCs are not necessary. The UE behavior in CCA can be covered by the tests for SS-RSRP with CCA.

Proposal 8: Regarding UE timing, the new TCs are not necessary for MRTD, MTTD, TA.

Proposal 9: For the RRM test cases for UE transmit timing based on a reference cell on a carrier frequency subject to CCA, a configuration of activated Scell shall be provided with the same timing as the reference cell. As the test requirement, UE transmit timing offset should stay within NTA + NTA\_offset) ×Tc ± Te of the first detected path of DL SS or UE shall not transmit any uplink signal.

**Decision:** The document was **not treated**.

**R4-2015390 On NR-U RRM test cases**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Presents a list of test cases to be considered in the NR-U performance work.

Proposal 1: Adopt in NR-U RRM test cases, the same specification structure as in the NR-U Core requirements: include the NR-U RRM test cases immediately below the corresponding NR RRM test cases and add the suffix A to the clause number.

Proposal 2: RAN4 to design different test cases covering LBE and FBE channel access.

Proposal 3: To minimize the number of test cases to be performed by UEs that support both LBE and FBE, for each requirement, the test equipment should select with equal probability the mode to be used in this test cases (FBE or LBE).

Proposal 4: RAN4 to define test cases for all core requirements that were changed or created during the NR-U RRM core work.

Proposal 5: RAN4 to consider the tests defined in Table 1 as a baseline for the NR-U RRM test cases definition in Rel-16.

Proposal 6: RAN4 to discuss the needed test cases for measurement performance requirements after detailing how to capture the performance requirements in the specification.

Proposal 7: RAN4 to consider the tests for 36.133 defined in Table 2 as a baseline for the NR-U RRM test cases definition in Rel-16.

**Decision:** The document was **not treated**.

**R4-2016416 NR-U RRM test case list and time plan**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

NR-U RRM test case list and time plan.

Proposal 1: RAN4 develops NR-U test cases, based on the test case list in Table 1.

Proposal 2: Legacy test cases are to be specified for SA NR-U, even if the requirements are the same as for legacy NR

o This applies at least for UE not supporting legacy NR.

o FFS: for UE supporting legacy NR and SA NR-U.

Proposal 3: Time plan for developing NR-U test cases:

o RAN4#97-e (Nov 2020):

 Agree on high-level list for test cases, work split, and specification structure

o RAN4#98-e (Jan 2021):

 Discuss and agree on basic common configurations and configuration details at least for Phase I test cases

 RAN4#98-bis-e (April 2021):Provide first drafts for Phase I test cases

 Agree on common configurations and configuration details for Phase II test cases

o RAN4#99-e (May 2021):

 Provide final CRs for Phase I test cases.

 Provide first drafts for Phase II test cases.

o RAN4#100(August 2021):

 Provide final CRs for Phase II test cases.

**Decision:** The document was **not treated**.

**R4-2016417 NR-U test cases structure**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1388 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

There are no test cases for NR-U which RAN4 plans to develop, the specification structure needs to be agreed for NR-U test cases

**Decision:** The document was **not treated**.

**R4-2016567 NR-U RRM Performance Work Plan and Work Split**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

In this paper, we discuss the work plan and work split for RRM performance requirements for NR-U.

**Decision:** The document was **not treated**.

#### 7.1.8 Demodulation and CSI requirements (38.101-4/38.104) [NR\_unlic-Perf]

##### 7.1.8.1 General [NR\_unlic-Perf]

**R4-2014240 Discussion on demodulation requirements for NR-U**

*Type: discussion For: Discussion  
 Source: Apple*

**Abstract:**

Proposal #1: Do not define additional tests for FBE and LBE devices separately.

Proposal #2: Define requirements with randomly chosen COT duration and fixed DRS window duration.

Proposal #3: Define requirements for both Scenario A and Scenario C and define applicability rules.

Proposal #4: Do not define requirements for PDCCH with DCI format 2-0.

Proposal #5: Introduce CQI reporting requirements in static channel conditions for NR-U.

Proposal #6: Do not model LBT failure separately in addition to the burst transmission model.

Proposal #7: Burst transmission model shall also be applied to SSB slots.

Proposal #8: COT duration shall be randomly chosen from a set during the simulation.

Proposal #9: Define requirements with PDSCH mapping Type A alone.

Proposal #10: Configure PDCCH monitoring on Format 2-0 with CO-DurationPerCell-r16 and indicate the randomly chosen COT duration

**Decision:** The document was **not treated**.

**R4-2014940 General Demodulation performance requirements for NR-U**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discussion on general aspects regarding NR-U BS demodulation.

Proposal 1: RAN4 to define PUSCH, PRACH, and PUCCH requirements that apply to all scenarios A, B, and C.

Proposal 2: RAN4 to define BS demodulation wideband requirements that are agnostic to the wideband operation modes 1 and 2.

Proposal 3: RAN4 to define wideband performance requirements for 20, 40, 60, and 80 MHz.

Proposal 4: Similar to Rel-15, depending on vendor declaration, define an applicability rule that a BS only has to perform tests for 20 MHz and the largest supported bandwidth.

**Decision:** The document was **not treated**.

**R4-2015130 Discussion on UE performance requirement for NR-U**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Abstract:**

Proposal 1: Define same test cases for both FBE and LBE devices.

Proposal 2: Support option 1. To define test cases for carrier aggregation between licensed band NR (PCell) and NR-U (SCell).

Proposal 3: Support option 2. Do not define test case for PDCCH format 2\_0.

Proposal 4: Support option 3 to define test case for both PDSCH mapping Type A and Type B.

Proposal 5: We propose using a subset of fixed values for PDSCH Type B duration and starting position, for example, [starting position, duration] = [2, 4], [2, 12], can be selected.

Proposal 6: Support to model LBT failure for data and SSB.

**Decision:** The document was **not treated**.

**R4-2015851 discussion on general issues in NR-U performance requirements**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

Discuss some general issues on BS and UE demodulation separately.

Proposal 1: Consider a minimum subset of Rel-15 test cases for NR-U scenario and define proper applicability rules for these requirements.

Proposal 2: Define demodulation requirements for the corresponding scenarios, but these requirements can be applied for other scenarios. Meanwhile, only define requirements for single carrier and don’t define requirements for intra-band CA.

Proposal 3: Do not consider mode 2 transmission of Wideband operation 2 during the NR-U BS demodulation discussion.

Proposal 4: Do not define requirements for Wideband Operation 1 specially. The requirement for 20MHz can be used for either Wideband Operation 1 or 2.

Proposal 5: Reuse Rel-15 demodulation assumptions as much as possible for NR-U demodulation.

Proposal 6: Define requirements for TDLA30-10 channel model. FFS for TDLB100 and TDLC300.

Proposal 7: Define low Doppler shift for TDLB100 and TDLC300 if we agree to define requirements for them.

Proposal 8: Define PDSCH demodulation requirements with Type A mapping.

Proposal 9: Consider 2ms COT in order to adapt the LTE burst transmission model with suitable number of possible slot length configurations

Proposal 10: Agree to reuse the LTE values for S2 configuration

Proposal 11: Define PDCCH, and CQI requirements with adaptations to the burst transmission model.

**Decision:** The document was **not treated**.

**R4-2015986 Discussion on NR-U General aspects**

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

**Abstract:**

Proposal 1: Do not introduce COT duration in the RAN4 demodulation tests

Proposal 2: RAN4 to define demodulation requirements for Scenario C and make them applicable for other NR-U scenarios

Proposal 3: Do not define NR-U PDCCH demodulation requirements

Observation 1: To define requirements for the specific mode of wideband operation LBT failure model is required

Proposal 4: RAN4 to define demodulation requirements for the wideband operation which are agnostic to the mode of wideband operation

Proposal 5: RAN4 to define requirements for bandwidth equal to 60MHz.

**Decision:** The document was **not treated**.

**R4-2016063 DL Transmission Model Definition for NR-U Demod Performances**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

Describe in detail our proposal for the NR-U DL Transmission Model to be used for Demod Performance.

Proposal 1: Specify the DL Transmission Model for NR Unlicensed for SCS30kHz only.

Proposal 2: Define the DL Transmission Model for NR Unlicensed as specified in this paper in Section 2.2, Steps 1)-7). The model is summarized here for clarity:

-Compute COT and Unoccupied duration as specified by Test Parameters, then repeat it periodically for the entire test;

- Fully allocate PDCCH and PDSCH in COT, except for Guard and UL Symbols at the end of COT as specified by Test Parameters;

-Use a threshold pLBT to control randomized LBT failures;

Proposal 3: Use the base Slot Pattern shown in Figure 2.3 1, created according to the Model presented in this paper, for NR Unlicensed Demod Performance Tests for 30kHz SCS.

Proposal 4: Specify a single LBT model that covers Data and SSB.

Proposal 5: Model LBT as described by the model presented in this paper, section 2.3. Use pLBT = 0 (always clear channel) for Scenario C Tests and pLBT = [TBD>0] (some probability of occupied channel) for Scenario A Tests.

**Decision:** The document was **not treated**.

##### 7.1.8.2 UE demodulation requirements [NR\_unlic-Perf]

###### 7.1.8.2.1 PDSCH requirements [NR\_unlic-Perf]

**R4-2015634 Discussion on NR-U PDSCH performance requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015987 Discussion on NR-U PDSCH requirements**

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

**Abstract:**

Proposal 1: For NR-U demodulation tests, burst length shall be defined as the number of slots rather than the number of subframes. We propose to use fixed S1 in units of slots for each SCS: {1, 3, 5, 8} for 15MHz SCS and {1, 6, 10, 16} for 30MHz SCS.

Proposal 2: For NR-U demodulation test, the starting position for the first slot is randomly selected from OFDM symbol 0 and OFDM symbol 7 with equal probability. If symbol 0 was selected PDSCH Type-A mapping should be used for all slots in the burst. If symbol 7 was selected – PDSCH Type-B mapping with the duration equal to 4 symbols should be used for the first slot and, PDSCH Type-A mapping should be used for all remaining slots in the burst.

Proposal 3: For NR-U demodulation test, PDSCH Type-B mapping with corresponding durations to be used for all slots in case if UE supports typeB-PDSCH-length-r16.

Proposal 4: For NR-U demodulation tests, we propose to define fixed S2 – {6, 9, 12, 14}.

Proposal 5: Do not model LBT failure.

Proposal 6: Consider COT duration equal to single burst transmission duration.

**Decision:** The document was **not treated**.

**R4-2016064 Simulation Assumptions for NR-U PDSCH Demodulation Performance Tests**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

Present a proposal for the simulation assumptions to be used in NR Unlicensed PDSCH Demod Performance test.

Proposal 1: For NR-U PDSCH Demod Performance Tests use the common test parameters from licensed NR PDSCH Demod Performance as a starting point.

Proposal 2: To define NR-U PDSCH Demod Performance Tests, use the DL Transmission model Parameters in Table 2.2-4 in the Simulation Assumptions.

Proposal 3: To define the prioritized test for NR-U PDSCH Demod Performance Tests, for both Channel Access parameters ’ChannelAccessType-r16’=semistatic and ’ChannelAccessType-r16’=dynamic, use the simulation assumptions listed in this paper, in Tables 2.1-1, 2.2-2, 2.2-3 and Table 2.2-4.

**Decision:** The document was **not treated**.

**R4-2016089 Discussion on NR-U PDSCH demodulation requirements**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This paper provides our views on PDSCH demodulation requirements for NR-U.

Proposal 1: Define PDSCH demodulation test cases for both Scenario A, and Scenario C.

Proposal 2: Adapt the test setup from LTE LAA for Scenario A

Proposal 3: Use 30kHz numerology as baseline for NR-U demodulation test cases.

Proposal 4: Use low delay spread and doppler speeds for propagation channels e.g. TDLA30.

Proposal 5: Use Table 1 parameters as starting point for NR-U PDSCH simulation assumptions.

**Decision:** The document was **not treated**.

###### 7.1.8.2.2 PDCCH requirements [NR\_unlic-Perf]

**R4-2015635 Discussion on NR-U PDCCH performance requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Proposal 1: No PDCCH demodulation requirements are needed to define for Rel-16 NR-U.

**Decision:** The document was **not treated**.

**R4-2016090 Discussion on NR-U PDCCH demodulation requirements**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This paper provides our views on PDCCH demodulation requirements for NR-U.

Observation 1: PDCCH performance requirements from Rel-15 have not been verified under burst-like transmission

Observation 2: Probability of missed scheduling grant is not captured by Rel-15 eMBB PDCCH requirements.

Proposal 1: Use the simulation assumptions from Table 1 as baseline for PDCCH NR-U demodulation requirements

**Decision:** The document was **not treated**.

##### 7.1.8.3 CSI requirements [NR\_unlic-Perf]

**R4-2015636 Discussion on NR-U CSI requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Proposal 1: Introduce CQI requirements for NR-U for following UE behavior:

 UE does not average the channel measurement across the different transmission bursts

 UE does the CSI measurement by using the valid slots when the transmission varies burst by burst.

Proposal 2: Set two sets of burst transmissions, each with distinct transmission power level and keeping the interference level constant during the test. The SNR is quite different.

 Use aperiodic CSI reporting

 CA scenario can be used as baseline. PCell (license band) is used for HARQ ACK/NACK feedback and aperiodic CSI triggering/reporting.

 CQI distribute criterion and BLER criterion can be used as test metric

**Decision:** The document was **not treated**.

**R4-2016091 Discussion on NR-U CSI performance requirements**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This paper provides our views on CSI performance requirements for NR-U.

Observation: Scenario A share similarities with CA CQI requirements, and Scenario C share similarities with SA CQI requirements.

Proposal: Use the simulation assumptions from Table 1 as baseline for NR-U CQI performance requirements.

**Decision:** The document was **not treated**.

##### 7.1.8.4 BS demodulation requirements [NR\_unlic-Perf]

**R4-2015117 View on BS demodulation requirement for NR-U**

*Type: discussion For: Discussion  
 Source: Samsung*

**Abstract:**

Proposal 1: Define demodulation requirements only for Scenario A (LAA), but these requirements can be applied for other scenarios. Meanwhile, only define requirements for single carrier and don’t define requirements for intra-band CA.

Proposal 2: Define the demodulation requirement with 20 MHz CBW with TDD 15 KHz and 30 KHz, only one SCS can be tested.

Proposal 3: Do not define requirements for wideband operation 1.

Proposal 4: Do not define requirements for GC-UCI multiplexing on PUSCH

**Decision:** The document was **not treated**.

###### 7.1.8.4.1 PUSCH requirements [NR\_unlic-Perf]

**R4-2014941 PUSCH Demodulation performance requirements for operation in unlicensed bands**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Proposal 1: RAN4 to consider only 1 interlace allocation for PUSCH performance requirements.

Proposal 2: RAN4 to define wideband performance requirements for 20, 40, 60, and 80 MHz.

Proposal 3: Depending on vendor declaration, define that a BS is only required to perform tests for 20 MHz and the largest supported bandwidth.

Proposal 4: RAN4 to define BS demodulation requirements for CG-UCI multiplexed on PUSCH, if demodulation impact is identified.

Proposal 5: RAN4 to consider the following parameters as baseline the definition of PUSCH BS demodulation requirements

**Decision:** The document was **not treated**.

**R4-2015637 Discussion on NR-U PUSCH performance requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Proposal 1: Define the BS requirements only for scenario A. i.e. Carrier aggregation between licensed band NR and unlicensed band NR-U.

Proposal 2: Define the performance requirements per CC only for scenario A. For the performance requirement of PCell, reuse it from NR Rel-15. For the performance requirement of SCell, define the case with bandwidth of 20MHz, 40MHz, 60MHz and 80MHz.

Proposal 3: No need to define the BS requirement for wideband operation 1

Proposal 4: Set intra cell guard size to 0 for PUSCH requirements.

Proposal 5: Introduce the performance requirements for CG-UCI when it is multiplexing on PUSCH with interlaced resource allocation and no HARQ-ACK, CSI part 1, CSI part 2 are existed.

Proposal 6: Use Table 1 as simulation assumptions

**Decision:** The document was **not treated**.

**R4-2015852 discussion on NR-U PUSCH demodulation assumptions**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

Discussion on NR-U PUSCH demodulation assumptions.

Proposal 1: Only consider 20MHz bandwidth for NR-U PUSCH requirement.

Proposal 2: Using single interlace with 10 PRBs for NR-U PUSCH demodulation simulation.

Proposal 3: Consider following assumptions for NR-U PUSCH demodulation simulation.

Proposal 4: Consider introduce a Rel-15 requirement for HARQ-ACK multiplexing on PUSCH with more than 2 HARQ-ACK information bits and using it to cover CG-UCI multiplexing on CG-PUSCH in NR-U scenario with proper applicability rule.

**Decision:** The document was **not treated**.

**R4-2015988 Discussion on NR-U PUSCH requirements**

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

**Abstract:**

Proposal 1: RAN4 to define demodulation requirements for PRB-Interlaced PUSCH Resource Allocation considering single interlace.

Proposal 2: Do not define requirements for UCI multiplexed on PUSCH

**Decision:** The document was **not treated**.

###### 7.1.8.4.2 PUCCH requirements [NR\_unlic-Perf]

**R4-2014942 PUCCH Demodulation performance requirements for operation in unlicensed bands**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Proposal 1: RAN4 to define demodulation requirements to all interlaced PUCCH formats (i.e. formats 0, 1, 2, and 3), with NR-U specific applicability rule for the new formats.

Proposal 2: RAN4 to define performance requirements only for 1 interlace PUCCH.

Proposal 3: RAN4 to consider NR-U PUCCH performance requirements without frequency hopping.

Proposal 4: RAN4 to consider QPSK modulation order tor NR-U PUCCH formats 2 and 3.

Proposal 5: RAN4 to consider Rel.15 PUCCH requirements as a baseline for the discussion of the NR-U PUCCH test scenarios as in the table below:

**Decision:** The document was **not treated**.

**R4-2015638 Discussion on NR-U PUCCH performance requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Proposal 1: Define the requirements for PRB-interlaced PUCCH resource allocation with following simulation setups:

 PF0/1/2/3

 Both 15 kHz and 30 kHz

 Test applicability rules:

 Unless otherwise stated, PUCCH requirement tests shall apply only for each PUCCH format declared to be supported

 Unless otherwise stated, PUCCH requirement tests shall apply only for each subcarrier spacing declared to be supported

Proposal 2: Only test one interlace and use interlace index 0 for PF0/1/2/3.

Proposal 3: Not configure frequency hopping for all cases.

Proposal 4: Use 1T4R for all cases.

Proposal 5: Use Table 2~Table 5 as simulation assumptions for performance requirements for NR-U PF0/1/2/3 respectively

**Decision:** The document was **not treated**.

**R4-2015853 discussion on NR-U PUCCH demodulation assumptions**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

Discussion on NR-U PUCCH demodulation assumptions.

Proposal 1: Introduce requirements for PUCCH enhanced format 0/1/2/3.

Proposal 2: Introduce NR-U PUCCH requirements with single interlace for enhanced format 0/1/2/3.

Proposal 3: Introduce NR-U PUCCH requirements with 2 discontinuous interlaces for enhanced format 2/3.

**Decision:** The document was **not treated**.

**R4-2015989 Discussion on NR-U PUCCH requirements**

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

**Abstract:**

Proposal 1: RAN4 to define demodulation requirements for PRB-Interlaced PUCCH Resource Allocation considering single interlace.

Proposal 2: RAN4 to define demodulation requirements for PDCCH enhanced formats 0/1/2/3

Proposal 3: For EPF 0/1/2/3 performance requirements RAN4 to reuse test configurations of Rel-15 PF 0/1/2/3 keeping only BW = 20MHz

**Decision:** The document was **not treated**.

###### 7.1.8.4.3 PRACH requirements [NR\_unlic-Perf]

**R4-2014943 PRACH Demodulation performance requirements for operation in unlicensed bands**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Proposal 1: RAN4 to define NR-U BS demodulation performance requirements for 15 kHz and 30 kHz and formats A2, B4, and C2.

Proposal 2: RAN4 to consider Rel. 15 PRACH for Normal Mode testing parameters as a baseline for the discussion on the parameters for NR-U performance requirements as in the table below:

**Decision:** The document was **not treated**.

**R4-2015639 Discussion on NR-U PRACH performance requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Proposal 1: Define the performance requirements for wideband PRACH with following assumptions:

 Sequence length: LRA=1151 for 15kHz and LRA=571 for 30kHz

 Format: B4, C2

 Ncs: 164 for LRA=1151 and 190 for LRA=571

 Logic root sequence index: 0

 v: 0

 Propagation conditions and CFO: AWGN and TDLA 30-10 with 600Hz CFO

 Antenna configuration: 1T4R

 Time error tolerance and test metric are reused from Rel-15 NR PRACH.

**Decision:** The document was **not treated**.

**R4-2015854 discussion on NR-U PRACH demodulation assumptions**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

Discussion on NR-U PRACH demodulation assumptions.

**Decision:** The document was **not treated**.

**R4-2015990 Discussion on NR-U PRACH requirements**

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

**Abstract:**

Proposal 1: RAN4 to define the performance requirements for both LRA = 1151 and LRA = 571 preamble length.

Proposal 2: RAN4 to define new test preambles

Proposal 3: For NR-U PRACH performance requirements RAN4 to reuse the test configuration parameters used for Rel-15 LRA = 139 preamble

Proposal 4: For NR-U PRACH performance requirements RAN4 to keep using existing test metrics: the false alarm probability shall be less than or equal to 0.1% and the probability of detection shall be equal to or exceed 99%

**Decision:** The document was **not treated**.

### 7.2 NR mobility enhancement [NR\_Mob\_enh]

#### 7.2.1 RRM core requirements maintenance (38.133) [NR\_Mob\_enh-Core]

**R4-2014357 Discussion on dual active protocol stack handover**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Abstract:**

Proposal 1: For asynchronous intra-frequency DAPS handover and asynchronous intra-band inter-frequency DAPS handover, demodulation performance degradation might happen on any single symbol of the first 3 symbols of a slot. There is no UE requirement expected if MRTD is larger than 3 OFDM symbol length.

**Decision:** The document was **not treated**.

**R4-2014358 CR on TS38.133 for dual active protocol stack handover**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1155 Cat: F (Rel-16)  
  
 Source: MediaTek inc.*

**Abstract:**

For asynchronous intra-frequency DAPS handover and asynchronous intra-band inter-frequency DAPS handover, demodulation performance degradation might happen on any single symbol of a slot

**Decision:** The document was **not treated**.

**R4-2015167 AGC operation in async intra-frequency DAPS HO**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

In this paper we discuss issue 1-1 from [1].

• Issue 1-1: demodulation performance degradation for async intra-frequency DAPS handover and async intra-band inter-frequency DAPS handover

How to capture the performance degradation for asynchronous cases ne

Proposal 1: During async intra-frequency DAPS handover and async intra-band inter-frequency DAPS handover, interruptions may occur depending on UE implementation. The duration and frequency of occurrence of such interruptions is not specified

**Decision:** The document was **not treated**.

**R4-2015168 Corrections to DAPS requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1239 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Editor’s note in specification needs to be addressed

Editor note: how to capture the performance degradation for asynchronous cases needs to be further studied

Typo exists in definition of sync condition for DAPS HO in FR1.

It is stated that

Note 2:For DAPS handover on a TDD band, a UE is not expected to transmit in the uplink earlier than NRX-TX after the end of the last received downlink symbol in the same cell where NRX-TX=26500Tc.

Note 3:For DAPS handover on a TDD band, a UE is not expected to receive in the downlink earlier than NTX-RX after the end of the last transmitted uplink symbol in the same cell where NTX-RX=26500Tc.

Taking these notes along with NTA,offset = 25600 Tc it is not possible to simultaneously have NRX-TX≥26500 and NTX-RX≥26500 regardless of NTA

The correct values of NRX-TX and NTX-RX should be aligned with those in 38.211

Table 4.3.2-3: Transition time and

Transition time

FR1

FR2

25600

13792

25600

13792

Thee value 26500Tc is a typo with swapped digits, and should be 25600Tc

**Decision:** The document was **not treated**.

**R4-2015464 CR on maintaining DAPS handover requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1272 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

For FR1 DAPS hadover, the synchronous conditions are defined with adding 3 notes. In current specification, Notes 2/3 clairfies to leave enough time for UE performing DL-to-UL and UL-to-DL switching only from single cell perspective. However, the UE shall be allowed to switching time between both source cell and target cell.

**Decision:** The document was **not treated**.

**R4-2016016 CR 38.133 Corrections to Conditional PSCell Change delay requirement**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1346 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The delay requirement for Conditional PSCell Change does not distinguish between whether source and target PSCells are in same or different FRs. For PSCell change (clause 8.11), the following SW-related processing times are specified:

-Tprocessing = 20 ms when source and target cells are in the same FR,

-Tprocessing = 40 ms when source and target cells are in different FRs.

The purpose of this CR is to correct the misalignment.

**Decision:** The document was **not treated**.

#### 7.2.2 RRM perf. requirements (38.133) [NR\_Mob\_enh-Perf]

##### 7.2.2.1 General [NR\_Mob\_enh-Perf]

**R4-2014222 Discussion on DAPS HO test applicability**

*Type: discussion For: Discussion  
 Source: Apple*

**Abstract:**

Proposal 1: RAN4 to further split test applicability for DAPS handover to cover intra-frequency, intra-band inter-frequency and inter-band inter-frequency respectively.

Proposal 2: update the test applicability for DAPS handover.

**Decision:** The document was **not treated**.

**R4-2014223 CR for DAPS HO test applicability**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1138 Cat: F (Rel-16)  
  
 Source: Apple*

**Abstract:**

RAN4 agreed to introduce many test cases to verify DAPS handover RRM requirements. The agreed test coverage covers intra-frequency, intra-band inter-frequency and inter-band inter-frequency. Both synchronous and asynchronous delployment are to be tested as well. To save testing time RAN4 aslo agreed to introduce corresponding test applicability to allow UE to skip some of the test cases.

**Decision:** The document was **not treated**.

##### 7.2.2.2 Test cases [NR\_Mob\_enh-Perf]

**R4-2014580 Intra-band Inter-frequency sync DAPS handover test in SA for FR1**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1187 Cat: B (Rel-16)  
  
 Source: Intel Corporation*

**Abstract:**

Intra-band inter-frequency sync DAPS handover test in SA for FR1 is missing.

**Decision:** The document was **not treated**.

**R4-2015169 Conditional handover test cases for NR**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1240 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

In RAN4#95e it was agreed to introduce the testcases for CHO:

7

Conditional intrafrequency handover test in SA for FR1

8

Conditional interfrequency handover test in SA for FR1

11

Conditional intrafrequency handover test in SA for FR2

12

Conditional interfrequency handover test in SA for FR2

**Decision:** The document was **not treated**.

**R4-2015465 Discussion on DAPS handover test cases**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015466 DraftCR on inter-band DAPS handover tests**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

According to the agreements in WF [R4-2008585], four types of inter-band DAPS handover tests need to be introduced.

**Decision:** The document was **not treated**.

**R4-2016555 Introduction of intra-frequency sync and async DAPS HO test cases in FR1**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1393 Cat: B (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Per work split agreement in RAN4#95-e, intra-frequency sync and async DAPS HO test cases in FR1 are introduced in this CR. Per agreements in RAN4#96-e, the tests consist of 5 intervals and the last interval is used to verify the CSI reporting to source cell is stopped.

**Decision:** The document was **not treated**.

### 7.3 5G V2X with NR sidelink [5G\_V2X\_NRSL]

#### 7.3.1 General [5G\_V2X\_NRSL]

**R4-2014972 CR on TS38.101-1 for NR V2X**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0525 Cat: F (Rel-16)  
  
 Source: vivo*

**Abstract:**

Con-current band combinations are introduced in TS 38.101-1, and the definition of con-current operation should also be introduced. PC2 related requirements were removed in the last meeting, and the related description should also be removed. Some other editorial errors need revising.

**Decision:** The document was **not treated**.

**R4-2016474 draft CR for 38.101-1 NR V2X FRC**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0566 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Clarification for Alpha value for SCI-2 and sub-channel size of resource pool

**Decision:** The document was **not treated**.

#### 7.3.2 System parameters maintenance [5G\_V2X\_NRSL-Core]

#### 7.3.3 UE RF requirements maintenance [5G\_V2X\_NRSL-Core]

**R4-2014323 Correction on 5G V2X UE RF requirements in TS38.101-1 in rel-16**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0498 Cat: F (Rel-16)  
  
 Source: LG Electronics France*

**Abstract:**

This CR is to update UE-to-UE coexistence requirmeents for 5G V2X UE in TS38.101-1.

**Decision:** The document was **not treated**.

**R4-2014325 Correction on update 5G V2X UE RF requirements in TR38.886**

*Type: CR For: Agreement  
 38.886 v16.1.0 CR-0004 Cat: F (Rel-16)  
  
 Source: LG Electronics France*

**Abstract:**

This CR is to update Tx/Rx RF requirmeents for 5G V2X UE in TR38.886.

**Decision:** The document was **not treated**.

##### 7.3.3.1 Transmitter characteristics [5G\_V2X\_NRSL-Core]

**R4-2014321 UE-to-UE coexistence and other remaining issues for V2X operation**

*Type: other For: Approval  
 Source: LG Electronics France*

**Decision:** The document was **not treated**.

**R4-2015333 CR on V2X bands reference table**

*Type: CR For: Endorsement  
 38.101-1 v16.5.0 CR-0535 Cat: F (Rel-16)  
  
 Source: OPPO*

**Abstract:**

The reference table 5.2E-1for V2X bands does not exist.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2016447 Revision of inter-band V2X con-currency table for V2X\_n71A\_n47A**

*Type: CR For: Endorsement  
 38.101-1 v16.5.0 CR-0561 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

The con-currency table for V2X\_n71A-n47A has to be updated

**Decision:** The document was **not treated**.

##### 7.3.3.2 Receiver characteristics [5G\_V2X\_NRSL-Core]

**R4-2016446 Revised V2X FRC tables**

*Type: CR For: Endorsement  
 38.101-1 v16.5.0 CR-0560 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Current FRC tables in 38.101-1 sets PSCCH PRBs=10 for all allocated resource block lengths. This leads to cases where the PSCCH is smaller than a sub-channel for sub-channel sizes 12 and 15.

According to RAN1 when the sub-channel size is <20 PRBs and the size of the PSCCH is less than the sub-channel size, a UE is not expected to choose a PSSCH DMRS pattern to be transmitted in the same OFDM symbol with PSCCH.

Such a configurations limits the ability of the UE to use anything except the 2-symbol DMRS pattern with sub-channel sizes of 12 and 15 PRBs, placing signficiant restrictions on the overall system and could lead to performance degradation in moderate and high Doppler scenarios. Therefore, it is best to avoid using such a configuration.

This CR proposes a FRC configuration where the number of PSCCH PRBs is set equal to the subchannel size for sub-channel sizes <20. This allows PSSCH DMRS to be transmitted in the same OFDM symbol with PSSCH.

This permits more DMRS symbols per slot which will gives better performance in moderate and high doppler scenarios.

Additionally, some parameters that are required to calculate the TBS and decode the TB are missing. This CR introduces those parameters.

**Decision:** The document was **not treated**.

#### 7.3.4 Concurrent operation maintenance (scenarios, requirements, etc) [5G\_V2X\_NRSL-Core]

**R4-2014324 Correction on 5G V2X inter-band con-current UE RF requirements in TS38.101-3**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0363 Cat: F (Rel-16)  
  
 Source: LG Electronics France*

**Abstract:**

This CR is to update Tx/Rx RF requirmeents for 5G V2X UE in TS38.101-3.

**Decision:** The document was **not treated**.

##### 7.3.4.1 Transmitter characteristics [5G\_V2X\_NRSL-Core]

**R4-2014414 Discussion on switching period for NR V2X in ITS band**

*Type: discussion For: Approval  
 Source: CATT*

**Abstract:**

Proposal 1: To eliminate the performance impact, it is proposed to place the switching time including transient periods in one separate slot between LTE subframe and NR slot. The separate slot is dedicated to the switching time with each transient period located at the head part and tail part of the slot. The switching period 120 us is placed within the slot excluding where the transient periods are located.

Proposal 2: To specify the time masks for the switching between LTE SL and NR SL in Figure 1 and Figure 2.

**Decision:** The document was **not treated**.

**R4-2014416 CR for 38.886, Time mask for TDM between NR V2X and LTE V2X in ITS band**

*Type: CR For: Agreement  
 38.886 v16.1.0 CR-0005 Cat: F (Rel-16)  
  
 Source: CATT*

**Abstract:**

The time mask for TDM operation between NR SL and LTE SL at n47 should be introduced in 38.886.

**Decision:** The document was **not treated**.

**R4-2014596 General corrections for V2X sections in 38.101-3**

*Type: CR For: Endorsement  
 38.101-3 v16.5.0 CR-0368 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Some NR V2X section numbers have been denoted with suffix C. It was agreed that all NR V2X sections numbers will be denoted with suffix E. Also,in some instances the cross-referencing between NR V2X sections in 38.101-3 and 38.101-1 is not correct and needs to be fixed.

**Decision:** The document was **not treated**.

**R4-2014641 NR V2X inter-RAT Tx switch**

*Type: discussion For: Discussion  
 Source: Qualcomm, Inc.*

**Decision:** The document was **not treated**.

**R4-2014971 Further discussion on switching period for NR V2X**

*Type: discussion For: Approval  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2015253 CR for TS 38.101-3 switching period for V2X con-current operation**

*Type: CR For: (not specified)  
 38.101-2 v16.5.0 CR-0284 Cat: F (Rel-16)  
  
 Source: Xiaomi*

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

**R4-2015257 on switching period**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Abstract:**

Proposal: To agree the switching period location with the usage of priority determined by the SCI formats scheduling the transmission as following：

1. If the UE has known the priority of LTE sidelink and NR sidelink before the switching then the switching period can be located in the slot/sub-frame of the lower priority sidelink.

2. If the UE doesn’t know the priority of the two sidelink or the priority is the same, then it is up to UE implementation to chose where to locate the switching period.

**Decision:** The document was **not treated**.

**R4-2015267 CR for TS 38.101-3 switching period for V2X con-current operation**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0389 Cat: F (Rel-16)  
  
 Source: Beijing Xiaomi Electronics*

**Abstract:**

The switching period of V2X con-current operation has not been added in the specification. This CR is to complete this part.

**Decision:** The document was **not treated**.

**R4-2016475 On NR V2X switching period**

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

**Abstract:**

Observation 1: No clear benefit for a longer switching time under the scheduling restriction condition.

Observation 2: The whole switching period together with transient period should be put on one side on LTE subframe or NR slot to avoid more wasted resource.

Observation 3: It’s not reasonable to put the switching period only at the NR V2X side.

Observation 4: Due to the scheduling restriction, no essential difference for options to put the switching period at either LTE sub-frame or NR slot.

Proposal: It is proposed to agree on the time masks for switching between E-UTRA SL and NR SL in the slot/SF on the RAT UE switches from.

**Decision:** The document was **not treated**.

**R4-2016476 draft correction CR for TS 38.101-3: NR V2X con-current operation**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0417 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

There are some remaining issues are left to be finished for NR V2X con-current operation.

Tx: switching period requirement

**Decision:** The document was **not treated**.

##### 7.3.4.2 Receiver characteristics [5G\_V2X\_NRSL-Core]

**R4-2014322 MSD Analysis results and harmonic reduction filter for V2X\_20A\_n38A**

*Type: other For: Approval  
 Source: LG Electronics France*

**Abstract:**

Proposal 1: RAN4 need to align the RF architecture for DC\_20\_n38 and V2X\_20\_n38. Based on the aligned RF architecture, RAN4 can decide the same additional ILs for both DC\_20\_n38 UE and V2X\_20\_n38 UE.

Proposal 2: RAN4 specify MSD levels for 10MHz CBW with 10.7dB = (10.3dB + 11.0dB)/2 based on shared antenna RF architecture with HTF for both DC\_20\_n38 UE and V2X\_20\_n38 UE.

**Decision:** The document was **not treated**.

**R4-2014415 CR for TS 38.101-3, Time mask for TDM operation between NR V2X and LTE V2X in ITS band**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0364 Cat: F (Rel-16)  
  
 Source: CATT*

**Abstract:**

V2X\_47-n47 is operated with TDM mode and should not be considered as con-current operation.

The output power dynamics requirements for NR V2X should be introduced in TS 38.101-3.

**Decision:** The document was **not treated**.

#### 7.3.5 RRM core requirements maintenance (38.133) [5G\_V2X\_NRSL-Core]

**R4-2014213 On interruption requirement on LTE SL due to changing of NR SL sync source**

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

**Abstract:**

Proposal 1: Send LS to RAN1 to ask about the specific UE behavior when sync source is changed for NR SL, at least to trigger the discussion there and help to form common understanding in RAN4.

Proposal 2: Discuss this issue later after hearing from RAN1.

**Decision:** The document was **not treated**.

**R4-2014294 Discussion of maintenace issues for NR V2X**

*Type: discussion For: Discussion  
 Source: LG Electronics Inc.*

**Abstract:**

It discusses maintenance issues for NR V2X RRM requirements based on the agreed WF in last meeting.

**Decision:** The document was **not treated**.

**R4-2014295 CR of NR V2X operating band group**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1152 Cat: F (Rel-16)  
  
 Source: LG Electronics Inc.*

**Abstract:**

Introduce NR V2X operating band group in 3.5.

**Decision:** The document was **not treated**.

**R4-2014634 NR V2X RRM core and performance requirement remaining issues**

*Type: discussion For: Discussion  
 Source: Qualcomm, Inc.*

**Decision:** The document was **not treated**.

**R4-2014635 CR: Interruption requirement for NR V2X synchronization source chang**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1191 Cat: F (Rel-16)  
  
 Source: Qualcomm, Inc.*

**Decision:** The document was **not treated**.

**R4-2014767 Remaining issues on NR V2X RRM requirement**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Abstract:**

Proposal 1: The absolute accuracy of L1 SL-RSRP can be ±4.5dB at SNR=0dB unless additional cable loss is agreed to be introduced in V2X UE test.

Proposal 2: When two synchronization sources that UE switches between are not synchronized in NR sidelink, define the interruption to LTE SL due to NR SL sync. source change.

Proposal 3: Define the interruption to NR Uu link due to switching between LTE SL and NR SL. The UE is allowed an interruption on the PCell in NR as follow.

**Decision:** The document was **not treated**.

#### 7.3.6 RRM perf. requirements (38.133) [5G\_V2X\_NRSL-Perf]

##### 7.3.6.1 General [5G\_V2X\_NRSL-Perf]

**R4-2014296 CR of NR V2X measurement accuracy requirements(SL-RSSI and L1 SL-RSRP)**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1153 Cat: B (Rel-16)  
  
 Source: LG Electronics Inc.*

**Abstract:**

Introduce NR V2X measurement accuracy requirements for SL-RSSI and L1 SL-RSRP

**Decision:** The document was **not treated**.

**R4-2014298 CR of Annex.B for NR V2X side conditions**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1154 Cat: B (Rel-16)  
  
 Source: LG Electronics Inc.*

**Abstract:**

Introduce condtions for NR V2X in B.4

**Decision:** The document was **not treated**.

**R4-2014768 Discussion on L1 SL-RSRP measurement test case**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Abstract:**

Proposal 1: Both re-evaluation and pre-emption test cases shall be defined because they are critical to support aperiodic higher-priority traffic in NR V2X.

Proposal 2: Introducing a warm up duration T0. The test UE configured with resource pools only without the sidelink logical channels.

Proposal 3: RAN4 shall define the test cases related to re-evaluation and pre-emption and they can be merged into one test case.

**Decision:** The document was **not treated**.

##### 7.3.6.2 L1 SL-RSRP measurement accuracy [5G\_V2X\_NRSL-Perf]

**R4-2015467 DraftCR on PSBCH-RSRP accuracy requirements**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

The PSBCH-RSRP accuracy requirements need to be introduced for NR V2X.

**Decision:** The document was **not treated**.

##### 7.3.6.3 Test cases [5G\_V2X\_NRSL-Perf]

**R4-2014640 NR V2X RRM test case discussion**

*Type: discussion For: Discussion  
 Source: Qualcomm, Inc.*

**Decision:** The document was **not treated**.

###### 7.3.6.3.1 UE transmit timing [5G\_V2X\_NRSL-Perf]

**R4-2015469 DraftCR on UE Transmission Timing Accuracy Tests for NR V2X**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

UE transmission timing accuracy requirements has been specified for NR V2X, and the corresponding tests shall be defined in TS 38.133.

**Decision:** The document was **not treated**.

###### 7.3.6.3.2 Initiation/Cease of SLSS Transmission [5G\_V2X\_NRSL-Perf]

**R4-2014299 draft CR of Test for initiation and cease of SLSS Transmission with V2X Sidelink Communication**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: LG Electronics Inc.*

**Abstract:**

Introduce test case for initiation/cease of SLSS Transmission with V2X Sidelink Communication.

**Decision:** The document was **not treated**.

**R4-2014655 RRM test cases for NR V2X Synchronization Reference Selection/Reselection**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Xiaomi*

**Abstract:**

Add the Rel-16 NR V2X Synchronization Reference Selection/Reselection test case

**Decision:** The document was **not treated**.

###### 7.3.6.3.3 Selection / Reselection of V2X Synchronization Reference Source [5G\_V2X\_NRSL-Perf]

**R4-2014214 Selection or Reselection of V2X Synchronization Reference Source**

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

**Abstract:**

Observation 1: The able loss introduced by the vehicle antenna can be a major source of noise.

Proposal 1: Test set-up for GNSS with higher priority shall include 3 SyncRef UEs, SyncRef UE1 (sync to gNB directly), SyncRef UE2 (sync to GNSS in-directly) and SyncRef UE3 (sync to GNSS directly).

**Decision:** The document was **not treated**.

###### 7.3.6.3.4 L1 SL-RSRP measurements [5G\_V2X\_NRSL-Perf]

**R4-2014212 On L1 SL-RSRP accuracy for NR V2X**

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

**Abstract:**

Observation 1: The able loss introduced by the vehicle antenna can be a major source of noise.

Proposal 1: Finalize measurement accuracy requirement once RF session concludes on cable loss issue.

**Decision:** The document was **not treated**.

**R4-2014639 CR: RRM autonomous resource selection test cases for NR V2X**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Qualcomm, Inc.*

**Decision:** The document was **not treated**.

**R4-2014769 CR on V2X UE Resource Selection Tests for Re-evaluation**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: MediaTek inc.*

**Abstract:**

The re-evaluation test is missing.

**Decision:** The document was **not treated**.

**R4-2015468 Discussion on UE Autonomous Resource Selection/Reselection Test for NR V2X**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Proposal 1: For UE autonomous resource selection/reselection test, the test setups are suggested as follows:

- The value of X is configured as 20%

- Active UE and subchannel allocation: there are 40 active UEs in the system, first 10 UEs occupies subchannel 0, the next 10 occupies subchannel 1, the next 10 occupies subchannel 2, following the allocation until all the 40 active UEs are allocated. The subchannels 0/1/2/3 configured for UE to be tested are each occupied by 10 UEs. The subchannel 4 configured for UE to be tested is not occupied by active UEs.

- The active UEs on subchannel 0/1/3 always transmit in 20dB higher RSRP above the threshold (corresponding to 20dB SNR). The active UEs on subchannel 2 transmit with 5dB higher RSRP above the threshold.

**Decision:** The document was **not treated**.

###### 7.3.6.3.5 Congestion control measurements [5G\_V2X\_NRSL-Perf]

**R4-2014770 CR on V2X UE Congestion Control Measurement Test**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: MediaTek inc.*

**Abstract:**

The congestion control measurement test is missing.

**Decision:** The document was **not treated**.

###### 7.3.6.3.6 Interruptions [5G\_V2X\_NRSL-Perf]

**R4-2015470 DraftCR on Interruption Tests for NR V2X**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

The interruption requirements has been specified for NR V2X, and the corresponding tests shall be defined in TS 38.133.

**Decision:** The document was **not treated**.

###### 7.3.6.3.7 Others [5G\_V2X\_NRSL-Perf]

#### 7.3.7 Demodulation and CSI requirements (38.101-4) [5G\_V2X\_NRSL-Perf]

##### 7.3.7.1 General [5G\_V2X\_NRSL-Perf]

**R4-2014419 Simulation results of NR V2X demodulation test**

*Type: discussion For: Discussion  
 Source: CATT*

**Abstract:**

In this contribution, the initial simulation results are provided based on the simulation assuptions agreed in the last meeting.

**Decision:** The document was **not treated**.

**R4-2014537 Discussion on V2X work scope and general simulation assumptions**

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

**Abstract:**

Proposal 1: Define SDR requirements with active Sidelink in the scope of Rel-16 V2X.

Proposal 2: Define Rel-16 V2X demodulation requirements for different relative vehicle speeds: 30, 260 and 500 km/h.

Proposal 3: Define Rel-16 V2X demodulation requirements for scenarios with gNB based synchronisation, relative vehicle speed 30 km/h, TX/RX frequency offset ±1300 Hz and TX/RX time offset ±24Ts.

Proposal 4: Postpone the discussion on definition of 256QAM until simulation assumption for verification of basic V2X functionality will be stable.

Proposal 5: Use the following resource pool configuration for V2X demodulation requirements with CBW 20 MHz and SCS 30 kHz: sub-channel size = 10 PRBs, number of sub-channels = 5.

**Decision:** The document was **not treated**.

**R4-2014779 Discussion on V2X Demod test case**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Abstract:**

Proposal 1: 40MHz CBW should be configured for PSCCH/PSSCH decoding capability test.

Proposal 2: The velocity configuration of NR V2X test case can reuse LTE V2X.

Proposal 3: PSFCH should be transmitted on every slot and 3DMRS symbols for PSSCH test cases.

Proposal 4: 1 S-SSB per SL period should be configured for 30kHz SCS.

Proposal 5: Not to define 256QAM demodulation test case.

Proposal 6: Not to define SDR with active sidelink test case.

**Decision:** The document was **not treated**.

##### 7.3.7.2 Single link test [5G\_V2X\_NRSL-Perf]

**R4-2014417 Discussion on single link demodulation test for NR V2X**

*Type: discussion For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014420 CR for 38.101-1: Introduce PSBCH performance requirements for NR V2X**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0087 Cat: B (Rel-16)  
  
 Source: CATT*

**Abstract:**

Introduce PSBCH performance requirements for NR V2X

**Decision:** The document was **not treated**.

**R4-2014538 Discussion on Single Link V2X requirements**

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

**Decision:** The document was **not treated**.

**R4-2014637 NR V2X Demod single link requirement**

*Type: discussion For: Discussion  
 Source: Qualcomm, Inc.*

**Abstract:**

Proposal 1: Introduce two tests for PSSCH with 64QAM MCS table with low speed 30km/h and high speed 500km/h. For high speed tests, consider the following configurations (a) TDL\_C 300ns channel (b) More subchannel allocation (c) Not configuring PSFCH. (a)+(b) is preferred in our opinion.

Proposal 2: Configure 2 DMRS symbol for PSSCH low speed test.

Proposal 3: PSSCH tests MCS configuration: MCS 21 for low speed, and MCS 4 for high speed

Proposal 4: Define the requirement based on subchannel size of 10RB for all PSSCH tests except high speed.

Proposal 5: Define 256QAM PSSCH demod test with the same configuration as low speed PSSCH demod test configuration, only change the MCS to lowest one in 256QAM (MCS 20).

Proposal 6: Set beta = 2.25 for all PSSCH tests.

Proposal 7: Use relative speed of 260km/h and SCI 1 payload size = 28bits in PSCCH test.

Proposal 8: Use 30km/h relative speed and no repetition for PSBCH test.

Proposal 9: Consider 1 PSFCH in PSFCH detection performance test. Statistics to be collected:

Option 2 (ACK/NACK type): Pr(NACK to ACK) < 0.1%.

Option 1 (NACK only type): Pr(NACK miss) < 1%, or Pr(DTX to NACK)<1% (if we have DTX).

**Decision:** The document was **not treated**.

**R4-2014652 Discussion on NR V2X single link test cases**

*Type: discussion For: Discussion  
 Source: LG Electronics Inc.*

**Abstract:**

Proposal 1: DMRS configuration for PSSCH demodulation should be considered depending on relative velocity as case 1 and case 3 in option 1.

Proposal 2: PSFCH transmission should be considered every 4 slots.

Proposal 3: QPSK and 64QAM modulation order should be considered for PSSCH demodulation requirements

Proposal 4: 256QAM modulation order should be verified with applicability rule.

Proposal 5: TDLA30-1350 should be used for PSCCH demodulation requirement.

Proposal 6: Only ACK/NACK feedback mode should be considered for PSFCH demodulation (single link) requirement.

Proposal 7: Use simulation assumptions Table 1~4 for single link tests

**Decision:** The document was **not treated**.

**R4-2014668 Initial simulation results for NR V2X single link test cases**

*Type: discussion For: Discussion  
 Source: LG Electronics Inc.*

**Abstract:**

In this contribution, we provide initial simulation results for single link test cases for alignment.

**Decision:** The document was **not treated**.

**R4-2014780 CR on NR V2X PSFCH demodulation requirements**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: MediaTek inc.*

**Abstract:**

The V2X PSFCH demodulation requirements are missing

**Decision:** The document was **not treated**.

**R4-2015640 Discussion on performance requirements for NR V2X single-link test**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015641 Simulation results for NR V2X single-link test**

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

**Decision:** The document was **not treated**.

##### 7.3.7.3 Multiple link test [5G\_V2X\_NRSL-Perf]

**R4-2014418 Discussion on multiple link demodulation test for NR V2X**

*Type: discussion For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014539 Discussion on Multiple Link V2X requirements**

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

**Decision:** The document was **not treated**.

**R4-2014636 NR V2X Demod multiple linkrequirement**

*Type: discussion For: Discussion  
 Source: Qualcomm, Inc.*

**Decision:** The document was **not treated**.

**R4-2014638 nn**

*Type: draftCR For: Endorsement  
 38.101-4 v16.2.0  
 Source: Qualcomm, Inc.*

**Decision:** The document was **not treated**.

**R4-2014669 Discussion on NR V2X multiple link test cases**

*Type: discussion For: Discussion  
 Source: LG Electronics Inc.*

**Decision:** The document was **not treated**.

**R4-2014670 Initial simulation results for NR V2X multiple link test cases**

*Type: discussion For: Discussion  
 Source: LG Electronics Inc.*

**Decision:** The document was **not treated**.

**R4-2015642 Discussion on performance requirements for NR V2X multi-link test**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015643 Draft CR: Introduce power imbalance with two links test for NR sidelink**

*Type: draftCR For: Endorsement  
 38.101-4 v16.2.0  
 Source: Huawei, HiSilicon*

**Abstract:**

According to the work plan of V2X demodulation, companies should submit draft CRs in RAN 4 97-e meeting and RAN 4 has agree to introduce power imbalance with two links test

**Decision:** The document was **not treated**.

**R4-2015644 Draft CR: Introduce PSCCH/PSSCH decoding capability test for NR sidelink**

*Type: draftCR For: Endorsement  
 38.101-4 v16.2.0  
 Source: Huawei, HiSilicon*

**Abstract:**

According to the work plan of V2X demodulation, companies should submit draft CRs in RAN 4 97-e meeting and RAN 4 has agree to introduce PSCCH/PSSCH decoding capability test

**Decision:** The document was **not treated**.

**R4-2015645 Draft CR: PSFCH decoding capability test for NR sidelink**

*Type: draftCR For: Endorsement  
 38.101-4 v16.2.0  
 Source: Huawei, HiSilicon*

**Abstract:**

According to the work plan of V2X demodulation, companies should submit draft CRs in RAN 4 97-e meeting.

**Decision:** The document was **not treated**.

### 7.4 Integrated Access and Backhaul for NR [NR\_IAB]

#### 7.4.1 General [NR\_IAB-Core]

**R4-2016139 Draft CR to TS 38.174: IAB General and RF core maintenance**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: ZTE Corporation*

**Abstract:**

IAB core requirement is not defined correctly and needs further revision. Lot of editorial corrections are also needed

**Decision:** The document was **not treated**.

##### 7.4.1.1 System parameters maintenance [NR\_IAB-Core]

**R4-2014384 Draft CR to TS 38.174: IAB-MT CA support and maintanance of clause 4 to 5**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: CATT*

**Abstract:**

The CA support for IAB-MT is not complete in the spec and some maintanance is neccesary for clause 4 and clause 5.

**Decision:** The document was **not treated**.

**R4-2014752 Correction CR on TR38.809**

*Type: CR For: Agreement  
 38.809 v16.0.0 CR-0001 Cat: F (Rel-16)  
  
 Source: Samsung*

**Abstract:**

There are sub-clauses voided in version submitted to RAN#89e which can be cleanup in Nov meeting according to guidance shared in RAN4 reflector.

**Decision:** The document was **not treated**.

**R4-2015433 DraftCR to TS 38.174: System parameter corrections**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

IAB-MT channel bandwidth for CA is missing from the specification. It is required for emission measurements. Frequency range for operating band n41 is erroneous.

**Decision:** The document was **not treated**.

**R4-2016081 draftCR to TS 38.147: IAB-MT number of TRX**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Huawei*

**Abstract:**

The minimum number of TRX for the IAB-MT in the refernece poimnt definition clause is still FFS

**Decision:** The document was **not treated**.

**R4-2016251 CR on System parameters maintenance**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Ericsson*

**Abstract:**

IAB-MT CA feature system parameter missing,

**Decision:** The document was **not treated**.

**R4-2016260 CR on System parameters**

*Type: draftCR For: Endorsement  
 38.809 v16.0.0  
 Source: Ericsson*

**Abstract:**

“BR” not known,

**Decision:** The document was **not treated**.

##### 7.4.1.2 Others [NR\_IAB-Core]

**R4-2014385 Draft CR to TS 38.174: maintanance of references and definitions**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: CATT*

**Abstract:**

The references and the defintions are not complete.

**Decision:** The document was **not treated**.

**R4-2014751 Draft CR with correction on section 4**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Samsung*

**Abstract:**

There are mistakes for which correction needed in applicability of requiremnt table for IAB-MT

**Decision:** The document was **not treated**.

**R4-2015434 DraftCR to TS 38.174: General section corrections**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Most symbol and abbreviation definitions are missing even though they are used in the specification. Minimum number of IAB-MT transceivers is agreed and no longer FFS. Regional requirement section is empty, while regional requirements like category B requirements are included in the specification. Section for requirements for contiguous and non-contiguous spectrum includes content only IAB-DU while the same principles apply also for IAB-MT. Specification contains editorial errors.

**Decision:** The document was **not treated**.

**R4-2016083 draftCR to TS 38.174: Definitions, symbols and abreviations**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Huawei*

**Abstract:**

The definitions symbols and abbreviations sections of the TS were not completed in the 1st revision

**Decision:** The document was **not treated**.

**R4-2016250 CR on general requirements in TS 38.174**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Ericsson*

**Abstract:**

Missing the regional requirement in 4.5. Align the with other RAN4 agreement in 4.3.3. Add contigous and non-contigous spectrum on wide area IAB-MT. Add the OTA co-location clause title.

**Decision:** The document was **not treated**.

**R4-2016259 CR on general requirements in TR 38.809**

*Type: draftCR For: Endorsement  
 38.809 v16.0.0  
 Source: Ericsson*

**Abstract:**

Editorial change

**Decision:** The document was **not treated**.

#### 7.4.2 RF requirements maintenance [NR\_IAB-Core]

##### 7.4.2.1 Transmitter characteristics [NR\_IAB-Core]

**R4-2016137 Further discussion on IAB-MT power control and EVM measurement**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

###### 7.4.2.1.1 Tx Power related requirements [NR\_IAB-Core]

**R4-2016257 CR on Tx Power related requirements**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Ericsson*

**Abstract:**

Remove the FDD band requirement as IAB does not have FDD band in Rel-16. Correct the power control requirement reference table

**Decision:** The document was **not treated**.

**R4-2016264 CR on Tx Power related requirements chapter**

*Type: draftCR For: Endorsement  
 38.809 v16.0.0  
 Source: Ericsson*

**Abstract:**

Adding the local area IAB-MT on the RAN4 agreement

**Decision:** The document was **not treated**.

###### 7.4.2.1.2 Transmitted signal quality [NR\_IAB-Core]

**R4-2014386 Draft CR to TS 38.174: Transmitted signal quality maintainance**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: CATT*

**Abstract:**

The spec structure of transmitted signal quality is not aligned with other requirements.

The EVM frame structure for measurement is missing.

The EVM measurement process for IAB-MT is [TBD] not void.

**Decision:** The document was **not treated**.

**R4-2014387 Draft CR to TS 38.809: Transmitted signal quality maintainance**

*Type: draftCR For: Endorsement  
 38.809 v16.0.0  
 Source: CATT*

**Abstract:**

There’s no background of EVM measurement frame structure in the TP.

The titles of sub-caluse 7.5.2 and 9.6.2 are missing.

**Decision:** The document was **not treated**.

**R4-2015207 IAB EVM procedure and other consideration**

*Type: discussion For: Approval  
 38.174 v..  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015435 DraftCR to TS 38.174: Transmitted signal quality**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

IAB-MT modulation quality requirement is included in section belonging to frequency error.

**Decision:** The document was **not treated**.

**R4-2016082 draft CR to TS 38.174 - Correction of IAB-modulation quality sub-clause.**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Huawei*

**Abstract:**

The IAB modulation quality sub clause text is in the woring place.

**Decision:** The document was **not treated**.

**R4-2016255 CR on Tx signal quality requirements**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Ericsson*

**Abstract:**

Terminology replacement and specification structure re-arrangement

**Decision:** The document was **not treated**.

**R4-2016263 CR on Tx signal quality related requirements chapter**

*Type: draftCR For: Endorsement  
 38.809 v16.0.0  
 Source: Ericsson*

**Abstract:**

Weaken the frequency error requriement reasoning, there are different synchronization implementation depending on different architecture design.

**Decision:** The document was **not treated**.

###### 7.4.2.1.3 Unwanted emissions [NR\_IAB-Core]

**R4-2016258 CR on unwanted emission requirements**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Ericsson*

**Abstract:**

5MHz IAB-MT/IAB-DU channel bandwidth is not supported in IAB Rel-16 frequency band.

**Decision:** The document was **not treated**.

**R4-2016265 CR on unwanted emission requirements chapter**

*Type: draftCR For: Endorsement  
 38.809 v16.0.0  
 Source: Ericsson*

**Abstract:**

Adding the text for the IAB-MT downlink transmission requriement

**Decision:** The document was **not treated**.

###### 7.4.2.1.4 Others [NR\_IAB-Core]

**R4-2014388 Discussion on IAB-MT EVM measurement process**

*Type: other For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2016256 CR on Tx characteristic other requirements**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Ericsson*

**Abstract:**

Annex F for interference charateristic is missing

**Decision:** The document was **not treated**.

##### 7.4.2.2 Receiver characteristics [NR\_IAB-Core]

###### 7.4.2.2.1 Sensitivity and dynamic range requirements [NR\_IAB-Core]

**R4-2015436 DraftCR to TS 38.174: Sensitivity corrections**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Section 7.1 with general sensitivity information is empty. FR2 OTA reference sensitivity requirement table for IAB-MT is empty. Editorial errors exist.

**Decision:** The document was **not treated**.

**R4-2016254 CR on Sensitivity and dynamic range related requirements**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Ericsson*

**Abstract:**

The new TS specication for conformance test not decided and number of the declared direction can be discussed in conformance phase with adding bracket for now.

**Decision:** The document was **not treated**.

**R4-2016262 CR on Sensitivity and dynamic range related requirements chapter**

*Type: draftCR For: Endorsement  
 38.809 v16.0.0  
 Source: Ericsson*

**Abstract:**

Weaken the statement in 8.2.2 for SNR requriement. The SNR is taken after simulation and agreement in RAN4. Typo correction on 10.2

**Decision:** The document was **not treated**.

###### 7.4.2.2.2 In-band selectivity and blocking requirements [NR\_IAB-Core]

**R4-2015437 DraftCR to TS 38.174: In-band selectivity corrections**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Some ACS interferer offsets are not defined. There are errors whether delta OTAREFSENS or delta OTAminSENS is used to offset the interfering signal mean power in IAB-MT in-band blocking test. Editorial errors exist.

**Decision:** The document was **not treated**.

**R4-2016252 CR on Inband selectivity and blocking requirements**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Ericsson*

**Abstract:**

inband selectivity and blocking requirements correction in TS38.174

**Decision:** The document was **not treated**.

**R4-2016261 CR on Inband selectivity and blocking requirements chapter**

*Type: draftCR For: Endorsement  
 38.809 v16.0.0  
 Source: Ericsson*

**Abstract:**

Correct the tabel number and adding the unit

**Decision:** The document was **not treated**.

###### 7.4.2.2.3 Others [NR\_IAB-Core]

**R4-2015438 DraftCR to TS 38.174: OOB blocking and Rx spurious corrections**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Section number 7.5.2 is applied for multiple different sections. Problem exists also in table numbers. n259 data is missing from table providing step frequencies for defining the radiated Rx spurious emission limits for IAB-MT type 2-O

**Decision:** The document was **not treated**.

**R4-2016253 CR on Rx Charateristic other related requirements**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: Ericsson*

**Abstract:**

Correct the reference number to 38.104

**Decision:** The document was **not treated**.

#### 7.4.3 RF conformance testing [NR\_IAB-Perf]

##### 7.4.3.1 General and work plan [NR\_IAB-Perf]

**R4-2014484 IAB RF Conformance Testing**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2014750 On IAB conformance testing**

*Type: other For: Discussion  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2015439 IAB RF conformance testing framework**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016084 Discussion on conformance specification**

*Type: discussion For: Discussion  
 Source: Huawei*

**Abstract:**

Discuss drafting of the conformance specification

**Decision:** The document was **not treated**.

**R4-2016245 On IAB conformance testing**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our general view on IAB RF conformance test work

**Decision:** The document was **not treated**.

##### 7.4.3.2 Common test issues for conducted and radiated conformance testing [NR\_IAB-Perf]

**R4-2016138 Discussion on IAB conformance testing**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

###### 7.4.3.2.1 Test configurations [NR\_IAB-Perf]

**R4-2014389 Discussion on IAB RF test configuration**

*Type: other For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014485 IAB RF Testing**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2015440 Test configurations for IAB RF conformance testing**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016243 IAB Common test issue on test configuration**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our view on test configuration for IAB RF conformance test work

**Decision:** The document was **not treated**.

###### 7.4.3.2.2 Test models [NR\_IAB-Perf]

**R4-2014390 Discussion on IAB RF test model**

*Type: other For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2016244 IAB Common test issue on test model**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our view on test model for IAB RF conformance test work

**Decision:** The document was **not treated**.

###### 7.4.3.2.3 Others [NR\_IAB-Perf]

**R4-2016242 IAB Common test issue on enviroment conditions**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our view on test enviromental conditions for IAB RF conformance test work

**Decision:** The document was **not treated**.

##### 7.4.3.3 Conducted conformance testing [NR\_IAB-Perf]

###### 7.4.3.3.1 Transmitter characteristics [NR\_IAB-Perf]

**R4-2014391 Discussion on the reference conditions of IAB-MT output power dynamics**

*Type: other For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2015441 Radiated conformance testing, Tx requirements**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016246 Conducted transmitter characteristic test**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our view on conducted transmitter test for IAB RF conformance test work

**Decision:** The document was **not treated**.

###### 7.4.3.3.2 Receiver characteristics [NR\_IAB-Perf]

**R4-2015442 Radiated conformance testing, Rx requirements**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016247 Conducted receiver characteristic test**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our view on conducted receiver test for IAB RF conformance test work

**Decision:** The document was **not treated**.

###### 7.4.3.3.3 Other test issues [NR\_IAB-Perf]

##### 7.4.3.4 Radiated conformance testing [NR\_IAB-Perf]

###### 7.4.3.4.1 Transmitter characteristics [NR\_IAB-Perf]

**R4-2016248 Radiated transmitter characteristic test**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our view on OTA Transmitter test for IAB RF conformance test work

**Decision:** The document was **not treated**.

###### 7.4.3.4.2 Receiver characteristics [NR\_IAB-Perf]

**R4-2016249 Radiated receiver characteristic test**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper, we present our view on OTA receiver test for IAB RF conformance test work

**Decision:** The document was **not treated**.

###### 7.4.3.4.3 Other test issues [NR\_IAB-Perf]

#### 7.4.4 RRM core requirements maintenance [NR\_IAB-Core]

**R4-2015508 CR on Link recovery for IAB-MT**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1285 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

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

**R4-2015509 CR on RLM for IAB-MT**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1286 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

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

**R4-2015790 CR on Link recovery for IAB-MT**

*Type: CR For: Agreement  
 38.174 v16.0.0 CR-0001 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The requirement for multiple SMTC configuration (up to 4) is missing in the link recovery requirement for IAB-MT

There are typos need to be fixed.

**Decision:** The document was **not treated**.

**R4-2015791 CR on RLM for IAB-MT**

*Type: CR For: Agreement  
 38.174 v16.0.0 CR-0002 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The requirement for multiple SMTC configuration (up to 4) is missing in the RLM requirement for IAB-MT

**Decision:** The document was **not treated**.

**R4-2016028 DraftCR for TR38.809: IAB RRM general**

*Type: draftCR For: Endorsement  
 38.809 v16.0.0  
 Source: Samsung*

**Abstract:**

Adding general descriptions is to summarize the meeting agreements as Rel-16 RAN4 conclusions and the reference for future release IAB RRM requirement standardization.

**Decision:** The document was **not treated**.

**R4-2016170 Symbols, abbreviations and definitions for IAB RRM in 38.174**

*Type: CR For: Agreement  
 38.174 v16.0.0 CR-0003 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

To define missing symbols, abbreviations and definitions related to IAB RRM requirements.

**Decision:** The document was **not treated**.

**R4-2016171 Issues with IAB RRM requirements**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

The paper analyze some of the issues related to RRM requirements

**Decision:** The document was **not treated**.

**R4-2016382 Correction on IAB RRM requirements in TS 38.174**

*Type: CR For: Agreement  
 38.174 v16.0.0 CR-0005 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Maintenance CR for IAB RRM requirements.

**Decision:** The document was **not treated**.

#### 7.4.5 RRM perf. requirements [NR\_IAB-Perf]

##### 7.4.5.1 General [NR\_IAB-Perf]

**R4-2014009 Scope of test cases for IAB-MTs**

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

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

**R4-2015510 Discussion on performance requirements for IAB**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016172 Specification structure for IAB-MT RRM test cases in 38.174**

*Type: CR For: Agreement  
 38.174 v16.0.0 CR-0004 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

To create an annex in TS 38.174 for defining RRM test cases

**Decision:** The document was **not treated**.

**R4-2016173 Principles for IAB RRM test cases**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

The paper discussed general principles for RRM tests for IAB

**Decision:** The document was **not treated**.

**R4-2016174 IAB RRM test case list**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

The paper discussed general principles for RRM tests for IAB

**Decision:** The document was **not treated**.

**R4-2016383 discussion on IAB RRM test cases**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discussion the RRM test cases for IAB.

**Decision:** The document was **not treated**.

**R4-2016594 Scope of test cases for IAB-MTs**

*Type: discussion For: Discussion  
 Source: ZTE Corporation, Qualcomm Incorporated*

**Decision:** The document was **not treated**.

##### 7.4.5.2 Test cases [NR\_IAB-Perf]

**R4-2014184 [draft CR] Test cases for timing for IAB-MT**

*Type: draftCR For: Endorsement  
 38.174 v16.0.0  
 Source: ZTE Corporation*

**Abstract:**

The test cases for timing of IAB-MTs in FR1 need to be specified in TS 38.174.

**Decision:** The document was **not treated**.

**R4-2015511 Discussion on test cases for IAB**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

#### 7.4.6 EMC core requirements maintenance [NR\_IAB-Core]

##### 7.4.6.1 General [NR\_IAB-Core]

**R4-2015026 CR to TS 38.175: IAB definition**

*Type: CR For: Agreement  
 38.175 v16.0.0 CR-0001 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

There are no definitions for IAB type.

**Decision:** The document was **not treated**.

**R4-2015106 CR to TS 38.175 on Voltage dips and interruptions, Release 16**

*Type: CR For: Agreement  
 38.175 v16.0.0 CR-0003 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Performance criteria is updated to reflect considerations on the test levels.

**Decision:** The document was **not treated**.

**R4-2015107 Definition of Exclusion Bands for IAB EMC nodes**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Discussion paper on Exclusion bands for IAB EMC testing

**Decision:** The document was **not treated**.

**R4-2015108 CR to TS 38.175 on Exclusion Bands**

*Type: CR For: Agreement  
 38.175 v16.0.0 CR-0004 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Definition of Exclusion Band sizes is required to guarantee IAB nodes EMC testing.

**Decision:** The document was **not treated**.

##### 7.4.6.2 Emission requirements [NR\_IAB-Core]

**R4-2015027 CR to TS 38.175: Radiated emission, IAB**

*Type: CR For: Agreement  
 38.175 v16.0.0 CR-0002 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

The radiated eimssion IAB requirements need to be added.

**Decision:** The document was **not treated**.

**R4-2015109 Discussion on IAB EMC Radiated Emissions**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Discussion paper on EMC Radiated Emissions for IAB EMC

**Decision:** The document was **not treated**.

**R4-2015110 CR to TS 38.175 on IAB EMC Emission**

*Type: CR For: Agreement  
 38.175 v16.0.0 CR-0005 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Radiated emission limits for IAB node needs to be defined.

**Decision:** The document was **not treated**.

##### 7.4.6.3 Immunity requirements [NR\_IAB-Core]

**R4-2015111 Discussion on Spatial Exclusion for IAB EMC RI test**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Discussion paper on Spatial Exclusion for IAB EMC Radiated Immunity Testing

**Decision:** The document was **not treated**.

**R4-2015112 CR to TS 38.175 on Spatial Exclusion for IAB EMC Radiated Immunity test**

*Type: CR For: Agreement  
 38.175 v16.0.0 CR-0006 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Introduction of spatial exclusion concept for IAB EMC CR to TS 38.175 on Spatial Exclusion for IAB EMC Radiated Immunity test.

**Decision:** The document was **not treated**.

#### 7.4.7 EMC performance requirements [NR\_IAB-Perf]

**R4-2015028 Discussion on the performance requirements of IAB EMC**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015113 Discussion on IAB EMC performance requirements**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Discussion paper on IAB EMC Performance requirements

**Decision:** The document was **not treated**.

**R4-2015114 CR to TS 38.175 on IAB EMC performance requirements**

*Type: CR For: Agreement  
 38.175 v16.0.0 CR-0007 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Introduction of performance requirements in IAB EMC specification is required to complete the EMC IAB standard.

**Decision:** The document was **not treated**.

#### 7.4.8 Demodulation and CSI requirements [NR\_IAB-Perf]

##### 7.4.8.1 General [NR\_IAB-Perf]

**R4-2015868 On IAB testing approach**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

General discussion on approach to demodulation testing for IAB

**Decision:** The document was **not treated**.

**R4-2016038 IAB Demodulation Testing**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2016039 IAB Demodulation Testing**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2016443 On NR IAB general demodulation requirements**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution, we provide an updated version of IAB demod work plan and our proposal about a possible bigCR work split.

**Decision:** The document was **not treated**.

##### 7.4.8.2 IAB-DU performance requirements [NR\_IAB-Perf]

**R4-2015592 Discussion on NR IAB DU demodulation performance requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015870 IAB-DU demodulation requirements**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Requirements matrix for DU

**Decision:** The document was **not treated**.

**R4-2016444 On NR IAB-DU demodulation requirements**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we extend further our previous contribution on IAB-DU demod and discuss the detailed scope of IAB-DU demodulation performance requirements.

**Decision:** The document was **not treated**.

##### 7.4.8.3 IAB-MT performance requirements [NR\_IAB-Perf]

**R4-2015593 Discussion on NR IAB MT demodulation performance requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015869 IAB-MT demodulation requirements**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Requirements matrix for MT

**Decision:** The document was **not treated**.

**R4-2016433 On NR IAB-MT test setup and demodulation requirements**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this paper, we highlight some critical aspects of IAB technology and architecture, overview the existing BS and UE conformance testing setups, and propose a new IAB-MT test setup. Furthermore, we overview the performance requirements to be re-used/adap

**Decision:** The document was **not treated**.

### 7.5 Multi-RAT Dual-Connectivity and Carrier Aggregation enhancements [LTE\_NR\_DC\_CA\_enh]

**R4-2014486 Draft Reply LS on cell-grouping UE capability for synchronous NR-DC**

*Type: LS out For: Approval  
 to RAN2  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

#### 7.5.1 RF requirements maintenance [LTE\_NR\_DC\_CA\_enh-Core]

**R4-2014958 CR to TS 38.101-3 on intra-band contiguous EN-DC BW class (Rel-16)**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0382 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

The intra-band contiguous EN-DC bandwidth class “AB” is missing in Table 5.3B-1 which has already been introduced in the specification.

**Decision:** The document was **not treated**.

**R4-2015036 CR to TS 38.307 on the definition of the duplex-mode for the band configurations**

*Type: CR For: Agreement  
 38.307 v15.6.0 CR-0037 Cat: F (Rel-15)  
  
 Source: ZTE Corporation, CHTTL*

**Abstract:**

In current 38.307 spec, there are no definitions for the ‘duplex-mode’ in the table. Due to there are lots of types of band configurations including ENDC, NR-CA, SUL, etc, it is necessary to add the NOTE in the table to describe the meaning of the ‘duplex-mode’ for a certain type of band configuration, especially more and more types of configurations will be added in future.

Also, several ‘FDD and TDD’ inter-band ENDC for PC3 are defined in Rel-15.

**Decision:** The document was **not treated**.

**R4-2015037 CR to TS 38.307 on the definition of the duplex-mode for the band configurations**

*Type: CR For: Agreement  
 38.307 v16.4.0 CR-0038 Cat: A (Rel-16)  
  
 Source: ZTE Corporation, CHTTL*

**Decision:** The document was **not treated**.

**R4-2015556 Discussion on how to support EN-DC band combinations for Roaming UE**

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

**Decision:** The document was **not treated**.

**R4-2016087 CR to 38.101-3 DC\_1A-20A\_n28A Missing MSD**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: VODAFONE Group Plc*

**Abstract:**

MSD test points for intermodulation interference due to dual uplink operation for PC3 in DC\_1A-20A\_n28A are missing.

**Decision:** The document was **not treated**.

**R4-2016151 Draft Reply LS to RAN2 on cell-grouping UE capability for synchronous NR-DC**

*Type: LS out For: Approval  
 to RAN2  
 Source: Ericsson GmbH, Eurolab*

**Decision:** The document was **not treated**.

**R4-2016435 Correction to PCMAX for contiguous intra-band EN-DC**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0414 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

An error seems to have been introduced into the specification during the implementation of R4-2000454. The configured maximum output power for E-UTRA cell group is not specified for contiguous intra-band EN-DC. Instead, the PCMAX for NR cell group is specified twice.

**Discussion:**

The secretary commented that (on the coversheet) the specification number should read 38.101-3 instead of TS38.101-3.

**Decision:** The document was **not treated**.

**R4-2016487 On UE capability for distinguishing EN-DC implementation capable for different deployment scenarios**

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

**Decision:** The document was **not treated**.

**R4-2016575 Staring point of an Interruption window at Direct SCell activation**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2016583 CR to Multi-SCell activation for FR1 intra-band contiguous CA**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1400 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

One of conditions for FR1 contiguous multi-SCell activation may conflict with RAN1 spec and potentially cause unexpected issues depending on how the assumption can be further exploited by the UE.

**Decision:** The document was **not treated**.

**R4-2016584 CR to Staring point of an Interruption window at Direct SCell activation**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1401 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

In the current version of 38.133, the earliest possible starting point of an interruption window due to Direct SCell activation at SCell addition is limited to the time after the corresponding HARQ-ACK transmission, which is not aligned with other interruption requirements for RRM based command execution.

**Decision:** The document was **not treated**.

#### 7.5.2 RRM core requirements maintenance (38.133/36.133) [LTE\_NR\_DC\_CA\_enh-Core]

**R4-2014229 On cell-grouping UE capability for synchronous NR-DC**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014230 Reply LS on cell-grouping UE capability for synchronous NR-DC**

*Type: LS out For: Approval  
 to RAN1, RAN2  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014359 Discussion on interruption time for unaligned CA scenarios**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014360 CR on TS38.133 interruption time for CA with non-aligned frame boundaries**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1156 Cat: F (Rel-16)  
  
 Source: MediaTek inc.*

**Abstract:**

The total interruption time for the CA with non-aligned frame boundaries scenario does not consider and count the time duration of the slot which is partially overlapped with the measurement gap.

**Decision:** The document was **not treated**.

##### 7.5.2.1 Early Measurement reporting [LTE\_NR\_DC\_CA\_enh-Core]

**R4-2014361 Discussion on LTE CRS based and NR SSB based measurement in NR IDLE/INACTIVE mode**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014362 CR on TS38.133 for measurement capability of IDLE mode DCCA measurement**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1157 Cat: F (Rel-16)  
  
 Source: MediaTek inc., Huawei, HiSilicon*

**Abstract:**

UE requirement for MR-DC early measurement reporting in TS 38.133 is not finalized and following modifications are needed:

1. In WF agreed in RAN4 #95e, the agreed measurement capability is total number of LTE inter-RAT EMR carriers ≤7, not total number of FDD E-UTRA inter-RAT carriers ≤7 and total number of TDD E-UTRA inter-RAT carriers ≤7.

2. The measurement capabilities for UE supporting inter-freq. or inter-RAT EMR measurement in NR IDLE/INACTIVE mode are specified in different sections 4.2.2.1 and 4.3.2.2. A clarification must be added to show that measurement capabilities in section 4.2.2.1 and in section 4.3.2.2 should be simultaneously followed.

3. RAN2’s capability names have been updated to idleInactiveEUTRA-MeasReport-r16 and idleInactiveNR-MeasReport-r16.

4. Complete the measurement requirement of overlapping and non-overlapping early measurement reporting

5. Introduce the requirement for beam level reporting

**Decision:** The document was **not treated**.

**R4-2015587 Remaining issues on NR EMR**

*Type: discussion For: Discussion  
 Source: ZTE*

**Decision:** The document was **not treated**.

**R4-2015742 Discussion on remaining issues in EMR requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015743 CR on EMR requirements in 36.133**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6976 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon, MediaTek*

**Abstract:**

Core requirements for LTE-NR inter-RAT EMR are incomplete.

**Decision:** The document was **not treated**.

**R4-2015881 Early Measurement Reporting**

*Type: discussion For: Approval  
 38.133 v..  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015882 CR on UE requirement for MR-DC early measurement reporting in 36.133**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6985 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

UE requirements for MR-DC early measurement reporting in TS 36.133 are not finalized. This CR brings changes for finalization of the feature.

**Decision:** The document was **not treated**.

**R4-2015883 CR on UE requirement for MR-DC early measurement reporting in 38.133**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1338 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

UE requirements for MR-DC early measurement reporting in TS 38.133 are not finalized. This CR brings changes for finalization of the feature.

**Decision:** The document was **not treated**.

**R4-2016388 Updates in EMR requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1374 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

RAN4 has agreed on the definition overlapping/non-overlapping carriers in R4-2005847, but their definitions are still missing in the specification.

The terminology “EMR”, “early measurement reporting”, “idle CA measurements”, “idle CA/DC measurements”, are used inconsistently across specification, etc.

**Decision:** The document was **not treated**.

**R4-2016389 Updates in EMR requirements**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6998 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

RAN4 has agreed on the definition overlapping/non-overlapping carriers in R4-2005847, but their definitions are still missing in the specification.

Also, the EMR measurements are inconsistently referred to as idle mode measurements, DC measurements, etc.

**Decision:** The document was **not treated**.

**R4-2016573 Early measurement reporting in MR-DC**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

##### 7.5.2.2 Efficient and low latency serving cell configuration, activation and setup [LTE\_NR\_DC\_CA\_enh-Core]

**R4-2014363 Discussion on direct Scell activation**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014629 Discussion on TCI state activation in direct SCell activation**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2015301 Discussion on RRM requirements for SCell dormancy**

*Type: discussion For: Approval  
 Source: NEC*

**Abstract:**

Discussion on BWP switch delay for dormancy transition of multiple SCells

**Decision:** The document was **not treated**.

**R4-2015744 Discussion on remaining issues in SCell dormancy and cross-carrier scheduled BWP switching**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015745 CR on BWP switching and SCell dormancy**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1322 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

In SCell dormancy delay requirement, there is an editor note pending on RAN1 conclusion on whether dormancy indication within DCI 0\_1/1\_1 can be received after first 3 OFDM symbols in a slot or not. RAN1 has agreed that there is no restriction, so the editor note can be removed.

The BWP switching requirements for cross-carrier scheduling case need to be defined.

**Decision:** The document was **not treated**.

**R4-2016020 CR 38.133 Removal of brackets for SCell Dormancy and Direct SCell Activation**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1348 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

SCell Dormancy: The specification text contains requirements on maximum rate of interruptions resulting from RRM and CSI measurements on dormant SCell. The value, [0.5]%, is within brackets.

Direct SCell activation: The specification text contains side condition on number of SCells that can be directly activated simultaneously. The value, [2], is within brackets.

**Decision:** The document was **not treated**.

**R4-2016021 CR 36.133 Removal of brackets for NR SCell Dormancy**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6988 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

SCell Dormancy: The specification text contains requirements on maximum rate of interruptions resulting from RRM and CSI measurements on dormant NR SCell. The value, [0.5]%, is within brackets.

**Decision:** The document was **not treated**.

**R4-2016570 Dormant and Non-dormant BWP switching**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

#### 7.5.3 RRM perf. requirements (38.133) [LTE\_NR\_DC\_CA\_enh-Perf]

##### 7.5.3.1 General [LTE\_NR\_DC\_CA\_enh-Perf]

**R4-2014368 Discussion on performance part for SCell dormancy**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2015746 Discussion on accuracy requirements for EMR**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015747 draftCR to introduce accuracy requirements for EMR 38.133**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

Measurement accuracy requriements need to be defind for EMR.

**Decision:** The document was **not treated**.

**R4-2015748 draftCR to introduce accuracy for EMR 36.133**

*Type: draftCR For: Endorsement  
 36.133 v16.7.0  
 Source: Huawei, HiSilicon*

**Abstract:**

Measurement accuracy requriements need to be defind for EMR.

**Decision:** The document was **not treated**.

**R4-2016017 General discussion on MR-DC RRM test cases**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

Background information on proposal of test case list and time plan for MR-DC RRM test cases.

**Decision:** The document was **not treated**.

**R4-2016378 Accuracy requirements for MR-DC EMR (36.133)**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6995 Cat: F (Rel-16)  
  
 Source: Nokia Corporation*

**Abstract:**

Introduction of accuracy requirements for MR-DC EMr idle mode measurements.

**Decision:** The document was **not treated**.

**R4-2016386 Accuracy requirements for MR-DC EMR (38.133)**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1373 Cat: F (Rel-16)  
  
 Source: Nokia Corporation*

**Abstract:**

Introduction of accuracy requirements for MR-DC EMr idle mode measurements.

**Decision:** The document was **not treated**.

**R4-2016571 Performance requirements for Dormant SCell**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

##### 7.5.3.2 Test cases [LTE\_NR\_DC\_CA\_enh-Perf]

**R4-2014369 CR on TS38.133 for NR FR1 – NR FR1 Scell dormancy test case in SA**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: MediaTek inc.*

**Abstract:**

The SCell dormancy is introduced in Rel-16 so that UE can achieve power saving. In last meeting, it has been agreed that the test case for SCell dormancy shall be defined in RRM performance part. Thus, the test case “NR FR1 – NR FR1 SCell dormancy in SA” is provided in this CR.

**Decision:** The document was **not treated**.

**R4-2015749 Discussion on RRM test for MR-DC enhancement**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015884 Discussion on test cases for MD-DC EMR**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016018 MR-DC RRM test case list and time plan**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Proposed test case list and time plan for MR-DC RRM test cases.

**Decision:** The document was **not treated**.

#### 7.5.4 Demodulation and CSI requirements (38.101-4) [LTE\_NR\_DC\_CA\_enh-Perf]

**R4-2015594 Discussion on Multi-RAT Dual-Connectivity and Carrier Aggregation enhancements demodulation performance requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015815 UE demodulation requirements for WI on MR-DC and CA enhancements**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution discusses the impacts to UE demodulation and CSI reporting requirements due to WI on MR-DC and CA enhancements

**Decision:** The document was **not treated**.

### 7.6 UE power saving in NR [NR\_UE\_pow\_sav]

#### 7.6.1 RRM core requirements maintenance (38.133) [NR\_UE\_pow\_sav-Core]

**R4-2014408 CR for TS38.133, Remove duplication definition for measurement requirements for power saving**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1169 Cat: F (Rel-16)  
  
 Source: CATT*

**Abstract:**

The applicability of relaxed measurement requirements for EMR is defined clearly in TS38.304. The conditions of “T331 timer is not running…” in current specification is not accurate and duplicated.

1 hour measurement interval has been defined in TS38.304, and no tested will be defined in RAN4. The measurements for UE fulfillslow mobility and not-at-cell edge criteria are duplicated and may lead to misalignment with RAN2 specification.

For measurement requirements for higher priority carrier for inter frequency and inter-RAT when UE fulfills not-at-cell edge criterion are normal requirements, they need not be defined in clause 4.2.2.10.3 and 4.2.2.11.3.

**Decision:** The document was **not treated**.

**R4-2014527 Discussion on remaining issues of R16 UE power saving**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2014528 CR on RRM relaxation in R16 UE power saving**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1185 Cat: F (Rel-16)  
  
 Source: vivo*

**Abstract:**

Removed duplicated descriptions which are already captured in TS 38.304.

**Decision:** The document was **not treated**.

**R4-2015482 Correction CR to Rel-16 UE power saving requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1275 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Correct some mistakes;

Made some clarifications

**Decision:** The document was **not treated**.

**R4-2015574 CR to 38.133: Correction to relaxed measurement requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1305 Cat: F (Rel-16)  
  
 Source: ZTE*

**Abstract:**

In TS38.331 v16.2.0, the combineRelaxedMeasCondition-r16 is defined as follows.

relaxedMeasurement-r16 SEQUENCE {

…

combineRelaxedMeasCondition-r16 ENUMERATED {true} OPTIONAL, -- Need R

…

}

The IE is either absent or configured as true.

However in TS38.133 v16.5.0 the requirement is specified as follows.

“…and combineRelaxedMeasCondition [2] not configured or configured but set to FALSE, …”

The IE cannot be set to FALSE so the requirement is incorrect.

**Decision:** The document was **not treated**.

**R4-2016066 CR for correcting wrong requirement for UE fulfilling not-at-cell edge criterion for measurement relaxation**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1359 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Current version of the specification wrongly lists a parameter related to low mobility condition in the section relative to UE fulfilling not-at-cell edge condition

**Decision:** The document was **not treated**.

**R4-2016146 Corrections to UE power saving requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1360 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

During the transition period UE is required to apply a certain types of requirements, but it is not clear what they are or where they are defined. Also some references are corrected.

**Decision:** The document was **not treated**.

#### 7.6.2 RRM perf. requirements (38.133) [NR\_UE\_pow\_sav-Perf]

**R4-2014455 Work plan for power saving RRM test cases**

*Type: other For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

##### 7.6.2.1 General [NR\_UE\_pow\_sav-Perf]

**R4-2014370 Discussion on performance part for cell reselection**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014657 Discussion on test cases for power saving RRM**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision:** The document was **not treated**.

**R4-2014835 Considerations on test cases for UE power saving RRM**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2016147 Discussions on UE power saving performance requirements**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

In this contribution we discuss and provide our view on the open issues in performance part that were identified at last meeting.

**Decision:** The document was **not treated**.

##### 7.6.2.2 Test cases [NR\_UE\_pow\_sav-Perf]

**R4-2014371 CR on TS38.133 for cell reselection to FR1 inter-RAT E-UTRA test case with low mobility criterion**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: MediaTek inc.*

**Abstract:**

The low mobility and not-at-cell edge criterion are introduced in Rel-16 so that UE can measure neighboring cell with relaxed measurement time. On the other hands, in last meeting, it has been agreed that the test case for cell reselection to lower priority E-UTRAN shall be defined in RRM performance part. Thus, the proposed test cases are provided in this CR.

**Decision:** The document was **not treated**.

**R4-2014409 Discussion on RRM test cases for power saving**

*Type: discussion For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014410 CR for TS38.133, test case for cell reselection to FR1 intra-frequency NR case for power saving**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1170 Cat: B (Rel-16)  
  
 Source: CATT*

**Abstract:**

It is agreed that the test cases for relaxed RRM measurement requirements should be defined.

**Decision:** The document was **not treated**.

**R4-2014656 RRM test cases for NR UE power saving**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Xiaomi*

**Abstract:**

Add the RRM test cases for Rel-16 NR UE power saving

**Decision:** The document was **not treated**.

**R4-2014836 CR for test case for cell reselection to FR1 inter-RAT E-UTRA for not at cell edge criterion**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1205 Cat: B (Rel-16)  
  
 Source: vivo*

**Abstract:**

Add test case for cell reselection to FR1 inter-RAT E-UTRA for not at cell edge criterion

**Decision:** The document was **not treated**.

**R4-2015483 Discussion on test cases for measurement relaxation in power saving**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015484 Test case for cell reselection to FR2 intra-frequency NR case for UE configured with relaxed measurement**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

Specify the test case for Cell reselection to FR2 intra-frequency NR case for UE configured with relaxed measurement criterion

**Decision:** The document was **not treated**.

**R4-2016065 Draft CR on Cell reselection Tests for UE configured with relaxed measurement criterion**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Qualcomm Incorporated*

**Abstract:**

No Cell Reselection tests are specified for UE configured with relaxed measurement criterion

**Decision:** The document was **not treated**.

**R4-2016148 Cell reselection to FR2 inter-frequency NR case under power saving**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1361 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Inter-frequency cell reselection requirements were relaxed for UEs operating under power saving. However, test case is missing to verify the new requirements.

**Decision:** The document was **not treated**.

**R4-2016149 Discussions on testing cell reselection to FR2 inter-frequency NR case**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

In this contribution we discuss the methods for testing the requirements for cell reselection to a FR2 inter-frequency NR case.

**Decision:** The document was **not treated**.

#### 7.6.3 Demodulation and CSI requirements (38.101-4) [NR\_UE\_pow\_sav-Perf]

**R4-2014215 Discussion on PDCCH-WUS/PDCCG test**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014411 Discussion on power saving demodulation test**

*Type: discussion For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014412 CR for TS38.101-4, test for PDCCH DCI format 2\_6 demodulation**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0086 Cat: B (Rel-16)  
  
 Source: CATT*

**Abstract:**

Demodulation performance requirement for PDCCH DCI formant 2\_6 needs to be defined.

**Decision:** The document was **not treated**.

**R4-2014454 Work plan for power saving demodulation**

*Type: other For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014529 Discussion on DCP test cases for R16 UE power saving**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2014540 Discussion on PDCCH-WUS requirements**

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

**Decision:** The document was **not treated**.

**R4-2014727 Demodulation on UE power saving**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2015127 Discussion on performance requirements for PDCCH-WUS**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2015595 Discussion on the performance requirements for NR power saving**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

### 7.7 NR Positioning Support [NR\_pos]

#### 7.7.1 General [NR\_pos-Core/Perf]

**R4-2016396 On CSSF for positioning measurements**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

On CSSF for positioning measurements

**Decision:** The document was **not treated**.

**R4-2016397 Correction to CSSF for positioning measurements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1378 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Incomplete requirements

**Decision:** The document was **not treated**.

#### 7.7.2 RRM core requirements maintenance (38.133) [NR\_pos-Core]

**R4-2014798 CR to TS 38.133 on measurement period requirements for PRS RSTD, PRS-RSRP and UE Rx-Tx(section 9.9)**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: OPPO*

**Decision:** The document was **not treated**.

##### 7.7.2.1 PRS-RSTD measurement requirements [NR\_pos-Core]

**R4-2014004 Measurement period for PRS-RSTD**

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

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

**R4-2014445 Discussion on PRS RSTD measurement requirements**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014573 Further discussion on NR PRS RSTD measurement report requirements**

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

**Decision:** The document was **not treated**.

**R4-2014799 Further discussion on maintenance for RSTD measurement requirement**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2015750 Discussion on remaining issues for RSTD measurement requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015751 CR to update RSTD measurement requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1323 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The measurement period is FFS for the case when measurement gaps and processing time T do not have overlap between different positioning frequency layers

The definition of Lprs used in defining measurement period is not fully clear

The measurement period requirements cannot apply if PRS is dropeed due to collision with SSB, or a resource sampling exceeds UE capability

**Decision:** The document was **not treated**.

**R4-2016390 On UE positioning measurements: RSTD**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

On UE positioning measurements: RSTD

**Decision:** The document was **not treated**.

**R4-2016391 UE positioning measurements: RSTD**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1375 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Incomplete requirements, incorrect references

**Decision:** The document was **not treated**.

**R4-2016507 PRS-RSTD measurement period requirements**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

This contribution addresses remaining issues related to PRS-RSTD measurement requirements.

**Decision:** The document was **not treated**.

**R4-2016558 Revision of PRS-RSTD measurement period requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1396 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Clarify some aspects of the PRS-RSTD measurement period definition.

**Decision:** The document was **not treated**.

##### 7.7.2.2 PRS-RSRP measurement requirements [NR\_pos-Core]

**R4-2014006 Requirements for PRS-RSRP measurements**

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

**Decision:** The document was **not treated**.

**R4-2014575 Discussion on UE RX-TX time difference measurement requirements**

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

**Decision:** The document was **not treated**.

**R4-2015369 CR on PRS-RSRP report mapping**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1254 Cat: B (Rel-16)  
  
 Source: CATT*

**Abstract:**

CR R4-2009129 was agreed in RAN4#95e meeting but not implemented in 38.133.

**Discussion:**

The secretary commented that the CR number 1254 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2015752 Discussison on remaining issues for PRS-RSRP measurement requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015753 CR to update PRS-RSRP measurement requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1324 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The measurement period is FFS for the case when measurement gaps and processing time T do not have overlap between different positioning frequency layers

The definition of Lprs used in defining measurement period is not fully clear

The reporting requirements for aperiodic reporting is FFS

**Decision:** The document was **not treated**.

**R4-2016392 On UE positioning measurements: PRS-RSRP**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

On UE positioning measurements: PRS-RSRP

**Decision:** The document was **not treated**.

**R4-2016393 UE positioning measurements: PRS-RSRP**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1376 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Incomplete requirements, incorrect references

**Decision:** The document was **not treated**.

**R4-2016557 Revision of PRS-RSRP measurement period requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1395 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Clarify some aspects of the PRS-RSRP measurement period definition.

**Decision:** The document was **not treated**.

##### 7.7.2.3 UE Rx-Tx time difference measurement requirements [NR\_pos-Core]

**R4-2014003 UE Rx-Tx measurements**

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

**Decision:** The document was **not treated**.

**R4-2014446 Discussion on UE Rx-Tx time difference measurement requirements**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2015754 Discussison on remaining issues for UE Rx-Rx time difference measurement requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015755 CR to update UE Rx-Tx time difference measurement requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1325 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The measurement period is FFS for the case when measurement gaps and processing time T do not have overlap between different positioning frequency layers

The definition of Lprs used in defining measurement period is not fully clear

The reporting requirements for aperiodic reporting is FFS

There is an editor note related to UE processing capability N

Applicability related to SRS/PRS time/frequency relation is not missing.

**Decision:** The document was **not treated**.

**R4-2016394 On UE positioning measurements: UE Rx-Tx**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

On UE positioning measurements: UE Rx-Tx

**Decision:** The document was **not treated**.

**R4-2016395 UE positioning measurements: UE Rx-Tx**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1377 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Incomplete requirements, incorrect references

**Decision:** The document was **not treated**.

**R4-2016508 UE Rx-Tx time difference measurement period requirements**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

This contribution addresses remaining issues related to UE Rx-Tx time difference measurement requirements.

**Decision:** The document was **not treated**.

**R4-2016559 Revision of UE Rx-Tx time difference measurement period requirements and applicability**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1397 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Specify applicability of UE Rx-Tx time difference measurement requirements when UL timing changes and clarify some aspects of the PRS-RSRP measurement period definition.

**Decision:** The document was **not treated**.

##### 7.7.2.4 Other requirements [NR\_pos-Core]

**R4-2014005 New gap patterns for PRS measurements**

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

**Decision:** The document was **not treated**.

**R4-2014282 LS on new per-UE MG for NR positioning**

*Type: LS out For: Approval  
 to RAN2  
 Source: Apple*

**Abstract:**

Two information points are missing in the last LS R4-2012285: (1)these two new MG patterns are applicable for PRS and NR/LTE RRM measurements, i.e. new gaps are not shared between PRS and 2G/3G RRM measurements.

(2)these two new MG patterns are defined as

**Decision:** The document was **not treated**.

**R4-2015756 Discussion on remaining issues in CSSF for PRS measurement**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015757 CR on CSSF for PRS measurement**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1326 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

There are some remaining open issues in CSSF due to PRS measurement.

**Decision:** The document was **not treated**.

**R4-2015758 CR to introduce new measurement gap patterns for positioning in 36.133**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6977 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

New MG patterns have been introduced for positioning in 38.133. It is also agreed that the new MG patterns can be used for LTE measurement. The new patterns need to be also introduced in 36.133 because

1. The new MG patterns will impact the MG interruption on LTE serving cells in NE-DC

2. The new MG patterns will impact the LTE measurement, at least we need to define the effective measurement time as UE cannot search and measure for a duration of 9ms

**Decision:** The document was **not treated**.

**R4-2016156 Refinements on CSSF within gap to include NR positioning measurements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1362 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

CR 0941 was agreed at RAN4 #96-e in R4-2012286 on the matter of gap sharing between RRM and NR positioning measurements. This contained open issues such as how to define long-periodicicity NR measurements for positioning, which do not enter the gap competition, for PRS periodicities ≤160 ms and left the NR measurement term open.

**Decision:** The document was **not treated**.

**R4-2016505 General NR positioning measurement requirements**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

This contribution discusses residual issues related to general requirements for NR positioning measurements

**Decision:** The document was **not treated**.

**R4-2016556 Revision of NR positioning measurement requirements applicability**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1394 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Specify applicability of NR positioning measurement requirements under various scenarios

**Decision:** The document was **not treated**.

#### 7.7.3 RRM perf. requirements (38.133) [NR\_pos-Perf]

##### 7.7.3.1 General [NR\_pos-Perf]

**R4-2014571 Discussion on NR Positioning test cases configuration and list**

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

**Decision:** The document was **not treated**.

**R4-2014572 nn**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Intel Corporation*

**Decision:** The document was **not treated**.

**R4-2015567 Work plan for NR Positioning RRM Performance part**

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

**Decision:** The document was **not treated**.

**R4-2016398 General discussion on NR RRM positioning test cases**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

General discussion on NR RRM positioning test cases

**Decision:** The document was **not treated**.

##### 7.7.3.2 UE requirements and test cases [NR\_pos-Perf]

###### 7.7.3.2.1 Measurement accuracy requirements [NR\_pos-Perf]

7.7.3.2.1.1 PRS RSTD [NR\_pos-Perf]

**R4-2014447 Discussion on PRS RSTD accuracy requirements**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014450 CR on PRS RSTD accuracy requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1181 Cat: B (Rel-16)  
  
 Source: CATT*

**Abstract:**

The performance requirements for RSTD measurement need to be specified.

**Discussion:**

The secretary commented that the CR number 1181 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2014574 Discussion on NR PRS RSTD Measurement Accuracy Requirements**

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

**Decision:** The document was **not treated**.

**R4-2015759 Discussion on accuracy requirements for RSTD measurement**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015760 draftCR to introduce accuracy requirements for RSTD measurement**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

There is no accuracy requirements for RSTD measurement.

**Decision:** The document was **not treated**.

**R4-2016404 On RSTD measurement accuracy**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

On RSTD measurement accuracy

**Decision:** The document was **not treated**.

**R4-2016405 RSTD measurement accuracy**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1382 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

RSTD measurements accuracy requirements are missing

**Decision:** The document was **not treated**.

**R4-2016510 PRS-RSTD measurement accuracy requirements**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

In this contribution we discuss open issues concerning PRS-RSTD measurement accuracy and propse accuracy requirements.

**Decision:** The document was **not treated**.

7.7.3.2.1.2 PRS RSRP [NR\_pos-Perf]

**R4-2014007 Accuracy requirements for PRS-RSRP measurements**

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

**Decision:** The document was **not treated**.

**R4-2014448 Discussion on PRS RSRP accuracy requirements**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014451 CR on PRS-RSRP accuracy requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1182 Cat: B (Rel-16)  
  
 Source: CATT*

**Abstract:**

The performance requirements for PRS-RSRP measurement need to be specified.

**Discussion:**

The secretary commented that the CR number 1182 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2014578 Discussion on PRS RSRP accuracy requirements for NR Positioning**

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

**Decision:** The document was **not treated**.

**R4-2014579 Link-level simulation results for PRS RSRP measurement**

*Type: other For: Information  
 Source: Intel Corporation*

**Decision:** The document was **not treated**.

**R4-2015761 Discussion on accuracy requirements for PRS-RSRP measurement**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015762 draftCR to introduce accuracy requirements for PRS-RSRP measurement**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

There is no accuracy requirements for PRS-RSRP measurement.

**Decision:** The document was **not treated**.

**R4-2016402 On PRS-RSRP measurement accuracy**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

On PRS-RSRP measurement accuracy

**Decision:** The document was **not treated**.

**R4-2016403 PRS-RSRP measurement accuracy**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1381 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

PRS-RSRP measurements accuracy requirements are missing

**Decision:** The document was **not treated**.

**R4-2016509 PRS-RSRP measurement accuracy requirements**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

In this contribution we discuss residual issues concerning PRS-RSRP measurement accuracy.

**Decision:** The document was **not treated**.

7.7.3.2.1.3 UE Rx-Tx time difference [NR\_pos-Perf]

**R4-2014449 Discussion on UE Rx-Tx time difference accuracy requirements**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014452 CR on UE Rx-Tx time difference accuracy requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1183 Cat: B (Rel-16)  
  
 Source: CATT*

**Abstract:**

The performance requirements for UE Rx-Tx time difference measurement need to be specified.

**Discussion:**

The secretary commented that the CR number 1183 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2014576 Discussion on UE RX-TX time difference measurement accuracy requirements**

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

**Decision:** The document was **not treated**.

**R4-2014577 Link-level simulation results for UE RX-TX time difference measurement**

*Type: other For: Information  
 Source: Intel Corporation*

**Decision:** The document was **not treated**.

**R4-2015763 Discussion on accuracy requirements for UE Rx-Tx time difference measurement**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015764 draftCR to introduce accuracy requirements for UE Rx-Tx time difference measurement**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

There is no accuracy requirements for UE Rx-Tx time difference measurement.

**Decision:** The document was **not treated**.

**R4-2016406 On UE Rx-Tx measurement accuracy**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

On UE Rx-Tx measurement accuracy

**Decision:** The document was **not treated**.

**R4-2016407 UE Rx-Tx measurement accuracy**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1383 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

UE Rx-Tx measurements accuracy requirements are missing

**Decision:** The document was **not treated**.

**R4-2016511 UE Rx-Tx time difference measurement accuracy requirements**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

In this contribution we discuss open issues concerning UE Rx-Tx time difference measurement accuracy and propse accuracy requirements.

**Decision:** The document was **not treated**.

###### 7.7.3.2.2 Test cases [NR\_pos-Perf]

**R4-2015370 CR on conditions for NR RSTD measurement**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1255 Cat: B (Rel-16)  
  
 Source: CATT*

**Abstract:**

The conditions for NR RSTD measurement need to be defined when specifying the performance requirements for RSTD measurement in 38.133.

**Discussion:**

The secretary commented that the CR number 1255 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2015765 Discussion on RRM test case for UE positioning requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015766 draftCR on PRS RMC for positioning test cases**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

RAN4 to define RRM test cases for positioning measurement, and a common RMC for PRS configuration is needed.

**Decision:** The document was **not treated**.

**R4-2016399 NR RRM positioning test cases list and time plan**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

NR RRM positioning test cases list and time plan

**Decision:** The document was **not treated**.

**R4-2016400 NR RRM positioning test cases structure**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1379 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

No specification structure for NR positioning test cases

**Decision:** The document was **not treated**.

###### 7.7.3.2.3 Other [NR\_pos-Perf]

**R4-2016401 Correction to UE Rx-Tx measurement report mapping**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1380 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The parameter k used in the gNB timing measurement report mapping is corrected.

**Decision:** The document was **not treated**.

##### 7.7.3.3 gNB requirements [NR\_pos-Perf]

**R4-2014002 gNB requirements for NR positioning**

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

**Abstract:**

This paper discusses some pending issues left from last meeting

**Decision:** The document was **not treated**.

**R4-2014453 Discussion on gNB measurement requirements**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2015767 Discussion on the scope gNB requirements for NR positioning**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon, CMCC*

**Decision:** The document was **not treated**.

**R4-2015768 Discussion on gNB positioning measurement requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015769 System and link level simulation results for gNB measurement requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015770 draftCR to introduce accuracy requirements for gNB positioning measurement**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

There is no accuracy requirements for gNB positioning measurement.

**Decision:** The document was **not treated**.

**R4-2016062 gNB timing positioning measurement report mapping update for k**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1358 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The parameter k used in the gNB timing measurement report mapping is corrected.

**Decision:** The document was **not treated**.

**R4-2016088 gNB Positioning Requirements**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

Discussion on WF from the last meeting and a proposal to split the requirements.

**Decision:** The document was **not treated**.

**R4-2016109 gNB Positioning UL SRS System Simulation Results**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

Simulation results according to agreed assumptions.

**Decision:** The document was **not treated**.

**R4-2016154 gNB Positioning UL SRS Link Level Simulation Results**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

Simulation results according to agreed assumptions

**Decision:** The document was **not treated**.

**R4-2016157 On gNB measurement accuracy requirements for NR positioning**

*Type: discussion For: Agreement  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discussion on gNB measurement accuracy requirements for NR positioning.

**Decision:** The document was **not treated**.

**R4-2016158 System simulation results for SRS for NR positioning**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Partial system simulation results for SRS for NR positioning.

**Decision:** The document was **not treated**.

**R4-2016159 System simulation results for SRS for NR positioning**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Updated system simulation results for SRS for NR positioning.

**Decision:** The document was **not treated**.

**R4-2016506 gNB requirements for positioning**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

This contribution discusses remaining issues about gNB requirements for NR positioning

**Decision:** The document was **not treated**.

### 7.8 Physical layer enhancements for NR URLLC [NR\_L1enh\_URLLC-Core]

#### 7.8.1 Demodulation and CSI requirements (38.101-4/38.104) [NR\_L1enh\_URLLC-Perf]

##### 7.8.1.1 Performance requirements with ultra-low BLER [NR\_L1enh\_URLLC-Perf]

###### 7.8.1.1.1 UE demodulation requirements [NR\_L1enh\_URLLC-Perf]

**R4-2014241 UE demodulation requirements for Ultra low BLER**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014541 Simulation results for Ultra-low BLER UE demodulation requirements**

*Type: other For: Information  
 Source: Intel Corporation*

**Decision:** The document was **not treated**.

**R4-2015622 CR to TS 38.101-4: Applicability rules for URLLC UE demodulation requirements**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0102 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

For URLLC UE demodulation requirements, four new demodulation requirements are defined for FR1 and two for FR2. To clearly introduce new demodulation requirements in specification, applicability rules for these demodulation requirements should be clarified.

**Decision:** The document was **not treated**.

**R4-2015862 Summary of ideal and impairment results for ultra-low BLER UE**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

Moderator summary of simulation results

**Decision:** The document was **not treated**.

**R4-2016004 CR on FRC for UE Ultra-low BLER requirements**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0109 Cat: B (Rel-16)  
  
 Source: Intel Corporation*

**Abstract:**

Definition of FR1 UE Ultra-low BLER demodulation requirements

**Decision:** The document was **not treated**.

**R4-2016105 Simulation results on UE URLLC demodulation performance requirements for Ultra low BLER**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

This paper provides our simulation results for URLLC Ultra low BLER requirements

**Decision:** The document was **not treated**.

**R4-2016107 CR to TS 38.101-4: Performance requirements for URLLC PDSCH 0.001% BLER**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0112 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

New feature of PDSCH with 0.001% BLER were defined for URLLC. In order to test the performance of this new feature, a demodulation requirements are introduced as per RAN4 agreements.

**Decision:** The document was **not treated**.

###### 7.8.1.1.2 CSI requirements [NR\_L1enh\_URLLC-Perf]

**R4-2014542 Discussion on CSI requirements for Ultra-low BLER**

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

**Decision:** The document was **not treated**.

**R4-2015615 Discussion on CSI requireements with ultra low-BLER**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Discuss the open issues.

**Decision:** The document was **not treated**.

**R4-2015621 CR to TS 38.101-4: Applicability rules for URLLC CSI requirements**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0101 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

A new CQI table is designed for URLLC, to introduce the new CQI requirements, the applicability rule for URLLC CQI requirements should be clearly defined.

**Decision:** The document was **not treated**.

**R4-2015863 On 0.001%BLER CQI test**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Discussion on CQI test

**Decision:** The document was **not treated**.

**R4-2015864 Simulation results on URLLC UE CQI reporting requirements for CQI table 3**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

This paper provides our simulation results for 0.001% BLER

**Decision:** The document was **not treated**.

**R4-2016375 Draft CR on CQI reporting requirements with Table 3**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0114 Cat: B (Rel-16)  
  
 Source: Apple*

**Abstract:**

CQI Table 3 is introduced for target BLER of 10-5 on PDSCH. CQI reporting requirements for Table 3 are agreed to be introduced for URLLC in RAN4.

**Discussion:**

The secretary commented that the CR number should be zero padded, i.e. 114 -> 0114, and encouraged the source company to consider removal of 'Draft' from the title because the document type is CR.

**Decision:** The document was **not treated**.

**R4-2016376 Draft CR on Applicability of CQI reporting requirements with Table 3**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0115 Cat: F (Rel-16)  
  
 Source: Apple*

**Abstract:**

CQI Table 3 is introduced for target BLER of 10-5 on PDSCH. CQI reporting requirements for Table 3 are agreed to be introduced for URLLC in RAN4. Applicability of newly added tests for optional UE features needs to be added.

**Discussion:**

The secretary commented that the CR number should be zero padded, i.e. 115 -> 0115, and encouraged the source company to consider removal of 'Draft' from the title because the document type is CR.

**Decision:** The document was **not treated**.

**R4-2016445 Views on URLLC Ultra-low BLER CSI Reporting Test Cases**

*Type: discussion For: (not specified)  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

###### 7.8.1.1.3 BS demodulation requirements [NR\_L1enh\_URLLC-Perf]

**R4-2014543 Simulation results for Ultra-low BLER BS requirements**

*Type: other For: Information  
 Source: Intel Corporation*

**Decision:** The document was **not treated**.

**R4-2015024 Test requirements for 0.001% BLER**

*Type: CR For: Agreement  
 38.141-1 v16.5.0 CR-0156 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

This CR to introduce URLLC into the performance specifications is created according to the CR work split agreed at RAN4#95-e. The following areas are covered:

Requirements/Measurement of Performance requirements

Annex C.3 / Measurement system set-up Annex D (for 0.001% BLER)

**Decision:** The document was **not treated**.

**R4-2015025 Introduction of URLLC 0.001% BLER requirement**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0234 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

There is a need to introduce the URLLC requirement for 0.001% BLER, as discussed for the CR split at RAN4#95-e.

**Decision:** The document was **not treated**.

**R4-2015094 On NR Rel-16 BS demodulation performance requirements with ultra-low BLER**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we have explained our choices for an ultra-low BLER URLLC statistical testing appendix CR. No new simulation results were included.

**Decision:** The document was **not treated**.

**R4-2015096 CR for 38.104: Ultra high reliability BS demodulation requirements**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0243 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Endorsed draftCR in last meeting.

Errors in configuration tables.

**Decision:** The document was **not treated**.

**R4-2015098 CR for 38.141-1: URLLC testing methodology appendix**

*Type: CR For: Agreement  
 38.141-1 v16.5.0 CR-0157 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell, Intel, Ericsson, Huawei, HiSilicon*

**Abstract:**

The WF [R4-2012646] requested to provide a detailed description of the test methodology in the BS conformance specification

**Decision:** The document was **not treated**.

**R4-2015099 CR for 38.141-2: URLLC testing methodology appendix**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0235 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell, Intel, Ericsson, Huawei, HiSilicon*

**Abstract:**

The WF [R4-2012646] requested to provide a detailed description of the test methodology in the BS conformance specification.

**Decision:** The document was **not treated**.

**R4-2015625 CR to TS 38.141-1: Applicability of URLLC BS demodulation requirements**

*Type: CR For: Agreement  
 38.141-1 v16.5.0 CR-0163 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

As demodulation requirements for PUSCH mapping Type B with 2 symbol length allocated were agreed to be introduced in specification, the existing applicability for mapping type is needed to be updated when considering the new requirements.

**Decision:** The document was **not treated**.

**R4-2015627 CR to TS 38.141-2: FRC for FR1 URLLC BS performance requirements**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0240 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

For URLLC test cases, new FRCs are defined and agreed in RAN4.

**Decision:** The document was **not treated**.

**R4-2015861 Summary of ideal and impairment results for ultra-low BLER BS**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

Moderator summary of simulation results

**Decision:** The document was **not treated**.

**R4-2015867 Base station ultra-low BLER simulation results**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

Simulation results

**Decision:** The document was **not treated**.

##### 7.8.1.2 Performance requirements with higher BLER [NR\_L1enh\_URLLC-Perf]

###### 7.8.1.2.1 UE demodulation requirements [NR\_L1enh\_URLLC-Perf]

**R4-2014242 UE demodulation requirements with higher BLER**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014243 CR on requirements with slot aggreagation in FR2**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0085 Cat: B (Rel-16)  
  
 Source: Apple*

**Abstract:**

Demodulation performance requirements for PDSCH slot aggregation feature in FR2 has been agreed to be introduced in RAN4 for URLLC. New requirements for this need to be added to for this.

**Decision:** The document was **not treated**.

**R4-2014544 Discussion on UE demodulation requirements for URLLC**

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

**Decision:** The document was **not treated**.

**R4-2015129 Discussion on eMBB UE performance requirement with pre-emption**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2015616 Simulation results on UE PDSCH demodulation reuqirements with higher BLER and low latency**

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

**Abstract:**

provide simulation results for FR1 low latency case

**Decision:** The document was **not treated**.

**R4-2015617 Discussion on URLLC UE demodulation requirements with higher BLER and low latency**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Discuss the open issues.

**Decision:** The document was **not treated**.

**R4-2015620 CR to TS 38.101-4: Addition of UE performance requirements for FR1 URLLC PDSCH repetitions over multiple slots**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0100 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

New feature of PDSCH repetitions over multiple slots were defined for URLLC. In order to test the performance of this new feature, a demodulation requirements are introduced as per RAN4 agreements.

**Decision:** The document was **not treated**.

**R4-2015628 Summary of simulation results for UE URLLC demodulation performance requirements**

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

**Decision:** The document was **not treated**.

**R4-2016005 CR on FRC for UE Higher BLER requirements**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0110 Cat: B (Rel-16)  
  
 Source: Intel Corporation*

**Abstract:**

Definition of FR1 UE demodulation requirements for scenarios with repetition and Type B mapping

**Decision:** The document was **not treated**.

**R4-2016103 Discussion on UE URLLC demodulation performance requirements with higher BLER**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This paper provides an overview of UE URLLC demodulation requirements

**Decision:** The document was **not treated**.

**R4-2016104 Simulation results on UE URLLC demodulation performance requirements with higher BLER**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

This paper provides our simulation results for URLLC High BLER requirements

**Decision:** The document was **not treated**.

**R4-2016106 CR to TS 38.101-4: Performance requirements for URLLC High BLER feature tests**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0111 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

New feature of PDSCH URLLC feature test requirements including:

Test case for pre-emption indication for FR1

FR2 Type B requirements

**Decision:** The document was **not treated**.

**R4-2016462 Views on URLLC High BLER Demodulation Test Cases**

*Type: discussion For: (not specified)  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2016504 CR on FR1 PDSCH Mapping Type B and Processing Capability 2 Requirements**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0121 Cat: B (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Draft CR R4-2012652 was endorsed in last meeting with this change: FR1 PDSCH Mapping Type B and Processing Capability 2 requirements are not defined.

**Decision:** The document was **not treated**.

###### 7.8.1.2.2 BS demodulation requirements [NR\_L1enh\_URLLC-Perf]

**R4-2014545 Discussion on BS demodulation requirements for URLLC**

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

**Decision:** The document was **not treated**.

**R4-2014820 CR for TS 38.141-2: Introduction of performance requirements of PUSCH repetition type A and PUSCH mapping type B for URLLC**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0232 Cat: B (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Abstract:**

This CR introduces performance requirements of PUSCH repetition Type A and PUSCH mapping type B with non-slot transmission for URLLC.

**Decision:** The document was **not treated**.

**R4-2014821 Views on NR BS performance for high-reliability and low-latency**

*Type: other For: Approval  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015023 FRCs for URLLC**

*Type: CR For: Agreement  
 38.141-1 v16.5.0 CR-0155 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

This CR to introduce URLLC into the performance specifications is created according to the CR work split agreed at RAN4#95-e. The following areas are covered FRC

A draft CR with the same content was endorsed in R4-2012654 at RAN4#96-e

**Decision:** The document was **not treated**.

**R4-2015095 On NR Rel-16 BS demodulation performance requirements with higher BLER and simulation results**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we have provided our views on various open high reliability and low latency (e)URLLC issues. In particular on, remaining configurations for FR1 high reliability, remaining configurations for FR2 low latency, and introduction of Rel-16

**Decision:** The document was **not treated**.

**R4-2015097 CR for 38.104: Low latency BS demodulation requirements**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0244 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Endorsed draftCR in last meeting.

Errors in configuration tables.

**Decision:** The document was **not treated**.

**R4-2015122 Discussion and simulation results for BS URLLC requirement**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2015123 Draft CR on PUSCH repetition type A and PUSCH mapping type B radiated performance requirement for TS 38.104**

*Type: draftCR For: Endorsement  
 38.104 v16.5.0  
 Source: Samsung*

**Abstract:**

PUSCH requirements with high reliability and lower latency have been introduced in Rel-16 URLLC WI for FR2

**Decision:** The document was **not treated**.

**R4-2015124 Draft CR on FRC for URLLC BS radiated performance requirement for TS 38.141-2**

*Type: draftCR For: Endorsement  
 38.141-2 v16.5.0  
 Source: Samsung*

**Abstract:**

PUSCH requirements with high reliability and lower latency have been introduced in URLLC in Rel-16. There is no FRC table for FR2 PUSCH requirements with high reliablity and lower latency requirement testing

**Decision:** The document was **not treated**.

**R4-2015618 Discussion on URLLC BS demodulation requirements with higher BLER and low latency**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Discuss the open issues.

**Decision:** The document was **not treated**.

**R4-2015619 Simulation results on PUSCH demodulation reuqirements with higher BLER and low latency**

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

**Abstract:**

provide simulation results for FR1 high reliability and low latency case

**Decision:** The document was **not treated**.

**R4-2015623 CR to TS 38.104: Addition of BS performance requirements for URLLC PUSCH repetition Type A**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0249 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

PUSCH repetition Type A was agreed to be introduced as the new feature for URLLC to improve the high reliability for PUSCH performance. In order to verify the demodulation performance for PUSCH repetition Type A, the new demodulation requirements are defined.

**Decision:** The document was **not treated**.

**R4-2015624 CR to TS 38.141-1: Addition of BS conformance testing for URLLC demodulation requirements with higher BLER**

*Type: CR For: Agreement  
 38.141-1 v16.5.0 CR-0162 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

PUSCH repetition Type A was defined as the new feature to improve the high reliability for PUSCH performance. PUSCH mapping Type B with low number of symbols was agreed to be configured to reduce latency. In order to verify these two features for URLLC, the demodulation requirements are defined and should be introduced in this specification.

**Decision:** The document was **not treated**.

**R4-2015626 CR to TS 38.141-2: Addition of BS conformance testing for FR2 URLLC PUSCH repetition Type A**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0239 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

PUSCH repetition Type A was agreed to be introduced as the new feature for URLLC FR2 to improve the high reliability for PUSCH performance. In order to verify the demodulation performance for PUSCH repetition Type A, the new demodulation requirements are defined.

**Decision:** The document was **not treated**.

**R4-2015629 Summary of simulation results for BS URLLC demodulation performance requirements**

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

**Decision:** The document was **not treated**.

**R4-2015865 BS demodulation parameters**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Proposals for remaining open parameters

**Decision:** The document was **not treated**.

**R4-2015866 Simulation results for BS high BLER URLLC**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

Simulation results

**Decision:** The document was **not treated**.

**R4-2016006 CR on FR2 requirements for PUSCH mapping Type B with low number of symbols**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0246 Cat: B (Rel-16)  
  
 Source: Intel Corporation*

**Abstract:**

Definition of FR2 BS PUSCH demodulation requirements for scenarios with PUSCH mapping Type B with low number of symbols

**Decision:** The document was **not treated**.

### 7.9 Enhancements on MIMO for NR [NR\_eMIMO]

#### 7.9.1 UE RF core requirements maintenance (38.101) [NR\_eMIMO-Core]

##### 7.9.1.1 DMRS enhancement with PI/2 BPSK [NR\_eMIMO-Core]

**R4-2016481 CR for TS 38.101-1: correction of Pi/2 BPSK**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0568 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

There was no evaluation of Pi/2 BPSK with new DMRS for intra-band CA in Rel-16. And there is no A-MPR table in clause 6.2A.2.1.

**Decision:** The document was **not treated**.

##### 7.9.1.2 Uplink Tx Full Power transmission [NR\_eMIMO-Core]

**R4-2016480 On MPR for TxD and UL MIMO**

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

**Decision:** The document was **not treated**.

#### 7.9.2 RRM core requirements maintenance (38.133) [NR\_eMIMO-Core]

**R4-2014244 Discussion on RRM requirements for Multi-TRP**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014245 CR to 38.133 on RRM requirements for multi-TRxP**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1143 Cat: F (Rel-16)  
  
 Source: Apple*

**Abstract:**

In RAN4#96e it was agreed that there are no impacts to MRTD requirements due to multi TRxP deployment and in addition it was captured in chairman’s notes that signals from multi-TRxPs of the same serving cell will be received within CP in intra-band contiguous CA scenarios. The agreement doesn’t cover the case of multiple CCs. There is a need to further clarify that signals from all CCs and multi-TRxP are received within CP.

**Decision:** The document was **not treated**.

**R4-2014246 CR to 38.133 on Link recovery requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1144 Cat: F (Rel-16)  
  
 Source: Apple*

**Abstract:**

PBFD and PCBD was introduced in Rel-16 eMIMO for BFD and CBD respectively for SCell. Currently, PBFD and PCBD are defined as:

The values of PBFD used in Table 8.5.3.2-1 and Table 8.5.3.2-2 are defined as

For each CSI-RS resource in the set configured for PCell or PSCell

-PBFD = 1,.

For each CSI-RS resource in the set configured for a Scell

-PBFD is the number of band(s) on which UE is performing beam failure detection only for Scell.

The values of PCBD used in Table 8.5.5.2-1 and Table 8.5.5.2-2 are defined as

For each SSB resource in the set configured for Pcell or PSCell

-PCBD = 1.

For each SSB resource in the set configured for a Scell

-PCBD is the number of band(s) on which UE is performing candidate beam detection only for Scell.

The values of PCBD used in Table 8.5.6.2-1 and Table 8.5.6.2-2 are defined as

For each CSI-RS resource in the set configured for Pcell or PSCell

-PCBD = 1.

For each CSI-RS resource in the set configured for a Scell

-PCBD is the number of band(s) on which UE is performing candidate beam detection only for Scell.

Based on the current definition of PBFD and PCBD, for each resource in PCell or PSCell, the value is 1. This would be fine for SA, EN-DC and NE-DC when only PCell or PScell are configured. But this doesn’t cover NR-DC when we have both PCell and PScell configured.

The definition of PBFD and PCBD needs be updated to cover NR-DC case.

As an example, the proposed change for PCBD for SSB based CBD is captured below:

The values of PCBD used in Table 8.5.5.2-1 and Table 8.5.5.2-2 are defined as

For each SSB resource in the set configured for PCell or PSCell in EN-DC or NE-DC or SA; or PCell in NR-DC

- PCBD = 1.

For each SSB resource in the set configured for PSCell in NR-DC

- PCBD = 1 + number of band(s) on which UE is performing candidate beam detection only for SCell.

For each SSB resource in the set configured for a Scell

- PCBD is the number of band(s) on which UE is performing candidate beam detection only for Scell in EN-DC or NE-DC or SA

- PCBD = 1+ number of band(s) on which UE is performing candidate beam detection only for Scell.

Similar changes are required for PBFD and PCBD for CSI-RS based CBD

**Discussion:**

The secretary asked what is the correct Version? It reads 16.2.0 on the coversheet but the CR is allocated for 16.5.0.

**Decision:** The document was **not treated**.

**R4-2015826 CR: Clarification of L1-SINR reporting with CSI-RS based CMR and dedicated IMR configured**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1334 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Clarification of L1-SINR reporting with CSI-RS based CMR and dedicated IMR configured.

**Decision:** The document was **not treated**.

**R4-2016029 DraftCR to TS38.133 on L1-SINR Measurement Requirement**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Samsung*

**Abstract:**

L1-SINR measurement is introduced in Rel-16 MIMO enhancement work item. Accordingly, L1-SINR measurement requirement needs to be defined. However, current section 9.8 for L1-SINR measurement requirement in TS38.133 is not complete.

**Decision:** The document was **not treated**.

#### 7.9.3 RRM perf. requirements (38.133) [NR\_eMIMO-Perf]

##### 7.9.3.1 General [NR\_eMIMO-Perf]

**R4-2014756 Discussion on RRM Performance part for Rel-16 NR eMIMO**

*Type: discussion For: Approval  
 Source: Samsung*

**Decision:** The document was **not treated**.

##### 7.9.3.2 L1-SINR measurement accuracy [NR\_eMIMO-Perf]

**R4-2014247 Simulation results for L1-SINR Measurement accuracy**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014297 Requirements for L1-SINR measurement accuracy**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Qualcomm CDMA Technologies*

**Abstract:**

We present the simulation results in this contribution and propose L1-SINR accuracy values.

**Decision:** The document was **not treated**.

**R4-2014603 Discussion on L1-SINR measurement accuracy requirement**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014758 Simulation results summary for L1-SINR measurement accuracy**

*Type: discussion For: Information  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014759 Discussion on L1-SINR measurement accuracy requirement**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2015471 Discussion on L1-SINR measurement accuracy requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016239 Simulation results of L1-SINR measurement accuracy**

*Type: other For: Discussion  
 38.133 v..  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The document has presented the simulation results of L1-SINR measurement accuracy for CMR-only, SSB+NZP-IMR, SSB+ZP-IMR, CSI-RS+NZP-IMR and CSI-RS+ZP-IMR.

**Decision:** The document was **not treated**.

**R4-2016240 CR to TS 38.133: Adding L1-SINR accuracy requirements**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Following the approval of the L1-SINR measurement requirements, the L1-SINR accuracy requirements need to be specified.

**Decision:** The document was **not treated**.

##### 7.9.3.3 Test cases [NR\_eMIMO-Perf]

###### 7.9.3.3.1 L1-SINR measurements [NR\_eMIMO-Perf]

**R4-2014291 Draft test case CR on measurement procedure of L1-SINR for CSI-RS-based CMR and no dedicated IMR**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Qualcomm CDMA Technologies*

**Abstract:**

The core requirements were completed in discussions and specified in R4 96-e. This CR aims to introduce the L1-SINR measurement procedure test case for the scenario of CSI-RS based CMR and no dedicated IMR.

**Decision:** The document was **not treated**.

**R4-2014604 Discussion on test cases for L1-SINR measurement**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014757 DraftCR on L1-SINR measurement test case with CSI-RS CMR and dedicated IMR**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Samsung*

**Abstract:**

In Rel-16, the L1-SINR measurement procedure requirement is defined. Therefore the according test cases should be defined in Annex A. In this draft CR, CSI-RS based CMR and dedicated IMR scenario is introduced.

**Decision:** The document was **not treated**.

**R4-2015472 Discussion on L1-SINR measurement tests for NR eMIMO**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015473 DraftCR on L1-SINR measurement procedure tests with SSB based CMR and dedicated IMR**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

In Rel-16, the L1-SINR measurement procedure tests with SSB based CMR and dedicated IMR need to be introduced for NR eMIMO.

**Decision:** The document was **not treated**.

**R4-2015827 Simulation results of L1-SINR measurement accuracy**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution provides the simulation results of L1-SINR measurement accuracy.

**Decision:** The document was **not treated**.

###### 7.9.3.3.2 BFR for SCell [NR\_eMIMO-Perf]

**R4-2014605 Discussion on test cases for SCell BFR**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014606 Introduction of test cases for BFD and link recovery procedure for Scell**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: MediaTek inc.*

**Abstract:**

The discussion of RRM core part for SCell BFR has been closed and it has been agreed that the test case for SCell BFR shall be defined in performance part. According to email discussion, the SCell BFR is divided into two categories as follows:

BFD and link recovery procedure (UE is not provided by schedulingRequestID-BFR-SCell-r16)

Link Recovery with Link Recovery Request (UE is provided by schedulingRequestID-BFR-SCell-r16)

The details between these two categories is discussed in discussion paper and the test case in this CR is defined for category 1 “BFD and link recovery procedure”.

**Decision:** The document was **not treated**.

**R4-2015828 Link recovery test with link recovery requests**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the test case for link recovery with LRR

**Decision:** The document was **not treated**.

**R4-2015829 Draft CR: Introduction of test case of link recovery with link recovery requests**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Ericsson*

**Abstract:**

Introduction of test case of link recovery with link recovery requests

**Decision:** The document was **not treated**.

###### 7.9.3.3.3 DL/UL beam indication with reduced latency and overhead [NR\_eMIMO-Perf]

**R4-2014010 Test cases for applicable timing for PL RS activated by MAC-CE**

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

**Decision:** The document was **not treated**.

**R4-2014011 [draft CR] Test cases for applicable timing for PL RS activated by MAC-CE**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: ZTE Corporation*

**Abstract:**

Add test cases for delay requirements for pathloss RS activation / update.

**Decision:** The document was **not treated**.

###### 7.9.3.3.4 Others [NR\_eMIMO-Perf]

**R4-2014292 Draft test case CR on measurement performance of L1-SINR for CSI-RS-based CMR and no dedicated IMR**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Qualcomm CDMA Technologies*

**Abstract:**

The core requirements were completed in discussions and specified in R4 96-e. This CR aims to introduce the test case of measurement performance for the scenario of CSI-RS based CMR and no dedicated IMR.

**Decision:** The document was **not treated**.

**R4-2015474 DraftCR on L1-SINR measurement accuracy tests with SSB based CMR and dedicated IMR**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

In Rel-16, the L1-SINR measurement accuracy tests with SSB based CMR and dedicated IMR need to be introduced for NR eMIMO.

**Decision:** The document was **not treated**.

#### 7.9.4 Demodulation and CSI requirements (38.101-4) [NR\_eMIMO-Perf]

##### 7.9.4.1 General [NR\_eMIMO-Perf]

**R4-2014248 Draft CR for eMIMO demod requirements - General and Applicability rule**

*Type: draftCR For: Endorsement  
 38.101-4 v16.2.0  
 Source: Apple*

**Abstract:**

Under eMIMO WI, PDSCH demodulation requirements are agreed to be defined for multi-TRP multi-DCI and single DCI SDM scheme. The applicability of the newly defined tests needs to be captured.

**Decision:** The document was **not treated**.

**R4-2014741 Views for Multi-Panel/TRP transmision schemes**

*Type: discussion For: Approval  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014742 Simulation results summary for Rel-16 eMIMO WI**

*Type: discussion For: Information  
 Source: Samsung*

**Decision:** The document was **not treated**.

##### 7.9.4.2 Demodulation requirements [NR\_eMIMO-Perf]

**R4-2015830 Draft CR: PDSCH FRC for eMIMO sDCI/mDCI-based SDM transmission**

*Type: draftCR For: Endorsement  
 38.101-4 v16.2.0  
 Source: Ericsson*

**Abstract:**

FRC for PDSCH demodulation requirement with sDCI/mDCI-based SDM transmission is missing.

**Decision:** The document was **not treated**.

###### 7.9.4.2.1 Single-DCI based SDM scheme [NR\_eMIMO-Perf]

**R4-2014557 Views on UE demodulation requirements for single-DCI based multi-TRP SDM Tx scheme**

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

**Decision:** The document was **not treated**.

**R4-2014743 Simulation results for Single-DCI SDM scheme**

*Type: discussion For: Information  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2015650 Simulaiton results of PDSCH requirements for Single-DCI SDM scheme**

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

**Decision:** The document was **not treated**.

**R4-2015653 DraftCR for 38.101-4: Introduction of PDSCH requirement with Single-DCI based SDM scheme**

*Type: draftCR For: Endorsement  
 38.101-4 v16.2.0  
 Source: Huawei, HiSilicon*

**Abstract:**

RAN4 agree to introduce PDSCH requirements of Single-DCI based SDM scheme and the aligned requirements need to be added into the specfication

**Decision:** The document was **not treated**.

**R4-2015831 Simulation results of single-DCI based SDM transmission**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

This contribution provides the PDSCH simulation results of sDCI-based SDM transmission schemes.

**Decision:** The document was **not treated**.

###### 7.9.4.2.2 Multi-DCI based transmission scheme [NR\_eMIMO-Perf]

**R4-2014556 Views on UE demodulation requirements for multi-DCI based multi-TRP Tx schemes**

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

**Decision:** The document was **not treated**.

**R4-2014744 Simulation results for Multi-DCI transmission schemes**

*Type: discussion For: Information  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2015128 Simulation results on PDSCH performance requirements for multi-DCI based multi-TRP transmission**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2015648 Discussion on left open issues of PDSCH performance requirements for multi/single-DCI transmission scheme**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015649 Simulation results of PDSCH requirements for Multi-DCI transmission scheme**

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

**Decision:** The document was **not treated**.

**R4-2015654 DraftCR for 38.101-4: Introduction of PDSCH requirement with Multi-DCI based transmission scheme**

*Type: draftCR For: Endorsement  
 38.101-4 v16.2.0  
 Source: Huawei, HiSilicon*

**Abstract:**

RAN4 agree to introduce PDSCH requirements of Multi-DCI based transmission scheme and the aligned requirements need to be added into the specfication

**Decision:** The document was **not treated**.

**R4-2015832 PDSCH requirements for mDCI/sDCI-based SDM transmission**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the PDSCH demodulation requirements with mDCI/sDCI-based SDM transmission schemes.

**Decision:** The document was **not treated**.

**R4-2015833 Simulation results of multi-DCI based SDM transmission**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

This contribution provides the PDSCH simulation results of mDCI-based SDM transmission schemes.

**Decision:** The document was **not treated**.

###### 7.9.4.2.3 Single-DCI based transmission schemes (URLLC) [NR\_eMIMO-Perf]

**R4-2014558 Views on UE demodulation requirements for single-DCI based multi-TRP Repetition Tx schemes**

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

**Decision:** The document was **not treated**.

**R4-2014559 CR to TS 38.101-4: Performance requirements single-DCI based multi-TRP Repetition Tx schemes**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0089 Cat: B (Rel-16)  
  
 Source: Intel Corporation*

**Abstract:**

Add Rel-16 DL performacne requirements for single-DCI based multi-TRP Tx schemes

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked on the coversheet, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2014745 Simulation results for Single-DCI URLLC schemes**

*Type: discussion For: Information  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2015651 Discussion on PDSCH performance reuqirements for Multi-TRP URLLC schemes**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015652 Simulation results of PDSCH requirements for Single-DCI URLLC schemes**

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

**Decision:** The document was **not treated**.

**R4-2015834 Discussion on sDCI-based FDM/TDM transmission schemes**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the PDSCH demodulation requirements on sDCI-based FDM/TDM transmission schemes.

**Decision:** The document was **not treated**.

##### 7.9.4.3 CSI requirements [NR\_eMIMO-Perf]

**R4-2014249 On PMI reporting requirements with eType II codebook**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014740 Views and simulation results for Rel-16 Type II PMI test case**

*Type: discussion For: Approval  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014747 Draft CR for introduction of Rel-15 Type II PMI test cases**

*Type: draftCR For: Endorsement  
 38.101-4 v16.2.0  
 Source: Samsung*

**Abstract:**

Introduce PMI tese case to verify UE reporting accuracy for Rel-16 Type II codebook

**Decision:** The document was **not treated**.

**R4-2014949 On PMI reporting requirements for enhanced Type II codebooks**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015646 Discussion on the test setup of (e)Type II codebook based PMI reporting test**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015647 Simulation results for SU-MIMO eType II codebook based PMI reporting test**

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

**Decision:** The document was **not treated**.

**R4-2016033 Discussion on Type II PMI reporting test definition**

*Type: discussion For: Approval  
 Source: Rohde & Schwarz*

**Decision:** The document was **not treated**.

**R4-2016101 Simulation results for Rel-16 Type II codebook**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

This paper provides our simulation results for Rel-16 Type II codebook

**Decision:** The document was **not treated**.

**R4-2016102 Evaluations of Rel-16 Type II PMI testing**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This paper provides our views on Rel-16 Type II codebook PMI testing

**Decision:** The document was **not treated**.

**R4-2016429 Views on CSI Reporting test cases for eMIMO**

*Type: discussion For: (not specified)  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

### 7.10 Add support of NR DL 256QAM for FR2 [NR\_DL256QAM\_FR2]

#### 7.10.1 Demodulation and CSI requirements (38.101-4) [NR\_DL256QAM\_FR2-Perf]

##### 7.10.1.1 UE Demodulation requirements [NR\_DL256QAM\_FR2-Perf]

**R4-2014546 Discussion on UE demodulation requirements for FR2 DL 256QAM**

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

**Decision:** The document was **not treated**.

**R4-2014547 Summary of simulation results FR2 DL 256QAM demodulation requirements**

*Type: other For: Information  
 Source: Intel Corporation*

**Decision:** The document was **not treated**.

**R4-2014674 Updated work plan for FR2 DL 256QAM demodulation and CSI reporting requirements**

*Type: Work Plan For: Approval  
 Source: China Telecom*

**Decision:** The document was **not treated**.

**R4-2014675 On UE demodulation requirements for FR2 DL 256QAM**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Decision:** The document was **not treated**.

**R4-2015019 Propagation Condition for FR2 DL 256QAM**

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

**Decision:** The document was **not treated**.

**R4-2015021 nn**

*Type: draftCR For: Endorsement  
 38.101-4 v16.2.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015314 Views on 256QAM UE requirements for FR2**

*Type: discussion For: Discussion  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015596 CR on applicability and FRC for PDSCH normal demodulation for DL 256QAM for FR2**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0095 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduce applicability rules and FRC for PDSCH normal demodulation for DL 256QAM for FR2 as per RAN4 agreements

**Discussion:**

The secretary commented that the CR number 0095 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2015597 Discussion on PDSCH requirements for NR DL 256QAM for FR2**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016095 Simulation results for FR2 256QAM UE demodulation**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

This paper provides simulation results for UE demodulation for FR2 256QAM

**Decision:** The document was **not treated**.

##### 7.10.1.2 SDR requirements [NR\_DL256QAM\_FR2-Perf]

**R4-2014548 Discussion on SDR requirements for FR2 DL 256QAM**

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

**Decision:** The document was **not treated**.

**R4-2014676 On SDR requirements for FR2 DL 256QAM**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Decision:** The document was **not treated**.

**R4-2015315 Views on 256QAM SDR requirements for FR2**

*Type: discussion For: Discussion  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015598 CR on SDR requirements for DL 256QAM for FR2**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0096 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduce SDR requirements for DL 256QAM for FR2 if RAN4 achieve agreements

**Discussion:**

The secretary commented that the CR number 0096 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2015599 Discussion on SDR requirements for NR DL 256QAM for FR2**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015600 Summary of simulation results for SDR requirements**

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

**Decision:** The document was **not treated**.

**R4-2016093 Discussion on FR2 DL 256QAM? SDR Requirements**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

This paper provides our views on SDR requirements for FR2 256QAM

**Decision:** The document was **not treated**.

##### 7.10.1.3 CSI requirements [NR\_DL256QAM\_FR2-Perf]

**R4-2014677 On CQI reporting requirements for FR2 DL 256QAM**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Decision:** The document was **not treated**.

**R4-2014678 Summary of CQI reporting simulation results for FR2 DL 256QAM (TDD)**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Decision:** The document was **not treated**.

**R4-2015601 Discussion and simulation results on CQI requirements for NR DL 256QAM for FR2**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016092 Discussion on FR2 DL 256QAM? UE CQI testing**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

This paper provides our views on CSI performance requirements for FR2 256QAM

**Decision:** The document was **not treated**.

**R4-2016094 Simulation results for FR2 256QAM UE CQI performance requirements**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

This paper provides our simulation results for UE CQI performance requirements for FR2 256QAM

**Decision:** The document was **not treated**.

### 7.11 RF requirements for NR frequency range 1 (FR1) [NR\_RF\_FR1]

#### 7.11.1 RF core requirements maintenance [NR\_RF\_FR1-Core ]

**R4-2016042 CR Correction to NS\_27 and Band 10 protection 38101-1 Rel16**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0556 Cat: A (Rel-16)  
  
 Source: Skyworks Solutions Inc.*

**Abstract:**

This is a combined CR according to meeting guidelines:

A7 region contours do not match required back-off levels,

Band 10 protection removal has been agreed for LTE in R4-2011521. This CR applies this correction to relevant NR bands and NR CA combinations

**Decision:** The document was **not treated**.

##### 7.11.1.1 Intra-band contiguous DL CA for FR1 [NR\_RF\_FR1-Core]

**R4-2014956 CR to TS 38.101-1 on operating bands for intra-band CA (Rel-16)**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0523 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

For brevity, the operating bands for intra-band contiguous and non-contiguous CA in FR2 have been agreed to combine into one table. To be consistent with FR2, it is suggested in FR1 to use the same description of operating bands for intra-band contiguous and non-contiguous CA. In addition, section title for SUL bands should be moved from section 5.2B to 5.2C. NR band combination for SUL CA\_n78\_SUL\_n78-n86 should be corrected accordingly.

**Decision:** The document was **not treated**.

##### 7.11.1.2 Intra-band UL CA for FR1 power class 3 [NR\_RF\_FR1-Core]

**R4-2014171 CA\_n7B AMPR REFSENS**

*Type: other For: Approval  
 38.101-1 v..  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2014518 A-MPR definition for CA\_n7B, CA\_n48B, CA\_n41B and CA\_n41C**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0507 Cat: F (Rel-16)  
  
 Source: Nokia*

**Abstract:**

A-MPR is missing from CA configurations CA\_n7B, CA\_n41B, CA\_n41C and CA\_n48B altough these are already listed in specification as valid uplink configurations. CA\_7B needs MSD.

**Decision:** The document was **not treated**.

**R4-2014519 Simulation results for CA\_7B A-MPR.**

*Type: discussion For: Discussion  
 Source: Nokia*

**Decision:** The document was **not treated**.

**R4-2014909 FR1 intra-band UL NCCA frequency separation and power class**

*Type: other For: Approval  
 38.101-1 v..  
 Source: Apple Inc.*

**Decision:** The document was **not treated**.

**R4-2016009 CA\_n7B 50MHz Measurements for A-MPR and MSD Test Points**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Skyworks Solutions Inc.*

**Decision:** The document was **not treated**.

**R4-2016513 CR for intra-band UL CA non-contiguous CA requirement**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0574 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

This CR capture the agreement for intra-band UL non-contiguous CA in RAN4 #95e and 96-e meeting.

Since intra-band UL non-contiguous CA is introduced in Rel-16, the UL RF requirement shall be added.

**Decision:** The document was **not treated**.

**R4-2016515 on FR1 intra-band UL CA Pcmax**

*Type: other For: Approval  
 38.101-1 v..  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

##### 7.11.1.3 DC location for intra-band UL CA [NR\_RF\_FR1-Core]

**R4-2014714 DC location future compatible proposal**

*Type: discussion For: Approval  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2014910 DC location for intra-band UL CA**

*Type: other For: Discussion  
 38.101-1 v..  
 Source: Apple Inc.*

**Decision:** The document was **not treated**.

**R4-2015212 More on DC location reporting for Intra band UL CA**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution shares identified issue on the 2nd candidate in R4-2011906 using permutations of all possible simultaneously activated BWPs within configured BWPs whose details were proposed in R4-2011472 and provides an alternative

**Decision:** The document was **not treated**.

**R4-2015565 Clarification of DC location for intra-band UL CA**

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

**Decision:** The document was **not treated**.

**R4-2015997 Future proof UE DC location signaling for intra-band UL CA**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Skyworks Solutions Inc.*

**Abstract:**

RAN4 should discuss the point further to find a future proof solution for FR1 and FR2 that covers DC location signalling in an UL CA operation and accounting for the BWP configuration for a larger number of CCs.

**Decision:** The document was **not treated**.

**R4-2016514 on FR1 UL CA DC location**

*Type: other For: Approval  
 38.101-1 v..  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

##### 7.11.1.4 Switching period between case 1 and case 2 [NR\_RF\_FR1-Core]

**R4-2014464 DL interruption for band combinations supporting carrier switching**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2015195 CR to 38.101-1 Add requirement on the UL CA configurations with no DL interruption**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0533 Cat: F (Rel-16)  
  
 Source: China Telecom*

**Abstract:**

In RAN4 #96e, it was agreed in WF R4-2011731 that DL interruption is not allowed for some inter-band EN-DC and UL CA configurations. The exact EN-DC and UL CA configurations for which DL interruptions are not allowed will be captured in TS 38.101-1 and TS 38.101-3 respectively

**Decision:** The document was **not treated**.

**R4-2015196 CR to 38.101-3: Add requirement on the inter-band EN-DC with no DL interruption**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0386 Cat: F (Rel-16)  
  
 Source: China Telecom*

**Abstract:**

In RAN4 #96e, it was agreed in WF R4-2011731 that DL interruption is not allowed for some inter-band EN-DC and UL CA configurations. The exact EN-DC and UL CA configurations for which DL interruptions are not allowed will be captured in TS 38.101-1 and TS 38.101-3 respectively

**Decision:** The document was **not treated**.

**R4-2015975 Modification of Pcmax for UL CA with uplink Tx switching capability**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0553 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

For an inter-band UL CA configuration with UL TX switching (switching between carrier 1 and carrier 2), the maximum power on carrier 2 is boosted by 3 dB if the uplinkTxSwitchingPowerBoosting-r16 is enabled and the capability uplinkTxSwitching-PowerBoosting-r16 is supported by the UE. This is currently specified in clause 6.3A.3.3 on the transmit ON/OFF time mask for inter-band CA, but should be specified in the clause on configured power (Pcmax) for CA. However, the Pcmax for UL CA does not allow 3 dB power boosting for the BC, the total power is capped by the default CA power class (PC3); a modification is needed.

The 38.331 specifies the conditions that apply when the uplinkTxSwitchingPowerBoosting-r16 is enabled (CellGroupConfig)

uplinkTxSwitchingPowerBoosting

Indicates whether the UE is allowed to enable 3dB boosting on the maximum output power for transmission on carrier2 under the operation state in which 2-port transmission can be supported on carrier2 for inter-band UL CA case with dynamic UL Tx switching as defined in TS 38.101-1 [15]. Network can only configure this field for dynamic UL Tx switching in inter-band UL CA case with power Class 3 as defined in TS 38.101-1 [15].

The UE behavior with uplinkTxSwitchingPowerBoosting enabled is governed by the 38.331, the 38.101-1 only specifies the associated maximum output power requirement that applies under the conditions cited above

**Decision:** The document was **not treated**.

#### 7.11.2 RRM core requirements maintenance (38.133) [NR\_RF\_FR1-Core]

**R4-2014505 CR to TS 38.133: Add information on the inter-band EN-DC and UL CA configurations with no DL interruption**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1184 Cat: F (Rel-16)  
  
 Source: China Telecom*

**Abstract:**

In RAN4 #96e, it was agreed in WF R4-2011731 that DL interruption is not allowed for some inter-band EN-DC and UL CA configurations. The exact EN-DC and UL CA configurations for which DL interruptions are not allowed will be captured in TS 38.101-1 and TS 38.101-3 respectively, as seen in our companion CRs in

R4-2015195/6.

Meanwhile, since the DL interruption requirements for Tx switching are specified in TS 38.133 and TS 36.133, it is proposed to add the related information to TS 38.133 and TS 36.133 as well.

**Decision:** The document was **not treated**.

**R4-2014506 CR to TS 36.133: Add information on the inter-band EN-DC configurations with no DL interruption**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6963 Cat: F (Rel-16)  
  
 Source: China Telecom*

**Abstract:**

In RAN4 #96e, it was agreed in WF R4-2011731 that DL interruption is not allowed for some inter-band EN-DC and UL CA configurations. The exact EN-DC and UL CA configurations for which DL interruptions are not allowed will be captured in TS 38.101-1 and TS 38.101-3 respectively, as seen in our companion CRs in

R4-2015195/6.

Meanwhile, since the DL interruption requirements for Tx switching are specified in TS 38.133 and TS 36.133, it is proposed to add the related information to TS 38.133 and TS 36.133 as well.

**Decision:** The document was **not treated**.

**R4-2015488 Correction on DL interruption on Tx Switching between two uplink carriers**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1276 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The uplink switching mechanism in TS38.214 is captured in clause 6.1.6;

The interruption length due to uplink switching in NR SA for 210us switching period is not corrected implemented in the spec. (The DL interruption length was agreed in R4-2008623)

**Decision:** The document was **not treated**.

#### 7.11.3 RRM perf. requirements (38.133) [NR\_RF\_FR1-Perf]

**R4-2014503 Discussion on test case for DL interruptions at UE switching between two uplink carriers**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Decision:** The document was **not treated**.

**R4-2014504 Draft CR to TS 38.133: Test case for DL interruptions at UE switching between two uplink carriers in FDD+TDD inter-band CA case**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: China Telecom*

**Abstract:**

Test case for DL interruptions at UE switching between NR uplink carrier 1 and NR uplink carrier 2 in FDD+TDD inter-band uplink CA case shall be specified.

**Decision:** The document was **not treated**.

##### 7.11.3.1 General [NR\_RF\_FR1-Perf]

##### 7.11.3.2 Test cases [NR\_RF\_FR1-Perf]

**R4-2014733 Discussion on test case on TX switching between two TDD uplink carriers**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2014734 Draft CR to TS 38.133: Test case for DL interruptions at UE switching between two uplink carriers in TDD+TDD inter-band CA case**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: CMCC*

**Abstract:**

Test case for DL interruptions at UE switching between NR uplink carrier 1 and NR uplink carrier 2 in TDD+TDD inter-band uplink CA case shall be specified.

**Decision:** The document was **not treated**.

**R4-2015486 Discussion on test case on TX switching between two uplink carriers**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015487 Test case for DL Interruptions at UE switching between LTE 1Tx carrier and NR 2Tx carrier in inter-band ENDC**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

Test case for DL Interruptions at UE switching between LTE 1Tx carrier and NR 2Tx carrier in inter-band ENDC shall be specified

**Decision:** The document was **not treated**.

### 7.12 NR RF requirement enhancements for frequency range 2 (FR2) [NR\_RF\_FR2\_req\_enh]

#### 7.12.1 RF core requirements maintenance [NR\_RF\_FR2\_req\_enh-Core]

##### 7.12.1.1 Beam Correspondence based on configured DL RS (SSB or CSI-RS) [NR\_RF\_FR2\_req\_enh-Core]

**R4-2014320 Enhanced beam correspondence test applicability rules in rel-16**

*Type: other For: Approval  
 Source: LG Electronics France*

**Decision:** The document was **not treated**.

**R4-2014512 REL16 eBC capability alingment with 38.306**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0270 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

RAN4 specifications is aligned with RAN2 specification. There is TBD in applicability clause.

**Decision:** The document was **not treated**.

**R4-2014584 On CSI-RS based beam correspondence**

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

**Decision:** The document was **not treated**.

**R4-2014722 Discussion on Rel-16 beam correspondence remaining issues**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014923 Remaining issues with beam correspondence enhancement**

*Type: discussion For: Discussion  
 Source: Apple Inc.*

**Decision:** The document was **not treated**.

**R4-2014924 CR to TR 38.831 on beam correspondence corrections**

*Type: CR For: Agreement  
 38.831 v16.0.0 CR-0001 Cat: F (Rel-16)  
  
 Source: Apple Inc.*

**Abstract:**

The Rel-16 beam correspondence requirement has the following remaining open issues: how to define the PSD difference X between SSB and CSI-RS for FG8-3; and how to define the applicability rule for the case when the UE supports both FG8-2 and FG8-3. This CR resolves the open issues and updates the feature description for beam correspondence.

**Decision:** The document was **not treated**.

**R4-2015344 Discussion on Rel-16 BC**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2015808 Remaining issues in beam correspondence**

*Type: other For: Approval  
 Source: Sony, Ericsson*

**Decision:** The document was **not treated**.

**R4-2016518 CR on beam correspondence side condition**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0301 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Side condition for CSI-RS based beam correspondence is not defined.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

##### 7.12.1.2 Others [NR\_RF\_FR2\_req\_enh-Core]

**R4-2014290 Inter-band + intra-band CA FR2 frequency separation class**

*Type: discussion For: Approval  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2014581 CR to 38.101-2 (Rel-16) inter-band DL CA**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0271 Cat: F (Rel-16)  
  
 Source: Intel Corporation*

**Abstract:**

For inter-band DL CA, the current REFSENS and EIS spherical coverage requirements have brackets. Our analysis shows the requirements within brackets are achievable.

**Decision:** The document was **not treated**.

**R4-2014585 Rel-16 Inter-band DL CA requirements**

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

**Decision:** The document was **not treated**.

**R4-2014597 Clarification of EIS spherical coverage for inter-band CA**

*Type: CR For: Endorsement  
 38.101-2 v16.5.0 CR-0272 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

EIS spherical coverage requirement for inter-band CA is incomplete. The actual ‘common area’ requirement is missing in the requirement sub-clause.

**Decision:** The document was **not treated**.

**R4-2014932 CR for PSD imbalance for FR2 DL inter-band CA**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0281 Cat: F (Rel-16)  
  
 Source: NTT DOCOMO INC.*

**Abstract:**

To ensure the DL performance of IBM UE supporting FR2 inter-band CA under non-colocated deployment

There were contribtuions mentioning that it is needed to take care aobut RF design to handle PSD imbalance for FR2 DL inter-band CA, therefore it is meaningful to ensure the performance in Rx requirements.

It was agreed that IBE UE(s) are assumed to be operated under non-colocated deplyment in R4-2005736.

**Decision:** The document was **not treated**.

**R4-2015088 CR to TR 38.831 to include DL CA agreement**

*Type: CR For: Agreement  
 38.831 v16.0.0 CR-0002 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

The secretary commented that the CR is missing coversheet.

**Decision:** The document was **not treated**.

**R4-2015343 Discussion on Rel-16 FR2 inter-band DL CA**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2016519 CR for inter-band NC DL CA Rrefsens**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0302 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

For UE supporting CA configuration, ΔRIB is also applied for Single carrier requirement. There is no clarification in the spec.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2016520 CR on FR2 intra-band NC DL CA refsens**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0303 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016590 CR for intra-band NC DL CA Rrefsens**

*Type: CR For: Agreement  
 38.101-2 v15.11.0 CR-0307 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

For UE supporting CA configuration, ΔRIB is also applied for Single carrier requirement. There is no clarification in the spec.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

#### 7.12.2 RRM core requirements maintenance (38.133) [NR\_RF\_FR2\_req\_enh-Core]

### 7.13 NR RRM requirement enhancement [NR\_RRM\_Enh-Core]

#### 7.13.1 RRM core requirements maintenance (38.133) [NR\_RRM\_Enh-Core]

##### 7.13.1.1 SRS carrier switching requirements [NR\_RRM\_Enh\_Core]

**R4-2014646 38.133 CR on conditions for NR SRS carrier switching**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1192 Cat: F (Rel-16)  
  
 Source: Qualcomm, Inc.*

**Abstract:**

When UL BWP switching is performed, RF retuning is required, therefore SRS carrier switching can not be performed simultaneously. A sentence is added to SRS carrier switching condition, to avoid collision between UL BWP switching on either carrier and SRS carrier switching.

**Decision:** The document was **not treated**.

**R4-2015577 CR to 38.133: Correction to SRS carrier based switching requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1307 Cat: F (Rel-16)  
  
 Source: ZTE*

**Abstract:**

There are redundant sentences in the requirements that should be removed.

Wording should be improved to make the requirements clearer.

**Decision:** The document was **not treated**.

**R4-2016421 Missing requirements for LTE SRS carrier-based switching**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-7000 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

LTE SRS carrier-based switching requirements impacting LTE cells in EN-DC and NE-DC are missing in TS 36.133. Ambiguous terminology.

**Decision:** The document was **not treated**.

**R4-2016422 Correction in NR SRS carrier-based switching requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1391 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Incorrect requirement

**Decision:** The document was **not treated**.

##### 7.13.1.2 CGI reading requirements with autonomous gap [NR\_RRM\_Enh\_Core]

**R4-2015575 CR to 38.133: Correction to relaxed measurement requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1306 Cat: F (Rel-16)  
  
 Source: ZTE*

**Abstract:**

For change #1

Reference clause is incorrect.

The applicable scenario for inter-RAT E-UTRA cell CGI reading is NR SA and NE-DC rather than EN-DC as in the requirement.

For change #2

Remove brackets

**Decision:** The document was **not treated**.

**R4-2015576 CR to 36.133: Correction to NR CGI reading interruption requirements**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6972 Cat: F (Rel-16)  
  
 Source: ZTE*

**Abstract:**

Reference clause number is incorrect.

TMIB\_NR should be 25\* TSMTC for NR cells on FR2 by considering agreement that 1 additional SMTC is needed for AGC.

**Decision:** The document was **not treated**.

**R4-2015774 CR on CGI reading requirements 38.133**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1328 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

SIB1 transmission is dynamically scheduled by PDCCH, so the actualy SIB1 transmission periodicty could be different from the default periodicity or SMTC periodicty.

There is no requirement applicable for NR CGI reading configured by NR PSCell when UE is in EN-DC.

The references to LTE serving cells interruption requirements for EN-DC and NE-DC are wrong.

The last sentence in 9.11.1 states that overall CGI delay includes the RRC procedure delay and the reporting delay in 9.11.3, while the reporting delay in 9.11.3 already includes RRC procedure delay, so the RRC procedure delay is counted twice.

**Decision:** The document was **not treated**.

**R4-2015775 CR on CGI reading requirements 36.133**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6978 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

SIB1 transmission is dynamically scheduled by PDCCH, so the actualy SIB1 transmission periodicty could be different from the default periodicity or SMTC periodicty.

The last sentence in 8.1.2.4.27.1 states that overall CGI delay includes the RRC procedure delay and the reporting delay in 8.1.2.4.27.3, while the reporting delay in 8.1.2.4.27.1 already includes RRC procedure delay, so the RRC procedure delay is counted twice.

The requirements in 8.1.2.4 are only applicable for UE in LTE SA but not EN-DC or NE-DC.

MIB decoding delay for FR2 should be 25 SMTC periods (24 plus 1 for AGC).

The side condition of -3dB for MIB and SIB1 decoding is not captured.

**Decision:** The document was **not treated**.

**R4-2016379 Maintenance CR on NR CGI reading in 36.133**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6996 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Update on the requirements for NR CGI reading in 36.133

**Decision:** The document was **not treated**.

##### 7.13.1.3 BWP switching on multiple CCs [NR\_RRM\_Enh\_Core]

**R4-2014570 Discussion of RRC based BWP switching on multiple CCs**

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

**Decision:** The document was **not treated**.

**R4-2014773 Remaining issues on multiple BWP switch**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014774 CR on multiple BWP switch in R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1203 Cat: F (Rel-16)  
  
 Source: MediaTek inc.*

**Abstract:**

RRC-based BWP switch cannot apply for SCell.

Thus, there is no the scenario for multiple RRC-based simultaneous BWP switch. For RRC-based partially overlapped multiple BWP switch, the application scenario will only be PCell plus PSCell in NR-DC.

**Decision:** The document was **not treated**.

**R4-2014837 CR for simultaneous DCI based BWP switch delay on multiple CCs**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1206 Cat: F (Rel-16)  
  
 Source: vivo*

**Abstract:**

Current specification provides inconsistent ways on how to determine the SCS where BWP switch is based on.

Clear ambiguity of “all involved CCs”

Add value of D into specs.

**Decision:** The document was **not treated**.

**R4-2015304 Discussion on cross carrier BWP switch delay requirements for single and multiple CC**

*Type: discussion For: Approval  
 Source: NEC*

**Abstract:**

We provide our views on delay requirements for DCI based BWP switching when the DCI indication is through cross carrier scheduling.

**Decision:** The document was **not treated**.

**R4-2015305 CR to TS 38.133 on DCI based BWP switch requirements for cross carrier scheduling**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1252 Cat: F (Rel-16)  
  
 Source: NEC*

**Abstract:**

Existing DCI based BWP switch requirements are not applicable for DCI receved through cross-carrier schedling.

**Decision:** The document was **not treated**.

**R4-2015504 CR on BWP switching delay on mulitple CCs**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1283 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The requirements for cross carrier DCI-based BWP switching delay on multiple CCs should be added in Rel-16.

The defination of N in non-simultaneous RRC-based BWP switch is refered to the simultaneous BWP switch. However, for non-simultaneous case, N could also be one for the single CC BWP switch.

There are some editorial errors need to be fixed.

**Decision:** The document was **not treated**.

**R4-2015505 CR on interruption due to active BWP switching on mulitple CCs**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1284 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The requirements of interruptions due to active BWP switch on multiple CCs resue the same requirements of BWP switch on single CC. However, the starting point of each BWP swich on multiple CCs is different from that of BWP switch on single CC.

**Decision:** The document was **not treated**.

**R4-2015506 Discussion on requirements maintenance for BWP switch on multiple CCs**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016165 Analysis of RRC based non-simultaneous multiple CC BWP**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

The number of CCs in diferent CG can be different in RRC based non-simultaneous multiple CC BWP. This is clarified in the core requirements.

**Decision:** The document was **not treated**.

**R4-2016166 Correction to RRC based non-simultaneous multiple CC BWP**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1367 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

To correct requirements on RRC based non-simultaneous BWP on multiple CCs

**Decision:** The document was **not treated**.

**R4-2016427 On Active BWP switching under cross-carrier scheduling**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

Discussion on core requirements for active BWP switching with cross carrier scheduling.

**Decision:** The document was **not treated**.

**R4-2016428 CR 38.133 Active BWP switching with cross-carrier scheduling**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1392 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Requirements for active BWP switching when cross carrier scheduling (Rel-16 feature) is used are missing.

**Decision:** The document was **not treated**.

##### 7.13.1.4 Spatial relation switch for uplink [NR\_RRM\_Enh\_Core]

**R4-2014250 Requirements for UL spatial relation info switch**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014771 Remaining issues on active spatial relation switch**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2015308 Discussion on spatial relation switch for uplink**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015498 Discussion on the remaining issues on spatial relation switch**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015499 Correction on RRC based spatial relation switch delay**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1281 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

For RRC based spatial relation delay, the unit is not correct.

**Decision:** The document was **not treated**.

**R4-2016026 CR 38.133 Corrections to MAC-CE and RRC-based spatial relation switching requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1351 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The current specification text refers to a condition for the requirement to apply in the following way: “ […] when beamCorrespondenceWithoutUL-BeamSweeping sets to 1 […]”. What this means may not be immediately clear to the reader. Moreover, the condition is mentioned at the end of a paragraph, which means that the reader has to parse the whole paragraph before potentially finding that the requirement as such does not apply.

**Decision:** The document was **not treated**.

##### 7.13.1.5 Inter-band CA requirement for FR2 UE measurement capability of independent Rx beam and/or common beam [NR\_RRM\_Enh\_Core]

**R4-2014275 Draft CR on maintenance for inter-band FR2 CA RRM**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Apple*

**Abstract:**

CBM specific RRM requirement is downscoped from R16 and the corresponding requirement shall be cleaned up in TS38.133.

**Decision:** The document was **not treated**.

**R4-2014873 Discussion on Inter-band CA requirement for FR2**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014874 Correction on unknown SCell activation in FR2.**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1212 Cat: F (Rel-16)  
  
 Source: MediaTek inc.*

**Abstract:**

Requirement is missing for unknown SCell activation in FR2 with FR1-FR2 CA (e.g NR SA, PCell in FR1 and SCell in FR2), because the applicability of requiremrent was changed to cover the case with FR2 inter-band CA. However, the requirement is still needed for FR1-FR2 CA.

**Decision:** The document was **not treated**.

**R4-2015309 Discussion on inter-band CA requirement for FR2**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015985 CR on measurement restrictions for FR2 inter-band CA**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1340 Cat: F (Rel-16)  
  
 Source: Intel Corporation*

**Abstract:**

To align with the solution of the same issue for scheduling availability

**Decision:** The document was **not treated**.

**R4-2016576 BM resources for FR2 Inter-band IBM UEs**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

##### 7.13.1.6 Other requirements maintenance [NR\_RRM\_Enh\_Core]

**R4-2014277 Draft CR on UE behavior for UE specific CBW change**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Apple*

**Abstract:**

The UE behavior for Tx/Rx during CBW change delay is missing.

**Decision:** The document was **not treated**.

**R4-2014364 CR on TS38.133 for inter-frequency measurement requirement without gap**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1158 Cat: F (Rel-16)  
  
 Source: MediaTek inc.*

**Abstract:**

When all of the SMTC occasions of this inter-frequency measurement object are overlapped by the measurement gap, UE can only conduct the measurement within gap and follow the requirement in clause 9.3.4.

**Decision:** The document was **not treated**.

**R4-2014772 Remaining Issues on multiple SCell Activation**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014861 Editorial CR for inter frequency measurements without measurement gaps (9.3.9)**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Apple*

**Abstract:**

Several tables in clause 9.3.9 have the incorrect table index: 9.3.4.x, which are already used in clause 9.3.4 with different content.

Some title above table is also incorrect.

**Decision:** The document was **not treated**.

**R4-2015496 CR on inter-frequency measurement without gap**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1280 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

From AGC adjustment point of view, the power imbalance between intra-frequency layer and inter-frequency layer on which UE performs inter-frequency measurement without gap shall be limited, otherwise the measurement performance will be degraded.

**Decision:** The document was **not treated**.

**R4-2015578 CR to 38.133: Correction to mandatory gap pattern**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1308 Cat: F (Rel-16)  
  
 Source: ZTE*

**Abstract:**

The UE capability for NR only measurement are introduced as follows.

supportedGapPattern-NRonly

Indicates measurement gap pattern(s) optionally supported by the UE for NR SA and NR-DC when the frequencies to be measured within this measurement gap are all NR frequencies. The leading / leftmost bit (bit 0) corresponds to the gap pattern 2, the next bit corresponds to the gap pattern 3 and so on. The UE shall set the bits corresponding to the measurement gap pattern 2, 3 and 11 to 1.

supportedGapPattern-NRonly-NEDC

Indicates whether the UE supports gap patterns 2, 3 and 11 in NE-DC when the frequencies to be measured within this measurement gap are all NR frequencies.

measGapPatterns-NRonly-ENDC-r16

This field indicates whether the UE supports gap patterns 2, 3 and 11 in (NG)EN-DC when the frequencies to be measured within this measurement gap are all NR frequencies.

The requirements need to be consistent with the UE capability.

**Decision:** The document was **not treated**.

**R4-2015579 CR to 36.133: Introduce requirements for mandatory gap pattern**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6973 Cat: B (Rel-16)  
  
 Source: ZTE*

**Abstract:**

The UE capability for NR only measurement under LTE SA are introduced as follows.

measGapPatterns-NRonly-r16

This field indicates whether the UE supports gap patterns 2, 3 and 11 in LTE standalone when the frequencies to be measured within this measurement gap are all NR frequencies.

The requirements need to be introduced to ensure correct configuration of corresponding gap patterns.

**Decision:** The document was **not treated**.

**R4-2015771 Discussion on remaining issues in multiple SCell activation**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015772 CR on SCell activation requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1327 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

In multiple SCell activation, UE is assumed to skip cell detection for unknown FR1 SCell that is intra-band contiguous to active serving cell. The same can be extended to single SCell activation to speed up the activation process.

In multiple SCell activation, there is a case where no requriement applies for an FR1 unknown SCell that is intra-band contiguous to active or known SCell. However, the requirements for other SCells being activated with same MAC CE are not defined

UE cannot meet the current interuption requirements for multiple SCell activation if SMTC offsets for the SCells are misaligned.

**Decision:** The document was **not treated**.

**R4-2016019 CR 38.133 Removal of brackets for Multiple SCell activation**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1347 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The specification text contains side condition on Ês/Iot with value within brackets, Ês/Iot ≥ [-2]dB. The side condition is however aligned with corresponding conditions for requirements on SCell activation of single SCell, and hence can be removed.

**Decision:** The document was **not treated**.

**R4-2016574 Multi-SCell activation for FR1 intra-band contiguous CA**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

#### 7.13.2 RRM perf. requirements (38.133) [NR\_RRM\_Enh-Perf]

##### 7.13.2.1 General [NR\_RRM\_Enh-Perf]

**R4-2014566 Work plan of Rel-16 NR RRM enhancements WI performance part**

*Type: discussion For: Approval  
 Source: Intel Corporation, ZTE Corporation, Apple*

**Decision:** The document was **not treated**.

**R4-2016420 On test cases for SRS carrier-based switching in NR**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

On test cases for SRS carrier-based switching in NR

**Decision:** The document was **not treated**.

##### 7.13.2.2 Test cases [NR\_RRM\_Enh-Perf]

###### 7.13.2.2.1 SRS carrier switching requirements [NR\_RRM\_Enh-Perf]

**R4-2014227 E-UTRAN – NR FR2 interruptions at NR SRS carrier based switching (A.5.5.2.X)**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Apple*

**Abstract:**

RRM requirements for SRS carrier based switching have been introduced. However, corresponding test cases have not yet been specified.

**Decision:** The document was **not treated**.

**R4-2014789 CR to TS 38.133 TC for E-UTRAN – NR interruptions at E-UTRA SRS carrier based switching**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: OPPO*

**Abstract:**

The test case for E-UTRAN – NR interruptions at E-UTRA SRS carrier based switching is specified.

**Decision:** The document was **not treated**.

**R4-2015495 TC for E-UTRAN – NR interruptions at E-UTRA SRS carrier based switching**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

The test case for E-UTRAN – NR interruptions at E-UTRA SRS carrier based switching is specified.

**Decision:** The document was **not treated**.

**R4-2015581 Test case list for SRS carrier based switching**

*Type: discussion For: Approval  
 Source: ZTE*

**Decision:** The document was **not treated**.

**R4-2015584 Draft CR on test case for SA interruptions at NR SRS carrier based switching**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: ZTE*

**Abstract:**

Test case for NR SRS carrier based switching need to be introduced to verify corresponding core requirements.

**Decision:** The document was **not treated**.

**R4-2016052 38133 CR for Test case of E-UTRAN NR FR1 interruptions at NR SRS carrier switching**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016423 On TC2 configuration (SA interruptions at NR SRS carrier-based switching)**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

On TC2 configuration (SA interruptions at NR SRS carrier-based switching)

**Decision:** The document was **not treated**.

###### 7.13.2.2.2 Multiple Scell activation/deactivation [NR\_RRM\_Enh-Perf]

**R4-2014276 Test case of SCell activation and deactivation of multiple unknown SCells in FR1 with single activation/deactivation command**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Apple*

**Abstract:**

Test case of SCell activation and deactivation of multiple unknown SCells in FR1 with single activation/deactivation command is missing.

**Decision:** The document was **not treated**.

**R4-2014777 DraftCR on multiple SCell activation with FR1+FR2 unknown cells in NR-DC Test Case**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: MediaTek inc.*

**Abstract:**

The multiple SCell activation with FR1+FR2 unknown cells test case is missing.

**Decision:** The document was **not treated**.

**R4-2015580 Test case list for NR CGI reading with autonomous gaps**

*Type: discussion For: Approval  
 Source: ZTE*

**Decision:** The document was **not treated**.

**R4-2015583 Draft CR on test case for SA intra-frequency CGI identification of NR neighbor cell in FR1**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: ZTE*

**Abstract:**

Test cases for NR CGI reading need to be introduced to verify corresponding core requirements.

**Decision:** The document was **not treated**.

**R4-2015773 draftCR to introduce multiple SCell activation TC2**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

Based on R4-2012164, RRM test cases are to be introduced for multiple SCell activation.

**Decision:** The document was **not treated**.

###### 7.13.2.2.3 CGI reading requirements with autonomous gap [NR\_RRM\_Enh-Perf]

**R4-2014642 CGI reading test scope and requirement discussion**

*Type: discussion For: Discussion  
 Source: Qualcomm, Inc.*

**Decision:** The document was **not treated**.

**R4-2014776 DraftCR on SA CGI identification of E-UTRA neighbor cell Test Case**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: MediaTek inc.*

**Abstract:**

The SA CGI identification of E-UTRA neighbor cell test case is missing.

**Decision:** The document was **not treated**.

**R4-2015171 Test case list and configurations for CGI reading**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

Proposed test case list for CGI reading

**Decision:** The document was **not treated**.

**R4-2015172 CR to introduce interfrequency FR2 CGI reading test for SA NR (TC2)**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1242 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Introduction of TC2 as discussed on RAN4 reflector for CGI reading with autonomous gaps

**Decision:** The document was **not treated**.

**R4-2015776 draftCR on TC for EN-DC inter-frequency CGI identification of NR neighbor cell in FR2**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

RRM core requirements for CGI reading are defined, but there is no RRM test case for CGI reading.

**Decision:** The document was **not treated**.

**R4-2016380 Test cases for EN-DC intra-frequency CGI identification of NR neighbour cell in FR1**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Test cases for EN-DC intra-frequency CGI identification of NR cell with autonomous gaps in FR1

**Decision:** The document was **not treated**.

###### 7.13.2.2.4 BWP switching on multiple CCs [NR\_RRM\_Enh-Perf]

**R4-2014251 Discussion on testcases for BWP switching on multiple CCs**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014567 Discussion on test cases for BWP switching on multiple CCs**

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

**Decision:** The document was **not treated**.

**R4-2014568 CR on simultaneous DCI-based and Timer-based Active BWP Switch on multiple CCs on FR1 in EN-DC (section 4.5.6.3)**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Intel Corporation*

**Abstract:**

test case for simultaneous DCI-based and Timer-based Active BWP Switch on multiple CCs on FR1 in EN-DC is missing.

**Decision:** The document was **not treated**.

**R4-2014778 Discussion on multiple BWP switch test case**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014838 CR for test cases for simultaneously DCI/timer based bwp switch over mulitple CCs**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1207 Cat: B (Rel-16)  
  
 Source: vivo*

**Abstract:**

Add test cases for simultaneously DCI/timer based bwp switch over mulitple cc

**Decision:** The document was **not treated**.

**R4-2014839 Discussion on test cases for BWP switch on multiple CCs**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2015507 Discussion on performance requirements for BWP switch on multiple CCs**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016167 Test cases for BWP switching on multiple CCs**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

The paper discusses scenarios for RRM tests for multiple BWP switching and corresponding list of test

**Decision:** The document was **not treated**.

**R4-2016381 discussion on the test cases for BWP switch on multiple CCs**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discussion on test cases for BWP switch considering multiple CCs.

**Decision:** The document was **not treated**.

**R4-2016572 Performance requirements for BWP switching on multiple CCs**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

###### 7.13.2.2.5 Inter-frequency measurement requirement without MG [NR\_RRM\_Enh-Perf]

**R4-2014226 Test case for inter-frequency measurement without gap: SA event triggered reporting tests for FR1 when DRX is used (A.6.6.2.X)**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Apple*

**Abstract:**

RRM requirements for inter-frequency measurement without gap have been introduced. However, corresponding test cases have not yet been specified.

**Decision:** The document was **not treated**.

**R4-2014365 CR on TS38.133 SA event triggered reporting tests for FR2 without gap when DRX is used (A.7.6.2.X)**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: MediaTek inc.*

**Abstract:**

Test case for inter-frequency measurement without MG for FR2 when DRX is used shall be specified.

**Decision:** The document was **not treated**.

**R4-2014645 Inter-f without MG test scope and configuration discussion**

*Type: discussion For: Discussion  
 Source: Qualcomm, Inc.*

**Decision:** The document was **not treated**.

**R4-2014731 Discussion on test case on inter-frequency measurement without MG**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2014732 Draft CR to TS 38.133: SA event triggered reporting tests for FR1 without gap when DRX is not used (A.6.6.2.X)**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: CMCC*

**Abstract:**

Test case for inter-frequency measurement without MG shall be specified.

**Decision:** The document was **not treated**.

**R4-2015497 Test case for Inter-frequency measurements: SA event triggered reporting tests for FR2 without gap when DRX is not used**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

If UE supports interFrequencyMeas-NoGap-r16 and the flag interFrequencyConfig-NoGap-r16 is configured by the network, UE shall be able to perform inter-frequency measurement without gap. The test case for SA event triggered reporting tests for FR2 without gap when DRX is not used is specified.

**Decision:** The document was **not treated**.

###### 7.13.2.2.6 Mandatory MG patterns [NR\_RRM\_Enh-Perf]

**R4-2014228 Testing applicability for new mandatory gap patterns**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014643 Mandatory gap pattern test scope and applicability rule discussion**

*Type: discussion For: Discussion  
 Source: Qualcomm, Inc.*

**Decision:** The document was **not treated**.

**R4-2014644 nn**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Qualcomm, Inc.*

**Decision:** The document was **not treated**.

**R4-2015174 Test case list for mandatory measurement gap**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

CR to introduce TC2 for CGI reading as discussed on the RAN4 reflector

**Decision:** The document was **not treated**.

**R4-2015175 Test cases for mandatory measurement gap**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1243 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Addition of extra tests using GP 2,3,11, 17, 18 and 19

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2015582 Test case list for mandatory gap pattern**

*Type: discussion For: Approval  
 Source: ZTE*

**Decision:** The document was **not treated**.

**R4-2015585 Draft CR on test case for SA event triggered reporting tests with additional mandatory gap pattern**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: ZTE*

**Abstract:**

Test case for mandatory gap pattern need to be introduced to verify corresponding core requirements.

**Decision:** The document was **not treated**.

###### 7.13.2.2.7 UE-specific CBW change [NR\_RRM\_Enh-Perf]

**R4-2014278 Test case list for UE specific CBW change**

*Type: discussion For: Agreement  
 38.133 v..  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014279 Test case of UE specific CBW change on FR1 NR PSCell with non-DRX in synchronous EN-DC**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Apple*

**Abstract:**

The test case of UE specific CBW change on FR1 NR PSCell with non-DRX in synchronous EN-DC is missing.

**Decision:** The document was **not treated**.

**R4-2015302 Draft CR on TC for UE specific CBW change on FR2 NR PCell in NR SA**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: NEC*

**Abstract:**

TC for UE specific CBW change on FR2 NR PCell in NR SA are not available in specification

**Decision:** The document was **not treated**.

**R4-2015777 draftCR on TC for UE specific CBW change on FR2 NR PSCell in EN-DC**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

RRM core requirements for U-CBW change are defined, but there is no RRM test case for U-CBW change.

**Decision:** The document was **not treated**.

**R4-2016168 Analysis of TC3: UE specific CBW change on FR1 NR PCell in NR SA**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

The paper describes test case setup for UE specific CBW change in SA NR scenario

**Decision:** The document was **not treated**.

**R4-2016169 TC3: UE specific CBW change on FR1 NR PCell in NR SA (A.6.5.7)**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1368 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

To define new test on UE specific CBW change on FR1 NR PCell in NR SA

**Decision:** The document was **not treated**.

###### 7.13.2.2.8 Spatial relation switch for uplink [NR\_RRM\_Enh-Perf]

**R4-2014569 Discussion on test cases for UL spatial relation switch**

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

**Decision:** The document was **not treated**.

**R4-2014775 DraftCR on spatial relation switch test case**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: MediaTek inc.*

**Abstract:**

The E-UTRAN – NR PSCell FR2 uplink spatial relation switch for a known spatial relation test case is missing.

**Decision:** The document was **not treated**.

**R4-2015500 TC for RRC based spatial relation switch associated with a known DL-RS**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

The test case for RRC based spatial relation switch associated with a known DL-RS in EN-DC is specified.

**Decision:** The document was **not treated**.

**R4-2015885 RRC based spatial relation switch associated with a known DL-RS in SA**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1339 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016014 On TC3 MAC-CE based spatial relation info switching**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

Background information on Test case 3: MAC-CE based spatial relation switch associated with a known DL-RS in SA.

**Decision:** The document was **not treated**.

**R4-2016015 CR 38.133 TC3 MAC-CE based spatial relation info switching**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1345 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

During email discussions following the RAN4#96e meeting it was proposed that four test cases are to be introduced for verifying the spatial relation switching functionality. This CR covers TC 3: MAC-CE based spatial relation switch associated with a known  DL-RS in SA.

**Decision:** The document was **not treated**.

###### 7.13.2.2.9 Inter-band CA requirement for FR2 UE measurement capability of independent Rx beam [NR\_RRM\_Enh-Perf]

**R4-2015173 Test case list for FR2 inter-band carrier aggregation**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

ProposedRRM test case list for FR2 +FR2 interband CA

**Decision:** The document was **not treated**.

**R4-2015475 Discussion on RRM test cases for FR2 inter-band CA**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015476 DraftCR on SCell activation and deactication delay test for FR2 inter-band CA**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

In Rel-16, FR2 inter-band CA band combinations are introduced, and the SCell activation and deactication delay test need to be verified in FR2 inter-band CA scenario.

**Decision:** The document was **not treated**.

**R4-2016577 Performance requirements for FR2 Inter-band IBM UEs**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

### 7.14 NR RRM requirements for CSI-RS based L3 measurement [NR\_CSIRS\_L3meas]

#### 7.14.1 RRM core requirements maintenance (38.133) [NR\_CSIRS\_L3meas-Core]

**R4-2014188 CR on scheduling restriction for CSI-RS based intra-frequency measurement**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1108 rev 2 Cat: B (Rel-16)  
  
 Source: Qualcomm CDMA Technologies*

(Replaces R4-2012174)

**Abstract:**

CSI-RS L3 measurement was introduced to RAN4 in Rel-16. The CR aims to add restrictions in the scheduling availability during CSI-RS L3 intra-frequency measurements. The CR is revised from R4-2012174 which was approved but not implemented.

**Decision:** The document was **not treated**.

**R4-2014235 CR on CSSF with both CSI-RS and SSB**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1140 Cat: F (Rel-16)  
  
 Source: Apple*

**Abstract:**

Revise CSSF when CSI-RS resources for L3 measurement are considered on top of SSB.

R4-2012181 has been agreed in RAN4#96-bis. Due to editorial reason, it was not implemented. This CR is resubmitted based on v16.5.0

**Decision:** The document was **not treated**.

**R4-2014236 On remaining core issues of CSI-RS for L3 measurements**

*Type: discussion For: Agreement  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014314 Discussions on the remaining issues for CSI-RS L3 core requirements**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Qualcomm CDMA Technologies*

**Abstract:**

We intend to share our views regarding the remaining open issues for maintaining the core requirements e.g. measurement restriction and scheduling restriction.

**Decision:** The document was **not treated**.

**R4-2014413 CR for TS36.133, Adding requirements for CSI-RS based L3 measurement**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6962 Cat: B (Rel-16)  
  
 Source: CATT*

**Abstract:**

CSI-RS based L3 measurement are defined in NR, and the requirements are missed in 36.133 in EN-DC and NE-DC mode.

The number of inter frequency carrers measurement for NR has changed from 7 to 8 due to introducing CSI-RS based L3 measurement.

**Decision:** The document was **not treated**.

**R4-2014429 CR on abbreviations about CSI-RS based measurement in 38.133.**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1171 Cat: F (Rel-16)  
  
 Source: CATT*

**Abstract:**

CSI-RS based L3 measurement was introduced in 38.133. Some abbreviations about CSI-RS measurement are used and need to be defined.

**Discussion:**

The secretary commented that the CR number 1171 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2014430 CR on CSI-RS based intra-frequency measurement**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1172 Cat: F (Rel-16)  
  
 Source: CATT*

**Abstract:**

The clarification of the number of cells for CSI-RS based intra-frequency measurement is in the wrong place.

**Discussion:**

The secretary commented that the CR number 1172 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2014431 CR on CSI-RS based inter-frequency measurement.**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1173 Cat: F (Rel-16)  
  
 Source: CATT*

**Abstract:**

Some requirements for CSI-RS based inter-frequency measurement are missed.

**Discussion:**

The secretary commented that the CR number 1173 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2014432 CR on scheduling restriction for CSI-RS based intra-frequency measurement.**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1174 Cat: F (Rel-16)  
  
 Source: CATT*

**Abstract:**

Scheduling restriction for CSI-RS based intra-frequency measurement is not complete.

**Discussion:**

The secretary commented that the CR number 1174 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2014433 CR on CSI-RS configuration for mobility**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1175 Cat: F (Rel-16)  
  
 Source: CATT*

**Abstract:**

CSI-RS based L3 measurement was introduced in 38.133. The CSI-RS configuration for mobility needs to be specified when defining test cases.

**Discussion:**

The secretary commented that the CR number 1175 is missing on the coversheet.

The secretary wondered what is the correct Category? It reads B on the coversheet but the CR is allocated for F.

**Decision:** The document was **not treated**.

**R4-2014434 CR on conditions for NR CSI-RS based L3 measurement**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1176 Cat: F (Rel-16)  
  
 Source: CATT*

**Abstract:**

The conditions for NR CSI-RS based L3 measurement need to be defined when defining the performance requirements for CSI-RS based L3 measurement in 38.133.

**Discussion:**

The secretary commented that the CR number 1176 is missing on the coversheet.

The secretary wondered what is the correct Category? It reads B on the coversheet but the CR is allocated for F.

**Decision:** The document was **not treated**.

**R4-2014530 Discussion on remaining issues for R16 CSI-RS based L3 measurements**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2014531 CR on R16 CSI-RS based L3 measurements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1186 Cat: F (Rel-16)  
  
 Source: vivo*

**Abstract:**

Capture last meeting agreements on the number of layers.

Remove the side condition for SSB measurement in clause 9.10.2.2 of TS 38.133

Remove the exact number of cells to be monitored in clause 9.10.2.3.

The description on relation between CSI-RS for RRM and CSI-RS for RLM is removed.

Avoid some duplication

**Decision:** The document was **not treated**.

**R4-2014622 On remaining issues for CSI-RS based L3 measurement**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014623 Introduction of CSSF requirements for CSI-RS based L3 measurement**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1190 Cat: F (Rel-16)  
  
 Source: MediaTek inc., CATT*

**Abstract:**

CR R4-2012181 was agreed in last RAN4 meeting but not implemented in the version 16.5.0. This CR implements the changes in R4-2012181 with changes to improve readability.

**Decision:** The document was **not treated**.

**R4-2014660 Maintenance on CSI-RS based L3 requirements**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Xiaomi*

**Abstract:**

CSI-RS based L3 measurement requirements were completed in last meeting, some corrections in following aspects are needed to make the spec more clear:

In TS38.300, a note is added to clarify that extended CR for CSI-RS mobility is not supported in this release.

“NOTE 3:Extended CP for CSI-RS based measurement is not supported in this release.”

The requirements for intra-frequency measurements without gap is not implemented in this section

The requirements of number of cells to be monitored for intra/inter-frequency is not clear in the spec.

Some clause number and editorial error need to be fixed.

**Decision:** The document was **not treated**.

**R4-2014824 Discussion on remaining issues about CSI-RS based L3 measurement requirement**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015489 Discussion on remaining issues for CSI-RS based L3 measurement**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015490 CR on CSI-RS based intra-frequency measurement requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1277 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

1. Based on RAN1’s discussion history, extended CP for CSI-RS based mobility measurement is not supported in Rel-16, so it implies the second condition of CP type comparison for intra-frequency measurement is always satisified in this release. In RAN2 a note is added to clarify this [R2-2007002].

2. [R4-2012261] was endorsed at RAN4#96e, however the CR was implemented mixed with positioning in clause 9.9.2.4 and 9.9.2.6.

**Decision:** The document was **not treated**.

**R4-2015491 CR on CSSF definition for CSI-RS based measurement**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1278 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

[R4-2012181] on CSSF for CSI-RS based measurement was endorsed in RAN4#96e.

Some correction and clarification are made on top of [R4-2012181]:

It is agreed that Core/performance requirements in TS38.133 are specified based on the assumption that UE does not support simultaneous reception of CSI-RS and SSB. It means that CSI-RS L3 measurement and SSB based measurement are time division.

It is also agreed that Number of SSB layers should include SSB for mobility and that as associatedSSB for CSI-RS mobility.

Based on the above background, for CSSFoutsidegap, take EN-DC with FR1 only CA as an example, if SCell#1 is configured with both ssb-ConfigMobility and csi-rs-ResourceConfigMobility, SCell#2 is configured with csi-rs-ResourceConfigMobility only, SCell#3 is configured with ssb-ConfigMobility only, and there is one inter-frequency layer without gap, then SCell#1 and SCell#2 are regarded as 2 MOs including SSB and CSI-RS. The CSSF for each candidate shall be [2(for SCell#1) +2(for SCell#2)+ 1(for SCell#3)+1 (for inter-frequency layer w/o gap)].

Make some clarification on SSB MOs

The number of SSB measurement object shall include the total number of MOs with

-ssb-ConfigMobility configured, or

-ssb-ConfigMobility not configured but csi-rs-ResourceConfigMobility configured with associatedSSB.

If ssbfrequency, smtc1, smtc2 and ssbSubcarrierSpacing are same in multiple MOs, the multiple MOs are counted as one SSB measurement object.

**Decision:** The document was **not treated**.

**R4-2015782 CR on CSI-RS capability requirements and time restriction**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1329 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The current wording for CSI-RS time restriction in unclear whether the case where different CSI-RS resources fall in different instances of the measurement window is supported or not.

It is agreed that the number of CSI-RS resources in any duration that equal to the length of a slot is no larger than UE reported capability, it is more clear to capture this agreement in specification for reference.

The definition of SSB frequency layer and CSI-RS frequency layer are missing in UE capability requirements, and it is more clear to capture the agreements in specification for reference.

There is no LTE-NR inter-RAT measurement, so in EN-DC the LTE PCell cannot configure CSI-RS measurement on NR carriers.

**Decision:** The document was **not treated**.

**R4-2016043 CSI-RS based intra-frequency measurement requirements**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016044 38.133 CR on CSI-RS based intra-frequency measurement requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1352 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

The secretary commented that the CR number 1352 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2016045 38.133 CR on scheduling restrictions for CSI-RS based intra-frequency measurement**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1353 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The scheduling restriction CR R4-2012174 for intra-frequency CSI-RS based measurements were not implemented due to unclear clause numbering. In addition, the scheduling restriction was not concluded for TDD and FR2 scenarios. And the impact to SSB-based intra-frequency measurements is not reflected.

**Discussion:**

The secretary commented that the CR number 1353 is missing on the coversheet.

**Decision:** The document was **not treated**.

#### 7.14.2 RRM perf. requirements (38.133) [NR\_CSIRS\_L3meas-Perf]

**R4-2014666 RRM test cases for CSI-RS L3 measurement performance**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Xiaomi*

**Abstract:**

The CSI-RS based L3 RRM requirements were introduced in Rel-16, hence the test cases to verify the corresponding performance requirements shall be introduced.

**Decision:** The document was **not treated**.

**R4-2015213 CR on introduce the gain to CSI-RSRP measurements point in FR1 and FR2**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Xiaomi*

**Abstract:**

The CSI-RS based intra-frequency and inter-frequecny measurements were introduced in Rel-16, hence the gain to CSI-RSRP measurements point in FR1 and FR2 shall be introduced.

**Decision:** The document was **not treated**.

##### 7.14.2.1 General [NR\_CSIRS\_L3meas-Perf]

**R4-2014288 CR on introducing CSI-RS configurations for RRM**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1151 Cat: B (Rel-16)  
  
 Source: Qualcomm CDMA Technologies*

**Abstract:**

The core requirements were completed in discussions and specified during R4 96-e. This CR aims to introduce the CSI-RS configurations for RRM since the existing CSI-RS configurations are employed for L1 use.

**Decision:** The document was **not treated**.

**R4-2014435 Work plan for CSI-RS based L3 measurements**

*Type: Work Plan For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014436 Updated link-level simulation assumptions for CSI-RS based L3 measurements**

*Type: other For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014659 Discussion on performance requirements for CSI-RS L3 measurements**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision:** The document was **not treated**.

**R4-2014664 CR on side conditions for CSI-RS based intra-frequency and inter-frequency measurements**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Xiaomi*

**Abstract:**

The CSI-RS based intra-frequency and inter-frequecny measurements were introduced in Rel-16, hence the corresponding conditions for CSI-RS L3 measurements shall be introduced.

**Decision:** The document was **not treated**.

**R4-2014790 Discussion on accuracy requirements for CSI-RS L3 measurements**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2016046 Discussion on the performance of CSI-RS based intra-frequency measurements**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

###### 7.14.2.1.1 CSI-RSRP requirements [NR\_CSIRS\_L3meas -Perf]

**R4-2014354 Simulation results on CSI-RS based L3 measurements for RSRP**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Qualcomm CDMA Technologies*

**Abstract:**

We provide the simulation results for CSI-RS based RSRP subject to certain cell timing difference and reveal the impact on defining the performance test cases in this paper

**Decision:** The document was **not treated**.

**R4-2014437 Simulation results for CSI-RSRP measurement**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014439 Discussion on performance requirement for CSI-RSRP**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014441 CR on performance requirement for CSI-RSRP L3 measurement**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1177 Cat: B (Rel-16)  
  
 Source: CATT*

**Abstract:**

The performance requirements for CSI-RSRP L3 measurement need to be specified.

**Discussion:**

The secretary commented that the CR number 1177 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2014624 CSI-RSRP measurement accuracy requirements**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014661 CR on CSI-RSRP performance requirements for CSI-RS based measurements**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Xiaomi*

**Abstract:**

The CSI-RS based intra-frequency and inter-frequecny measurements were introduced in Rel-16, hence the corresponding performance requirements for CSI-RS L3 measurements shall be introduced.

**Decision:** The document was **not treated**.

**R4-2014703 Simulation results for CSI-RSRP measurement**

*Type: discussion For: Information  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2014791 nn**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2015783 Discussion on CSI-RSRP accuracy and report mapping**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015784 CR to introduce CSI-RSRP accuracy requirements and report mapping**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

CSI-RSRP accuracy and report mapping need to be defined.

**Decision:** The document was **not treated**.

**R4-2016047 38.133 CR on the intra-frequency CSI-RSRP accuracy requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1354 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The performance requirements for the CSI-RS based intra-frequency measurement needs to be specified.

**Discussion:**

The secretary commented that the CR number 1354 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2016048 38.133 CR on the conditions for NR intra-frequency CSI-RS based measurements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1355 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In current TS 38.133 Annex B, only the conditions for NR intra-frequency measurements based on SSBs are available. The conditions for CSI-RS based intra-frequency measurement needs to be specified.

**Discussion:**

The secretary commented that the CR number 1355 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2016049 Simulation results for CSI-RS based measurements**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

###### 7.14.2.1.2 CSI-RSRQ requirements [NR\_CSIRS\_L3meas -Perf]

**R4-2014438 Simulation results for CSI-RSRQ measurement**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014440 Discussion on performance requirement for CSI-RSRQ**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014442 CR on performance requirement for CSI-RSRQ L3 measurement**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1178 Cat: B (Rel-16)  
  
 Source: CATT*

**Abstract:**

The performance requirements for CSI-RSRQ L3 measurement need to be specified.

**Discussion:**

The secretary commented that the CR number 1178 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2014662 CR on CSI-RSRQ performance requirements for CSI-RS based L3 measurements**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Xiaomi*

**Abstract:**

The CSI-RS based intra-frequency and inter-frequecny measurements were introduced in Rel-16, hence the corresponding performance requirements for CSI-RS L3 measurements shall be introduced.

**Decision:** The document was **not treated**.

**R4-2014792 nn**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2015785 Discussion on CSI-RSRQ accuracy requirements and report mapping**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015786 CR to introduce CSI-RSRQ accuracy requirements and report mapping**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

CSI-RSRQ accuracy and report mapping need to be defined.

**Decision:** The document was **not treated**.

###### 7.14.2.1.3 CSI-SINR requirements [NR\_CSIRS\_L3meas -Perf]

**R4-2014443 CR on performance requirement for CSI-SINR L3 measurement**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1179 Cat: B (Rel-16)  
  
 Source: CATT*

**Abstract:**

The performance requirements for CSI-SINR L3 measurement need to be specified.

**Discussion:**

The secretary commented that the CR number 1179 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2014625 CSI-SINR measurement accuracy requirements**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014663 CR on CSI-SINR performance requirements for CSI-RS based L3 measurements**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Xiaomi*

**Abstract:**

The CSI-RS based intra-frequency and inter-frequecny measurements were introduced in Rel-16, hence the corresponding performance requirements for CSI-RS L3 measurements shall be introduced.

**Decision:** The document was **not treated**.

**R4-2015787 Discussion on CSI-SINR accuracy requirements and report mapping**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015788 CR to introduce CSI-SINR accuracy requirements and report mapping**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

CSI-SINR accuracy and report mapping need to be defined.

**Decision:** The document was **not treated**.

##### 7.14.2.2 Test cases [NR\_CSIRS\_L3meas-Perf]

**R4-2014189 Draft test case CR on EN-DC event triggered reporting tests without gap for NR neighbor cell in FR2**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Qualcomm CDMA Technologies*

**Abstract:**

The core requirements were completed in discussions and specified during R4 96-e. This CR aims to introduce the delay test case for CSI-RS based intra-frequency measurement in the case of EN-DC event triggered reporting tests without gap for NR neighbor cell in FR2

**Decision:** The document was **not treated**.

**R4-2014287 Draft test case CR on EN-DC CSI-RSRP measurement accuracy for NR neighbor cell in FR2**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Qualcomm CDMA Technologies*

**Abstract:**

The core requirements were completed in discussions and specified during R4 96-e. This CR aims to introduce the test case in the case of EN-DC CSI-RS measurement for NR neighbor performance cell in FR2

**Decision:** The document was **not treated**.

**R4-2014444 Test case for CSI-RS based L3 measurement**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1180 Cat: B (Rel-16)  
  
 Source: CATT*

**Abstract:**

The test cases for CSI-RS based L3 measurement need to be defined.

**Discussion:**

The secretary commented that the CR number 1180 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2014532 CR on test cases for EN-DC CSI-SINR measurement accuracy**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: vivo*

**Abstract:**

Introduce test case for EN-DC CSI-SINR measurement accuracy

**Decision:** The document was **not treated**.

**R4-2014626 Introduction of test case for CSI-SINR in SA FR2**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: MediaTek inc.*

**Abstract:**

Add the test case for CSI-SINR measurement accuracy for FR2 SA

**Decision:** The document was **not treated**.

**R4-2014665 RRM test cases for CSI-RS L3 intra-frequency and inter-frequency measurements**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Xiaomi*

**Abstract:**

The CSI-RS based L3 RRM requirements were introduced in Rel-16, hence the test cases to verify the corresponding requirement shall be introduced.

**Decision:** The document was **not treated**.

**R4-2014699 Discussion on test cases for CSI-RS based RRM measurement**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2014793 CR to TS 38.133: EN-DC event triggered reporting tests for NR neighbour cell in FR2 (PScell in FR1) for CSI-RS L3 inter-frequency measurements(A.5.6.x)**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: OPPO*

**Abstract:**

EN-DC event triggered reporting tests with gap for NR neighbour cell in FR2 (PScell in FR1) for inter-frequency measurement (when DRX is not used) are specified.

**Decision:** The document was **not treated**.

**R4-2014794 nn**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: OPPO*

**Abstract:**

TC8

**Decision:** The document was **not treated**.

**R4-2014795 nn**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: OPPO*

**Abstract:**

TC11

**Decision:** The document was **not treated**.

**R4-2015586 Draft CR on test case for SA CSI-RS based measurement in FR2 and CSI-RSRQ accuracy in FR2**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: ZTE*

**Abstract:**

Test cases for CSI-RS based measurement need to be introduced to verify corresponding core requirements and accuracy requirements.

**Decision:** The document was **not treated**.

**R4-2015789 CR to introduce TC for CSI-SINR measurement accuracy for FR1 SA and FR2 EN-DC**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

RRM core requirements for CSI-RS measurement are defined, but there is no RRM test case for CSI-RS measurement.

**Decision:** The document was **not treated**.

**R4-2016050 38.133 CR on the test case of EN-DC event triggered reporting for intra-frequency CSI-RS based measurements in FR1**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1356 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The test case for E-UTRAN-NR event triggered reporting in FR1 needs to be specified for the CSI-RS based intra-frequency measurements.

**Discussion:**

The secretary commented that the CR number 1356 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2016051 38.133 CR on the test cases of EN-DC measurement accuracy in FR1 for CSI-RS based intra-frequency and inter-frequency measurements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1357 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The test cases to verify the accuracy performance requirements for the CSI-RS based measurements in FR1 needs to be specified.

**Discussion:**

The secretary commented that the CR number 1357 is missing on the coversheet.

**Decision:** The document was **not treated**.

### 7.15 NR support for high speed train scenario [NR\_HST]

#### 7.15.1 RRM core requirements maintenance (38.133) [NR\_HST-Core]

**R4-2014691 38.133 CR on CSSFintra for measurement period for intra-frequency measurements in connected mode for Rel-16 NR HST**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1194 Cat: F (Rel-16)  
  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2014964 CR on IDLE state cell re-selection requirements for HST in 38.133**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1217 Cat: F (Rel-16)  
  
 Source: vivo,Huawei, HiSilicon*

**Abstract:**

As agreed in last meeting, for higher priority carrier search and measurement, there is no requirement enhancements for high speed scenario.

There is no description on how to indicate a carrier that should meet high speed performance

The requirement for 2.56s DRX cycle length is missing.

**Decision:** The document was **not treated**.

**R4-2014965 CR on IDLE state cell-reselection requirements for HST in 36.133**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1218 Cat: F (Rel-16)  
  
 Source: vivo,Huawei, HiSilicon*

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

**R4-2014981 CR on IDLE state cell re-selection requirements for HST in 36.133**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6964 Cat: F (Rel-16)  
  
 Source: vivo, Huawei, HiSilicon*

**Abstract:**

As agreed in last meeting, for higher priority carrier search and measurement, there is no requirement enhancements for high speed scenario.

There is no description on how to indicate a carrier that should meet high speed performance

**Decision:** The document was **not treated**.

**R4-2015156 Correction to high speed idle mode core requirement**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1228 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The title and table number for Table 4.2.2.3-1 has incorrectly been changed to “4.2.2.3-2 Tdetect,NR\_Intra, Tmeasure,NR\_Intra and Tevaluate,NR\_Intra for UE configured with highSpeedMeasFlag-r16 (Frequency range FR1)”. The title of table 4.2.2.3-2 needs to be changed to reflect the correct name of the high speed meas flag now that it is agreed in RAN2.

**Decision:** The document was **not treated**.

**R4-2015492 Correction on SSB based L1-RSRP Reporting for HST**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1279 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

For L1-RSRP reporting, when DRX ≤320ms, K = 1 when TSSB ≤ 40 ms and RRM enhancements for high speed are configured; otherwise K = 1.5. Thus the factor 1.5 shall be replaced by K.

**Decision:** The document was **not treated**.

**R4-2015804 Correction of CR0972 implementation**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1331 Cat: F (Rel-16)  
  
 Source: ETSI MCC*

**Abstract:**

Table 4.2.2.3-1 and Table 4.2.2.3-2 titles are not correctly implemented.

**Decision:** The document was **not treated**.

**R4-2016207 CR to TS 38.133: Corrections to Tables 9.5.4.1-1 and 9.5.4.2-1.**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1370 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

There is an error for the requirement in Tables 9.5.4.1-1 and 9.5.4.2-1.

The signalling for RRM enhancments for HST needs to be updated to reflect the newly specified RAN2 IE name.

**Decision:** The document was **not treated**.

#### 7.15.2 RRM perf. requirements (38.133) [NR\_HST-Perf]

##### 7.15.2.1 General [NR\_HST-Perf]

**R4-2014220 On HST intra-frequency measurement requirements**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014221 CR for HST intra-frequency measurement requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1137 Cat: F (Rel-16)  
  
 Source: Apple*

**Abstract:**

Scaling factor CSSF is missing in high speed intra-frequency measurement requirement.

**Decision:** The document was **not treated**.

**R4-2014695 CR on release independent for Rel.16 NR HST RRM requirements**

*Type: CR For: Agreement  
 38.307 v15.6.0 CR-0033 Cat: B (Rel-15)  
  
 Source: CMCC*

**Abstract:**

In last RAN4 meeting, it was agreed that Rel.16 NR HST RRM requirements are release independent from Rel-15.

**Decision:** The document was **not treated**.

**R4-2014697 CR on release independent for Rel.16 NR HST RRM requirements**

*Type: CR For: Agreement  
 38.307 v16.4.0 CR-0035 Cat: B (Rel-16)  
  
 Source: CMCC*

**Abstract:**

In last RAN4 meeting, it was agreed that Rel.16 NR HST RRM requirements are release independent from Rel-15.

**Decision:** The document was **not treated**.

**R4-2015494 Accuracy requirements for NR high speed**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

The R16 HST RRM enhancements are applied on FR1 intra-frequency SSB based measurement. There are no enhancement on FR1 inter-frequency SSB measurement, FR2 intra-frequency and inter-frequency SSB measurement. And there are no enhancement on CSI-RS based measurement. Thus for the measurement accuracy, it shall be explicitly point out that the legacy accuracy of FR1 intra-frequency SSB based measurement (including RSRP, RSRQ and SINR) shall be applicable when highSpeedMeasFlag-r16 is configured. In the last meeting, the accuracy of SINR under high speed has been agreed. This contribution focus on RSRP and RSRQ.

**Decision:** The document was **not treated**.

##### 7.15.2.2 Test cases [NR\_HST-Perf]

**R4-2014533 CR on test case for EUTRAN-NR cell re-selection in HST**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: vivo*

**Abstract:**

Introduce test case for reselection to higher priority FR1 NR carrier in HST scenario (Note: If

R4-2014981 is agreed then this may not needed.)

Introduce test case for reselection to lower priority FR1 NR carrier in HST scenario (Note: No related test case for R15 non-HST requirements and probably not needed)

**Decision:** The document was **not treated**.

**R4-2014630 NR HST test case discussion**

*Type: discussion For: Discussion  
 Source: Qualcomm, Inc.*

**Decision:** The document was **not treated**.

**R4-2014631 nn**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Qualcomm, Inc.*

**Decision:** The document was **not treated**.

**R4-2014692 nn**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2015147 Test cases for NR -NR cell identification in connected mode for high speed**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1219 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Add test cases for cell identification in high speed condition

**Decision:** The document was **not treated**.

**R4-2015493 Test cases for inter-RAT cell identification in connected mode for HST**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

The following test cases for high speed are needed to be specified:

1. NR-EUTRA inter-RAT event triggered reporting test under DRX in FR1

2. EUTRA-NR inter-RAT event triggered reporting for FR1 with SSB time index detection when DRX is used

**Decision:** The document was **not treated**.

**R4-2016215 CR to TS 38.133: Test cases for L1-RSRP measurement for beam reporting for NR HST**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Test cases for L1-RSRP measurement for beam reporting are not defined for NR HST.

**Decision:** The document was **not treated**.

#### 7.15.3 Demodulation and CSI requirements (38.101-4 / 38.104) [NR\_HST-Perf]

##### 7.15.3.1 UE demodulation and CSI requirements [NR\_HST-Perf]

**R4-2014633 View on NR HST demod**

*Type: discussion For: Discussion  
 Source: Qualcomm, Inc.*

**Decision:** The document was **not treated**.

**R4-2015602 Summary of ideal and impairment results for NR HST demodulation requirements**

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

**Decision:** The document was **not treated**.

###### 7.15.3.1.1 Requirements for DPS transmission scheme(s) [NR\_HST-Perf]

**R4-2014216 Discussion on DPS transmission scheme in HST**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014553 Views on UE demodulation requirements for DPS transmission scheme for NR HST**

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

**Decision:** The document was **not treated**.

**R4-2014563 CR to TS 38.101-4: Propagation conditions for HST scenarios**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0091 Cat: B (Rel-16)  
  
 Source: Intel Corporation*

**Abstract:**

Add Propagation conditions description for HST test cases

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked on the coversheet, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2014701 Further discussion on DPS for NR HST**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2014704 Simulation results for DPS transmission scheme**

*Type: discussion For: Information  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2015020 UE demodulation requirements for DPS transmission scheme**

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

**Decision:** The document was **not treated**.

**R4-2015603 CR on HST DPS requirements**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0097 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduce HST DPS requirements as per RAN4 agreements

**Discussion:**

The secretary commented that the CR number 0097 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2015604 Discussion on UE performance requirements for DPS transmission scheme**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015605 Simulation results on UE performance requirements for DPS 1a transmission scheme**

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

**Decision:** The document was **not treated**.

**R4-2015812 PDSCH demodulation requirements for HST-DPS**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the PDSCH demodulation requirements with HST-DPS scenario.

**Decision:** The document was **not treated**.

###### 7.15.3.1.2 Requirements for HST-SFN [NR\_HST-Perf]

**R4-2014562 CR to TS 38.101-4: HST-SFN FDD performance requirements**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0090 Cat: B (Rel-16)  
  
 Source: Intel Corporation*

**Abstract:**

Add Rel-16 DL HST-SFN FDD performacne requirements

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked on the coversheet, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2014690 CR on HST-SFN requirements for TDD**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0092 Cat: B (Rel-16)  
  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2014696 CR on release independent for Rel.16 NR HST UE demodulation requirements**

*Type: CR For: Agreement  
 38.307 v15.6.0 CR-0034 Cat: B (Rel-15)  
  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2014698 CR on release independent for Rel.16 NR HST UE demodulation requirements**

*Type: CR For: Agreement  
 38.307 v16.4.0 CR-0036 Cat: B (Rel-16)  
  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2015813 Simulation results of PDSCH with HST-SFN**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

This contribution provides the PDSCH simulation results with HST-SFN scenario.

**Decision:** The document was **not treated**.

###### 7.15.3.1.3 Requirements for HST single tap [NR\_HST-Perf]

**R4-2015606 CR on HST single-tap and HST multi-path fading requirements**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0098 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduce minimum requirements for HST single-tap scenario and HST multi-path fading scenario as per RAN4 agreements

**Discussion:**

The secretary commented that the CR number 0098 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2016108 CR to TS38.101-4: Addition of Rel-16 HST FRCs**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0113 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Endorsed in RAN4#96-e R4-2011369

Introduction of Rel-16 HST TDD FRC without Special slot data. Addition of HST single Tap MCS17 FRC

**Decision:** The document was **not treated**.

**R4-2016500 CR on FDD HST Single-Tap and Multipath Fading Requirements**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0120 Cat: B (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Draft CR R4-2012673 was endorsed in last meeting with this change: FDD HST Single-Tap and Multipath Fading requirements are not defined.

**Decision:** The document was **not treated**.

###### 7.15.3.1.4 Requirements for multi-path fading channels [NR\_HST-Perf]

###### 7.15.3.1.5 Applicability rule [NR\_HST-Perf]

**R4-2014217 Discussion on applicability rule for HST test**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014700 Discussion on applicability rule for UE demodulation requirements for NR HST**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2015313 Views on HST applicability rules**

*Type: discussion For: Discussion  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015607 CR on applicability rules for HST scenarios**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0099 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduce applicability rules for HST scenarios as per RAN4 agreements

**Discussion:**

The secretary commented that the CR number 0099 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2015608 Discussion on applicability rules for different scenarios**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015814 Applicability rule for PDSCH demodulation requirements in HST WI**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the applicability rule for PDSCH demodulation requirements in HST WI.

**Decision:** The document was **not treated**.

##### 7.15.3.2 BS demodulation requirements [NR\_HST-Perf]

**R4-2014397 Summary of ideal and impairment results for NR HST demodulation requirements**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2015183 Rel-16 NR HST BS demodulation requirements**

*Type: discussion For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Decision:** The document was **not treated**.

###### 7.15.3.2.1 PUSCH requirements [NR\_HST-Perf]

**R4-2014398 Simulation results for NR HST PUSCH demodulation requirement**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014555 Simulation results for NR HST PUSCH**

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

**Decision:** The document was **not treated**.

**R4-2014822 CR for TS 38.141-1: Updates of NR PUSCH performance requirements for Multi-path fading channel models under high Doppler values and applicability rules.**

*Type: CR For: Agreement  
 38.141-1 v16.5.0 CR-0153 Cat: B (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Abstract:**

This CR updates performance requirements of PUSCH for Multi-path fading channel models under high Doppler values and applicability rules for PUSCH for HST.

**Decision:** The document was **not treated**.

**R4-2015090 On NR Rel-16 HST BS demodulation PUSCH requirements and simulation results**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we have provided our views on various open PUSCH HST issues. In particular, simulation results misalignment and multi-path carrier frequency. Additionally, we have delivered the results of our simulation campaign on multi-path fading

**Decision:** The document was **not treated**.

**R4-2015091 CR for 38.104: HST PUSCH demodulation requirements**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0242 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Agreement in RAN4#96-e to introduce multi-path fading channel requirements with high Doppler value in a separate table under section “8.2.4 Requirements for PUSCH for high speed train”.

Update of SNR requirements following simulation collection [R4-2012749].

**Decision:** The document was **not treated**.

**R4-2015118 Simulation results for NR HST PUSCH**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2015609 Simulation results on the NR HST PUSCH performance requirements**

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

**Decision:** The document was **not treated**.

**R4-2015846 Additional test cases and FRC tables for HST PUSCH**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0245 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Resubmission of endorsed Draft CR R4-2012681.

In RAN4#96-e, requirements for HST PUSCH under fading channel was agreed to be introduced in separate tables under the same section of AWGN channel requirements

**Discussion:**

The secretary commented that the CR number 0245 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2015850 simulation results for HST PUSCH under fading channel**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

simulation results for HST PUSCH under multipath fading channel

**Decision:** The document was **not treated**.

###### 7.15.3.2.2 PRACH requirements [NR\_HST-Perf]

**R4-2014399 Simulation results for NR HST PRACH demodulation requirement**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014554 Simulation results for NR HST PRACH**

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

**Decision:** The document was **not treated**.

**R4-2015092 On NR Rel-16 HST BS demodulation PRACH simulation results**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we have provided our simulation results for HST PRACH restricted sets under fading propagation conditions.

**Decision:** The document was **not treated**.

**R4-2015120 Simulation results for NR HST PRACH**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2015664 CR for 38.104: Introduction of performance requirements for NR HST PRACH under fading channel**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0250 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

RAN4 agree to introduce PRACH requirements of fading channel and the aligned requirements need to be added into the specfication

**Decision:** The document was **not treated**.

**R4-2015665 CR for 38.141-1: Introduction of conformance testing for NR HST PRACH under fading channel**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0251 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

RAN4 agree to introduce PRACH requirements of fading channel and the aligned requirements need to be added into the specfication

**Discussion:**

Withdrawn because Tdoc allocated for another specification.

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

**R4-2015666 CR for 38.141-2: Introduction of conformance testing for NR HST PRACH under fading channel**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0252 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

RAN4 agree to introduce PRACH requirements of fading channel and the aligned requirements need to be added into the specfication

**Discussion:**

Withdrawn because Tdoc allocated for another specification.

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

**R4-2015667 Simulation results for NR HST PRACH format 0 with restricted set A and B under fading channel**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015849 simulation results for HST PRACH under fading channel**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

simulation results for TDLC300-400 for restricted set type A/B

**Decision:** The document was **not treated**.

**R4-2016596 CR for 38.141-1 Introduction of conformance testing for NR HST PRACH under fading channel**

*Type: CR For: Agreement  
 38.141-1 v16.5.0 CR-0166 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016597 CR for 38.141-2 Introduction of conformance testing for NR HST PRACH under fading channel**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0256 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

###### 7.15.3.2.3 UL timing adjustment requirements [NR\_HST-Perf]

**R4-2014400 Simulation results for NR PUSCH UL timing adjustment demodulation requirement**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014426 Discussion on remaining issues of PUSCH UL TA**

*Type: discussion For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014427 CR for 38.141-2: Introduction of NR PUSCH UL timing adjustment performance requirement for scenario X**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0228 Cat: F (Rel-16)  
  
 Source: CATT*

**Abstract:**

Scenario X for UL timing adjustment has been agreed in RAN4#96e meeting in non-HST part as well as the additional CBWs.

**Decision:** The document was **not treated**.

**R4-2014702 Discussion on remaining issues for NR HST BS demodulation**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2014823 Views on NR PUSCH for UL timing adjustment**

*Type: other For: Approval  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015093 On NR Rel-16 HST BS demodulation UL timing adjustment requirements and simulation results**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we have provided our views on various open UL TA HST issues. In particular, SCS/CBW combinations, and applicability rules for SCS/CBW combinations and implicit test passing.

Additionally, we have delivered the results of our simulatio

**Decision:** The document was **not treated**.

**R4-2015119 Discussion and simulation results for NR HST UL timing adjustment**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2015121 CR on UL timing adjustment conducted performance requirement for TS 38.141-1**

*Type: CR For: Agreement  
 38.141-1 v16.5.0 CR-0158 Cat: B (Rel-16)  
  
 Source: Samsung*

**Abstract:**

UL timing adjustment requirement have been introduced for NR HST in Rel-16. Additional scenario X for UL timing adjustment have been agreed to be introduced

**Decision:** The document was **not treated**.

**R4-2015610 Discussion and simulation results on the UL timing adjustment**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015847 discussion on HST UL TA remain issues**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

discuss test cases for scenario X and relative applicability rules

**Decision:** The document was **not treated**.

**R4-2015848 additional simulation results for UL TA**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

simulation results for scenario X, Y and Z for UL TA

**Decision:** The document was **not treated**.

**R4-2016468 Simulation results for NR HST UL TA**

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

**Decision:** The document was **not treated**.

### 7.16 NR performance requirement enhancement [NR\_perf\_enh-Perf]

#### 7.16.1 UE demodulation and CSI requirements (38.101-4) [NR\_perf\_enh-Perf]

##### 7.16.1.1 NR CA PDSCH requirements [NR\_perf\_enh-Perf]

**R4-2014498 Test applicability for NR CA PDSCH normal demodulation requirements**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Decision:** The document was **not treated**.

**R4-2014549 Discussion on NR CA UE demodulation requirements**

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

**Decision:** The document was **not treated**.

**R4-2014550 Draft CR on FRC for Normal NR CA demodulation requirements**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0088 Cat: B (Rel-16)  
  
 Source: Intel Corporation*

**Abstract:**

Definition of FRCs for Normal CA requirements

**Decision:** The document was **not treated**.

**R4-2014729 Introduction of NR PDSCH FR1 CA 2Rx performance requirements**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0093 Cat: B (Rel-16)  
  
 Source: CMCC*

**Abstract:**

Revised Rel-16 NR performance requirements enhancement WI RP-200472 is approved in RAN#87-e meeting. NR CA PDSCH normal demodulation requirements for NR CA are agreed to be defined for the following CA configs:

FDD CA with 15kHz SCS

TDD CA

30kHz SCS + 30kHz SCS

15kHz SCS + 30kHz SCS

TDD FDD CA

FDD 15kHz SCS + TDD 15kHz SCS

FDD 15kHz SCS + TDD 30kHz SCS

DraftCR has been endorsed in RAN4 #96-e R4-2012693

**Decision:** The document was **not treated**.

**R4-2014730 Test applicability rule for NR CA PDSCH normal demodulation**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2015312 Views on test applicability rule for CA PDSCH requirements**

*Type: discussion For: Discussion  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015655 Discussion on PDSCH CA normal demodulation requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015656 CR: Introduction of performance requirements for NR FR1 PDSCH CA with 4Rx**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0103 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Revised Rel-16 NR performance requirements enhancement WI RP-200472 is approved in RAN#87-e meeting. NR PDSCH normal demodulation requirements for NR CA were agreed to be defined for the following CA configs:

FDD CA with 15kHz SCS

TDD CA

30kHz SCS + 30kHz SCS

15kHz SCS + 30kHz SCS

TDD FDD CA

FDD 15kHz SCS + TDD 15kHz SCS

FDD 15kHz SCS + TDD 30kHz SCS

**Decision:** The document was **not treated**.

**R4-2016003 CR on Applicability rules for Normal NR CA demodulation requirements**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0108 Cat: B (Rel-16)  
  
 Source: Intel Corporation*

**Abstract:**

Definition of applicability rules for Normal CA requirements

**Decision:** The document was **not treated**.

**R4-2016512 CR on FR2 PDSCH CA Requirements**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0122 Cat: B (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Draft CR R4-2012695 was endorsed in last meeting with this change: FR2 PDSCH CA requirements are not defined.

**Decision:** The document was **not treated**.

##### 7.16.1.2 PMI reporting requirements with larger number of Tx ports [NR\_perf\_enh-Perf]

**R4-2014252 On PMI reporting requirements with larger number of TX ports**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014551 Discussion on PMI Type I requirements**

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

**Decision:** The document was **not treated**.

**R4-2014672 On PMI reporting requirements for larger Tx ports**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Decision:** The document was **not treated**.

**R4-2014746 Views and simulation results for Rel-15 Type II PMI test case**

*Type: discussion For: Approval  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014748 Draft CR for introduction of Rel-15 Type II PMI test cases**

*Type: draftCR For: Endorsement  
 38.101-4 v16.2.0  
 Source: Samsung*

**Abstract:**

Introduce PMI tese case to verify UE reporting accuracy for Rel-15 Type II codebook

**Decision:** The document was **not treated**.

**R4-2015657 Simulaiton results for Type II codebook PMI reporting test**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015658 Discussion on the open issue of PMI reporting test with larger Tx ports**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015659 CR for TS 38.101-4: Applicability for NR PMI requirements with Tx ports larger than 8 and up to 32**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0104 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

This CR introduces the applicability rule for Type II codebook of NR PMI requirements with Tx ports larger than 8 and up to 32

**Decision:** The document was **not treated**.

**R4-2016098 Summary of simulation results of NR UE CSI PMI with 16, and 32Tx antennas**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

This paper provides a collection of SP Type I PMI requirements

**Decision:** The document was **not treated**.

**R4-2016099 Simulation results for Rel-15 Type II codebook**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

This paper provides our simulation results for Rel-15 Type II codebook

**Decision:** The document was **not treated**.

**R4-2016100 Evaluations of Rel-15 Type II PMI testing**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This paper provides our views on Rel-15 Type II codebook PMI testing

**Decision:** The document was **not treated**.

**R4-2016434 Parameters and simulation results on PMI reporting requirements with larger number of Tx ports**

*Type: discussion For: (not specified)  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

##### 7.16.1.3 FR1 CA and EN-DC power imbalance requirements [NR\_perf\_enh-Perf]

**R4-2014499 Power imbalance requirements for FR1 CA and EN-DC**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Decision:** The document was **not treated**.

**R4-2015317 Views on FR1 power imbalance requirements**

*Type: discussion For: Discussion  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015318 CR: FR1 EN-DC power imbalance requirements**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0094 Cat: B (Rel-16)  
  
 Source: NTT DOCOMO, INC, SoftBank Corp.*

**Abstract:**

Revised Rel-16 NR performance requirements enhancement WI RP-200472 is approved in RAN#87-e meeting. FR1 CA and EN-DC power imbalance requirements are agreed to be defined.

**Decision:** The document was **not treated**.

**R4-2015660 Discussion on UE power imbalance requirements for FR1 CA and EN-DC**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015661 CR: Addition of power imbalance requirements for intra-band contiguous CA and intra-band EN-DC**

*Type: CR For: Agreement  
 38.101-4 v16.2.0 CR-0105 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

As per the revised Rel-16 NR performance requirements enhancement WID RP-200472 approved in RAN#87-e meeting, PDSCH demodulation performance requirements with power imbalance for FR1 intra-band contiguous 2CC CA and intra-band EN-DC are agreed to be defined.

**Decision:** The document was **not treated**.

**R4-2015820 PDSCH demodulation requirements with power imbalanced condition**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses PDSCH demodulation requirements with power imbalanced condition.

**Decision:** The document was **not treated**.

**R4-2016463 Views on Power Imbalance Tests**

*Type: discussion For: (not specified)  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

##### 7.16.1.4 NR CA CQI reporting requirements [NR\_perf\_enh-Perf]

**R4-2014500 Duplex mode and SCS for CA CQI test**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Decision:** The document was **not treated**.

**R4-2014552 Discussion on FR1 CA and EN-DC power imbalance requirements**

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

**Decision:** The document was **not treated**.

**R4-2014673 DraftCR: Adding applicability and requirements for FR1 and FR2 CA CQI reporting test**

*Type: draftCR For: Endorsement  
 38.101-4 v16.2.0  
 Source: China Telecom*

**Abstract:**

Introducing CA CQI reporting requirements for NR CA under AWGN condition is one of the objective of the Rel-16 NR performance requirements enhancement WI. In the RAN4 #96e meeting, the test metric and most of the test parameters have been decided in R4-2012692.

**Decision:** The document was **not treated**.

**R4-2014728 Discussion on FR1 CA and EN-DC power imbalance requirements**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2015662 Discussion on CA CQI reporting requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015821 CA CQI reporting requirements**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the remaining open issues on CA CQI reporting requirements.

**Decision:** The document was **not treated**.

##### 7.16.1.5 Release independent [NR\_perf\_enh-Perf]

**R4-2014253 On Release Independence for NR UE performance enhancement requirements**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014501 Draft CR for TS 38.307 on UE demodulation performance requirements (Rel-15)**

*Type: draftCR For: Endorsement  
 38.307 v15.6.0  
 Source: China Telecom*

**Abstract:**

For Rel-16 NR\_perf\_enh-Perf WI, the following agreements were reached in RAN4#94e in R4-2002390.

CA normal demodulation requirements

The requirements for those CA configurations that are defined as release independent from release 15 in TS 38.307 can be release independent from release 15

PMI reporting requirements for single panel Type I codebook

The requirements for 16 and 32 Tx ports can be release independent from release 15

Demodulation requirements for TDD LTE - NR coexistence

Release independent from release 15 for the TDD bands supporting spectrum sharing in Rel-15

The features/requirements in the last two bullets are not included in Rel-15 of 38.307.

**Decision:** The document was **not treated**.

**R4-2014502 Draft CR for TS 38.307 on UE demodulation performance requirements (Rel-16)**

*Type: draftCR For: Endorsement  
 38.307 v16.4.0  
 Source: China Telecom*

**Abstract:**

For Rel-16 NR\_perf\_enh-Perf WI, the following agreements were reached in RAN4#94e in R4-2002390. This CR is to capture these RAN4 agreements into the specification.

CA normal demodulation requirements

The requirements for those CA configurations that are defined as release independent from release 15 in TS 38.307 can be release independent from release 15

PMI reporting requirements for single panel Type I codebook

The requirements for 16 and 32 Tx ports can be release independent from release 15

Demodulation requirements for TDD LTE - NR coexistence

Release independent from release 15 for the TDD bands supporting spectrum sharing in Rel-15

**Decision:** The document was **not treated**.

**R4-2015316 Views on release independence aspect for power imbalance requirements**

*Type: discussion For: Discussion  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015663 Discussion on release independence for NR performance requirements enhancements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015822 Release independent requirements for Rel-16 performance requirement enhancement**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the release independent requirements discussed in Rel-16 UE performance enhancement WI.

**Decision:** The document was **not treated**.

#### 7.16.2 BS demodulation requirements (38.104) [NR\_perf\_enh-Perf]

**R4-2015845 Adding FRC table description in Annex in TS38.104 v16.5.0**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0257 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

There is a FRC table description missing.

**Discussion:**

The secretary commented that the CR number 0257 is missing on the coversheet.

**Decision:** The document was **not treated**.

### 7.17 Over the air (OTA) base station (BS) testing TR [OTA\_BS\_testing-Perf]

#### 7.17.1 General [OTA\_BS\_testing-Perf]

**R4-2015960 CR to TR 37.941: overall TR cleanup, Rel-15**

*Type: CR For: Agreement  
 37.941 v15.1.0 CR-0013 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

Cleanup corrections of the whole TR 37.941.

Full TR is attached to this cover page.

**Decision:** The document was **not treated**.

**R4-2015961 CR to TR 37.941: overall TR cleanup, Rel-16**

*Type: CR For: Agreement  
 37.941 v16.1.0 CR-0014 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

Cleanup corrections of the whole TR 37.941, Rel-16.

**Decision:** The document was **not treated**.

#### 7.17.2 MU / TT values: derivation and tables [OTA\_BS\_testing-Perf]

**R4-2015714 CR to TR 37.941: Removal of Square Brackets**

*Type: CR For: Agreement  
 37.941 v15.1.0 CR-0011 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

[ ] cannot be be in the final version TR

**Decision:** The document was **not treated**.

**R4-2015715 CR to TR 37.941: Removal of Square Brackets**

*Type: CR For: Agreement  
 37.941 v16.1.0 CR-0012 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Removal of [ ] in MU tables in TR 37.941

**Decision:** The document was **not treated**.

**R4-2015962 CR to TR 37.941: MU and TT values alignments and corrections, Rel-15**

*Type: CR For: Agreement  
 37.941 v15.1.0 CR-0015 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

It was observed that there were some inconsistencies across the MU and TT values in requirements specific sections and in the summary tables in cluase 17 and 18.

Regulatory decision is incorporated for the TT of the OTA RX spur requirement.

**Decision:** The document was **not treated**.

**R4-2015963 CR to TR 37.941: MU and TT values alignments and corrections, Rel-16**

*Type: CR For: Agreement  
 37.941 v16.1.0 CR-0016 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

MU and TT values inconsistencies are corrected among requirement specific sections and the summary tables, together with other text improvements. Regulatory decision is incorporated for the TT of the OTA RX spur requirement.

**Decision:** The document was **not treated**.

**R4-2016370 Plane Wave Synthesizer – Pending MU terms from 4.2GHz to 6GHz**

*Type: discussion For: (not specified)  
 37.941 v..  
 Source: ROHDE & SCHWARZ*

**Decision:** The document was **not treated**.

**R4-2016466 CR to TR 37.941: Completion of MU terms for PWS.**

*Type: CR For: Agreement  
 37.941 v15.1.0 CR-0023 Cat: F (Rel-15)  
  
 Source: ROHDE & SCHWARZ*

**Decision:** The document was **not treated**.

**R4-2016467 Mirror CR to TR 37.941: Completion of MU terms for PWS.**

*Type: CR For: Agreement  
 37.941 v16.1.0 CR-0024 Cat: A (Rel-16)  
  
 Source: ROHDE & SCHWARZ*

**Decision:** The document was **not treated**.

#### 7.17.3 Annexes [OTA\_BS\_testing-Perf]

**R4-2015964 CR to TR 37.941: alignments and corrections to the MU contributors and MU derivations, Rel-15**

*Type: CR For: Agreement  
 37.941 v15.1.0 CR-0017 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

MU contributor terms alignment among MU tables and annexes is provided. Related Excel spreadsheets to be further updated to reflect modifications in the TR.

**Decision:** The document was **not treated**.

**R4-2015965 CR to TR 37.941: alignments and corrections to the MU contributors and MU derivations, Rel-16**

*Type: CR For: Agreement  
 37.941 v16.1.0 CR-0018 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

MU contributor terms alignment among MU tables and annexes is provided. Related Excel spreadsheets to be further updated to reflect modifications in the TR.

**Decision:** The document was **not treated**.

#### 7.17.4 Others [OTA\_BS\_testing-Perf]

**R4-2016290 CR to TR 37.941: Corrections to TRP measurement procedures**

*Type: CR For: Agreement  
 37.941 v15.1.0 CR-0019 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Cross-references are incorrect in a few procedures in clause 6.3.2.2.

**Decision:** The document was **not treated**.

**R4-2016291 CR to TR 37.941: Corrections to TRP measurement procedures**

*Type: CR For: Agreement  
 37.941 v16.1.0 CR-0020 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Cross-references are incorrect in a few procedures in clause 6.3.2.2.

**Decision:** The document was **not treated**.

**R4-2016292 Justification for additional test cases for PWS**

*Type: discussion For: (not specified)  
 37.941 v..  
 Source: ROHDE & SCHWARZ*

**Decision:** The document was **not treated**.

**R4-2016293 CR to TR 37.941: Additional test cases for PWS**

*Type: CR For: Agreement  
 37.941 v15.1.0 CR-0021 Cat: F (Rel-15)  
  
 Source: ROHDE & SCHWARZ*

**Abstract:**

PWS method is able to cover additional test cases for BS OTA conformance

**Decision:** The document was **not treated**.

**R4-2016300 Mirror CR to TR 37.941: Additional test cases for PWS**

*Type: CR For: Agreement  
 37.941 v16.1.0 CR-0022 Cat: A (Rel-16)  
  
 Source: ROHDE & SCHWARZ*

**Decision:** The document was **not treated**.

### 7.18 2-step RACH for NR [NR\_2step\_RACH-Perf]

#### 7.18.1 RRM core requirements maintenance (38.133) [NR\_2step\_RACH-Core]

**R4-2014935 CR Maintenance 2-step RACH RRM requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1214 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Correction to RRM core requirements related to 2-step RACH procedure, which involves MsgB and not RAR.

**Decision:** The document was **not treated**.

#### 7.18.2 RRM perf. requirements (38.133) [NR\_2step\_RACH-Perf]

##### 7.18.2.1 General [NR\_2step\_RACH-Perf]

**R4-2014356 Principles for 2-step RACH test cases**

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

**Decision:** The document was **not treated**.

**R4-2014934 2-step RACH RRM performance requirements**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015810 Draft CR: RMC of MsgA for 2-step RACH test**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Ericsson*

**Abstract:**

RMC of MsgA for 2-step RACH test is missing

**Decision:** The document was **not treated**.

##### 7.18.2.2 Test cases [NR\_2step\_RACH-Perf]

**R4-2014008 [draft CR] 2-step RACH test case**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: ZTE Corporation*

**Abstract:**

Add test cases corresponding to core requirements for 2 step RA, in specific, for FR1 NR cells in NR SA under Non-contention based RA and FR2 NR cells in EN-DC under Non-contention based RA. Correct the titles in the current test cases for 4-step RA.

**Decision:** The document was **not treated**.

**R4-2014933 Big CR on 2-step RA type RRM performance requirements**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1213 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Addition of 2-step RACH tests for 2-step RACH.

**Decision:** The document was **not treated**.

**R4-2014936 Draft CR on 2-step RA type CBRA in FR2 for NR Standalone**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction of text clause with RRM performance requirements of contention-based 2-step RACH in FR2 in standalone

**Decision:** The document was **not treated**.

**R4-2015303 Draft CR on TC for 2-step RA type contention based RA in FR1 and FR2 NR cells for EN-DC**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: NEC*

**Abstract:**

Addition of 2-step RA type test cases for contention based RA in EN-DC

**Decision:** The document was **not treated**.

**R4-2015811 Draft CR: Introduction of 2-step RACH CFRA tests**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Ericsson*

**Abstract:**

Introduction of non-contention based random access test for 2-step RA type

**Decision:** The document was **not treated**.

#### 7.18.3 BS Demodulation requirements (38.104) [NR\_2step\_RACH-Perf]

**R4-2014560 Views on BS demodulation requirements for NR 2-Step RACH**

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

**Decision:** The document was **not treated**.

**R4-2014561 CR to TS 38.141-2: BS demodulation requirements for 2-step RACH (Annex)**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0231 Cat: B (Rel-16)  
  
 Source: Intel Corporation*

**Abstract:**

Add Rel-16 2-step RACH demodulation performacne requirements

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked on the coversheet, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2014937 2-step RACH BS demodulation performance requirements**

*Type: discussion For: Agreement  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discussion on remaining topics for 2-step RACH BS demodulation

**Decision:** The document was **not treated**.

**R4-2014938 2-step RACH BS demodulation simulation results**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2014939 Introduction of 2-step RACH FRC tables in 38.141-1**

*Type: CR For: Agreement  
 38.141-1 v16.5.0 CR-0154 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction of FRCs in 38.141-1 related to 2-step RACH demodulation performance requirements

**Decision:** The document was **not treated**.

**R4-2015022 Introduction of test procedure and requirement for 2-step RACH**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0233 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

2-step RACH test procedure and requirements should be introduced to the conformance specifications

**Decision:** The document was **not treated**.

**R4-2015125 Discussion and simulation results for BS 2-step RACH requirement**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2015126 Draft CR on MsgA PUSCH radiated performance requirement for TS 38.141-2**

*Type: draftCR For: Endorsement  
 38.141-2 v16.5.0  
 Source: Samsung*

**Abstract:**

MsgA PUSCH requirements have been introduced for Rel-16 NR 2-step RACH

**Decision:** The document was **not treated**.

**R4-2015177 Draft CR to TS 38.104 BS demodulation requirements for 2-step RACH**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0245 Cat: B (Rel-16)  
  
 Source: ZTE Wistron Telecom AB*

**Abstract:**

BS demodulation requirements for 2-step RACH are missing in TS 38.104

**Decision:** The document was **not treated**.

**R4-2015178 Simulation results on BS demodulation requirements for 2-step RACH**

*Type: discussion For: Information  
 Source: ZTE Wistron Telecom AB*

**Decision:** The document was **not treated**.

**R4-2015179 Simulation results collection on BS demodulation requirements for 2-step RACH**

*Type: discussion For: Information  
 Source: ZTE Wistron Telecom AB*

**Decision:** The document was **not treated**.

**R4-2015180 Open issues on BS demodulation requirements for 2-step RACH**

*Type: discussion For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Decision:** The document was **not treated**.

**R4-2015611 Discussion and simulation results on NR 2-step RACH BS performance requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015612 CR on BS demodulation requirements for 2-step RACH for FR2**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0248 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduce BS demodulation requirements for 2-step RACH for FR2 as per RAN4 agreements

**Discussion:**

The secretary commented that the CR number 0248 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2015857 2-step RACH open issues**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Proposals for the remainin open issues with 2-step RACH

**Decision:** The document was **not treated**.

**R4-2015858 2-step RACH simulation results**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

Simulation results according to agreed assumptions

**Decision:** The document was **not treated**.

#### 7.18.4 Others [NR\_2step\_RACH-Perf]

### 7.19 R16 NR maintenance [WI code or TEI16]

**R4-2015966 CR to TR 38.820: correction in the NF analysis for NR BS, Rel-16**

*Type: CR For: Agreement  
 38.820 v16.0.0 CR-0001 Cat: F (Rel-16)  
  
 Source: Huawei*

**Abstract:**

During TP drafting for the 52.6 – 71 GHz SI, it was observed that the text on NF analysis for NR BS in TR 38.820 is mistakenly pointing to the NF data from ETSI TR 101 854 in table 5.5.1.2-1, instead of the summary of state-of-the-art LNA-only noise figure publications in figure 5.5.1.2-1.

Cross-reference in the NF analysis for the NR BS is corrected in order to point to the right set of data and avoid incorrect text interpretation.

**Decision:** The document was **not treated**.

#### 7.19.1 UE transient period capability [TEI16]

**R4-2014489 Short Transient Period Testing**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2014490 Draft CR on introduction of shorter Transient Period Capability**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0505 Cat: B (Rel-16)  
  
 Source: Qualcomm Incorporated, Verizon, Dish Network, Ericsson, CMCC, Keysight Technologies, Nokia, Nokia Shanghai Bell, AT&T, ZTE, Vodafone, Orange, T-Mobile USA, Deutsche Telekom, Telecom Italia, CHTTL, China Telecom, SGS Wireless, Interdigital*

**Abstract:**

Adding the newly defined shorter transient periods.

**Discussion:**

The secretary commented that TS should be removed from the specification number, i.e. TS38.101-1 -> 38.101-1, and CR number should be zero padded, i.e. 505 -> 0505.

**Decision:** The document was **not treated**.

**R4-2016516 On transient period UE capability**

*Type: other For: Approval  
 38.101-1 v..  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016517 CR on TS 38.101-1 time mask for shorter transient**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0575 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduce tpstart as the start line of shorter transient, the reason is provided in

R4-2016516.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

#### 7.19.2 Transmit diversity and power class related to UL MIMO [TEI16]

##### 7.19.2.1 R16 support of transmit diversity [TEI16]

**R4-2014303 Remaining issues on Tx diversity**

*Type: other For: Approval  
 Source: LG Electronics Polska*

**Decision:** The document was **not treated**.

**R4-2014583 Remaining Issues on Transparent TxD**

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

**Decision:** The document was **not treated**.

**R4-2014686 Remaining items on transparent Tx diversity**

*Type: discussion For: Approval  
 Source: Anritsu corporation*

**Decision:** The document was **not treated**.

**R4-2014712 Tx diversity changes for Rel-16**

*Type: discussion For: Approval  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2014713 Introduction of Tx diversity in tor 38101-1**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0510 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Introduction of TX diversity requirements

**Decision:** The document was **not treated**.

**R4-2014849 Further discussio on the Support of Transparent Tx Diversity in Rel-16**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014904 On Tx diversity**

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

**Decision:** The document was **not treated**.

**R4-2015265 Discussion on Tx diversity open issues**

*Type: other For: Approval  
 Source: Xiaomi*

**Decision:** The document was **not treated**.

**R4-2015321 Remaining issues in Transparent Tx Diversity**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2015340 Discussion on Rel-16 TxD**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2015341 CR on TxD requirements**

*Type: CR For: Endorsement  
 38.101-1 v16.5.0 CR-0537 Cat: F (Rel-16)  
  
 Source: OPPO*

**Abstract:**

It is agreed that transparent Tx diversity (TxD) is enabled at least from Rel-16 RAN4 specification.

And TxD is one kind of UE implementaion for single antenna port.

Necessary changes to single antenna port requirements are needed to make this kind of UE implementation be accormmodated.

**Discussion:**

The secretary wondered what is the correct Category? It reads B on the coversheet but the CR is allocated for F.

**Decision:** The document was **not treated**.

**R4-2015342 Reply LS on Tx diversity testing**

*Type: LS out For: Approval  
 to RAN5  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2016034 Discussion on remaining open issues for Tx diversity requirements**

*Type: discussion For: Approval  
 Source: Rohde & Schwarz*

**Decision:** The document was **not treated**.

**R4-2016285 On the EVM Definition for Transmit Diversity**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Motorola Mobility France S.A.S*

**Decision:** The document was **not treated**.

**R4-2016288 On the EVM Definition for Transmit Diversity**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Lenovo, Motorola Mobility*

**Decision:** The document was **not treated**.

**R4-2016477 On Tx diversity requirements**

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

**Decision:** The document was **not treated**.

**R4-2016478 CR for TS 38.101-1 Tx diversity requirements**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0567 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Make necessary changes to eliminate the ambiguity for supporting transparent Tx diversity.

**Decision:** The document was **not treated**.

##### 7.19.2.2 Power class related to UL MIMO and other related req. (MPR, SEM, etc) [TEI16 or NR\_newRAT-Core]

**R4-2015322 Remaining issues in Power class & UL MIMO related requirments**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2015976 PHR and Pcmax verification for NR PC2 devices supporting NR PC3 for EN-DC**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution we consider verification of PHR and Pcmax for UL-MIMO PC2 and alignment with Rel-16 power-class verification

**Decision:** The document was **not treated**.

**R4-2015977 Correction of Pcmax for an NR PC2 UE supporting NR PC3 for EN-DC**

*Type: CR For: Agreement  
 38.101-3 v15.11.0 CR-0403 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

For a UE advertising NR PC2 for SA but only supporting NR PC3 when configured with EN-DC, the Pcmax for NR should by modified according to the declared (for conformance) NR power capability for NSA so that the PHR becomes correct.

**Discussion:**

The secretary commented that the CR number should be zero padded, i.e. 403 -> 0403.

**Decision:** The document was **not treated**.

**R4-2016465 Discussion on Single Carrier MPR versus Architecture**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Skyworks Solutions Inc.*

**Abstract:**

We provide here our input on how to distinguish the different MPRs vs power class and transmit chain architecture and still limit the amount of tables.

**Decision:** The document was **not treated**.

**R4-2016479 Discussion and draft reply LS on EN-DC power class**

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

**Decision:** The document was **not treated**.

#### 7.19.3 Other UE RF [WI code or TEI16]

**R4-2014167 CR CatF n7 NS\_46 AMPR and coexistence**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0492 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Missing the additional spurious requirement for NS\_46 large channel BWs > 20MHz.

**Decision:** The document was **not treated**.

**R4-2014168 CR CatF CA\_n39-n41\_and CA\_n40-n41 Sync**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0493 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

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

**R4-2014169 CR CatF Cross Band Noise DC\_3\_n1\_highBW**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0358 Cat: F (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Missing cross band noise MSD for various interband ENDC band combinations with large NR UL BW

**Decision:** The document was **not treated**.

**R4-2014170 ENDC Cross Band Noise with high NR BW**

*Type: other For: Approval  
 38.101-3 v..  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2014317 Consideration on additional ILs and MSD levels for DC\_20\_n38 UE or V2X\_20\_n38 UE based on RF architecture**

*Type: other For: Approval  
 Source: LG Electronics France*

**Decision:** The document was **not treated**.

**R4-2014318 Correction on Additional ILs and MSD levels for DC\_20\_n38 UE**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0362 Cat: F (Rel-16)  
  
 Source: LG Electronics France, Huawei*

**Abstract:**

This CR is to update additional ILs and MSD levels by 3rd harmonic problem for DC\_20\_n38 UE 5G V2X UE in TS38.101-3.

**Decision:** The document was **not treated**.

**R4-2014319 Discussion on MFBI for NR system**

*Type: discussion For: Action  
 Source: LG Electronics France*

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

**R4-2014517 n53 bracket removal**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0506 Cat: F (Rel-16)  
  
 Source: Nokia*

**Abstract:**

RAN5 is developping test cases for n53 but this band has A-MPR values and OOB table note 6 still in brackets which means that these requriements are untestable. Furthermore some references and numbering is corrected.

**Decision:** The document was **not treated**.

**R4-2014520 TS 38.101-3: Addition of missing lower order fallbacks**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0508 Cat: B (Rel-16)  
  
 Source: Nokia, AT&T*

**Abstract:**

These configurations have relating higher order configurations already in REL16 specs. It is important to add these as a correction inorder to retain specification intergity.

DC\_2A-30A\_n2A

DC\_2A-66A\_n2A

DC\_29A-30A\_n2A

DC\_29A-30A\_n66A

DC\_30A-66A\_n66A

**Decision:** The document was **not treated**.

**R4-2014521 TR 37.716-21-11: Addition of missing lower order fallbacks**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0509 Cat: B (Rel-16)  
  
 Source: Nokia, AT&T*

**Abstract:**

These configurations have relating higher order configurations already in REL16 specs. This CR captures necessary analysis into the TR.

DC\_2A-66A\_n2A

DC\_30A-66A\_n66A

DC\_2A-30A\_n2A

DC\_29A-30A\_n2A

DC\_30A-66A\_n66A

**Decision:** The document was **not treated**.

**R4-2014582 CR to 38.101-3 (Rel-16) error correntions to configurations for CA and DC**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0367 Cat: F (Rel-16)  
  
 Source: Intel Corporation*

**Abstract:**

There are errors in CA and DC configurations in Clause 5.5A and 5.5B

**Decision:** The document was **not treated**.

**R4-2014600 CR on adding NR ovelapping bands list in TS38.307 in Rel-15**

*Type: CR For: Agreement  
 38.307 v15.6.0 CR-0031 Cat: F (Rel-15)  
  
 Source: LG Electronics France*

**Abstract:**

This CR is to update NR overlapping bands list in TS38.307.

**Decision:** The document was **not treated**.

**R4-2014620 CR on adding NR ovelapping bands list in TS38.307 in Rel-16**

*Type: CR For: Agreement  
 38.307 v16.4.0 CR-0032 Cat: F (Rel-16)  
  
 Source: LG Electronics France*

**Abstract:**

This CR is to update NR overlapping bands list in TS38.307.

**Decision:** The document was **not treated**.

**R4-2014883 Clarification on RF assumption for B42\_n77 and B42\_n78**

*Type: other For: Approval  
 Source: NTT DOCOMO INC.*

**Decision:** The document was **not treated**.

**R4-2014899 Coexistence cleanup for 38.101-1 Rel16**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0518 Cat: F (Rel-16)  
  
 Source: Apple Inc.*

**Abstract:**

Rel-16 features several band protection requirements which are not technical possible or contain contradicting protection requirements.

**Decision:** The document was **not treated**.

**R4-2014901 Coexistence cleanup for 38.101-3 Rel16**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0379 Cat: F (Rel-16)  
  
 Source: Apple Inc.*

**Abstract:**

Rel-16 features several band protections which are not technical possible due to sometimes TDD bands with overlapping regions are protected or similar issues. The CR focuses on correcting false protections so that a UE will not face technical impossible emission requirements.

**Decision:** The document was **not treated**.

**R4-2014915 CR for TS 38.101-3: Corrections for intra-band contiguous EN-DC configurations**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0381 Cat: F (Rel-16)  
  
 Source: Apple Inc.*

**Abstract:**

Intra-band contiguous EN-DC configuration DC\_(n)41AB was introduced in RAN4 #94bis-e meeting through a CR (R4-2003169) which was intended for introducing new BCS for the existing EN-DC combinations, but not for brand new EN-DC configuration. This combination in principle should not be approved as it did not go through the normal TP process. In addition, the EN-DC bandwidth class “AB” has never been defined which would render DC\_(n)41AB as an invalid EN-DC configuration. Since the CR had been agreed, to avoid the iterative process of removing and reintroducing the combination, we can accept to add EN-DC BW class “AB” in Rel-16 specifications to validate this configuration. We also strongly encourage proponent companies to follow the regular process when proposing any new band combinations to avoid any potential errors being overlooked.

A few intra-band contiguous EN-DC combinations were specified with non-contigous UL configurations which should not be allowed.

**Decision:** The document was **not treated**.

**R4-2014957 CR to TS 38.101-2 on fallback group for intra-band contiguous CA (Rel-16)**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0282 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

The fallback groups for intra-band contiguous CA classes CA\_n259G and CA\_n261D in the configuration table are incorrect groups.

**Decision:** The document was **not treated**.

**R4-2015033 CR to TS38.101-1: Correction on the general requirement and configured transmitted power requirement for inter-band DC**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0532 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

For the general requirement (subclause 4.3)

The sentence agreed in R4-2006997 was not implemented in the latest spec.

For Pcmax: (subclause 6.2B.4.1)

According to the configured transmitted power single carrier, the total power reduction is (MPR+ ∆MPR) dB.

The feature of PC2 inter-band NR-DC combination is not supported in Rel-16, therefore it is no need to consider ΔPPowerClass in the formulas.

The explanation for some inter-band DC specfied terms in the formulas are missing.

**Decision:** The document was **not treated**.

**R4-2015042 Discussion on the MSD of the new channel BW for EN-DC and NR CA band combinations**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015264 CR to TS 38.101-3: corrections on ACS for intra-band contiguous EN-DC**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0388 Cat: F (Rel-16)  
  
 Source: Xiaomi*

**Abstract:**

In release 16, the transmitter is set to 4 dB below PCMAX\_L,f,c for ACS case 2 which is not aligned with the requirement in release 15. The reason is that the agreed Cat A CR (R4-2000452) was not implemented accordingly when Cat F CR (R4-2000451) was implemented after RAN4 #94-e meeting.

**Decision:** The document was **not treated**.

**R4-2015299 Editorial correction on section 5.2C to 38.101-1 R16**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0534 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

This CR corrects title for 5.2C.

**Decision:** The document was **not treated**.

**R4-2015323 Alignment of descritpion of the power class restriction for inter-band EN-DC**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0390 Cat: F (Rel-16)  
  
 Source: vivo*

**Abstract:**

The clarification for FDD-TDD ENDC HPUE has been agreed in Note 6 in Table 6.2B.1.3-1 with improved wording which is more clear. This can be also used for Note 5 to improve the consistency and better reflect the result for TDD-TDD ENDC HPUE.

**Decision:** The document was **not treated**.

**R4-2015324 Correction of delta Powerclass for Inter-band EN-DC**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0391 Cat: F (Rel-16)  
  
 Source: vivo, CMCC, China Unicom*

**Abstract:**

This is resubmission of CR R4-2010855 (CRNum: 0344). The original CR which was agreed in RAN4#96-e and also approved in RP-201504 in RAN#89, was mistakenly implemented into clause 6.2B.4.1.3a which is used for NE-DC in 38.101-3 v16.5.0. The correction for 6.2B.4.1.3 for EN-DC has to be done, and current revision to 6.2B.4.1.3a can also be kept.

-------------------

Power class 2 had been introduced for TDD-TDD ENDC and the fallback scheme had been defined in 6.2B.1.3. It has been clarified that under different conditions, the requirements for default or the supported power class would be applied and would “set the configured transmitted power as specified sub-clause 6.2B.4”

However, no revisions had been done for section 6.2B.4.1.3 which is for inter-band EN-DC for FR1. The ∆PPowerClass,EN-DC which is used to adjust this was not updated as for other cases, thus make the specification incomplete.

**Decision:** The document was **not treated**.

**R4-2015331 CR on NR power class under EN-DC**

*Type: CR For: Endorsement  
 38.101-3 v16.5.0 CR-0392 Cat: F (Rel-16)  
  
 Source: OPPO*

**Abstract:**

The capability signaling for NR part under EN-DC has been defined in RAN2 38.331, thus RAN4 spec shall be aligned.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2015332 Discussion on WRC-19 requirements**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2015336 CR on FR2 equal PSD in UL CA (R16)**

*Type: CR For: Endorsement  
 38.101-2 v16.5.0 CR-0286 Cat: F (Rel-16)  
  
 Source: OPPO*

**Abstract:**

As discussed in

R4-2015334, the equal PSD restriction in Pcmax is not needed and it has caused confusions in interpretation of requirements.

**Decision:** The document was **not treated**.

**R4-2015338 CR on simultaneous Tx-Rx for EN-DC (R16 mirror CR)**

*Type: CR For: Endorsement  
 38.101-3 v16.5.0 CR-0394 Cat: F (Rel-16)  
  
 Source: OPPO*

**Abstract:**

In RAN4#96e, the discussion of simultaneous Tx/Rx in EN-DC band combination DC\_42\_n79 happens and it was recognoized that it is unclear whether a band combination is mandatory or optional to support simultaneous Tx/Rx.

In current spec, for example in Table 5.5B.4.1-1(Inter-band EN-DC configurations within FR1 (two bands)), following two notes are defined for simultaneous Tx/Rx. In which NOTE3 means non-simultaneous Tx/Rx is only supported for the band combination, and NOTE7 means simultaneous Rx/Tx is only supported for the band combination.

NOTE 3: The minimum requirements apply only when there is non-simultaneous Tx/Rx operation between E-UTRA and NR carriers. This restriction applies also for these carriers when applicable EN-DC configuration is part of a higher order EN-DC configuration.

NOTE 7: Applicable for UE supporting inter-band EN-DC with mandatory simultaneous Rx/Tx capability.

However, it is not clear for band combinations which neither have NOTE3 nor NOTE7 for example in Table 5.5B.4.1-1. For these band combinations it should be interpretated as the simultaneous Rx/Tx is optionally supported. This is also aligned with the UE capability below in 38.306.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2015339 CR on sum of power for multiple transmit connectors**

*Type: CR For: Endorsement  
 38.101-1 v16.5.0 CR-0536 Cat: F (Rel-16)  
  
 Source: OPPO*

**Abstract:**

In R4-2011768, below agreements have been reached in changing the description of how to sum powers from multiple connectors. The agreement is reproduced below. Even the agreements are made for UL MIMO/TxD, it is also applicable to other cases which require summing of powers from multiple connectors.

RAN4 agree to define requirements for MOP and emission so that power is measured correctly for all implementations, including UE with transparent TxD:

Use “requirements are defined as the sum of powers from both connectors”.

This shall be interpreted as: Measure the power and emissions per connector and then sum them up afterwards.

RAN4 will clean-up all requirements related to summing the powers and emissions, including UL MIMO, UL full power transmission requirement.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2015552 Consideration on Cross band isolation impact with larger BW**

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

**Decision:** The document was **not treated**.

**R4-2015553 Discussion on spurious emission about UE co-existence between band n40 and n41**

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

**Decision:** The document was **not treated**.

**R4-2015554 CR on spurious emission about UE co-existence between band n40 and n41**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0539 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon, CMCC*

**Abstract:**

The operators in China has a plan to use the asynchronized deployment between band n40 and n41. It’s necessary to specify the spurious emission about UE co-existence between band n40 and n41.

**Decision:** The document was **not treated**.

**R4-2015555 Discussion on asynchronous for DC\_42\_n79**

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

**Decision:** The document was **not treated**.

**R4-2015557 CR for 38.101-1 to correct the notation of SUL band combinations in order to be aligned with 38.101-3**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0540 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Based on agreed CR R4-2006997, the sentence “5.2COperating band combination for SUL” should be removed from subclause 5.2B. The headline of sub-clause 5.2C is missing.

Based on the agreed CR R4-2009948, the notation of DC\_66A\_n78(2A)\_SUL\_n78A-n86A is changed into DC\_66A\_ SUL\_n78(2A)-n86A. The notation of SUL\_n78(2A)-n86A can be aligned with 38.101-3. It’s helpfut to avoid the confusion.

Based on agreed CR R4-2009178, the sentence “6.3COutput power dynamics for SUL” should be removed from subclause 6.3B. The headline of sub-clause 6.3C is missing.

**Decision:** The document was **not treated**.

**R4-2015699 Reference measurement channels for 70 MHz CBW**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0544 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

70 MHz CBW is introduced in Rel-16 for band n77/n78, but the reference measurement channels for 70 MHz CBW are not defined.

**Decision:** The document was **not treated**.

**R4-2015729 CR to TS 38.101-3 corrections on inter-band EN-DC configurations including FR1 and FR2**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0396 Cat: F (Rel-16)  
  
 Source: CHTTL*

**Abstract:**

Few configurations in the spec are not aligned with the agreed CR, R4-2006728, “Introducing CR on new EN-DC LTE(xDL/1UL)+ NR(2DL/1UL) DC in Rel-16”.

**Decision:** The document was **not treated**.

**R4-2015795 Discussion on handling the cross band isolation requirement for larger channel BW in Rel.16**

*Type: discussion For: Discussion  
 Source: CHTTL*

**Decision:** The document was **not treated**.

**R4-2015797 CR to correct MSD of DC\_1A-41A\_n77A&n78A**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0398 Cat: F (Rel-16)  
  
 Source: KDDI Corporation*

**Abstract:**

MSD test points are not correct for the following combinations

DC\_1A-41A\_n77A

DC\_1A-41A\_n78A

**Decision:** The document was **not treated**.

**R4-2015856 CR to TS 38.307 on release independent update for the Rel.16 EN-DC and NR CA/DC**

*Type: CR For: Agreement  
 38.307 v16.4.0 CR-0040 Cat: B (Rel-16)  
  
 Source: CHTTL, ZTE Corporation, Dish, SGS Wireless*

**Abstract:**

More Rel.16 EN-DC and NR CA/DC configurations have been introduced in latest TS 38.101-1, 38.101-2, 38.101-3, an update is needed for the release independent specification.

Note that the draft CR with same content was endorsed in RAN#96-e, R4-2011781.

**Decision:** The document was **not treated**.

**R4-2015914 Correction to supported channel bandwidths per SUL\_n41A-n81A**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0547 Cat: F (Rel-16)  
  
 Source: Keysight Technologies UK Ltd*

**Decision:** The document was **not treated**.

**R4-2015978 Modification of FR2 MOP verification with account of the 38.213 scaling rule**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this conctribution we consider the verification of the CA MOP subject to the 38.213 power prioritization

**Decision:** The document was **not treated**.

**R4-2015979 Correction to Pcmax: account of power prioritization rules for secondary cells**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0290 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Correct the specification of Pcmax for CA in view of the power prioritization rules of 38.213. Add a test case for verification of the maximum output power when the SCell power is scaled or the SCell(s) is/are dropped. Modify the definition of the (calculated) PCMAX.

The scaling rules for LTE are different when the UE configured with UL CA is power limited. For NR, an assumption that the MPR for each serving cell is the same as the MPR of the total signal could also be the baseline for intra-band CA despite different power prioritization rules; for PUSCH transmissions the SCell power levels may be reduced or SCells dropped at maximum output power. This determination of MPR would be similar to the “total A-MPR” adopted for intra-band contiguous EN-DC still recognising that the CG powers could be different. However, this should be a prerequisite for the MPR determination for intra-band CA, not the calculation of the PCMAX

**Decision:** The document was **not treated**.

**R4-2015980 Correction to modified MPR behaviour**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0291 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Incorrect conditions for the bits in the field modifiedMPRbehavior (all defined in Rel-15).

Modified MPR behaviour introduced in an earlier release is mandatory in a later release.

**Decision:** The document was **not treated**.

**R4-2015981 Verification of the P-MPR method for EN-DC FDD-TDD power class 2**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0404 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Introduce a test case for the P-MPR solution. The (UE-based) P-MPR solution is the default for EN-DC FDD-TDD PC2 in the absence of duty-cycle capabilities. Moreover, fallback to a lower EN-DC power class is not defined for the P-MPR solution.

The total EN-DC power is always 26 dBm for the P-MPR solution, there is not fallback behaviour (unclear if this is the case under all circumstances e.g. when the combined UL duty cycle exceeds 50% or for TDD U/D configurations up to 50% UL duty cycle ).

The P-MPR method is not verified. The solution is proprietary, but it should at least make sure that the maximum power of 26 dBm can be achieved for both non-simultaneos and simultaneous (overlapping) CG transmissions when the combined duty cycle is up to 50% resulting in a 23 dBm average total EN-DC power.

**Decision:** The document was **not treated**.

**R4-2016341 CR for editorial corrections 38.101-1**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0557 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Editorial corrections 38.101-1

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2016342 CR for editorial corrections 38.101-2**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0297 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Editorial corrections 38.101-2

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2016343 CR for editorial corrections 38.101-3**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0413 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

Editorial corrections 38.101-3

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2016442 Replacement of void sub-clauses**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0559 Cat: D (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Abstract:**

Sub-clauses were incorrect marked as “Void” when the intention was to reserve them for future usage.

**Discussion:**

The secretary commented that (on the coversheet) the specification number should read 38.101-1 instead of TS38.101-1.

**Decision:** The document was **not treated**.

**R4-2016451 CR to for 38.101-1: CA uplink power clarification**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0562 Cat: F (Rel-16)  
  
 Source: T-Mobile USA*

**Abstract:**

Some of the wording on UE maximum output power for carrier aggregation is unclear.

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2016458 CR for 38.101-1: Editorial corrections**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0563 Cat: D (Rel-16)  
  
 Source: T-Mobile USA*

**Abstract:**

Many editorial errors exist in 38.101-1

**Discussion:**

The secretary commented if neither UICC, ME, Radio Access Network or Core Network boxes are checked, the CR does not change anything and hence the CR is not needed.

**Decision:** The document was **not treated**.

**R4-2016483 CR for TS 38.101-1: harmonic MSD for CA\_n41-n79**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0569 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

For CA\_n41-n79, the frequency range below 2506 MHz for Band n41 is not used, it is assumed before that there is no 2nd order harmonic issue due to the applicable frequency range. However, since n41 supports larger CBW, considering the spectrum regrowth for the harmonics, the interference would still cause REFSENS degradation for n79 especially for the DL channel close to 5000MHz.

**Decision:** The document was **not treated**.

**R4-2016592 Editorial CR to change 'Void" section to reserved**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0583 Cat: D (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2016593 Editorial CR to change 'Void" section to reserved**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0308 Cat: D (Rel-16)  
  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

#### 7.19.4 BS RF [WI code or TEI16]

**R4-2015967 CR to TS 37.105: Introduction of new BS capability set for NR+EUTRA+UTRA, Rel-16**

*Type: CR For: Agreement  
 37.105 v16.5.0 CR-0204 Cat: F (Rel-16)  
  
 Source: Huawei*

**Abstract:**

Referring to the Rel-16 WI on MSR\_GSM\_UTRA\_LTE\_NR, the MSR BS specification was extended with additional CS configuration (e.g. UTRA+EUTRA+NR).

WID in RP-190642 captured that only MSR BS specifications are to be affected, i.e. TS 37.104, TS 37.141.

Related MSR BS CRs are listed below:

TS 37.104: R4-1908049Introduction of requirements for NR + UTRA/GSM combinations

TS 37.141: R4-1910476Introduction of requirements for NR + UTRA/GSM combinations

Still, the referred WI has also impacted OBUE and blocking requirements, which also impacts the AAS BS specifications.

Therefore, this CR provides modifications to the AAS BS core specification TS 37.105, to reflect modification from the MSR\_GSM\_UTRA\_LTE\_NR WI which were introduced to Rel-16 MSR BS TS 37.104.

This is a resubmission of R4-2012582, updated to the latest spec version.

**Decision:** The document was **not treated**.

**R4-2015968 CR to TS 37.145-1: Introduction of new BS capability set for NR+EUTRA+UTRA, Rel-16**

*Type: CR For: Agreement  
 37.145-1 v16.4.0 CR-0225 Cat: F (Rel-16)  
  
 Source: Huawei*

**Abstract:**

Referring to the Rel-16 WI on MSR\_GSM\_UTRA\_LTE\_NR, the MSR BS specification was extended with additional CS configuration (e.g. UTRA+EUTRA+NR).

WID in RP-190642 captured that only MSR BS specifications are to be affected, i.e. TS 37.104, TS 37.141.

Realted MSR BS CRs are listed below:

TS 37.104: R4-1908049Introduction of requirements for NR + UTRA/GSM combinations

TS 37.141: R4-1910476Introduction of requirements for NR + UTRA/GSM combinations

Still, the referred WI has also impacted OBUE and blocking requirements, which also impacts the AAS BS specifications, as well as the Capability Sets and test configurations were extended.

Therefore, this CR provides modifications to the AAS BS test specification TS 37.145-1, to reflect modification from the MSR\_GSM\_UTRA\_LTE\_NR WI which were introduced to Rel-16 MSR BS TS 37.141.

This is resubmission of R4-2012583.

**Decision:** The document was **not treated**.

**R4-2015969 CR to TS 37.145-2: Introduction of new BS capability set for NR+EUTRA+UTRA, Rel-16**

*Type: CR For: Agreement  
 37.145-2 v16.5.0 CR-0250 Cat: F (Rel-16)  
  
 Source: Huawei*

**Abstract:**

Referring to the Rel-16 WI on MSR\_GSM\_UTRA\_LTE\_NR, the MSR BS specification was extended with additional CS configuration (e.g. UTRA+EUTRA+NR).

WID in RP-190642 captured that only MSR BS specifications are to be affected, i.e. TS 37.104, TS 37.141.

Realted MSR BS CRs are listed below:

TS 37.104: R4-1908049Introduction of requirements for NR + UTRA/GSM combinations

TS 37.141: R4-1910476Introduction of requirements for NR + UTRA/GSM combinations

Still, the referred WI has also impacted OBUE and blocking requirements, which also impacts the AAS BS specifications, as well as the Capability Sets and test configurations were extended.

Therefore, this CR provides modifications to the AAS BS test specification TS 37.145-1, to reflect modification from the MSR\_GSM\_UTRA\_LTE\_NR WI which were introduced to Rel-16 MSR BS TS 37.141.

This is a resubmission of R4-2012584, updated to the latest spec version.

**Decision:** The document was **not treated**.

**R4-2016206 CR to 38.141-2: Correction to test system uncertainty**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0251 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Clause 4.1.2.2 and 4.1.2.3 is not aligned with Annex C and RAN4 agreements on test system uncertainty up to 43.5GHz.

**Decision:** The document was **not treated**.

**R4-2016430 CR to TS 37.105: addition of the OBUE applicability table, Rel-15**

*Type: CR For: Agreement  
 37.105 v15.10.0 CR-0212 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

In relation to the following 3 CRs for UTRA+EUTRA+NR Capability Set to Rel-16 which were postponed last meeting, it was observed that the OBUE applicability table introduced by CR in R4-1811112 to the TS 37.104 v15.4.0, was not mirrored to the AAS specidication TS 37.105 Rel-15.

The below proposal CRs are fixinig this aspect for Rel-16, while this CRs is addressing missing OBUE applicability table for Rel-15.

1

CR to TS 37.105: Introduction of new BS capability set for NR+EUTRA+UTRA, Rel-16

2

CR to TS 37.145-1: Introduction of new BS capability set for NR+EUTRA+UTRA, Rel-16

3

CR to TS 37.145-2: Introduction of new BS capability set for NR+EUTRA+UTRA, Rel-16

NOTE: Referring to related section in TS 37.104 Rel-16 specification, the OBUE applicabiltiy table captured the following band exceptions: band 1, 7, 38, 65. Below we provide some clarification on modifications applied in this CR:

Bands 7 and 38 was introduced based on the ECC decision for non-AAS BS products – so it is not applicable to AAS.

Band 65 was introduced for Rel-16, so it is not applicable to the Rel-15 CR.

**Decision:** The document was **not treated**.

**R4-2016431 CR to TS 37.145-1: addition of the OBUE applicability table, Rel-15**

*Type: CR For: Agreement  
 37.145-1 v15.7.0 CR-0232 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

In relation to the following 3 CRs for UTRA+EUTRA+NR Capability Set to Rel-16 which were postponed last meeting, it was observed that the OBUE applicability table was not mirrored to the AAS specifications for Rel-15.

The below proposal CRs are fixinig this aspect for Rel-16, while this CRs is addressing missing OBUE applicability table for Rel-15.

1

CR to TS 37.105: Introduction of new BS capability set for NR+EUTRA+UTRA, Rel-16

2

CR to TS 37.145-1: Introduction of new BS capability set for NR+EUTRA+UTRA, Rel-16

3

CR to TS 37.145-2: Introduction of new BS capability set for NR+EUTRA+UTRA, Rel-16

NOTE: Referring to related section in TS 37.104 Rel-16 specification, the OBUE applicabiltiy table captured the following band exceptions: band 1, 7, 38, 65. Below we provide some clarification on modifications applied in this CR:

Bands 7 and 38 was introduced based on the ECC decision for non-AAS BS products – so it is not applicable to AAS.

Band 65 was introduced for Rel-16, so it is not applicable to the Rel-15 CR.

**Decision:** The document was **not treated**.

**R4-2016432 CR to TS 37.145-2: addition of the OBUE applicability table, Rel-15**

*Type: CR For: Agreement  
 37.145-2 v15.8.0 CR-0264 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

Based on the Rel-16 CR to the TS 37.145-2 in

R4-2015969 ("CR to TS 37.145-1: Introduction of new BS capability set for NR+EUTRA+UTRA, Rel-16"), it was identifed that there is missing OBUE applicability table in Rel-15 spec. This CR adds the missing OBUE a

**Decision:** The document was **not treated**.

#### 7.19.5 RRM [WI code or TEI16]

**R4-2014280 Discussion on R16 IDLE/INACTIVE RRM requirement with SMTC2-LP**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014281 CR on R16 IDLE/INACTIVE RRM requirement with SMTC2-LP**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1150 Cat: B (Rel-16)  
  
 Source: Apple*

**Abstract:**

The SMTC2-LP is missing in the R16 RRM requirement in IDLE/INACTIVE mode.

**Decision:** The document was **not treated**.

**R4-2014378 CR on TS38.133 for E-UTRAN – NR PSCell FR2 DL active BWP switch test case with FR2 SCell in non-DRX in synchronous EN-DC**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1165 Cat: F (Rel-16)  
  
 Source: MediaTek inc.*

**Abstract:**

To align with Rel-15 spec, the missing sentence “where j is the first slot of the subframe” is added in A.5.5.6.1.

**Decision:** The document was **not treated**.

**R4-2014379 CR on TS38.133 for SCell activation and deactivation delay test cases**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1166 Cat: F (Rel-16)  
  
 Source: MediaTek inc.*

**Abstract:**

Some equations in A.4.5.3 are missing in v16.5.0.

**Decision:** The document was **not treated**.

**R4-2014671 Fine/rough beam assumption for CLI performance test cases**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1193 Cat: F (Rel-16)  
  
 Source: LG Electronics Inc.*

**Abstract:**

Capture fine or rough beam assumption for CLI performance test cases according to agreed WF R4-2008538.

Revise wrong table number which was not fully implemented in the specification based on agreed R4-2010024.

**Decision:** The document was **not treated**.

**R4-2014796 CR on interruptions at E-UTRA SRS carrier based switching in TS38.133**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1204 Cat: A (Rel-16)  
  
 Source: OPPO*

**Abstract:**

The interruption on active serving cells in NR SCG in FR2 is missing for EN-DC interruptions at E-UTRA SRS carrier-based switching

**Discussion:**

The secretary commented that the CR number 1204 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2015477 CR on maintaining L1-RSRP measurements test cases R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1273 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

For CSI-RS based L1-RSRP measurement procedure tests, the L1-RSRP reporting on aperiodic CSI-RS resources need to be tested. However, in current CSI-RS based L1-RSRP measurement tests, CSI-RS is configured as periodic resources.

**Decision:** The document was **not treated**.

**R4-2015478 Discussion on MRTD/MTTD requirements for FR1 intra-band NCCA**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015479 CR on MRTD/MTTD requirements for FR1 intra-band NCCA R16**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1274 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

In Rel-16, non-co-located deployment is also needed for FR1 intra-band non-contiguous CA.

**Decision:** The document was **not treated**.

**R4-2015533 Update NR Frequency Band Groups to include Band n48**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1299 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The frequency band group do not include Band n48.

**Decision:** The document was **not treated**.

**R4-2015534 Update NR Frequency Band Groups to include Band n65**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1300 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

The frequency band group do not include Band n65.

**Decision:** The document was **not treated**.

**R4-2015671 [CR] NR Perf Maintenance R16 Cat F**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1309 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

The following errors exist in the current test cases which mislead readers:

- In Table A.6.5.6.1.2.1-3, the configuration is for Cell 1 not Cell 2. The note should be for Cell 1 only since there is only one cell in the test.

Note that those errors are not in the R15 specifications, thus a separate R16 Category F CR is submitted to correct them.

**Decision:** The document was **not treated**.

**R4-2015792 [CR] Specify RRC processing delay in TCI state switching delay for R16 NR-U**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1330 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

In clause 8.10A.5, the value of TRRC\_processing is not given nor defined.

**Decision:** The document was **not treated**.

**R4-2015878 Correcting the range of Lmax=8 for unpaired spectrum**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1337 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The Table 8.1.1-2 refers to the Lmax value for different frequency ranges specified in 38.213. In RAN#89e, the range for Lmax=8 was changed for unpaired spectrum by CR0141v1 (RP-202015). RAN1 spesification is the source for supported Lmax (and NRLM) values, thus RAN4 spesifcation should be aligned.

This change is not changing any UE requirement or behaviour.

**Decision:** The document was **not treated**.

#### 7.19.6 Demodulation and CSI [WI code or TEI16]

#### 7.19.7 NR MIMO OTA test methods (38.827) [FS\_NR\_MIMO\_OTA\_test]

**R4-2014289 Addition of Time Domain Alternative for Spatial Correlation Validation**

*Type: CR For: Agreement  
 38.827 v16.0.0 CR-0002 Cat: B (Rel-16)  
  
 Source: Spirent Communications*

**Abstract:**

Time Domain Techniques to validate Spatial Correlation have been agreed during R4#96e

**Discussion:**

The secretary commented that the CR number 0002 is missing on the coversheet.

**Decision:** The document was **not treated**.

**R4-2016211 Update of FR2 probe configuration**

*Type: CR For: Agreement  
 38.827 v16.0.0 CR-0003 Cat: F (Rel-16)  
  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

To be produced once agreement on probe configuration has been reached

**Decision:** The document was **not treated**.

**R4-2016227 Number of Slots for NR MIMO OTA testing**

*Type: other For: Endorsement  
 Source: vivo, CAICT*

**Decision:** The document was **not treated**.

**R4-2016228 Number of Slots for NR MIMO OTA testing**

*Type: CR For: Agreement  
 38.827 v16.0.0 CR-0004 Cat: F (Rel-16)  
  
 Source: vivo, CAICT*

**Abstract:**

The minimum number of slots has not been defined for NR MIMO OTA test method.

**Decision:** The document was **not treated**.

**R4-2016544 TP to 38.827 on channel model rotations**

*Type: CR For: Agreement  
 38.827 v16.0.0 CR-0005 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Discussion:**

The secretary commented that the document type is wrong (pCR instead of CR), there is no coverhseet and the content also seems to be from another document (R4-2006742?).

**Decision:** The document was **not treated**.

**R4-2016546 TP to 38.827 on base station beamforming configuration**

*Type: CR For: Agreement  
 38.827 v16.0.0 CR-0006 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Discussion:**

The secretary commented that the document type is wrong (pCR instead of CR), there is no coverhseet and the content also seems to be from another document (R4-2006742?).

**Decision:** The document was **not treated**.

**R4-2016586 CR for 38.827 on corrections**

*Type: CR For: Agreement  
 38.827 v16.0.0 CR-0007 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

corrections

**Decision:** The document was **not treated**.

## 8 Rel-16 UE feature list

**R4-2014234 On R16 UE feature list**

*Type: discussion For: Agreement  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014483 On the Optionality of RAN4 Requirements**

*Type: other For: Approval  
 Source: Qualcomm Incorporated, CMCC, KDDI, AT&T, Ericsson, Nokia, T-Mobile USA, China Telecom*

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

**R4-2014488 Overloading of the Per-FR gap capability**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2014627 Discussion on UE feature list**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2015089 Clarification of intra-bandENDC-Support**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015566 Views on Rel-16 NR UE feature list**

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

**Decision:** The document was **not treated**.

**R4-2015798 On NRU operation modes and capabilities**

*Type: discussion For: Approval  
 Source: LG Electronics Finland*

**Abstract:**

During the RAN1#101 meeting and RAN4#96 meeting NRU UE capabilities have been discussed.

This contribution further discusses this topic and proposes a way forward.

**Decision:** The document was **not treated**.

**R4-2015982 On the FG "co-location" (2-22) and remaining FGs for NR-U**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution we consider the tentative FG 2-22 and the remaining FG for NR-U (including RAN1 placeholders)

**Decision:** The document was **not treated**.

**R4-2016030 On the Optionality of RAN4 Requirements**

*Type: other For: Approval  
 Source: Qualcomm Incorporated, CMCC, KDDI, AT&T, Ericsson, Nokia, T-Mobile USA, China Telecom, Vodafone, Verizon, Softbank*

**Decision:** The document was **not treated**.

## 9 Rel-16 spectrum related Work Items for NR

### 9.1 LTE/NR spectrum sharing in band 48/n48 frequency range [NR\_n48\_LTE\_48\_coex-Core]

#### 9.1.1 General [NR\_n48\_LTE\_48\_coex-Core]

#### 9.1.2 Channel raster, sync raster, and UL shift [NR\_n48\_LTE\_48\_coex-Core]

**R4-2014174 B48/n48 Allocation shift emission containment**

*Type: other For: Approval  
 38.101-1 v..  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2014890 LTE/NR spectrum sharing in band 48/n48 frequency range**

*Type: discussion For: Decision  
 Source: Apple Inc., Comcast*

**Decision:** The document was **not treated**.

**R4-2014891 Introduction of LTE/NR spectrum sharing in band 48/n48 frequency range**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0516 Cat: B (Rel-16)  
  
 Source: Apple Inc.*

**Abstract:**

To enable dynamic spectrum sharing between LTE and NR in band 48/n48 frequency range, DL and UL sub-carrier grids have to be aligned, which in some deployment and configurations case will require shifting the NR center frequency by -/+100kHz shift. A new NS value is added so that the UE is aware of the fact that the guard band is smaller.

**Decision:** The document was **not treated**.

**R4-2015086 n48 DSS operation with 100 kHz channel raster shift**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015350 Views on DSS in band 48/n48**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2016140 LTE/NR spectrum sharing in band 48/n48 frequency range**

*Type: other For: Approval  
 Source: Ericsson GmbH, Eurolab*

**Decision:** The document was **not treated**.

**R4-2016372 The remaining issue on n48 DSS**

*Type: discussion For: (not specified)  
 Source: Google Inc.*

**Decision:** The document was **not treated**.

## 10 Rel-17 spectrum related Work Items for NR

### 10.1 NR intra band Carrier Aggregation for xCC DL/yCC UL including contiguous and non-contiguous spectrum (x>=y) [NR\_CA\_R17\_intra]

#### 10.1.1 Rapporteur Input (WID/TR/CR) [NR\_CA\_R17\_intra-Core /Perf]

**R4-2015916 Revised WID NR Intra-band Rel-17**

*Type: WID revised For: Endorsement  
 Source: Ericsson*

**Abstract:**

Revised WID NR Intra-band Rel-17

**Decision:** The document was **not treated**.

**R4-2015919 CR introduction completed band combinations Rel-17 NR Intra-band -> 38.101-1**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0548 Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

CR introduction completed band combinations Rel-17 NR Intra-band -> 38.101-1

**Decision:** The document was **not treated**.

**R4-2015920 CR introduction completed band combinations Rel-17 NR Intra-band -> 38.101-2**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0287 Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

CR introduction completed band combinations Rel-17 NR Intra-band -> 38.101-2

**Decision:** The document was **not treated**.

**R4-2015924 TR 38.717-01-01 v0.2.0 Rel-17 NR Intra-band**

*Type: draft TR For: Agreement  
 38.717-01-01 v0.1.0  
 Source: Ericsson*

**Abstract:**

TR 38.717-01-01 v0.2.0 Rel-17 NR Intra-band

**Decision:** The document was **not treated**.

#### 10.1.2 UE RF for FR1 [NR\_CA\_R17\_intra-Core]

**R4-2014493 UE Architecture and DL MIMO Aspects for Supporting n77(3A) DL CA**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Skyworks Solutions Inc. SoftBank Corp.*

**Abstract:**

for n77(3A) DL CA, some companies raised a concern about the impact on the RF front end and RF transceiver architectureand the fact the 4x4 DL MIMO has mandatory support for band n77. In this contribution, we discuss these aspects to reach a common unders

**Decision:** The document was **not treated**.

**R4-2015069 MSD for CA\_n71(2A)**

*Type: pCR For: Approval  
 38.717-01-01 v0.1.0  
 Source: MediaTek Inc.*

**Decision:** The document was **not treated**.

**R4-2015431 DraftCR for 38.101-1 to add BCS1 for CA\_n77(2A)**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To add BCS1 for CA\_n77(2A).

**Decision:** The document was **not treated**.

**R4-2016329 TP to TR 38.717-01-01 to include CA\_n2(2A)**

*Type: pCR For: Approval  
 38.717-01-01 v0.1.0  
 Source: Ericsson, Verizon*

**Abstract:**

TP to TR 38.717-01-01 to include CA\_n2(2A)

**Decision:** The document was **not treated**.

**R4-2016330 TP to TR 38.717-01-01 to include CA\_n5(2A)**

*Type: pCR For: Approval  
 38.717-01-01 v0.1.0  
 Source: Ericsson, Verizon, MediaTek*

**Abstract:**

TP to TR 38.717-01-01 to include CA\_n5(2A)

**Decision:** The document was **not treated**.

**R4-2016331 TP to TR 38.717-01-01 to include CA\_n77(3A)**

*Type: pCR For: Approval  
 38.717-01-01 v0.1.0  
 Source: Ericsson, Verizon*

**Abstract:**

TP to TR 38.717-01-01 to include CA\_n77(3A)

**Decision:** The document was **not treated**.

**R4-2016332 TP to TR 38.717-01-01 to include CA\_n77(4A)**

*Type: pCR For: Approval  
 38.717-01-01 v0.1.0  
 Source: Ericsson, Verizon*

**Abstract:**

TP to TR 38.717-01-01 to include CA\_n77(4A)

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

**R4-2016339 TP to TR 38.717-01-01 to update MSD values CA\_n71(2A)**

*Type: pCR For: Approval  
 38.717-01-01 v0.1.0  
 Source: Ericsson, T-Mobile US*

**Abstract:**

TP to TR 38.717-01-01 to update MSD values CA\_n71(2A)

**Decision:** The document was **not treated**.

#### 10.1.3 UE RF for FR2 [NR\_CA\_R17\_intra-Core]

### 10.2 NR inter-band Carrier Aggregation/Dual Connectivity for 2 bands DL with x bands UL (x=1, 2) [NR\_CADC\_R17\_2BDL\_xBUL]

#### 10.2.1 Rapporteur Input (WID/TR/CR) [NR\_CADC\_R17\_2BDL\_xBUL-Core/Perf]

**R4-2015057 Revised WID on Rel-17 NR Inter-band CA\_DC xUL\_2DL (x=1,2)**

*Type: WID revised For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015058 Draft 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: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015059 Draft 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: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015184 TR 38.717-02-01 v0.2.0**

*Type: draft TR For: Agreement  
 38.717-02-01 v0.2.0  
 Source: ZTE Wistron Telecom AB*

**Decision:** The document was **not treated**.

#### 10.2.2 NR inter band CA without any FR2 band(s) [NR\_CADC\_R17\_2BDL\_xBUL-Core]

**R4-2014110 TP for TR 38.717-02-01 CA\_n41-n77**

*Type: pCR For: Approval  
 38.717-02-01 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014111 TP for TR 38.717-02-01 CA\_n41-n78**

*Type: pCR For: Approval  
 38.717-02-01 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014131 TP for TR 38.717-02-01 CA\_n2-n66**

*Type: pCR For: Approval  
 38.717-02-01 v0.1.0  
 Source: Samsung, TELUS, Bell mobility*

**Decision:** The document was **not treated**.

**R4-2014141 nn**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Samsung, TELUS, Bell mobility*

**Decision:** The document was **not treated**.

**R4-2014522 draft CR for NR inter-band CA for 2 bands DL**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Nokia, T-Mobile USA*

**Abstract:**

Addition of higher order configurations.

**Decision:** The document was **not treated**.

**R4-2014524 TP for TR 38.717-02-01: CA\_n41-n77**

*Type: pCR For: Approval  
 38.717-02-01 v0.1.0  
 Source: Nokia, T-Mobile USA*

**Decision:** The document was **not treated**.

**R4-2014525 TP for TR 38.717-02-01: CA\_n71A-n77A**

*Type: pCR For: Approval  
 38.717-02-01 v0.1.0  
 Source: Nokia, T-Mobile USA*

**Decision:** The document was **not treated**.

**R4-2014842 DraftCR to 38.101-1: Introduce NR CA configurations for CA\_n2A-n48 and CA\_n48-n66A combinations**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Verizon Denmark*

**Abstract:**

Additional inter-band CA and DC configurations are missing in the spec for CA\_n2A-n48 and CA\_n48-n66A combinations

**Decision:** The document was **not treated**.

**R4-2014876 TP for TR 37.717-02-01: CA\_n5-n48**

*Type: discussion For: Approval  
 Source: Verizon Denmark*

**Decision:** The document was **not treated**.

**R4-2015045 Draft CR to TS38.101-1: Add missing OOB blocking exception combination**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: ZTE Corporation*

**Abstract:**

For CA\_n5-n78 and CA\_n28-n78, it needs to define OOB blocking exception requirements

**Decision:** The document was **not treated**.

**R4-2015046 TP for TR38.717-02-01\_ CA\_n34A-n79A**

*Type: pCR For: Approval  
 38.717-02-01 v0.1.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015075 draftCR for CA\_n66(2A)-n77A, CA\_n66A-n77(2A) and CA\_n66(2A)-n77(2A) BCS1**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction of CA\_n66(2A)-n77A, CA\_n66A-n77(2A) and CA\_n66(2A)-n77(2A)

**Decision:** The document was **not treated**.

**R4-2015076 TP to TR 38.717-02-01: CA\_n5-n25**

*Type: pCR For: Approval  
 38.717-02-01 v0.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015077 TP to TR 38.717-02-01: CA\_n25-n77**

*Type: pCR For: Approval  
 38.717-02-01 v0.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015082 TP to TR 38.717-02-01 to correct CA\_n7(2A)-n66 BCS**

*Type: pCR For: Approval  
 38.717-02-01 v0.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015425 DraftCR for 38.101-1 to add BCS1 for CA\_n20A-n28A**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To add BCS1 for CA\_n20A-n28A.

**Decision:** The document was **not treated**.

**R4-2015426 DraftCR for 38.101-1 to add BCS1 for CA\_n1A-n78A CA\_n1A-n78(2A)**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To add BCS1 for CA\_n1A-n78A CA\_n1A-n78(2A).

**Decision:** The document was **not treated**.

**R4-2015427 DraftCR for 38.101-1 to add BCS1 for CA\_n8A-n78A and CA\_n8A-n78(2A)\_BCS0**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To add BCS1 for CA\_n8A-n78A and CA\_n8A-n78(2A)\_BCS0.

**Decision:** The document was **not treated**.

**R4-2015428 TP for TR 38.717-02-01: to add UL configuration for CA\_n78A-n79A and CA\_n78(2A)-n79A\_BCS0**

*Type: pCR For: Approval  
 38.717-02-01 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015429 TP for TR 38.717-02-01: CA\_n8A-n28A**

*Type: pCR For: Approval  
 38.717-02-01 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015430 TP for TR 38.717-02-01: CA\_n3A-n7A**

*Type: pCR For: Approval  
 38.717-02-01 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

#### 10.2.3 NR inter band CA with at least one FR2 band [NR\_CADC\_R17\_2BDL\_xBUL-Core]

**R4-2014813 draft CR 38.101-3 to add DC\_n1-n257 and DC\_n79-n257**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: NTT DOCOMO, INC.*

**Abstract:**

Adding configurations to existing DC combinations. The following NR DC configurations are specified by draft CR according to the agreement described in R4-2005647 since corresponding NR CA configurations have been already aprroved.

**Decision:** The document was **not treated**.

**R4-2014843 DraftCR to 38.101-3: Introduce inter-band CA and DC configurations including FR2**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Verizon Denmark*

**Abstract:**

Introduce NR CA configurations for CA\_n48-n260 and CA\_n66-261

**Decision:** The document was **not treated**.

**R4-2015131 Draft CR for 38.101-3 to add n78C in DC\_n78-n257**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: SK Telecom, Samsung, Ericsson, Nokia, LGE*

**Abstract:**

DC combos of n78-n257 are updated to add DL n78C.

**Decision:** The document was **not treated**.

**R4-2015217 draftCR to introduce CADC\_n1-n258 to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Nokia*

**Abstract:**

Introduction of new combinations due to operator request.

**Decision:** The document was **not treated**.

**R4-2015218 draftCR to introduce CADC\_n40-n258 to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Nokia*

**Abstract:**

Introduction of new combinations due to operator request.

**Decision:** The document was **not treated**.

**R4-2015219 draftCR to introduce CADC\_n78-n258 to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Nokia*

**Abstract:**

Introduction of new combinations due to operator request.

**Decision:** The document was **not treated**.

**R4-2016308 CR to add CBW 25, 30 and 70 MHz for n78 in n78-n258 configurations**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Ericsson, Telstra*

**Abstract:**

Adding CBW 25, 30 and 70 MHz for n78 in n78-n258 configurations

**Decision:** The document was **not treated**.

### 10.3 DC of 1 LTE band and 1 NR band [DC\_R17\_1BLTE\_1BNR\_2DL2UL]

#### 10.3.1 Rapporteur Input (WID/TR/CR) [DC\_R17\_1BLTE\_1BNR\_2DL2UL-Core/Perf]

**R4-2014786 TR 37.717-11-11 v0.2.0 Rel-17 Dual Connectivity (DC) of 1 LTE band (1DL/1UL) and 1 NR band (1DL/1UL)**

*Type: draft TR For: Agreement  
 37.717-11-11 v0.1.0  
 Source: CHTTL*

**Decision:** The document was **not treated**.

**R4-2014787 Revised WID for Rel-17 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 **not treated**.

**R4-2014788 Big CR for Rel-17 Dual Connectivity (DC) of 1 LTE band (1DL/1UL) and 1 NR band (1DL/1UL)**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0376 Cat: B (Rel-17)  
  
 Source: CHTTL*

**Decision:** The document was **not treated**.

#### 10.3.2 EN-DC without FR2 band [DC\_R17\_1BLTE\_1BNR\_2DL2UL-Core]

**R4-2014030 TP for 37.717-11-11 for DC\_8\_n2**

*Type: pCR For: Approval  
 37.717-11-11 v0.1.0  
 Source: Huawei,HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014070 TP to TR 37.717-11-11: DC\_18A\_n28A**

*Type: pCR For: Approval  
 37.717-11-11 v0.1.0  
 Source: KDDI Corporation*

**Abstract:**

This contribution is a text proposal for TR 37.717-11-11 to include DC\_18A\_28A.

**Decision:** The document was **not treated**.

**R4-2014142 nn**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Samsung, SK Telecom, KT, KDDI, TELUS, Bell mobility*

**Decision:** The document was **not treated**.

**R4-2014172 DC\_XXA\_71A\_n71A REFSENS relaxation**

*Type: other For: Approval  
 38.101-3 v..  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2014810 TP to TR 37.717-11-11: DC\_18A\_n41A**

*Type: pCR For: Approval  
 37.717-11-11 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014850 TP for TR 38.717-11-11: DC\_48\_n77**

*Type: discussion For: Approval  
 Source: Verizon Denmark*

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

**R4-2015071 draftCR for DC\_1A-1A\_n28A and DC\_1A-1A\_n78A**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction of DC\_1A-1A\_n28A and DC\_1A-1A\_n78A

**Decision:** The document was **not treated**.

**R4-2015221 TP for 37.717-11-11 to introduce DC\_7\_n2A**

*Type: pCR For: Approval  
 37.717-11-11 v0.1.0  
 Source: Nokia*

**Decision:** The document was **not treated**.

**R4-2015245 TP for 37.717-11-11 to introduce DC\_71A\_n71A**

*Type: pCR For: Approval  
 37.717-11-11 v0.1.0  
 Source: Nokia, T-Mobile*

**Decision:** The document was **not treated**.

**R4-2015403 TP for TR 37.717-11-11: DC\_12\_n71**

*Type: pCR For: Approval  
 37.717-11-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015928 CR to add configurations for 1\_n40 and 3\_n40**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Ericsson*

**Abstract:**

Adding configurations for 1\_n40 and 3\_n40

**Decision:** The document was **not treated**.

**R4-2016304 CR to add DC\_1\_n258 configurations**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Ericsson, Telstra*

**Abstract:**

Adding DC\_1\_n258 configurations

**Decision:** The document was **not treated**.

**R4-2016309 CR to add CA\_n7B UL configurations**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Ericsson, Telstra*

**Abstract:**

Adding CA\_n7B UL configurations

**Decision:** The document was **not treated**.

#### 10.3.3 EN-DC with FR2 band [DC\_R17\_1BLTE\_1BNR\_2DL2UL-Core]

**R4-2014607 Draft CR for TS 38.101-3: Support of Uplink n257D/G/H/I for DC\_8\_n257 and DC\_11\_n257**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: SoftBank Corp.*

**Abstract:**

DC combos of 8\_n257 and 11\_n257 are updated to add UL n257D/G/H/I.

**Decision:** The document was **not treated**.

**R4-2014844 DraftCR to 38.101-3: Introduce configurations for inter-band EN-DC including FR2**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Verizon Denmark*

**Abstract:**

Some uplink configuratoins are missing from the privious approved proposals, inlcuding configuraitons,

DC\_2A\_n260I

DC\_5A\_n260I

DC\_13A\_n260I

DC\_48A\_n260G

DC\_48A\_n260H

DC\_48A\_n260I

DC\_66A\_n260I

In addition, following two downlink configurations are missing,

DC\_48A\_n261(A-G-H)

DC\_48A\_n261(A-G-I)

**Decision:** The document was **not treated**.

**R4-2014877 TP for TR 37.717-11-11 for DC\_2\_n261**

*Type: discussion For: Approval  
 Source: Verizon Denmark*

**Decision:** The document was **not treated**.

**R4-2015132 Draft CR for 38.101-3 to add UL EN-DC configurations for DC\_5\_n257, DC\_7\_n257 and DC\_7-7\_n257**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: SK Telecom, Samsung, Ericsson, Nokia, LGE*

**Abstract:**

DC combos of 5\_n257, 7\_n257, and 7-7\_n257 are updated to add UL CA.

**Decision:** The document was **not treated**.

**R4-2015220 draftCR to introduce DC\_8A\_n258 to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Nokia*

**Abstract:**

Introduction of new combinations due to operator request.

**Decision:** The document was **not treated**.

### 10.4 DC of 2 LTE band and 1 NR band [DC\_R17\_2BLTE\_1BNR\_3DL2UL]

**R4-2014056 TP for TR 37.717-21-11: DC\_7-32\_n78**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: VODAFONE Group Plc*

**Abstract:**

This contribution is a text proposal for TR 37.717-21-11 to update the reference sensitivity exceptions for DC\_7-32\_n78. Test points are proposed for B32 to account for the IMD3 and IMD4 impact of a DC\_7\_n78 UL configuration.

**Decision:** The document was **not treated**.

**R4-2014057 TP for TR 37.717-21-11: DC\_7-32\_n1**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: VODAFONE Group Plc*

**Abstract:**

This contribution is a text proposal for TR 37.717-21-11 to include DC\_7-32\_n1.

**Decision:** The document was **not treated**.

**R4-2014058 TP for TR 37.717-21-11: DC\_20-32\_n1**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: VODAFONE Group Plc*

**Abstract:**

This contribution is a text proposal for TR 37.717-21-11 to include DC\_20-32\_n1.

**Decision:** The document was **not treated**.

#### 10.4.1 Rapporteur Input (WID/TR/CR) [DC\_R17\_2BLTE\_1BNR\_3DL2UL-Core/Perf]

**R4-2015704 TR 37.717-21-11 V0.2.0 for DC of 2 LTE band and 1 NR band**

*Type: draft TR For: Agreement  
 37.717-21-11 v0.2.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015705 Revised 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 **not treated**.

**R4-2015706 CR on introduction of completed EN-DC of 2 bands LTE and 1 band NR from RAN4#96e and RAN4#97e into TS 38.101-3**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0395 Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

#### 10.4.2 EN-DC without FR2 band [DC\_R17\_2BLTE\_1BNR\_3DL2UL-Core]

**R4-2014031 TP for 37.717-21-11 for DC\_2-66\_n7**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Huawei,HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014032 TP for 37.717-21-11 for DC\_2-5\_n7**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Huawei,HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014033 TP for 37.717-21-11 for DC\_2-8\_n2**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Huawei,HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014034 TP for 37.717-21-11 for DC\_5-66\_n7**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Huawei,HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014035 TP for 37.717-21-11 for DC\_20-32\_n1**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Huawei,HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014036 TP for 37.717-21-11 for DC\_20-32\_n3**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Huawei,HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014103 TP for TR 37.717-21-11 DC\_1-3\_n3**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014104 TP for TR 37.717-21-11 DC\_1-41\_n3**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014105 TP for TR 37.717-21-11 DC\_3-18\_n3**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014106 TP for TR 37.717-21-11 DC\_3-41\_n3**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014128 TP for TR 37.717-21-11 DC\_5A-7A\_n66A**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Samsung, TELUS, Bell mobility*

**Decision:** The document was **not treated**.

**R4-2014129 TP for TR 37.717-21-11 DC\_7-66\_n77**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Samsung, TELUS, Bell mobility*

**Decision:** The document was **not treated**.

**R4-2014132 TP for TR 37.717-21-11 DC\_2-5\_n48**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Samsung, Verizon*

**Decision:** The document was **not treated**.

**R4-2014133 TP for TR 37.717-21-11 DC\_2-13\_n48**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Samsung, Verizon*

**Decision:** The document was **not treated**.

**R4-2014135 TP for TR 37.717-21-11 DC\_2-48\_n5**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Samsung, Verizon*

**Decision:** The document was **not treated**.

**R4-2014136 TP for TR 37.717-21-11 DC\_5-46\_n66**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Samsung, Verizon*

**Decision:** The document was **not treated**.

**R4-2014137 TP for TR 37.717-21-11 DC\_5-66\_n48**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Samsung, Verizon*

**Decision:** The document was **not treated**.

**R4-2014138 TP for TR 37.717-21-11 DC\_5-66\_n77**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Samsung, Verizon*

**Decision:** The document was **not treated**.

**R4-2014139 TP for TR 37.717-21-11 DC\_13-48\_n77**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Samsung, Verizon*

**Decision:** The document was **not treated**.

**R4-2014144 nn**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Samsung, SK Telecom, KT, KDDI, Verizon*

**Decision:** The document was **not treated**.

**R4-2014612 TP for TR 37.717-21-11: EN-DC\_1-42\_n3**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2014613 TP for TR 37.717-21-11: EN-DC\_8-42\_n3**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2014614 TP update for TR 37.717-21-11: EN-DC\_1-11\_n28**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: SoftBank Corp., LG Electronics*

**Decision:** The document was **not treated**.

**R4-2014811 TP for DC\_3-18\_n28**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014831 Draft CR to 38.101-3: Error correction of EN-DC configurations**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Verizon Denmark*

**Abstract:**

The LTE\_48B is not defined, and it is incorrectly applied in the following confirgurations,

DC\_13A-48B\_n2A

DC\_13A-48B\_n66A

DC\_48B-66A\_n5A

**Decision:** The document was **not treated**.

**R4-2014852 TP for TR 37.717-21-11: CA\_2-66\_n77**

*Type: discussion For: Approval  
 Source: Verizon Denmark*

**Decision:** The document was **not treated**.

**R4-2014854 TP for TR 37.717-21-11: CA\_2-48\_n77**

*Type: discussion For: Approval  
 Source: Verizon Denmark*

**Decision:** The document was **not treated**.

**R4-2014856 TP for TR 37.717-21-11: CA\_2-13\_n77**

*Type: discussion For: Approval  
 Source: Verizon Denmark*

**Decision:** The document was **not treated**.

**R4-2014857 TP for TR 37.717-21-11: CA\_2-5\_n77**

*Type: discussion For: Approval  
 Source: Verizon Denmark*

**Decision:** The document was **not treated**.

**R4-2014858 TP for TR 37.717-21-11: CA\_5-13\_n66**

*Type: discussion For: Approval  
 Source: Verizon Denmark*

**Decision:** The document was **not treated**.

**R4-2014860 TP for TR 37.717-21-11: CA\_13-66\_n77**

*Type: discussion For: Approval  
 Source: Verizon Denmark*

**Decision:** The document was **not treated**.

**R4-2014862 TP for TR 37.717-21-11: CA\_13-66\_n5**

*Type: discussion For: Approval  
 Source: Verizon Denmark*

**Decision:** The document was **not treated**.

**R4-2014864 TP for TR 37.717-21-11: CA\_48-66\_n77**

*Type: discussion For: Approval  
 Source: Verizon Denmark*

**Decision:** The document was **not treated**.

**R4-2014952 TP for DC\_1-18\_n28**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014953 TP for DC\_1-18\_n41**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014982 TP for DC\_3-42\_n1 for TR 37.717-21-11**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015072 draftCR for DC\_1A-1A-3A\_n28A, DC\_1A-1A-3C\_n28A, DC\_1A-1A-3A\_n78A, DC\_1A-1A-3C\_n78A, DC\_1A-1A-5A\_n78A, DC\_1A-1A-7A\_n28A, DC\_1A-1A-28A\_n78A, and DC\_3C-5A\_n78A**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction of DC\_1A-1A-3A\_n28A, DC\_1A-1A-3C\_n28A, DC\_1A-1A-3A\_n78A, DC\_1A-1A-3C\_n78A, DC\_1A-1A-5A\_n78A, DC\_1A-1A-7A\_n28A, DC\_1A-1A-28A\_n78A, and DC\_3C-5A\_n78A

**Decision:** The document was **not treated**.

**R4-2015225 TP for 37.717-21-11 to introduce DC\_5A-7A\_n7A**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Nokia*

**Decision:** The document was **not treated**.

**R4-2015226 TP for 37.717-21-11 to introduce DC\_2A-28A\_n7A**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Nokia, ZTE*

**Decision:** The document was **not treated**.

**R4-2015227 TP for 37.717-21-11 to introduce DC\_28A-66A\_n7A**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Nokia, ZTE*

**Decision:** The document was **not treated**.

**R4-2015228 TP for 37.717-21-11 to introduce DC\_7A-28A\_n2A**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Nokia, ZTE*

**Decision:** The document was **not treated**.

**R4-2015229 TP for 37.717-21-11 to introduce DC\_2A-7A\_n7A**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Nokia*

**Decision:** The document was **not treated**.

**R4-2015246 TP for 37.717-21-11 to introduce DC\_2A-71A\_n71A and DC\_66A-71A\_n71A**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Nokia, T-Mobile*

**Decision:** The document was **not treated**.

**R4-2015268 TP to TR 37.717-21-11 DC\_1A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015269 TP to TR 37.717-21-11 DC\_3A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015270 TP to TR 37.717-21-11 DC\_7A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015271 TP to TR 37.717-21-11 DC\_8A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015404 TP for TR 37.717-21-11: DC\_7A-66A\_n7A/DC\_7A-66A-66A\_n7A**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015710 TP for TR 37.717-21-11: DC\_2-7\_n77**

*Type: pCR For: Approval  
 37.717-21-11 v0.2.0  
 Source: Huawei, HiSilicon, Bell Mobility, Telus*

**Decision:** The document was **not treated**.

**R4-2015711 TP for TR 37.717-21-11: DC\_7-66\_n77**

*Type: pCR For: Approval  
 37.717-21-11 v0.2.0  
 Source: Huawei, HiSilicon, Bell Mobility, Telus*

**Decision:** The document was **not treated**.

**R4-2015929 TP for TR 37.717-21-11 to include DC\_1A-40A\_n78A, DC\_1A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP for TR 37.717-21-11 to include DC\_1A-40A\_n78A, DC\_1A-40C\_n78A

**Decision:** The document was **not treated**.

**R4-2015930 TP for TR 37.717-21-11 to include DC\_3A-40A\_n78A, DC\_3A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP for TR 37.717-21-11 to include DC\_3A-40A\_n78A, DC\_3A-40C\_n78A

**Decision:** The document was **not treated**.

**R4-2015931 TP for TR 37.717-21-11 to include DC\_7A-40A\_n78A, DC\_7A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP for TR 37.717-21-11 to include DC\_7A-40A\_n78A, DC\_7A-40C\_n78A

**Decision:** The document was **not treated**.

**R4-2016310 CR to add CA\_n7B UL configurations**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Ericsson, Telstra*

**Abstract:**

Adding CA\_n7B UL configurations

**Decision:** The document was **not treated**.

#### 10.4.3 DMEN-DC with FR2 band [DC\_R17\_2BLTE\_1BNR\_3DL2UL-Core]

**R4-2014134 TP for TR 37.717-21-11 DC\_2-46\_n261**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Samsung, Verizon*

**Decision:** The document was **not treated**.

**R4-2014140 TP for TR 37.717-21-11 DC\_13-46\_n261**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Samsung, Verizon*

**Decision:** The document was **not treated**.

**R4-2014143 nn**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Samsung, Verizon*

**Decision:** The document was **not treated**.

**R4-2014609 Draft CR for TS 38.101-3: Support of Uplink n257D/G/H/I for DC\_1-8\_n257, DC\_1-11\_n257, DC\_3-8\_n257 and DC\_8-11\_n257**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: SoftBank Corp.*

**Abstract:**

DC combos of 1-8\_n257, 1-11\_n257, 3-8\_n257 and 8-11\_n257 are updated to add UL n257D/G/H/I.

**Decision:** The document was **not treated**.

**R4-2015133 Draft CR for 38.101-3 to add UL EN-DC configurations including FR2 with 3DL and 2UL**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: SK Telecom, Samsung, Ericsson, Nokia, LGE*

**Abstract:**

DC combos supporting UL CA are updated.

**Decision:** The document was **not treated**.

**R4-2015222 draftCR to introduce DC\_3A-8A\_n258 to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Nokia*

**Abstract:**

Introduction of new combinations due to operator request.

**Decision:** The document was **not treated**.

**R4-2015223 draftCR to introduce DC\_7A-8A\_n258 to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Nokia*

**Abstract:**

Introduction of new combinations due to operator request.

**Decision:** The document was **not treated**.

**R4-2015224 draftCR to introduce DC\_3A-7A\_n258 to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Nokia*

**Abstract:**

Introduction of new combinations due to operator request.

**Decision:** The document was **not treated**.

### 10.5 DC of 3 LTE band and 1 NR band [DC\_R17\_3BLTE\_1BNR\_4DL2UL]

**R4-2014059 TP for TR 37.717-31-11: DC\_1-7-32\_n78**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: VODAFONE Group Plc*

**Abstract:**

This contribution is a text proposal for TR 37.717-31-11 to update the reference sensitivity exceptions for DC\_1-7-32\_n78.

**Decision:** The document was **not treated**.

**R4-2014060 TP for TR 37.717-31-11: DC\_1-20-32\_n28**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: VODAFONE Group Plc*

**Abstract:**

This contribution is a text proposal for TR 37.717-31-11 to update the reference sensitivity exceptions for DC\_1-20-32\_n28.

**Decision:** The document was **not treated**.

**R4-2014061 TP for TR 37.717-31-11: DC\_1-20-32\_n78**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: VODAFONE Group Plc*

**Abstract:**

This contribution is a text proposal for TR 37.717-31-11 to update the reference sensitivity exceptions for DC\_1-20-32\_n78.

**Decision:** The document was **not treated**.

**R4-2014062 TP for TR 37.717-31-11: DC\_3-7-32\_n78**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: VODAFONE Group Plc*

**Abstract:**

This contribution is a text proposal for TR 37.717-31-11 to update the reference sensitivity exceptions for DC\_3-7-32\_n78.

**Decision:** The document was **not treated**.

**R4-2014063 TP for TR 37.717-31-11: DC\_3-20-32\_n78**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: VODAFONE Group Plc*

**Abstract:**

This contribution is a text proposal for TR 37.717-31-11 to update the reference sensitivity exceptions for DC\_3-20-32\_n78.

**Decision:** The document was **not treated**.

**R4-2014064 TP for TR 37.717-31-11: DC\_7-20-32\_n1**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: VODAFONE Group Plc*

**Abstract:**

This contribution is a text proposal for TR 37.717-31-11 to update the reference sensitivity exceptions for DC\_7-20-32\_n1.

**Decision:** The document was **not treated**.

#### 10.5.1 Rapporteur Input (WID/TR/CR) [DC\_R17\_3BLTE\_1BNR\_4DL2UL-Core/Perf]

**R4-2015917 Revised WID LTE 3DL and one NR band Rel-17**

*Type: WID revised For: Endorsement  
 Source: Ericsson*

**Abstract:**

Revised WID LTE 3DL and one NR band Rel-17

**Decision:** The document was **not treated**.

**R4-2015921 CR introduction completed band combinations LTE 3DL and one NR band -> 38.101-3**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0400 Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

CR introduction completed band combinations LTE 3DL and one NR band -> 38.101-3

**Decision:** The document was **not treated**.

**R4-2015925 TR 37.717-31-11 v0.2.0 Rel-17 DC combinations LTE 3DL and one NR band**

*Type: draft TR For: Agreement  
 37.717-31-11 v0.1.0  
 Source: Ericsson*

**Abstract:**

TR 37.717-31-11 v0.2.0 Rel-17 DC combinations LTE 3DL and one NR band

**Decision:** The document was **not treated**.

#### 10.5.2 EN-DC without FR2 band [DC\_R17\_3BLTE\_1BNR\_4DL2UL-Core]

**R4-2014037 TP for 37.717-31-11 for DC\_1-20-32\_n3**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei,HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014038 TP for 37.717-31-11 for DC\_2-4-7\_n28**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei,HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014039 TP for 37.717-31-11 for DC\_2-5-7\_n66**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei,HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014040 TP for 37.717-31-11 for DC\_2-5-66\_n7**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei,HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014041 TP for 37.717-31-11 for DC\_2-5-66\_n66**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei,HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014042 TP for 37.717-31-11 for DC\_2-7-66\_n28**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei,HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014043 TP for 37.717-31-11 for DC\_3-20-32\_n1**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei,HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014107 TP for TR 37.717-31-11 DC\_1-3-18\_n3**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014108 TP for TR 37.717-31-11 DC\_1-3-41\_n3**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014109 TP for TR 37.717-31-11 DC\_1-3-41\_n41**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014130 TP for TR 37.717-31-11 DC\_2-5-7\_n66**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Samsung, TELUS, Bell mobility*

**Decision:** The document was **not treated**.

**R4-2014145 nn**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Samsung, SK Telecom, KT, KDDI*

**Decision:** The document was **not treated**.

**R4-2014615 TP for TR 37.717-31-11: EN-DC\_1-3-11\_n28**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2014616 TP for TR 37.717-31-11: EN-DC\_1-3-11\_n77**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2014617 TP for TR 37.717-31-11: EN-DC\_3-8-11\_n28**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2014618 TP for TR 37.717-31-11: EN-DC\_3-8-11\_n77**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2014619 TP for TR 37.717-31-11: EN-DC\_1-8-11\_n28**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2014807 TP for TR 37.717-31-11: DC\_1A-3A-18A\_n28A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014845 TP for TR 37.717-31-11: DC\_1A-3A-18A\_n41A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2015073 draftCR for DC\_1A-3C-5A\_n78A, DC\_1A-1A-3A-5A\_n78A, DC\_1A-1A-3C-5A\_n78A, DC\_1A-1A-3A-7A\_n78A, DC\_1A-1A-3C-7A\_n78A, DC\_1A-1A-3C-7A\_n28A, DC\_1A-1A-3A-28A\_n78A, DC\_1A-1A-3C-28A\_n78A and DC\_3C-5A-7A\_n78A**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction of DC\_1A-3C-5A\_n78A, DC\_1A-1A-3A-5A\_n78A, DC\_1A-1A-3C-5A\_n78A, DC\_1A-1A-3A-7A\_n78A, DC\_1A-1A-3C-7A\_n78A, DC\_1A-1A-3C-7A\_n28A, DC\_1A-1A-3A-28A\_n78A, DC\_1A-1A-3C-28A\_n78A and DC\_3C-5A-7A\_n78A

**Decision:** The document was **not treated**.

**R4-2015231 TP for 37.717-31-11 to introduce DC\_2A-7A-28A\_n7A**

*Type: pCR For: Approval  
 37.717-21-11 v0.1.0  
 Source: Nokia*

**Decision:** The document was **not treated**.

**R4-2015247 TP for 37.717-31-11 to introduce DC\_2A-66A-71A\_n71A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Nokia, T-Mobile*

**Decision:** The document was **not treated**.

**R4-2015248 TP for 37.717-31-11 to introduce DC\_2-5-66\_n77A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Nokia, Verizon*

**Decision:** The document was **not treated**.

**R4-2015249 TP for 37.717-31-11 to introduce DC\_2-13-66\_n77A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Nokia, Verizon*

**Decision:** The document was **not treated**.

**R4-2015250 TP for 37.717-31-11 to introduce DC\_2-48-66\_n77A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Nokia, Verizon*

**Decision:** The document was **not treated**.

**R4-2015272 TP to TR 37.717-31-11 DC\_1A-3A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei, HiSilicon, Nokia*

**Decision:** The document was **not treated**.

**R4-2015273 TP to TR 37.717-31-11 DC\_1A-7A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015274 TP to TR 37.717-31-11 DC\_1A-8A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei, HiSilicon, Nokia*

**Decision:** The document was **not treated**.

**R4-2015275 TP to TR 37.717-31-11 DC\_3A-7A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015276 TP to TR 37.717-31-11 DC\_3A-8A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei, HiSilicon, Nokia*

**Decision:** The document was **not treated**.

**R4-2015277 TP to TR 37.717-31-11 DC\_7A-8A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015405 TP for TR 37.717-31-11: DC\_1A-7A-8A\_n28A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015406 TP for TR 37.717-31-11: DC\_3A-7A-8A\_n28A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015407 TP for TR 37.717-31-11: DC\_1A-7A-28A\_n3A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015408 TP for TR 37.717-31-11: DC\_3A-8A-40A\_n1A/DC\_3A-8A-40C\_n1A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015409 TP for TR 37.717-31-11: DC\_7A-8A-40A\_n1A/DC\_7A-8A-40C\_n1A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015410 DraftCR for 38.101-3 to add configuration DC\_3A-7A-40C\_n1A**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To add ENDC configuration DC\_3A-7A-40C\_n1A.

**Decision:** The document was **not treated**.

**R4-2015411 TP for TR 37.717-31-11: DC\_2A-28A-66A\_n7A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015412 TP for TR 37.717-31-11: DC\_2A-5A-7A\_n7A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015413 TP for TR 37.717-31-11: DC\_2A-7A-66A\_n7A/DC\_2A-7A-66A-66A\_n7A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015414 TP for TR 37.717-31-11: DC\_5A-7A-66A\_n7A/DC\_5A-7A-66A-66A\_n7A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015415 TP for TR 37.717-31-11: DC\_7A-28A-66A\_n7A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015712 TP for TR 37.717-31-11: DC\_2-7-66\_n77**

*Type: pCR For: Approval  
 37.717-31-11 v0.2.0  
 Source: Huawei, HiSilicon, Bell Mobility, Telus*

**Decision:** The document was **not treated**.

**R4-2015932 TP for TR 37.717-31-11 to include DC\_1A-3A-40A\_n78A, DC\_1A-3A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP for TR 37.717-31-11 to include DC\_1A-3A-40A\_n78A, DC\_1A-3A-40C\_n78A

**Decision:** The document was **not treated**.

**R4-2015933 TP for TR 37.717-31-11 to include DC\_1A-7A-40A\_n78A, DC\_1A-7A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP for TR 37.717-31-11 to include DC\_1A-7A-40A\_n78A, DC\_1A-7A-40C\_n78A

**Decision:** The document was **not treated**.

**R4-2015934 TP for TR 37.717-31-11 to include DC\_3A-7A-40A\_n78A, DC\_3A-7A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-31-11 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP for TR 37.717-31-11 to include DC\_3A-7A-40A\_n78A, DC\_3A-7A-40C\_n78A

**Decision:** The document was **not treated**.

**R4-2015944 draft CR 38.101-3 to add DC\_2A-2A-5A-66A\_n66A**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Ericsson, Bell*

**Abstract:**

Adding configuration to existing DC combination

**Decision:** The document was **not treated**.

**R4-2016311 CR to add CA\_n7B UL configurations**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Ericsson, Telstra*

**Abstract:**

Adding CA\_n7B UL configurations

**Decision:** The document was **not treated**.

#### 10.5.3 EN-DC with FR2 band [DC\_R17\_3BLTE\_1BNR\_4DL2UL-Core]

**R4-2014611 Draft CR for TS 38.101-3: Support of Uplink n257D/G/H/I for DC\_1-3-8\_n257 and DC\_1A-8-11\_n257**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: SoftBank Corp.*

**Abstract:**

DC combos of 1-3-8\_n257 and 1-8-11\_n257 are updated to add UL n257D/G/H/I.

**Decision:** The document was **not treated**.

**R4-2015134 Draft CR for 38.101-3 to add EN-DC configurations including FR2 with 4DL and 2UL**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: SK Telecom, Samsung, Ericsson, Nokia, LGE*

**Abstract:**

DC combos supporting UL CA and DL CA are updated.

**Decision:** The document was **not treated**.

**R4-2015230 draftCR to introduce DC\_3A-7A-8A\_n258 to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Nokia*

**Abstract:**

Introduction of new combinations due to operator request.

**Decision:** The document was **not treated**.

### 10.6 DC of 4 LTE band and 1 NR band [DC\_R17\_4BLTE\_1BNR\_5DL2UL]

#### 10.6.1 Rapporteur Input (WID/TR/CR) [DC\_R17\_4BLTE\_1BNR\_5DL2UL-Core/Perf]

**R4-2015214 Revised Rel-17 WID on DC of 4 bands LTE inter-band CA (4DL1UL) and 1 NR band (1DL1UL)**

*Type: WID revised For: Endorsement  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Inclusion of requests provided at RAN4#97

**Decision:** The document was **not treated**.

**R4-2015215 CR to introduce new combinations of LTE 4band + NR 1band for TS 38.101-3**

*Type: CR For: Endorsement  
 38.101-3 v16.5.0 CR-0387 Cat: B (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Inclusion of approved combinations provided at RAN4#97

**Decision:** The document was **not treated**.

**R4-2015216 draftTR 37.717-41-11 v0.2.0**

*Type: draft TR For: Agreement  
 37.717-41-11 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Inclusion of TPs provided at RAN4#97

**Decision:** The document was **not treated**.

#### 10.6.2 EN-DC without FR2 band [DC\_R17\_4BLTE\_1BNR\_5DL2UL-Core]

**R4-2014044 TP for 37.717-41-11 for DC\_2-5-7-66\_n66**

*Type: pCR For: Approval  
 37.717-41-11 v0.1.0  
 Source: Huawei,HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014146 nn**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Samsung, SK Telecom*

**Decision:** The document was **not treated**.

**R4-2015074 draft CR for DC\_1A-1A-3A-5A-7A\_n78A, DC\_1A-3C-5A-7A\_n78A, and DC\_1A-1A-3A-7A-28A\_n78A**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction of DC\_1A-1A-3A-5A-7A\_n78A, DC\_1A-3C-5A-7A\_n78A, and DC\_1A-1A-3A-7A-28A\_n78A

**Decision:** The document was **not treated**.

**R4-2015278 TP to TR 37.717-41-11 DC\_1A-3A-7A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-41-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015279 TP to TR 37.717-41-11 DC\_1A-3A-8A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-41-11 v0.1.0  
 Source: Huawei, HiSilicon, Nokia*

**Decision:** The document was **not treated**.

**R4-2015280 TP to TR 37.717-41-11 DC\_1A-7A-8A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-41-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015281 TP to TR 37.717-41-11 DC\_3A-7A-8A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-41-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015416 TP for TR 37.717-41-11: DC\_2A-7A-28A-66A\_n7A**

*Type: pCR For: Approval  
 37.717-41-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015417 TP for TR 37.717-41-11:DC\_2A-5A-7A-66A\_n7A/DC\_2A-5A-7A-66A-66A\_n7A**

*Type: pCR For: Approval  
 37.717-41-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015418 TP for TR 37.717-41-11:DC\_1A-3A-7A-8A\_n28A**

*Type: pCR For: Approval  
 37.717-41-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015419 TP for TR 37.717-41-11:DC\_3A-7A-8A-40A\_n1A/DC\_3A-7A-8A-40C\_n1A**

*Type: pCR For: Approval  
 37.717-41-11 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015935 TP for TR 37.717-41-11 to include DC\_1A-3A-7A-40A\_n78A, DC\_1A-3A-7A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-41-11 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP for TR 37.717-41-11 to include DC\_1A-3A-7A-40A\_n78A, DC\_1A-3A-7A-40C\_n78A

**Decision:** The document was **not treated**.

#### 10.6.3 EN-DC with FR2 band [DC\_R17\_4BLTE\_1BNR\_5DL2UL-Core]

**R4-2015135 Draft CR for 38.101-3 to add UL EN-DC configurations including FR2 with 5DL and 2UL**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: SK Telecom, Samsung, Ericsson, Nokia, LGE*

**Abstract:**

DC combos supporting UL CA are updated.

**Decision:** The document was **not treated**.

### 10.7 DC of x bands (x=1,2, 3, 4) LTE inter-band CA and 2 bands NR inter-band CA [DC\_R17\_xBLTE\_2BNR\_yDL2UL]

#### 10.7.1 Rapporteur Input (WID/TR/CR) [DC\_R17\_xBLTE\_2BNR\_yDL2UL-Core/Per]

**R4-2014304 TR 37.717-11-21 v0.2.0 TR update: LTE(xDL/1UL)+ NR(2DL/1UL) DC in Rel-17**

*Type: draft TR For: Agreement  
 37.717-11-21 v0.2.0  
 Source: LG Electronics Polska*

**Decision:** The document was **not treated**.

**R4-2014305 Revised WID on LTE (xDL/UL x=1.2,3,4) with NR 2 bands (2DL/1UL) EN DC in Rel-17**

*Type: WID revised For: (not specified)  
 Source: LG Electronics Polska*

**Decision:** The document was **not treated**.

**R4-2014306 Introducing CR on new EN-DC LTE(xDL/1UL)+ NR(2DL/1UL) DC in Rel-17**

*Type: CR For: (not specified)  
 38.101-3 v16.5.0 CR-0359 Cat: B (Rel-17)  
  
 Source: LG Electronics Polska*

**Decision:** The document was **not treated**.

#### 10.7.2 EN-DC including NR inter CA without FR2 band [DC\_R17\_xBLTE\_2BNR\_yDL2UL-Core]

**R4-2014071 TP for TR 37.717-11-21 DC\_1\_n3-n41**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014072 TP for TR 37.717-11-21 DC\_1\_n3-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014073 TP for TR 37.717-11-21 DC\_1\_n41-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014074 TP for TR 37.717-11-21 DC\_1-3\_n3-n41**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014075 TP for TR 37.717-11-21 DC\_1-3\_n3-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014076 TP for TR 37.717-11-21 DC\_1-3\_n3-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014077 TP for TR 37.717-11-21 DC\_1-3\_n41-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014078 TP for TR 37.717-11-21 DC\_1-3-18\_n3-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014079 TP for TR 37.717-11-21 DC\_1-3-18\_n3-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014080 TP for TR 37.717-11-21 DC\_1-3-41\_n3-n41**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014081 TP for TR 37.717-11-21 DC\_1-3-41\_n3-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014082 TP for TR 37.717-11-21 DC\_1-3-41\_n3-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014083 TP for TR 37.717-11-21 DC\_1-3-41\_n41-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014084 TP for TR 37.717-11-21 DC\_1-3-41\_n41-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014085 TP for TR 37.717-11-21 DC\_1-18\_n3-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014086 TP for TR 37.717-11-21 DC\_1-41\_n3-n41**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014087 TP for TR 37.717-11-21 DC\_1-41\_n3-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014088 TP for TR 37.717-11-21 DC\_1-41\_n3-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014089 TP for TR 37.717-11-21 DC\_1-41\_n41-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014090 TP for TR 37.717-11-21 DC\_1-41\_n41-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014091 TP for TR 37.717-11-21 DC\_3\_n3-n41**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014092 TP for TR 37.717-11-21 DC\_3\_n41-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014093 TP for TR 37.717-11-21 DC\_3-18\_n3-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014094 TP for TR 37.717-11-21 DC\_3-18\_n3-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014095 TP for TR 37.717-11-21 DC\_3-41\_n3-n41**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014096 TP for TR 37.717-11-21 DC\_3-41\_n3-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014097 TP for TR 37.717-11-21 DC\_3-41\_n3-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014098 TP for TR 37.717-11-21 DC\_3-41\_n41-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014099 TP for TR 37.717-11-21 DC\_3-41\_n41-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014100 TP for TR 37.717-11-21 DC\_41\_n3-n41**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014101 TP for TR 37.717-11-21 DC\_41\_n41-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014102 TP for TR 37.717-11-21 DC\_41\_n41-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014121 TP for TR 37.717-11-21 DC\_2\_n7-n66**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, TELUS, Bell mobility*

**Decision:** The document was **not treated**.

**R4-2014122 TP for TR 37.717-11-21 DC\_2\_n38-n66**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, TELUS, Bell mobility*

**Decision:** The document was **not treated**.

**R4-2014123 TP for TR 37.717-11-21 DC\_2\_n66-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, TELUS, Bell mobility*

**Decision:** The document was **not treated**.

**R4-2014124 TP for TR 37.717-11-21 DC\_2-7\_n38-n66**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, TELUS, Bell mobility*

**Decision:** The document was **not treated**.

**R4-2014125 TP for TR 37.717-11-21 DC\_7-66\_n38-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, TELUS, Bell mobility*

**Decision:** The document was **not treated**.

**R4-2014126 TP for TR 37.717-11-21 DC\_12\_n7-n66**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, TELUS, Bell mobility*

**Decision:** The document was **not treated**.

**R4-2014127 TP for TR 37.717-11-21 DC\_66\_n38-n66**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Samsung, TELUS, Bell mobility*

**Decision:** The document was **not treated**.

**R4-2014187 Discussion of MSD for 3DL2UL DC\_42\_n1-n79 and DC\_19\_n1-n77 due to UL IMD issues**

*Type: discussion For: Approval  
 38.717-03-02 v..  
 Source: MediaTek Inc.*

**Decision:** The document was **not treated**.

**R4-2014315 TP on summary of self-interference analysis for new EN-DC LTE(xDL/1UL)+ NR(2DL/1UL) DC in Rel-17**

*Type: pCR For: Approval  
 37.717-11-21 v0.2.0  
 Source: LG Electronics France*

**Decision:** The document was **not treated**.

**R4-2014316 MSD anlaysis results for new DC band combinations**

*Type: pCR For: Approval  
 37.717-11-21 v0.2.0  
 Source: LG Electronics France*

**Decision:** The document was **not treated**.

**R4-2014608 TP for DC\_19\_n1-n77 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC., MediaTek Inc.*

**Decision:** The document was **not treated**.

**R4-2014610 TP for DC\_19\_n1-n78 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC., MediaTek Inc.*

**Decision:** The document was **not treated**.

**R4-2014647 TP for TR 37.717-11-21: EN-DC\_11\_n3-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2014648 TP for TR 37.717-11-21: EN-DC\_11\_n28-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2014650 TP for TR 37.717-11-21: EN-DC\_42\_n3-n28**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2014651 TP for TR 37.717-11-21: EN-DC\_42\_n3-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2014653 TP for TR 37.717-11-21: EN-DC\_1-8\_n3-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2014667 TP for TR 37.717-11-21: EN-DC\_1-11\_n3-n28**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2014681 TP for TR 37.717-11-21: EN-DC\_8-11\_n3-n28**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2014689 TP for TR 37.717-11-21: EN-DC\_1-8-42\_n28-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2014808 TP for TR 37.717-11-21: EN-DC\_1-3-18\_n28-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014809 TP for TR 37.717-11-21: EN-DC\_1-3-18\_n28-n78**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014812 TP for TR 37.717-11-21: DC\_41A\_n28A-n41A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014825 TP for TR 37.717-11-21: DC\_1A-18A\_n28A-n41A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014828 TP for TR 37.717-11-21: DC\_1A-18A\_n28A-n77A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014830 TP for TR 37.717-11-21: DC\_1A-18A\_n28A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014833 TP for TR 37.717-11-21: DC\_1A-18A\_n3A-n41A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014840 TP for TR 37.717-11-21: DC\_1A-18A\_n41A-n77A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014841 TP for TR 37.717-11-21: DC\_1A-18A\_n41A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014851 TP for TR 37.717-11-21: EN-DC\_1-3-41\_n28-n41**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014853 TP for TR 37.717-11-21: DC\_1A-41A\_n28A-n41A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014855 TP for TR 37.717-11-21: DC\_3A-18A\_n28A-n41A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014859 TP for TR 37.717-11-21: DC\_3A-18A\_n28A-n77A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014863 TP for TR 37.717-11-21: DC\_3A-18A\_n28A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014878 TP for TR 37.717-11-21: DC\_3A-18A\_n3A-n41A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014879 TP for TR 37.717-11-21: DC\_3A-18A\_n41A-n77A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014881 TP for TR 37.717-11-21: DC\_3A-18A\_n41A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014882 TP for TR 37.717-11-21: DC\_3A-41A\_n28A-n41A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014884 TP for TR 37.717-11-21: DC\_3A\_n28A-n41A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014927 TP for TR 37.717-11-21: DC\_18A\_n28A-n41A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014929 TP for TR 37.717-11-21: DC\_18A\_n28A-n77A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014930 TP for TR 37.717-11-21: DC\_18A\_n28A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014931 TP for TR 37.717-11-21: DC\_18A\_n3A-n41A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014950 TP for TR 37.717-11-21: DC\_18A\_n41A-n77A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014951 TP for TR 37.717-11-21: DC\_18A\_n41A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: KDDI Corporation*

**Decision:** The document was **not treated**.

**R4-2014983 TP for DC\_19\_n1-n79 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014984 TP for DC\_21\_n1-n77 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014985 TP for DC\_21\_n1-n78 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014986 TP for DC\_21\_n1-n79 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014987 TP for DC\_42\_n1-n77 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014988 TP for DC\_42\_n1-n78 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014989 TP for DC\_3-19\_n1-n77 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014990 TP for DC\_3-19\_n1-n78 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014991 TP for DC\_3-19\_n1-n79 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014992 TP for DC\_3-21\_n1-n77 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014993 TP for DC\_3-21\_n1-n78 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014994 TP for DC\_3-21\_n1-n79 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014995 TP for DC\_3-42\_n1-n77 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014996 TP for DC\_3-42\_n1-n78 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014997 TP for DC\_3-42\_n1-n79 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014998 TP for DC\_19-21\_n1-n77 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014999 TP for DC\_19-21\_n1-n78 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015000 TP for DC\_19-21\_n1-n79 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015001 TP for DC\_19-42\_n1-n77 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015002 TP for DC\_19-42\_n1-n78 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015003 TP for DC\_19-42\_n1-n79 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015004 TP for DC\_21-42\_n1-n77 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015005 TP for DC\_21-42\_n1-n78 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015006 TP for DC\_21-42\_n1-n79 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015007 TP for DC\_3-19-42\_n1-n77 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015008 TP for DC\_3-19-42\_n1-n78 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015009 TP for DC\_3-19-42\_n1-n79 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015010 TP for DC\_3-21-42\_n1-n77 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015011 TP for DC\_3-21-42\_n1-n78 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015012 TP for DC\_3-21-42\_n1-n79 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015013 TP for DC\_19-21-42\_n1-n77 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015014 TP for DC\_19-21-42\_n1-n78 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015015 TP for DC\_19-21-42\_n1-n79 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015259 TP for DC\_42\_n1-n79 for TR 37.717-11-21**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2015420 DraftCR for 38.101-3 to add UL configuration DC\_3C\_n1A-n78A**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To add ENDC UL configuration DC\_3C\_n1A-n78A.

**Decision:** The document was **not treated**.

**R4-2015421 TP for TR 37.717-11-21:DC\_3A-20A\_n1A-n78A/DC\_3C-20A\_n1A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015422 TP for TR 37.717-11-21:DC\_7A-20A\_n1A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015423 DraftCR for 38.101-3 to add UL configuration DC\_3C\_n1A and DC\_3C\_n78A for DC\_3C-7A\_n1A-n78A**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To add ENDC UL configuration for DC\_3C-7A\_n1A-n78A.

**Decision:** The document was **not treated**.

**R4-2015424 TP for TR 37.717-11-21:DC\_3A-7A-20A\_n1A-n78A/DC\_3C-7A-20A\_n1A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015936 TP for TR 37.717-11-21 to include DC\_28A\_n1A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_28A\_n1A-n78A

**Decision:** The document was **not treated**.

**R4-2015937 TP for TR 37.717-11-21 to include DC\_3A-7A\_n40A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_3A-7A\_n40A-n78A

**Decision:** The document was **not treated**.

**R4-2015938 TP for TR 37.717-11-21 to include DC\_1A-7A\_n40A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_1A-7A\_n40A-n78A

**Decision:** The document was **not treated**.

**R4-2015939 TP for TR 37.717-11-21 to include DC\_7A-28A\_n40A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_7A-28A\_n40A-n78A

**Decision:** The document was **not treated**.

**R4-2015940 TP for TR 37.717-11-21 to include DC\_3A-7A-28A\_n40A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_3A-7A-28A\_n40A-n78A

**Decision:** The document was **not treated**.

**R4-2015941 TP for TR 37.717-11-21 to include DC\_1A-3A-7A\_n40A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_1A-3A-7A\_n40A-n78A

**Decision:** The document was **not treated**.

**R4-2015942 TP for TR 37.717-11-21 to include DC\_1A-7A-28A\_n40A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_1A-7A-28A\_n40A-n78A

**Decision:** The document was **not treated**.

**R4-2015943 TP for TR 37.717-11-21 to include DC\_1A-3A-7A-28A\_n40A-n78A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_1A-3A-7A-28A\_n40A-n78A

**Decision:** The document was **not treated**.

**R4-2016312 CR to add CA\_n7B UL configurations**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Ericsson, Telstra*

**Abstract:**

Adding CA\_n7B UL configurations

**Decision:** The document was **not treated**.

**R4-2016313 TP for TR 37.717-11-21 to include DC\_2A\_n5A-n77A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Verizon, LG Electronics*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2A\_n5A-n77A

**Decision:** The document was **not treated**.

**R4-2016314 TP for TR 37.717-11-21 to include DC\_2A-13A\_n66A-n77A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Verizon*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2A-13A\_n66A-n77A

**Decision:** The document was **not treated**.

**R4-2016315 TP for TR 37.717-11-21 to include DC\_2A\_n66A-n77A, DC\_2A-2A\_n66A-n77A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Verizon, LG Electronics*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2A\_n66A-n77A, DC\_2A-2A\_n66A-n77A

**Decision:** The document was **not treated**.

**R4-2016316 TP for TR 37.717-11-21 to include DC\_2A-66A\_n66A-n77A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Verizon*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2A-66A\_n66A-n77A

**Decision:** The document was **not treated**.

**R4-2016317 TP for TR 37.717-11-21 to include DC\_2A-66A\_n5A-n77A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Verizon*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_2A-66A\_n5A-n77A

**Decision:** The document was **not treated**.

**R4-2016318 TP for TR 37.717-11-21 to include DC\_13A\_n2A-n77A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Verizon, LG Electronics*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_13A\_n2A-n77A

**Decision:** The document was **not treated**.

**R4-2016319 TP for TR 37.717-11-21 to include DC\_13A\_n5A-n48A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Verizon*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_13A\_n5A-n48A

**Decision:** The document was **not treated**.

**R4-2016320 TP for TR 37.717-11-21 to include DC\_13A\_n48A-n66A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Verizon*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_13A\_n48A-n66A

**Decision:** The document was **not treated**.

**R4-2016321 TP for TR 37.717-11-21 to include DC\_13A\_n66A-n77A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Verizon, LG Electronics*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_13A\_n66A-n77A

**Decision:** The document was **not treated**.

**R4-2016322 TP for TR 37.717-11-21 to include DC\_13A-66A\_n66A-n77A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Verizon*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_13A-66A\_n66A-n77A

**Decision:** The document was **not treated**.

**R4-2016323 TP for TR 37.717-11-21 to include DC\_13A-66A\_n2A-n77A**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Verizon*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_13A-66A\_n2A-n77A

**Decision:** The document was **not treated**.

**R4-2016324 TP for TR 37.717-11-21 to include DC\_13-66\_n5-n48**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Verizon*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_13-66\_n5-n48

**Decision:** The document was **not treated**.

**R4-2016325 TP for TR 37.717-11-21 to include DC\_66\_n2-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Verizon*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_66\_n2-n77

**Decision:** The document was **not treated**.

**R4-2016326 TP for TR 37.717-11-21 to include DC\_66\_n5-n48**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Verizon*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_66\_n5-n48

**Decision:** The document was **not treated**.

**R4-2016327 TP for TR 37.717-11-21 to include DC\_66\_n5-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Verizon, LG Electronics*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_66\_n5-n77

**Decision:** The document was **not treated**.

**R4-2016328 TP for TR 37.717-11-21 to include DC\_66\_n66-n77**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Verizon*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_66\_n66-n77

**Decision:** The document was **not treated**.

#### 10.7.3 EN-DC including NR inter CA with FR2 band [DC\_R17\_xBLTE\_2BNR\_yDL2UL-Core]

**R4-2015047 TP for 37.717-11-21\_ DC\_40\_n41-n258**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015048 TP for 37.717-11-21\_ DC\_40\_n79-n258**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015049 TP for 37.717-11-21\_ DC\_41\_n79-n258**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015232 TP for 37.717-11-21 to introduce DC\_8A\_n78A-n258**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Nokia*

**Decision:** The document was **not treated**.

**R4-2015233 TP for 37.717-11-21 to introduce DC\_8A\_n40A-n258**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Nokia*

**Decision:** The document was **not treated**.

**R4-2015234 TP for 37.717-11-21 to introduce DC\_1A-8A\_n78A-n258**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Nokia*

**Decision:** The document was **not treated**.

**R4-2015235 TP for 37.717-11-21 to introduce DC\_3A-8A\_n78A-n258**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Nokia*

**Decision:** The document was **not treated**.

**R4-2015236 TP for 37.717-11-21 to introduce DC\_7A-8A\_n78A-n258**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Nokia*

**Decision:** The document was **not treated**.

**R4-2015237 TP for 37.717-11-21 to introduce DC\_1A-8A\_n40A-n258**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Nokia*

**Decision:** The document was **not treated**.

**R4-2015238 TP for 37.717-11-21 to introduce DC\_3A-8A\_n40A-n258**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Nokia*

**Decision:** The document was **not treated**.

**R4-2015239 TP for 37.717-11-21 to introduce DC\_7A-8A\_n40A-n258**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Nokia*

**Decision:** The document was **not treated**.

**R4-2015240 TP for 37.717-11-21 to introduce DC\_3A-7A-8A\_n78A-n258**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Nokia*

**Decision:** The document was **not treated**.

**R4-2015241 TP for 37.717-11-21 to introduce DC\_3A-7A-8A\_n40A-n258**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Nokia*

**Decision:** The document was **not treated**.

**R4-2016301 TP for TR 37.717-11-21 to include DC\_7A\_n78A-n258A to M, DC\_7C\_n78A-n258A to M**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Telstra*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_7A\_n78A-n258A to M, DC\_7C\_n78A-n258A to M

**Decision:** The document was **not treated**.

**R4-2016302 TP for TR 37.717-11-21 to include DC\_3A\_n78A-n258A to M**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Telstra*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_3A\_n78A-n258A to M

**Decision:** The document was **not treated**.

**R4-2016303 TP for TR 37.717-11-21 to include DC\_28A\_n78A-n258A to M**

*Type: pCR For: Approval  
 37.717-11-21 v0.1.0  
 Source: Ericsson, Telstra*

**Abstract:**

TP for TR 37.717-11-21 to include DC\_28A\_n78A-n258A to M

**Decision:** The document was **not treated**.

### 10.8 Band combinations for SA NR supplementary uplink (SUL), NSA NR SUL, NSA NR SUL with UL sharing from the UE perspective (ULSUP) [NR\_SUL\_combos\_R17]

#### 10.8.1 Rapporteur Input (WID/TR/CR) [NR\_SUL\_combos\_R17-Core/Per]

**R4-2014800 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 **not treated**.

**R4-2014801 TR 37.717-00-00 v0.2.0**

*Type: draft TR For: Agreement  
 37.717-00-00 v0.1.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To capture the approved TPs in this meeting

**Decision:** The document was **not treated**.

**R4-2014802 CR on Introduction of completed SUL band combinations into TS 38.101-1**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0514 Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014803 CR on Introduction of completed SUL band combinations into TS 38.101-3**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0377 Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

#### 10.8.2 UE RF [NR\_SUL\_combos\_R17-Core]

**R4-2015535 DraftCR for 38.101-1 to add BCS1 for SUL\_n78A-n80A**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To add BCS1 for SUL\_n78A-n80A.

**Decision:** The document was **not treated**.

**R4-2015536 DraftCR for 38.101-1 to add BCS1 for SUL\_n78A-n83A**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To add BCS1 for SUL\_n78A-n83A.

**Decision:** The document was **not treated**.

**R4-2015537 DraftCR for 38.101-1 to add BCS1 for SUL\_n78A-n84A**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To add BCS1 for SUL\_n78A-n84A.

**Decision:** The document was **not treated**.

**R4-2015538 DraftCR for 38.101-1 to add BCS1 for SUL\_n41A-n80A**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To add BCS1 for SUL\_n41A-n80A.

**Decision:** The document was **not treated**.

**R4-2015539 DraftCR for 38.101-1 to add BCS1 for SUL\_n79A-n80A**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To add BCS1 for SUL\_n79A-n80A.

**Decision:** The document was **not treated**.

**R4-2015540 TP for TR 37.717-00-00 to correct the notation of SUL band combinations**

*Type: pCR For: Approval  
 37.717-00-00 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015541 TP for TR 37.717-00-00 for CA\_n1A\_SUL\_n78A-n80A**

*Type: pCR For: Approval  
 37.717-00-00 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015542 TP for TR 37.717-00-00 for CA\_n1A\_SUL\_n78A-n84A**

*Type: pCR For: Approval  
 37.717-00-00 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015543 TP for TR 37.717-00-00 for CA\_n41A\_SUL\_n79A-n80A**

*Type: pCR For: Approval  
 37.717-00-00 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015544 TP for TR 37.717-00-00 for CA\_n79A\_SUL\_n41A-n80A**

*Type: pCR For: Approval  
 37.717-00-00 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015545 DraftCR for 38.101-1 to add configuration for SUL\_n41C-n80A / SUL\_n41C-n83A / SUL\_n78C-n80A / SUL\_n78C-n84A / SUL\_n79C-n80A / SUL\_n79C-n83A**

*Type: draftCR For: Endorsement  
 37.717-00-00 v0.1.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To add configuration for SUL\_n41C-n80A / SUL\_n41C-n83A / SUL\_n78C-n80A / SUL\_n78C-n84A / SUL\_n79C-n80A / SUL\_n79C-n83A.

**Decision:** The document was **not treated**.

### 10.9 NR Inter-band Carrier Aggregation for 3 bands DL with 1 band UL [NR\_CA\_R17\_3BDL\_1BUL]

#### 10.9.1 Rapporteur Input (WID/TR/CR) [NR\_CA\_R17\_3BDL\_1BUL-Core/Per]

**R4-2014460 TR 38.717-03-01 on Rel-17 NR inter-band Carrier Aggregation (CA) for 3 Down Link (DL) / 1 Up Link (UL)**

*Type: draft TR For: Agreement  
 38.717-03-01 v0.1.0  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014461 Revised WID on Rel-17 NR inter-band CA of 3DL bands and 1UL band**

*Type: WID revised For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

#### 10.9.2 UE RF [NR\_CA\_R17\_3BDL\_1BUL-Core]

**R4-2014112 TP for TR 38.717-03-01 CA\_n3-n41-n77**

*Type: pCR For: Approval  
 38.717-03-01 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014113 TP for TR 38.717-03-01 CA\_n3-n41-n78**

*Type: pCR For: Approval  
 38.717-03-01 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014114 TP for TR 38.717-03-01 CA\_n28-n41-n77**

*Type: pCR For: Approval  
 38.717-03-01 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014115 TP for TR 38.717-03-01 CA\_n28-n41-n78**

*Type: pCR For: Approval  
 38.717-03-01 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014462 CR on Introducing NR inter-band CA for 3DL Bands and 1UL band for 38.101-1**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0504 Cat: B (Rel-17)  
  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014463 CR on Introducing NR inter-band CA for 3DL Bands and 1UL band for 38.101-3**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0366 Cat: B (Rel-17)  
  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014523 draft CR for NR inter-band CA for 3 bands DL**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Nokia, T-Mobile USA*

**Abstract:**

Addition of higher order configurations.

**Decision:** The document was **not treated**.

**R4-2014526 TP for TR 38.717-03-01: CA\_n1A-n8A-n78(2A)**

*Type: pCR For: Approval  
 38.717-03-01 v0.0.0  
 Source: Nokia, Telefonica*

**Decision:** The document was **not treated**.

**R4-2015051 TP for TR38.717-03-01\_ CA\_n8A-n40A-n41A**

*Type: pCR For: Approval  
 38.717-03-01 v0.1.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015078 TP to TR 38.717-03-01: CA\_n5-n66-n77**

*Type: pCR For: Approval  
 38.717-03-01 v0.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015079 TP to TR 38.717-03-01: CA\_n2-n66-n77**

*Type: pCR For: Approval  
 38.717-03-01 v0.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015242 draftCR to introduce CA\_n1A-n40A-n258 to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Nokia*

**Abstract:**

Introduction of new combinations due to operator request.

**Decision:** The document was **not treated**.

**R4-2015243 draftCR to introduce CA\_n1A-n78A-n258 to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Nokia*

**Abstract:**

Introduction of new combinations due to operator request.

**Decision:** The document was **not treated**.

**R4-2015244 draftCR to introduce CA\_n40A-n78A-n258 to 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: Nokia*

**Abstract:**

Introduction of new combinations due to operator request.

**Decision:** The document was **not treated**.

**R4-2015707 TP for TR 38.717-03-01: CA\_n66-n71-n78**

*Type: pCR For: Approval  
 38.717-03-01 v0.2.0  
 Source: Huawei, HiSilicon, Bell Mobility, Telus*

**Decision:** The document was **not treated**.

**R4-2015708 TP for TR 38.717-03-01: CA\_n38-n66-n78**

*Type: pCR For: Approval  
 38.717-03-01 v0.2.0  
 Source: Huawei, HiSilicon, Bell Mobility, Telus*

**Decision:** The document was **not treated**.

**R4-2015709 TP for TR 38.717-03-01: CA\_n25-n38-n78**

*Type: pCR For: Approval  
 38.717-03-01 v0.2.0  
 Source: Huawei, HiSilicon, Bell Mobility, Telus*

**Decision:** The document was **not treated**.

**R4-2016305 TP to add CA\_n3A-n5A-n7A, CA\_n3A-n5A-n7B**

*Type: pCR For: Approval  
 38.717-03-01 v0.1.0  
 Source: Ericsson, Telstra*

**Abstract:**

TP to add CA\_n3A-n5A-n7A, CA\_n3A-n5A-n7B

**Decision:** The document was **not treated**.

**R4-2016306 TP to add CA\_n5A-n7A-n78A, CA\_n5A-n7B-n78A**

*Type: pCR For: Approval  
 38.717-03-01 v0.1.0  
 Source: Ericsson, Telstra*

**Abstract:**

TP to add CA\_n5A-n7A-n78A, CA\_n5A-n7B-n78A

**Decision:** The document was **not treated**.

### 10.10 NR Inter-band Carrier Aggregation for 4 bands DL with 1 band UL [NR\_CA\_R17\_4BDL\_1BUL]

#### 10.10.1 Rapporteur Input (WID/TR/CR) [NR\_CA\_R17\_4BDL\_1BUL-Core/Per]

**R4-2015918 Revised WID 4 bands NR CA Rel-17**

*Type: WID revised For: Endorsement  
 Source: Ericsson*

**Abstract:**

Revised WID 4 bands NR CA Rel-17

**Decision:** The document was **not treated**.

**R4-2015922 CR introduction completed band combinations NR Inter-band 4 bands CA -> 38.101-1**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0549 Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

CR introduction completed band combinations NR Inter-band 4 bands CA -> 38.101-1

**Decision:** The document was **not treated**.

**R4-2015923 CR introduction completed band combinations NR Inter-band 4 bands CA -> 38.101-3**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0401 Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

CR introduction completed band combinations NR Inter-band 4 bands CA -> 38.101-3

**Decision:** The document was **not treated**.

**R4-2015926 TR 38.717-04-01 v0.2.0 Rel-17 NR Inter-band 4 bands CA**

*Type: draft TR For: Agreement  
 38.717-04-01 v0.1.0  
 Source: Ericsson*

**Abstract:**

TR 38.717-04-01 v0.2.0 Rel-17 NR Inter-band 4 bands CA

**Decision:** The document was **not treated**.

#### 10.10.2 UE RF [NR\_CA\_R17\_4BDL\_1BUL-Core]

**R4-2014118 TP for TR 38.717-04-01 CA\_n3-n28-n41-n77**

*Type: pCR For: Approval  
 38.717-04-01 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014816 TP for CA\_n1-n77-n79-n257 4DL/1UL for TR38.717-04-01**

*Type: pCR For: Approval  
 38.717-04-01 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014817 TP for CA\_n1-n78-n79-n257 4DL/1UL for TR38.717-04-01**

*Type: pCR For: Approval  
 38.717-04-01 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2016307 TP to add CA\_n3A-n5A-n7A-n78A, CA\_n3A-n5A-n7B-n78A**

*Type: pCR For: Approval  
 38.717-04-01 v0.1.0  
 Source: Ericsson, Telstra*

**Abstract:**

TP to add CA\_n3A-n5A-n7A-n78A, CA\_n3A-n5A-n7B-n78A

**Decision:** The document was **not treated**.

### 10.11 NR Inter-band Carrier Aggregation/Dual connectivity for 3 bands DL with 2 bands UL [NR\_CADC\_R17\_3BDL\_2BUL]

#### 10.11.1 Rapporteur Input (WID/TR/CR) [NR\_CADC\_R17\_3BDL\_2BUL-Core/Per]

**R4-2015060 Revised WID on Rel-17 NR Inter-band Carrier AggregationDual Connectivity for 3 bands DL with 2 bands UL**

*Type: WID revised For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015061 Draft CR to reflect the completed NR inter band CA DC combinations for 3 bands DL with 2 bands UL into TS 38.101-1**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015062 Draft CR to reflect the completed NR inter band CA DC combinations for 3 bands DL with 2 bands UL into TS 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015185 TR 38.717-03-02 v0.2.0**

*Type: draft TR For: Agreement  
 38.717-03-02 v0.2.0  
 Source: ZTE Wistron Telecom AB*

**Decision:** The document was **not treated**.

#### 10.11.2 UE RF [NR\_CADC\_R17\_3BDL\_2BUL-Core]

**R4-2014116 TP for TR 38.717-03-02 CA\_n3-n28-n41**

*Type: pCR For: Approval  
 38.717-03-02 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014117 TP for TR 38.717-03-02 CA\_n3-n28-n78**

*Type: pCR For: Approval  
 38.717-03-02 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014595 TP for CA 3DL2UL n1-n77-n79 for TR 38.717-03-02**

*Type: pCR For: Approval  
 38.717-03-02 v0.1.0  
 Source: NTT DOCOMO, INC., MediaTek Inc., LG Electronics*

**Decision:** The document was **not treated**.

**R4-2014599 TP for CA 3DL2UL n1-n78-n79 for TR 38.717-03-02**

*Type: pCR For: Approval  
 38.717-03-02 v0.1.0  
 Source: NTT DOCOMO, INC., MediaTek Inc., LG Electronics*

**Decision:** The document was **not treated**.

**R4-2014814 draft CR 38.101-3 to add DC\_n1-n77-n257, DC\_n1-n78-n257, DC\_n1-n79-n257, DC\_n77-n79-n257 and DC\_n78-n79-n257**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: NTT DOCOMO, INC.*

**Abstract:**

Adding configurations to existing DC combinations. The following NR DC configurations are specified by draft CR according to the agreement described in R4-2005647 since corresponding NR CA configurations have been already aprroved.

**Decision:** The document was **not treated**.

**R4-2015052 TP for TR38.717-03-02\_ CA\_n8A-n40A-n41A**

*Type: pCR For: Approval  
 38.717-03-02 v0.1.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015068 MSD evaluation for CA 3DL2UL n1-n77-n79 for TR 38.717-03-02**

*Type: pCR For: Approval  
 38.717-03-02 v0.1.0  
 Source: MediaTek Inc.*

**Decision:** The document was **not treated**.

**R4-2015080 TP to TR 38.717-03-02: CA\_n5-n66-n77**

*Type: pCR For: Approval  
 38.717-03-02 v0.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015081 TP to TR 38.717-03-02: CA\_n2-n66-n77**

*Type: pCR For: Approval  
 38.717-03-02 v0.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016333 TP to add CA\_n25A-n41A-n77A, CA\_n25A-n41(2A)-n77A, CA\_n25A-n41C-n77A**

*Type: pCR For: Approval  
 38.717-03-02 v0.1.0  
 Source: Ericsson, T-Mobile US*

**Abstract:**

TP to add CA\_n25A-n41A-n77A, CA\_n25A-n41(2A)-n77A, CA\_n25A-n41C-n77A

**Decision:** The document was **not treated**.

**R4-2016334 TP to add CA\_n25A-n66A-n77A**

*Type: pCR For: Approval  
 38.717-03-02 v0.1.0  
 Source: Ericsson, T-Mobile US*

**Abstract:**

TP to add CA\_n25A-n66A-n77A

**Decision:** The document was **not treated**.

**R4-2016335 TP to add CA\_n25A-n71A-n77A**

*Type: pCR For: Approval  
 38.717-03-02 v0.1.0  
 Source: Ericsson, T-Mobile US*

**Abstract:**

TP to add CA\_n25A-n71A-n77A

**Decision:** The document was **not treated**.

**R4-2016336 TP to add CA\_n41A-n66A-n77A, CA\_n41(2A)-n66A-n77A, CA\_n41C-n66A-n77A**

*Type: pCR For: Approval  
 38.717-03-02 v0.1.0  
 Source: Ericsson, T-Mobile US*

**Abstract:**

TP to add CA\_n41A-n66A-n77A, CA\_n41(2A)-n66A-n77A, CA\_n41C-n66A-n77A

**Decision:** The document was **not treated**.

**R4-2016337 TP to add CA\_n41A-n71A-n77A, CA\_n41(2A)-n71A-n77A, CA\_n41C-n71A-n77A**

*Type: pCR For: Approval  
 38.717-03-02 v0.1.0  
 Source: Ericsson, T-Mobile US*

**Abstract:**

TP to add CA\_n41A-n71A-n77A, CA\_n41(2A)-n71A-n77A, CA\_n41C-n71A-n77A

**Decision:** The document was **not treated**.

**R4-2016338 TP to add CA\_n66A-n71A-n77A**

*Type: pCR For: Approval  
 38.717-03-02 v0.1.0  
 Source: Ericsson, T-Mobile US*

**Abstract:**

TP to add CA\_n66A-n71A-n77A

**Decision:** The document was **not treated**.

### 10.12 DC of x bands (x=1,2) LTE inter-band CA (xDL/xUL) and y bands (y=3-x) NR inter-band CA [DC\_R17\_xBLTE\_yBNR\_3DL3UL]

#### 10.12.1 Rapporteur Input (WID/TR/CR) [DC\_R17\_xBLTE\_yBNR\_3DL3UL-Core/Per]

**R4-2015063 Revised WID on Rel-17 Dual Connectivity (DC) x bands (x=1,2) LTE inter-band CA (xDL/xUL) and y bands (y=3-x) NR inter-band CA**

*Type: WID revised For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015064 Draft CR to reflect the completed DC combinations for 3 bands DL with 3 bands UL into TS 38.101-3**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015065 TR 37.717-33 v0.2.0**

*Type: draft TR For: Agreement  
 37.717-33 v0.1.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

#### 10.12.2 UE RF [DC\_R17\_xBLTE\_yBNR\_3DL3UL-Core]

### 10.13 DC of x bands (x=1,2,3) LTE inter-band CA (xDL/1UL) and 3 bands NR inter-band CA (3DL/1UL) [DC\_R17\_xBLTE\_3BNR\_yDL2UL]

#### 10.13.1 Rapporteur Input (WID/TR/CR) [DC\_R17\_xBLTE\_3BNR\_yDL2UL -Core/Per]

**R4-2015066 Revised WID on Rel-17 Dual Connectivity (DC) of x bands (x=1,2,3) LTE inter-band CA (xDL1UL) and 3 bands NR inter-band CA (3DL1UL)**

*Type: WID revised For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015067 TR 37.717-11-31\_v0.2.0**

*Type: draft TR For: Agreement  
 37.717-11-31 v0.1.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015588 Draft CR to reflect the completed Dual Connectivity (DC) of x bands (x=1,2,3) LTE inter-band CA (xDL1UL) and 3 bands NR inter-band CA (3DL1UL)**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

#### 10.13.2 UE RF [DC\_R17\_xBLTE\_3BNR\_yDL2UL-Core]

**R4-2014706 TP for TR 37.716-11-31: EN-DC\_1\_n3-n28-n77**

*Type: pCR For: Approval  
 37.717-11-31 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2014707 TP for TR 37.717-11-31: EN-DC\_8\_n3-n28-n77**

*Type: pCR For: Approval  
 37.717-11-31 v0.1.0  
 Source: SoftBank Corp.*

**Decision:** The document was **not treated**.

**R4-2015050 TP for 37.717-11-31\_ DC\_8A\_n40A-n41A-n79A**

*Type: pCR For: Approval  
 37.717-11-31 v0.1.0  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015802 TP for TR 37.717-11-31: support of DC\_3\_n1-n78-n257, DC\_3-3\_n1-n78-n257, DC\_7\_n1-n78-n257, DC\_7-7\_n1-n78-n257**

*Type: pCR For: Approval  
 37.717-11-31 v0.1.0  
 Source: CHTTL*

**Decision:** The document was **not treated**.

**R4-2015806 TP for TR 37.717-11-31: support of DC\_3-7\_n1-n78-n257, DC\_3-3-7\_n1-n78-n257, DC\_3-7-7\_n1-n78-n257, DC\_3-3-7-7\_n1-n78-n257**

*Type: pCR For: Approval  
 37.717-11-31 v0.1.0  
 Source: CHTTL*

**Decision:** The document was **not treated**.

### 10.14 NR inter-band Carrier Aggregation and Dual connectivity for DL 4 bands and 2UL bands [NR\_CADC\_R17\_4BDL\_2BUL]

#### 10.14.1 Rapporteur Input (WID/TR/CR) [NR\_CADC\_R17\_4BDL\_2BUL -Core/Per]

**R4-2014380 TR38.717-04-02 update version 0.2.0**

*Type: draft TR For: Agreement  
 38.717-04-02 v0.1.0  
 Source: Samsung Electronics GmbH*

**Decision:** The document was **not treated**.

**R4-2014753 Revised WID on NR CA/DC with 4DL/2UL**

*Type: WID revised For: Decision  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014754 CR on introduction of completed NR CA/DC combs with 4DL/2UL within FR1**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0513 Cat: B (Rel-17)  
  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014755 CR on introduction of completed NR CA/DC combs with 4DL/2UL including FR2**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0373 Cat: B (Rel-17)  
  
 Source: Samsung*

**Abstract:**

Both resubmission of combs endorsed in CR R4-2010145 and combs approved in RAN4#97e will be included in this CR.

**Decision:** The document was **not treated**.

#### 10.14.2 UE RF [NR\_CADC\_R17\_4BDL\_2BUL -Core]

**R4-2014119 TP for TR 38.717-04-02 CA\_n3-n28-n41-n77**

*Type: pCR For: Approval  
 38.717-04-02 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014120 TP for TR 38.717-04-02 CA\_n3-n28-n41-n78**

*Type: pCR For: Approval  
 38.717-04-02 v0.1.0  
 Source: Samsung, KDDI*

**Decision:** The document was **not treated**.

**R4-2014815 draft CR 38.101-3 to add DC\_n1-n77-n79-n257 and DC\_n1-n78-n79-n257**

*Type: draftCR For: Endorsement  
 38.101-3 v16.5.0  
 Source: NTT DOCOMO, INC.*

**Abstract:**

Adding configurations to existing DC combinations. The following NR DC configurations are specified by draft CR according to the agreement described in R4-2005647 since corresponding NR CA configurations are to be aprroved in RAN4#97.

**Decision:** The document was **not treated**.

**R4-2014818 TP for CA\_n1-n77-n79-n257 4DL/2UL for TR38.717-04-02**

*Type: pCR For: Approval  
 38.717-04-02 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

**R4-2014819 TP for CA\_n1-n78-n79-n257 4DL/2UL for TR38.717-04-02**

*Type: pCR For: Approval  
 38.717-04-02 v0.1.0  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

### 10.15 NR inter-band CA for 5 bands DL with x bands UL (x=1, 2) [NR\_CADC\_R17\_5BDL\_xBUL\_3DL3UL]

#### 10.15.1 Rapporteur Input (WID/TR/CR) [NR\_CADC\_R17\_5BDL\_xBUL -Core/Per]

**R4-2014804 Revised WID on NR inter-band CA for 5 bands DL with x bands UL (x=1, 2)**

*Type: WID revised For: Endorsement  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014805 TR 38.717-05-01 v0.2.0**

*Type: draft TR For: Agreement  
 38.717-05-01 v0.1.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To capture the approved TPs in this meeting

**Decision:** The document was **not treated**.

**R4-2014806 CR on Introduction of completed 5 bands inter-band CA into TS 38.101-1**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0515 Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

#### 10.15.2 UE RF [NR\_CADC\_R17\_5BDL\_xBUL -Core]

### 10.16 DC of 5 bands LTE inter-band CA (5DL/1L) and 1 NR band (1DL/1UL) [DC\_R17\_5BLTE\_1BNR\_6DL2UL]

#### 10.16.1 Rapporteur Input (WID/TR/CR) [DC\_R17\_5BLTE\_1BNR\_6DL2UL-Core/Per]

**R4-2014781 Revised WID on Dual Connectivity (DC) of 5 bands LTE inter-band CA (5DL/1UL) and 1 NR band (1DL/1UL)**

*Type: WID revised For: Information  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014782 CR introduction completed band combinations for Dual Connectivity (DC) of 5 bands LTE inter-band CA (5DL/1UL) and 1 NR band (1DL/1UL)**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0374 Cat: B (Rel-17)  
  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014967 Skeleton on TR 37.717-51-11\_0.0.1**

*Type: draft TR For: Agreement  
 37.717-51-11 v0.0.1  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014968 TR 37.717-51-11\_0.1.0**

*Type: draft TR For: Agreement  
 37.717-51-11 v0.1.0  
 Source: Samsung*

**Decision:** The document was **not treated**.

#### 10.16.2 UE RF [DC\_R17\_5BLTE\_1BNR\_6DL2UL-Core]

**R4-2015282 TP to TR 37.717-51-11 DC\_1A-3A-7A-8A-40C\_n78A**

*Type: pCR For: Approval  
 37.717-51-11 v0.0.1  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

### 10.17 DC of x bands (x=2,3,4) LTE inter-band CA (xDL/1UL) and 1 NR FR1 band (1DL/1UL) and 1 NR FR2 band (1DL/1UL) [DC\_R17\_xBLTE\_2BNR\_yDL3UL]

#### 10.17.1 Rapporteur Input (WID/TR/CR) [DC\_R17\_xBLTE\_2BNR\_yDL3UL-Core/Per]

**R4-2014783 CR introduction completed band combinations for Dual Connectivity (DC) of x bands (x=2,3,4) LTE inter-band CA (xDL/1UL) and 1 NR FR1 band (1DL/1UL) and 1 NR FR2 band (1DL/1UL)**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0375 Cat: B (Rel-17)  
  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014784 Revised WID on Dual Connectivity (DC) of x bands (x=2,3,4) LTE inter-band CA (xDL/1UL) and 1 NR FR1 band (1DL/1UL) and 1 NR FR2 band (1DL/1UL)**

*Type: WID revised For: Information  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014969 Skeleton on TR 37.717-21-22\_0.0.1**

*Type: draft TR For: Agreement  
 37.717-21-22 v0.0.1  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014970 TR 37.717-21-22\_0.1.0**

*Type: draft TR For: Agreement  
 37.717-21-22 v0.1.0  
 Source: Samsung*

**Decision:** The document was **not treated**.

#### 10.17.2 UE RF [DC\_R17\_xBLTE\_2BNR\_yDL3UL-Core]

**R4-2015136 TP for TR 37.717-21-22: DC\_1-3\_n78-n257**

*Type: discussion For: Approval  
 37.717-21-22 v..  
 Source: SK Telecom, Samsung*

**Decision:** The document was **not treated**.

**R4-2015137 TP for TR 37.717-21-22: DC\_1-5\_n78-n257**

*Type: discussion For: Approval  
 37.717-21-22 v..  
 Source: SK Telecom, Samsung*

**Decision:** The document was **not treated**.

**R4-2015138 TP for TR 37.717-21-22: DC\_1-7\_n78-n257 and DC\_1-7-7\_n78-n257**

*Type: discussion For: Approval  
 37.717-21-22 v..  
 Source: SK Telecom, Samsung*

**Decision:** The document was **not treated**.

**R4-2015139 TP for TR 37.717-21-22: DC\_3-5\_n78-n257**

*Type: discussion For: Approval  
 37.717-21-22 v..  
 Source: SK Telecom, Samsung*

**Decision:** The document was **not treated**.

**R4-2015140 TP for TR 37.717-21-22: DC\_3-7\_n78-n257 and DC\_3-7-7\_n78-n257**

*Type: discussion For: Approval  
 37.717-21-22 v..  
 Source: SK Telecom, Samsung*

**Decision:** The document was **not treated**.

**R4-2015141 TP for TR 37.717-21-22: DC\_5-7\_n78-n257 and DC\_5-7-7\_n78-n257**

*Type: discussion For: Approval  
 37.717-21-22 v..  
 Source: SK Telecom, Samsung*

**Decision:** The document was **not treated**.

**R4-2015142 TP for TR 37.717-21-22: DC\_1-3-5\_n78-n257**

*Type: discussion For: Approval  
 37.717-21-22 v..  
 Source: SK Telecom, Samsung*

**Decision:** The document was **not treated**.

**R4-2015143 TP for TR 37.717-21-22: DC\_1-3-7\_n78-n257 and DC\_1-3-7-7\_n78-n257**

*Type: discussion For: Approval  
 37.717-21-22 v..  
 Source: SK Telecom, Samsung*

**Decision:** The document was **not treated**.

**R4-2015144 TP for TR 37.717-21-22: DC\_1-5-7\_n78-n257 and DC\_1-5-7-7\_n78-n257**

*Type: discussion For: Approval  
 37.717-21-22 v..  
 Source: SK Telecom, Samsung*

**Decision:** The document was **not treated**.

**R4-2015145 TP for TR 37.717-21-22: DC\_3-5-7\_n78-n257 and DC\_3-5-7-7\_n78-n257**

*Type: discussion For: Approval  
 37.717-21-22 v..  
 Source: SK Telecom, Samsung*

**Decision:** The document was **not treated**.

**R4-2015146 TP for TR 37.717-21-22: DC\_1-3-5-7\_n78-n257 and DC\_1-3-5-7-7\_n78-n257**

*Type: discussion For: Approval  
 37.717-21-22 v..  
 Source: SK Telecom, Samsung*

**Decision:** The document was **not treated**.

### 10.18 SAR schemes for UE power class 2 (PC2) for NR inter-band Carrier Aggregation and supplemental uplink (SUL) configurations with 2 bands UL [NR\_SAR\_PC2\_interB\_SUL\_2BUL]

#### 10.18.1 General and Rapporteur Input (WID/TR/CR) [NR\_SAR\_PC2\_interB\_SUL\_2BUL-Core/Per]

**R4-2014383 Discussion on SAR issues for inter-band and SUL 2UL CA PC2**

*Type: other For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2015039 On MSD for PC2 n41-n79 NR inter-band CA**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015266 MSD analysis on high power UE for CA\_n41-n79**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision:** The document was **not treated**.

#### 10.18.2 PC2 for inter-band CA [NR\_SAR\_PC2\_interB\_SUL\_2BUL-Core]

**R4-2015040 Discussion on SAR solution for NR PC2 inter-band CA**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015190 Discussion on SAR schemes for UE power class 2 NR inter-band CA with 2UL**

*Type: other For: Approval  
 Source: China Telecom*

**Decision:** The document was **not treated**.

**R4-2015192 draft CR to 38.101-1 Introduce SAR solution for UE power class 2 NR inter-band CA with 2UL**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: China Telecom*

**Abstract:**

Introduce SAR solution for UE power class 2 NR inter-band CA with 2UL

**Decision:** The document was **not treated**.

**R4-2015193 draft CR to 38.101-1 Introduce band combination requirements for PC2 CA\_n1A-n78A**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: China Telecom*

**Abstract:**

Introduce band combination requirements for PC2 CA\_n1A-n78A

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

**R4-2015260 Discussion on SAR issue for HP UE inter-band UL CA**

*Type: other For: Approval  
 Source: Xiaomi*

**Decision:** The document was **not treated**.

**R4-2015287 Discussion on the SAR solutions for UL CA band combinations**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015329 Discussion on SAR solution for PC2 inter-band NR CA**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2015346 Discussion on inter-band CA HPUE SAR**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2015889 CR to 38.101-1 Introduce band combination requirements for PC2 CA\_n1A-n78A**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0545 Cat: B (Rel-17)  
  
 Source: China Telecom, ZTE, Huawei, HiSilicon, CATT*

**Abstract:**

Introduce band combination requirements for PC2 CA\_n1A-n78A

**Decision:** The document was **not treated**.

**R4-2015983 Facilitating SAR compliance for UL inter-band CA PC2**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution we discuss and propose methods for facilitating SAR compliance for UL CA PC2 (also applicable for SUL)

**Decision:** The document was **not treated**.

**R4-2016439 Upper limits on output power for dual PA**

*Type: discussion For: Approval  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

#### 10.18.3 PC2 for SUL [NR\_SAR\_PC2\_interB\_SUL\_2BUL-Core]

**R4-2015041 Discussion on SAR solution for NR PC2 SUL**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015191 Discussion on SAR schemes for UE power class 2 NR SUL configurations**

*Type: other For: Approval  
 Source: China Telecom*

**Decision:** The document was **not treated**.

**R4-2015194 draft CR to 38.101-1 Introduce SAR solution for UE power class 2 NR SUL configurations**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: China Telecom*

**Abstract:**

Introduce SAR solution for UE power class 2 NR SUL configurations

**Decision:** The document was **not treated**.

**R4-2015286 Discussion on the SAR solutions for SUL band combinations**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015330 Discussion on SAR solution for PC2 UE with SUL**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2015345 Discussion on SUL HPUE SAR**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

### 10.19 High power UE (power class 2) for NR inter-band Carrier Aggregation with 2 bands downlink and 2 bands uplink [NR\_PC2\_CA\_R17\_2BDL\_2BUL]

#### 10.19.1 Rapporteur Input (WID/TR/CR) [NR\_PC2\_CA\_R17\_2BDL\_2BUL-Core/Per]

**R4-2015186 Work plan and procedure for basket WI on high power UE for NR inter-band CA with 2 bands DL and 2 bands UL**

*Type: other For: Approval  
 Source: China Telecom*

**Decision:** The document was **not treated**.

**R4-2015187 TR skeleton for TR 38.xxx 0.0.1: High power UE (power class 2) for NR inter-band Carrier Aggregation with 2 bands downlink and 2 bands uplink**

*Type: other For: Approval  
 Source: China Telecom*

**Decision:** The document was **not treated**.

**R4-2015188 Draft TR 38.xxx v0.1.0: High power UE (power class 2) for NR inter-band Carrier Aggregation with 2 bands downlink and 2 bands uplink**

*Type: other For: Approval  
 Source: China Telecom*

**Decision:** The document was **not treated**.

**R4-2015189 Revised WID: High power UE (power class 2) for NR inter-band Carrier Aggregation with 2 bands downlink and 2 bands uplink**

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

**Decision:** The document was **not treated**.

#### 10.19.2 UE RF [NR\_PC2\_CA\_R17\_2BDL\_2BUL-Core]

**R4-2015053 TP for TR38.xxx\_ PC2 CA\_n3A-n41A**

*Type: other For: Approval  
 Source: ZTE Corporation, CMCC*

**Decision:** The document was **not treated**.

**R4-2015054 TP for TR38.xxx\_ PC2 CA\_n28A-n41A**

*Type: other For: Approval  
 Source: ZTE Corporation, CMCC*

**Decision:** The document was **not treated**.

**R4-2015055 TP for TR38.xxx\_ PC2 CA\_n28A-n79A**

*Type: other For: Approval  
 Source: ZTE Corporation, CMCC*

**Decision:** The document was **not treated**.

**R4-2015056 TP for TR38.xxx\_ PC2 CA\_n40A-n41A**

*Type: other For: Approval  
 Source: ZTE Corporation, CMCC*

**Decision:** The document was **not treated**.

**R4-2016441 MSD for Band n77 PC2 combinations**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

### 10.20 High power UE (power class 2) for EN-DC with 1 LTE band + 1 NR TDD band [ENDC\_UE\_PC2\_R17\_NR\_TDD]

#### 10.20.1 Rapporteur Input (WID/TR/CR) [ENDC\_UE\_PC2\_R17\_NR\_TDD -Core/Per]

**R4-2014649 TR Skeleton for TR 37.826 v0.0.1 ENDC\_UE\_PC2\_R17\_NR\_TDD**

*Type: draft TR For: Agreement  
 37.826 v0.0.1  
 Source: China Unicom*

**Decision:** The document was **not treated**.

**R4-2014708 Big CR on introduction of completed PC2 for EN-DC with 1 LTE band + 1 NR TDD band**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0371 Cat: B (Rel-17)  
  
 Source: China Unicom*

**Decision:** The document was **not treated**.

**R4-2014709 Big CR on introduction of completed PC2 for EN-DC with 1 LTE band + 1 NR TDD band**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0372 Cat: B (Rel-17)  
  
 Source: China Unicom*

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

#### 10.20.2 UE RF [ENDC\_UE\_PC2\_R17\_NR\_TDD -Core]

**R4-2014679 TP for TR 37.826 to introduce PC2 for DC\_1A\_n78A**

*Type: pCR For: Approval  
 37.826 v0.0.1  
 Source: China Unicom*

**Decision:** The document was **not treated**.

**R4-2014680 TP for TR 37.826 to introduce PC2 for DC\_8A\_n78A**

*Type: pCR For: Approval  
 37.826 v0.0.1  
 Source: China Unicom*

**Decision:** The document was **not treated**.

**R4-2015793 Discussion on release independent of FDD-TDD EN-DC High Power UE**

*Type: discussion For: Approval  
 Source: CHTTL*

**Decision:** The document was **not treated**.

**R4-2016440 Improving PC2 MSD for EN-DC and UL CA**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

### 10.21 Adding channel bandwidth support to existing NR bands [NR\_bands\_R17\_BWs]

#### 10.21.1 General and Rapporteur Input (WID/TR/CR) [NR\_bands\_R17\_BWs -Core/Per]

**R4-2015910 Revised RP-201294 - Basket WID on adding channel bandwidth support to existing NR bands**

*Type: WID revised For: Endorsement  
 Source: Ericsson*

**Abstract:**

This contribution is the revision of RP-201294 to include the new requests received before RAN4#96e meeting

**Decision:** The document was **not treated**.

**R4-2015911 Big CR to 38.104 - Additional Channel BW**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0258 Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Add following channel BWs support: 70MHz in n48, 30MHz in n83 and 25/30/40/50 MHz in n84.

**Decision:** The document was **not treated**.

**R4-2015912 Big CR to 38.101-1 - Additional Channel BW**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0546 Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

Add following channel BWs support: 70MHz in n41, 70MHz in n48, 30MHz in n83 and 25/30/40/50 MHz in n84.

**Decision:** The document was **not treated**.

#### 10.21.2 UE RF requirement [NR\_bands\_R17\_BWs -Core]

**R4-2015292 Adding 40M bandwidth for band n80 and n83**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015293 draftCR to 38101-1 to add 40MHz BW for band n80**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

This CR is to introduce UE RF requirements for adding 40MHz channel bandwidth for band n80.

**Decision:** The document was **not treated**.

**R4-2015296 Adding 90 and 100MHz UE bandwidth for band n40**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015297 draftCR to 38101-1 to add 90 and 100MHz BW for band n40**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

This CR is to introduce UE RF requirements for adding 90 and 100MHz channel bandwidth for band n40.

**Decision:** The document was **not treated**.

##### 10.21.2.1 Reference sensitivity [NR\_bands\_R17\_BWs -Core]

**R4-2014186 REFSENS of n8 and n71 for new channel bandwidth**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: MediaTek Inc.*

**Decision:** The document was **not treated**.

##### 10.21.2.2 MPR/A-MPR/NS signaling [NR\_bands\_R17\_BWs -Core]

**R4-2014593 n40 MPR and Interference for Additional Channel Bandwidths**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution, we discuss the related fractional BW criteria issue, deltaMPR and potential interference to ISM band of the addition of 90 and 100 MHZ channel bandwidth to Band n40.

**Decision:** The document was **not treated**.

##### 10.21.2.3 others [NR\_bands\_R17\_BWs -Core]

#### 10.21.3 BS RF requirement [NR\_bands\_R17\_BWs -Core]

**R4-2015294 draftCR to 38104 to add 40MHz BW for band n80**

*Type: draftCR For: Endorsement  
 38.104 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

This CR is to introduce 40MHz channel bandwidths for band n80.

**Decision:** The document was **not treated**.

**R4-2015295 draftCR to 38104 to add 40MHz BW for band n83**

*Type: draftCR For: Endorsement  
 38.104 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

This CR is to introduce 40MHz channel bandwidth for band n83.

**Decision:** The document was **not treated**.

**R4-2015298 draftCR to 38104 to add 90MHz BW for band n40**

*Type: draftCR For: Endorsement  
 38.104 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

This CR is to introduce 90MHz channel bandwidth for band n40.

**Decision:** The document was **not treated**.

### 10.22 Introduction of channel bandwidths 35MHz and 45MHz for NR [NR\_FR1\_35MHz\_45MHz\_BW]

**R4-2016452 35 and 45 MHz CH BW Release Independence**

*Type: discussion For: Approval  
 Source: T-Mobile USA, TELUS, Bell Mobility, AT&T*

**Decision:** The document was **not treated**.

#### 10.22.1 General and Rapporteur Input (WID/TR/CR) [NR\_FR1\_35MHz\_45MHz\_BW-Core/Per]

**R4-2015701 Discussion on release independence**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016113 Discussion on release independent and signalling for brand new channel bandwidth**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

#### 10.22.2 Spectrum utilization [NR\_FR1\_35MHz\_45MHz\_BW-Core]

**R4-2015043 Further discussion on spectrum utilization for 35MHz and 45MHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

#### 10.22.3 UE RF requirements [NR\_FR1\_35MHz\_45MHz\_BW-Core]

**R4-2014173 35M\_45M AMPR, MPR, REFSENS**

*Type: other For: Approval  
 38.101-1 v..  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2015044 On UE RF requirement for new channel bandwidth of 35MHz and 45MHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015351 Release independence for 35MHz and 45Mhz BW**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2015432 REFSENS of n3, n8, n25 and n71 for new channel bandwidth**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Murata Manufacturing Co Ltd.*

**Decision:** The document was **not treated**.

**R4-2015702 Draft CR for TS 38.101: introduction of channel bandwidths 35MHz and 45MHz for general part**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of channel bandwidths 35MHz and 45MHz for general part

**Decision:** The document was **not treated**.

**R4-2015800 Specification impact of additional 35&45MHz channel bandwidths**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution, we discuss the technical issues, specification impact, UE capability and release independence aspects for single CC and band combination support related to 35 and 45 MHz new channel BW.

**Decision:** The document was **not treated**.

**R4-2015801 Specification impact of additional 35&45MHz channel bandwidths**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution, we discuss the technical issues, specification impact, UE capability and release independence aspects for single CC and band combination support related to 35 and 45 MHz new channel BW.

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

**R4-2016010 n71 35MHz AMPR and MSD Measurements**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Skyworks Solutions Inc.*

**Decision:** The document was **not treated**.

**R4-2016011 n8 35MHz AMPR and MSD Measurements**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Skyworks Solutions Inc.*

**Decision:** The document was **not treated**.

**R4-2016027 n7 35MHz AMPR and MSD Measurements**

*Type: discussion For: Discussion  
 38.101-1 v..  
 Source: Skyworks Solutions Inc.*

**Decision:** The document was **not treated**.

**R4-2016059 Draft CR to add 35MHz and 45 MHz Bandwidth to TS38.101-1**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: Ericsson*

**Abstract:**

Adding 35MHz and 45 MHz Bandwidth to TS38.101-1 in clauses 5 and 6.

This CR does not change clases containing CA, DC combinations sice RAN4 have not concluded how to cater for these new BWs when it comes to band combinations.

**Decision:** The document was **not treated**.

**R4-2016060 Introduction of 35MHz and 45MHz regarding CA, DC, V2x combinations**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

The papers lists remaining CA, DC, V2X clauses that needs to be updated in 38.101-1 and -3. And proposes not to add new BCS per default for new BWs

**Decision:** The document was **not treated**.

**R4-2016295 Introduction of 35 MHz for n8, n66, n71 and 45 MHz for n66**

*Type: discussion For: Approval  
 Source: Apple Inc.*

**Decision:** The document was **not treated**.

#### 10.22.4 BS RF requirements [NR\_FR1\_35MHz\_45MHz\_BW-Core]

**R4-2015703 CR for TS 38.104: draft CR on introduction of channel bandwidths 35MHz and 45MHz for BS TX and general part**

*Type: draftCR For: Endorsement  
 38.104 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of channel bandwidths 35MHz and 45MHz for BS TX and general part

**Decision:** The document was **not treated**.

**R4-2015718 Draft CR to TS 38.104: Introduction of CBWs 35 MHz and 45 MHz**

*Type: draftCR For: Endorsement  
 38.104 v16.5.0  
 Source: Ericsson*

**Abstract:**

Including BS RF requirements for 35/45 MHz

**Decision:** The document was **not treated**.

**R4-2015719 Draft CR to TS 38.141-1: Introduction of CBWs 35 MHz and 45 MHz**

*Type: draftCR For: Endorsement  
 38.141-1 v16.5.0  
 Source: Ericsson*

**Abstract:**

Including BS RF requirements for 35/45 MHz

**Decision:** The document was **not treated**.

**R4-2015720 Draft CR to TS 38.141-2: Introduction of CBWs 35 MHz and 45 MHz**

*Type: draftCR For: Endorsement  
 38.141-2 v16.5.0  
 Source: Ericsson*

**Abstract:**

Including BS RF requirements for 35/45 MHz

**Decision:** The document was **not treated**.

**R4-2016114 Discussion on BS RF requirement for new channel bandwidth of 35MHz and 45MHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016115 Draft CR to TS 38.104: Introduction of 35MHz and 45MHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016116 Draft CR to TS 38.141-1: Introduction of 35MHz and 45MHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016117 Draft CR to TS 38.141-2: Introduction of 35MHz and 45MHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016118 Draft CR to TS 37.104: Introduction of 35MHz and 45MHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016119 Draft CR to 37.141: Introduction of 35MHz and 45MHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016120 Draft CR to TS 37.105: Introduction of 35MHz and 45MHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016121 Draft CR to 37.145-1: Introduction of 35MHz and 45MHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016122 Draft CR to 37.145-2: Introduction of 35MHz and 45MHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

#### 10.22.5 Others [NR\_FR1\_35MHz\_45MHz\_BW-Core]

**R4-2014911 UE RF requirments tables with channel BW dependency**

*Type: other For: Approval  
 38.101-1 v..  
 Source: Apple Inc.*

**Decision:** The document was **not treated**.

### 10.23 Band combinations for Uu and V2X con-current operation [NR\_LTE\_V2X\_PC5\_combos]

#### 10.23.1 General and Rapporteur Input (WID/TR/CR) [NR\_LTE\_V2X\_PC5\_combos-Core/Per]

**R4-2014421 Discussion on Rel-17 band combinations for Uu and V2X con-current operation**

*Type: discussion For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014425 Revised WID for V2X band combination**

*Type: WID revised For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2015561 TP for TR 37.875: adding some UE RF study for NR V2X band combinations**

*Type: pCR For: Approval  
 37.875 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

#### 10.23.2 UE RF requirement for concurrent operation between NR Uu band and NR PC5 band [NR\_LTE\_V2X\_PC5\_combos-Core]

**R4-2014422 TP on V2X\_n40A-n47A coexistence study**

*Type: pCR For: Approval  
 37.875 v0.0.0  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014423 CR for TS 38.101-1, Introduce new band combination of V2X\_n39A-n47A and V2X\_n40A-n47A**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0503 Cat: B (Rel-17)  
  
 Source: CATT*

**Abstract:**

The con-current operation of V2X\_n39A-n47A and V2X\_n40A-n47A should be introduced based on request.

**Decision:** The document was **not treated**.

#### 10.23.3 UE RF requirement for concurrent operation between LTE Uu band and NR PC5 band [NR\_LTE\_V2X\_PC5\_combos-Core]

**R4-2014424 CR for TS 38.101-3, Introduce new band combination of V2X\_39A-n47A, V2X\_n39A-47A, V2X\_40A-n47A and V2X\_n40A-47A**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0365 Cat: B (Rel-17)  
  
 Source: CATT*

**Abstract:**

The con-current operation of V2X\_39A-n47A, V2X\_n39A-47A, V2X\_40A-n47A and V2X\_n40A-47A should be introduced based on request.

**Decision:** The document was **not treated**.

#### 10.23.4 UE RF requirement for concurrent operation between NR Uu band and LTE PC5 band [NR\_LTE\_V2X\_PC5\_combos-Core]

#### 10.23.5 UE RF requirement for concurrent operation of LTE/NR CA/DC band combinations + PC5 V2X [NR\_LTE\_V2X\_PC5\_combos-Core]

### 10.24 Introduction of FR2 FWA UE with maximum TRP of 23dBm for band n257 and n258 [NR\_FR2\_FWA\_Bn257\_Bn258]

#### 10.24.1 UE RF (38.101-2) [NR\_FR2\_FWA\_Bn257\_Bn258-Core]

**R4-2014264 On Japan FWA EIRP requirement**

*Type: other For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

PC5 is more performance oriented than PC3, so EIRP requirement can support higher levels.

**Decision:** The document was **not treated**.

**R4-2014826 Proposals on FR2 FWA UE with maximum TRP of 23dBm**

*Type: report For: (not specified)  
 Source: MediaTek Beijing Inc.*

**Abstract:**

Proposal1: n257 and n258 Peak EIRP is 28.4 dBm for FR2 FWA UE with maximum TRP of 23dBm.

Proposal2.a: n257 REFSENS for 50MHz channel BW is -92.5 dBm for FR2 FWA UE with maximum TRP of 23dBm.

Proposal2.b: n258 REFSENS for 50MHz channel BW is -92.6 dBm for

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

**R4-2014832 Proposals on FR2 FWA UE with maximum TRP of 23dBm**

*Type: discussion For: Approval  
 Source: MediaTek Beijing Inc.*

**Abstract:**

Proposal1: n257 and n258 Peak EIRP is 28.4 dBm for FR2 FWA UE with maximum TRP of 23dBm.

Proposal2.a: n257 REFSENS for 50MHz channel BW is -92.5 dBm for FR2 FWA UE with maximum TRP of 23dBm.

Proposal2.b: n258 REFSENS for 50MHz channel BW is -92.6 dBm for

**Decision:** The document was **not treated**.

**R4-2015085 Open issues on FR2 FWA UE RF requirement**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015347 Discussion on Rel-17 FWA**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2015809 Views on RF requirement for FWA**

*Type: other For: Approval  
 Source: Sony, Ericsson*

**Decision:** The document was **not treated**.

**R4-2015887 Views on UE RF requirements of new FWA with 23dBm maximum TRP**

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

**Decision:** The document was **not treated**.

**R4-2016529 on new FR2 FWA UE RF requirement**

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

**Decision:** The document was **not treated**.

**R4-2016530 Draft CR for FR2 FWA RF requirements**

*Type: draftCR For: Endorsement  
 38.101-2 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

Power class 5 is introduced in Rel-17 for FWA usage.

**Decision:** The document was **not treated**.

#### 10.24.2 RRM Core requirements (38.133) [NR\_FR2\_FWA\_Bn257\_Bn258-Core]

**R4-2015480 DraftCR on RRM core requirements for FR2 new FWA UE in 38.133**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

Based on the endorsed document [R4-2012200] in RAN4#96-e meeting, the RRM requirements for new FR2 FWA UE need to be specified in TS38.133.

**Decision:** The document was **not treated**.

**R4-2016178 Big CR on FR2 new FWA UE RRM requirements in 36.133**

*Type: CR For: Agreement  
 36.133 v16.7.0 CR-6994 Cat: B (Rel-17)  
  
 Source: Ericsson*

**Abstract:**

To specify inter-RAT RRM requirements for FR2 FWA UE power class.

**Decision:** The document was **not treated**.

#### 10.24.3 RRM Perf. requirements (38.133) [NR\_FR2\_FWA\_Bn257\_Bn258-Perf]

**R4-2015481 DraftCR on RRM performance requirements for FR2 new FWA UE in 38.133**

*Type: draftCR For: Endorsement  
 38.133 v16.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

Based on the agreements in [R4-2012199] in RAN4#96-e meeting, it has been obseved that the side condition, UE gain range and test directions for FR2 RRM tests need to be introduced for FR2 new FWA UE.

**Decision:** The document was **not treated**.

#### 10.24.4 Others [NR\_FR2\_FWA\_Bn257\_Bn258-Core/Perf]

### 10.25 Introduction of NR band n13 [NR\_n13]

#### 10.25.1 UE RF (38.101-1) [NR\_n13-Core]

**R4-2014902 A-MPR Proposal for n13**

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

**Decision:** The document was **not treated**.

**R4-2015682 CR to TS 38.101-1: introduction of NR band n13**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0543 Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of NR band n13 in TS 38.101-1.

**Decision:** The document was **not treated**.

#### 10.25.2 BS RF (38.104) [NR\_n13-Core]

**R4-2015684 CR to TS 38.104: introduction of NR band n13**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0253 Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of NR band n13 in TS 38.104

**Decision:** The document was **not treated**.

**R4-2015685 CR to TS 38.141-1: introduction of NR band n13**

*Type: CR For: Agreement  
 38.141-1 v16.5.0 CR-0164 Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of NR band n13 in TS 38.141-1

**Decision:** The document was **not treated**.

**R4-2015686 CR to TS 38.141-2: introduction of NR band n13**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0241 Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of NR band n13 in TS 38.141-2

**Decision:** The document was **not treated**.

**R4-2015687 CR to TS 36.104: introduction of NR band n13**

*Type: CR For: Agreement  
 36.104 v16.7.0 CR-4916 Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of NR band n13 in TS 36.104

**Decision:** The document was **not treated**.

**R4-2015688 CR to TS 36.141: introduction of NR band n13**

*Type: CR For: Agreement  
 36.141 v16.7.0 CR-1285 Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of NR band n13 in TS 36.141

**Decision:** The document was **not treated**.

**R4-2015689 CR to TS 37.104: introduction of NR band n13**

*Type: CR For: Agreement  
 37.104 v16.7.0 CR-0911 Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of NR band n13 in TS 37.104

**Decision:** The document was **not treated**.

**R4-2015690 CR to TS 37.141: introduction of NR band n13**

*Type: CR For: Agreement  
 37.141 v16.7.0 CR-0952 Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of NR band n13 in TS 37.141

**Decision:** The document was **not treated**.

**R4-2015691 CR to TS 37.105: introduction of NR band n13**

*Type: CR For: Agreement  
 37.105 v16.5.0 CR-0203 Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of NR band n13 in TS 37.105

**Decision:** The document was **not treated**.

**R4-2015692 CR to TS 37.145-1: introduction of NR band n13**

*Type: CR For: Agreement  
 37.145-1 v16.4.0 CR-0220 Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of NR band n13 in TS 37.145-1

**Decision:** The document was **not treated**.

**R4-2015693 CR to TS 37.145-2: introduction of NR band n13**

*Type: CR For: Agreement  
 37.145-2 v16.5.0 CR-0245 Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of NR band n13 in TS 37.145-2

**Decision:** The document was **not treated**.

#### 10.25.3 RRM (38.133) [NR\_n13-Core]

**R4-2015683 CR to TS 38.133: introduction of NR band n13**

*Type: CR For: Agreement  
 38.133 v16.5.0 CR-1313 Cat: B (Rel-17)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Introduction of NR band n13 in TS 38.133

**Decision:** The document was **not treated**.

#### 10.25.4 Others [NR\_n13-Core/Perf]

### 10.26 Introduction of 1880-1920MHz SUL band for NR [NR\_SUL\_band\_1880\_1920MHz]

#### 10.26.1 UE RF (38.101-1) [NR\_SUL\_band\_1880\_1920MHz-Core]

**R4-2014330 Introduction of 1880-1920MHz SUL band into Rel-17 TS 38.101-1**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0499 Cat: B (Rel-17)  
  
 Source: CMCC*

**Abstract:**

Introduction of 1880-1920MHz SUL band for NR into Rel-17 TS 38.101-1

**Decision:** The document was **not treated**.

**R4-2015290 Discussion on new SUL band n98 UE requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

#### 10.26.2 BS RF (38.104) [NR\_SUL\_band\_1880\_1920MHz -Core]

**R4-2014331 Introduction of 1880-1920MHz SUL band into Rel-17 TS 38.104**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0240 Cat: B (Rel-17)  
  
 Source: CMCC*

**Abstract:**

Introduction of 1880-1920MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014332 Introduction of 1880-1920MHz SUL band into Rel-16 TS 36.104**

*Type: CR For: Agreement  
 36.104 v16.7.0 CR-4912 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 1880-1920MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014333 Introduction of 1880-1920MHz SUL band into Rel-17 TS 36.141**

*Type: CR For: Agreement  
 36.141 v16.7.0 CR-1274 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 1880-1920MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014334 Introduction of 1880-1920MHz SUL band into Rel-17 TS 37.104**

*Type: CR For: Agreement  
 37.104 v16.7.0 CR-0908 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 1880-1920MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014335 Introduction of 1880-1920MHz SUL band into Rel-17 TS 37.105**

*Type: CR For: Agreement  
 37.105 v16.5.0 CR-0200 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 1880-1920MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014336 Introduction of 1880-1920MHz SUL band into Rel-17 TS 37.141**

*Type: CR For: Agreement  
 37.141 v16.7.0 CR-0949 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 1880-1920MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014337 Introduction of 1880-1920MHz SUL band into Rel-17 TS 37.145-1**

*Type: CR For: Agreement  
 37.145-1 v16.4.0 CR-0217 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 1880-1920MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014338 Introduction of 1880-1920MHz SUL band into Rel-17 TS 37.145-2**

*Type: CR For: Agreement  
 37.145-2 v16.5.0 CR-0242 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 1880-1920MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014339 Introduction of 1880-1920MHz SUL band into Rel-17 TS 38.141-1**

*Type: CR For: Agreement  
 38.141-1 v16.5.0 CR-0151 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 1880-1920MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014340 Introduction of 1880-1920MHz SUL band into Rel-17 TS 38.141-2**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0223 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 1880-1920MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2015291 Discussion on new SUL band n98 BS requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

#### 10.26.3 RRM (38.133) [NR\_SUL\_band\_1880\_1920MHz -Core]

#### 10.26.4 Others [NR\_SUL\_band\_1880\_1920MHz -Core/Perf]

### 10.27 Introduction of 2300-2400MHz SUL band for NR [NR\_SUL\_band\_2300\_2400MHz]

#### 10.27.1 UE RF (38.101-1) [NR\_SUL\_band\_2300\_2400MHz -Core]

**R4-2014341 introduction of 2300-2400MHz SUL band into Rel-17 TS 38.101-1**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0500 Cat: B (Rel-17)  
  
 Source: CMCC*

**Abstract:**

Introduction of 2300-2400MHz SUL band for NR into Rel-17 TS 38.101-1

**Decision:** The document was **not treated**.

**R4-2015288 Discussion on new SUL band n97 UE requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

#### 10.27.2 BS RF (38.104) [NR\_SUL\_band\_2300\_2400MHz -Core]

**R4-2014342 Introduction of 2300-2400MHz SUL band into Rel-17 TS 38.104**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0241 Cat: B (Rel-17)  
  
 Source: CMCC*

**Abstract:**

Introduction of 2300-2400MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014343 Introduction of 2300-2400MHz SUL band into Rel-16 TS 36.104**

*Type: CR For: Agreement  
 36.104 v16.7.0 CR-4913 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 2300-2400MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014344 Introduction of 2300-2400MHz SUL band into Rel-17 TS 36.141**

*Type: CR For: Agreement  
 36.141 v16.7.0 CR-1275 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 2300-2400MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014345 Introduction of 2300-2400MHz SUL band into Rel-17 TS 37.104**

*Type: CR For: Agreement  
 37.104 v16.7.0 CR-0909 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 2300-2400MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014346 Introduction of 2300-2400MHz SUL band into Rel-17 TS 37.105**

*Type: CR For: Agreement  
 37.105 v16.5.0 CR-0201 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 2300-2400MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014347 Introduction of 2300-2400MHz SUL band into Rel-17 TS 37.141**

*Type: CR For: Agreement  
 37.141 v16.7.0 CR-0950 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 2300-2400MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014348 Introduction of 2300-2400MHz SUL band into Rel-17 TS 37.145-1**

*Type: CR For: Agreement  
 37.145-1 v16.4.0 CR-0218 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 2300-2400MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014349 Introduction of 2300-2400MHz SUL band into Rel-17 TS 37.145-2**

*Type: CR For: Agreement  
 37.145-2 v16.5.0 CR-0243 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 2300-2400MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014350 Introduction of 2300-2400MHz SUL band into Rel-17 TS 38.141-1**

*Type: CR For: Agreement  
 38.141-1 v16.5.0 CR-0152 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 2300-2400MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2014351 Introduction of 2300-2400MHz SUL band into Rel-17 TS 38.141-2**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0224 Cat: B (Rel-17)  
  
 Source: CMCCCMCC, Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2014355 Introduction of 2300-2400MHz SUL band into Rel-17 TS 38.141-2**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0225 Cat: B (Rel-17)  
  
 Source: CMCC, Huawei, HiSilicon*

**Abstract:**

Introduction of 2300-2400MHz SUL (supplemental uplink) band for NR

**Decision:** The document was **not treated**.

**R4-2015289 Discussion on new SUL band n97 BS requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

#### 10.27.3 RRM (38.133) [NR\_SUL\_band\_2300\_2400MHz -Core]

#### 10.27.4 Others [NR\_SUL\_band\_2300\_2400MHz -Core/Perf]

### 10.28 Introduction of NR 47 GHz band [NR\_47GHz\_Band]

**R4-2016461 Revised WID: introduction of NR 47 GHz band**

*Type: WID revised For: Information  
 Source: T-Mobile USA, Dish Network*

**Decision:** The document was **not treated**.

#### 10.28.1 UE RF (38.101-2) [NR\_47GHz\_Band -Core]

**R4-2014263 Discussion on PC3 EIRP and EIS in n262**

*Type: other For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

peak gain, spherical coverage of gain discussed

**Decision:** The document was **not treated**.

**R4-2015084 UE RF requirements for NR band n262**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015855 Link budget for PC3 for n262**

*Type: other For: Approval  
 Source: Sony, Ericsson*

**Decision:** The document was **not treated**.

**R4-2015888 PC3 minimum peak EIRP and EIS requirements for band n262**

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

**Decision:** The document was **not treated**.

**R4-2015894 Link budget for PC3 for n262**

*Type: other For: Approval  
 Source: Sony, Ericsson*

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

**R4-2015896 Link budget for PC3 for n262**

*Type: other For: Approval  
 Source: Sony, Ericsson*

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

**R4-2016229 EIRP and EIS evaluation for band n262**

*Type: discussion For: Approval  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2016296 Peak EIRP and Peak EIS for band n262**

*Type: discussion For: Approval  
 Source: Apple Inc.*

**Decision:** The document was **not treated**.

#### 10.28.2 BS RF (38.104) [NR\_47GHz\_Band -Core]

**R4-2015903 Draft CR to TS 38.104 – Introduction of band n262 (47GHz)**

*Type: draftCR For: Endorsement  
 38.104 v16.5.0  
 Source: Ericsson*

**Abstract:**

Add band n262

**Decision:** The document was **not treated**.

**R4-2015904 BS RF requirements and system parameters - TP to TR 38.847**

*Type: pCR For: Approval  
 38.847 v0.0.1  
 Source: Ericsson*

**Abstract:**

This contriobution is a text proposal to TR 38.847 to capture the RAN4#96-e agrements on BS RF requirements and system parameters

**Decision:** The document was **not treated**.

**R4-2016155 47GHz band TT for NR BS RF requirement**

*Type: discussion For: Agreement  
 Source: Keysight Technologies UK Ltd*

**Decision:** The document was **not treated**.

**R4-2016191 TP to TR 38.847: BS RF requirements**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

#### 10.28.3 RRM (38.133) [NR\_47GHz\_Band -Core]

**R4-2016179 Analysis of RRM requirements for 47 GHz band**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

This document analysis RRM requirements for new band on 47 GHz

**Decision:** The document was **not treated**.

#### 10.28.4 Others [NR\_47GHz\_Band -Core/Perf]

**R4-2015083 TP to TR 38.847 on regulatory background and system parameters**

*Type: pCR For: Approval  
 38.847 v0.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015902 TR 38.847 Introduction of NR Band 262 (47Ghz band)**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

TR skeleton to capture the work done when specifying the new NR FR2 47GHz band

**Decision:** The document was **not treated**.

**R4-2016096 Simulation results on UE demodulation performance impact by the introduction of NR 47GHz band**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

This paper provides UE simulation results for 47GHz FR2 band

**Decision:** The document was **not treated**.

**R4-2016097 On demodulation requirements for the new 47GHz band**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This paper provides an overview of demodulation requirements for the new 47GHz band

**Decision:** The document was **not treated**.

### 10.29 Introduction of NR band n24 [NR\_band\_n24]

#### 10.29.1 UE RF (38.101-1) [NR\_band\_n24-Core]

**R4-2014466 n24 emission requirements and A-MPR assumptions**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Ligado Networks*

**Decision:** The document was **not treated**.

**R4-2014495 Band 24 and n24 A-MPR**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Skyworks Solutions Inc.*

**Abstract:**

In this contribution we provide our input on filter feasibility, A-MPR evaluation assumptions and preliminary back-off measurements for NR FDD and SUL Band n24 that is also relevant to LTE Band 24.

**Decision:** The document was **not treated**.

#### 10.29.2 BS RF (38.104) [NR\_band\_n24-Core]

**R4-2016192 Draft CR to 36.104: Introduction of n24 requirements**

*Type: draftCR For: Endorsement  
 36.104 v16.7.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction on n24 requirements.

**Decision:** The document was **not treated**.

**R4-2016193 Draft CR to 36.141: Introduction of n24 requirements**

*Type: draftCR For: Endorsement  
 36.141 v16.7.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction on n24 requirements.

**Decision:** The document was **not treated**.

**R4-2016194 Draft CR to 37.104: Introduction of n24 requirements**

*Type: draftCR For: Endorsement  
 37.104 v16.7.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction on n24 requirements.

**Decision:** The document was **not treated**.

**R4-2016195 Draft CR to 37.141: Introduction of n24 requirements**

*Type: draftCR For: Endorsement  
 37.141 v16.7.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction on n24 requirements.

**Decision:** The document was **not treated**.

**R4-2016196 Draft CR to 38.104: Introduction of n24**

*Type: draftCR For: Endorsement  
 38.104 v16.5.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Introduction on n24.

**Decision:** The document was **not treated**.

#### 10.29.3 RRM (38.133) [NR\_band\_n24-Core]

#### 10.29.4 Others [NR\_band\_n24-Core/Perf]

**R4-2014176 Draft CR for 37.105 Introduction of NR band n24**

*Type: draftCR For: Endorsement  
 37.105 v16.5.0  
 Source: Ligado Networks*

**Abstract:**

Introduction of NR band n24 into the specifications

**Decision:** The document was **not treated**.

**R4-2014177 Draft CR for 37.145-1 Introduction of NR band n24**

*Type: draftCR For: Endorsement  
 37.145-1 v16.4.0  
 Source: Ligado Networks*

**Abstract:**

Introduction of NR band n24 into the specifications

**Decision:** The document was **not treated**.

**R4-2014178 Draft CR for 37.145-2 Introduction of NR band n24**

*Type: draftCR For: Endorsement  
 37.145-2 v16.5.0  
 Source: Ligado Networks*

**Abstract:**

Introduction of NR band n24 into the specifications

**Decision:** The document was **not treated**.

**R4-2014179 Draft CR for 38.141-1 Introduction of NR band n24**

*Type: draftCR For: Endorsement  
 38.141-1 v16.5.0  
 Source: Ligado Networks*

**Abstract:**

Introduction of NR band n24 into the specifications

**Decision:** The document was **not treated**.

**R4-2014180 Draft CR for 38.141-2 Introduction of NR band n24**

*Type: draftCR For: Endorsement  
 38.141-2 v16.5.0  
 Source: Ligado Networks*

**Abstract:**

Introduction of NR band n24 into the specifications

**Decision:** The document was **not treated**.

### 10.30 Introduction of 1.6 GHz NR SUL band with same uplink frequency range of Band 24 [NR\_SUL\_UL\_n24]

**R4-2015356 Discussion on the new SUL band for 1.6GHz**

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

**Abstract:**

Proposal 1: Introduce the new SUL band for 1626.5-1660.5MHz as band n99.

Proposal 2: Specify UE RF requirements for the new SUL band for 1626.5-1660.5MHz following band n24.

Proposal 3: Specify BS spurious emissions requirements for the new SUL band fo

**Decision:** The document was **not treated**.

#### 10.30.1 UE RF (38.101-1) [NR\_SUL\_UL\_n24-Core]

**R4-2014468 A-MPR and Emission Requirements for new SUL Band related to the UL of n24**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Ligado Networks*

**Decision:** The document was **not treated**.

**R4-2015357 draftCR to 38101-1 on introducing new SUL band n99**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0538 Cat: B (Rel-17)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

This draftCR is to introduce new SUL band for 1626.5-1660.5MHz in the UE RF spec.

**Decision:** The document was **not treated**.

#### 10.30.2 BS RF (38.104) [NR\_SUL\_UL\_n24-Core]

**R4-2014202 Draft CR for TS 38.104 Introduction of SUL for UL of NR band n24**

*Type: draftCR For: Endorsement  
 38.104 v16.5.0  
 Source: Ligado Networks*

**Abstract:**

Introduction of SUL Band n99 into the specifications

**Decision:** The document was **not treated**.

**R4-2015358 draftCR to 38104 on introducing new SUL band n99**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0246 Cat: B (Rel-17)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

This draftCR is to introduce new SUL band for 1626.5-1660.5MHz in 38.104 spec.

**Decision:** The document was **not treated**.

**R4-2015359 draftCR to 36104 on introducing new SUL band n99**

*Type: CR For: Agreement  
 36.104 v16.7.0 CR-4914 Cat: B (Rel-17)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

This draftCR is to introduce new SUL band for 1626.5-1660.5MHz in 36.104 spec.

**Decision:** The document was **not treated**.

**R4-2015360 draftCR to 38141-1 on introducing new SUL band n99**

*Type: CR For: Agreement  
 38.141-1 v16.5.0 CR-0159 Cat: B (Rel-17)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

This draftCR is to introduce new SUL band for 1626.5-1660.5MHz in 38.141-1 spec.

**Decision:** The document was **not treated**.

**R4-2015361 draftCR to 38141-2 on introducing new SUL band n96**

*Type: CR For: Agreement  
 38.141-2 v16.5.0 CR-0236 Cat: B (Rel-17)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

This draftCR is to introduce new SUL band for 1626.5-1660.5MHz in 38.141-2 spec.

**Decision:** The document was **not treated**.

**R4-2015362 draftCR to 36141 on introducing new SUL band n99**

*Type: CR For: Agreement  
 36.141 v16.7.0 CR-1283 Cat: B (Rel-17)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

This draftCR is to introduce new SUL band for 1626.5-1660.5MHz in 36.141 spec.

**Decision:** The document was **not treated**.

**R4-2015363 draftCR to 37104 on introducing new SUL band n99**

*Type: CR For: Agreement  
 37.104 v16.7.0 CR-0910 Cat: B (Rel-17)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

This draftCR is to introduce new SUL band for 1626.5-1660.5MHz in 37.104 spec.

**Decision:** The document was **not treated**.

**R4-2015364 draftCR to 37141 on introducing new SUL band n99**

*Type: CR For: Agreement  
 37.141 v16.7.0 CR-0951 Cat: B (Rel-17)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

This draftCR is to introduce new SUL band for 1626.5-1660.5MHz in 37.141 spec.

**Decision:** The document was **not treated**.

**R4-2015365 draftCR to 37105 on introducing new SUL band n99**

*Type: CR For: Agreement  
 37.105 v16.5.0 CR-0202 Cat: B (Rel-17)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

This draftCR is to introduce new SUL band for 1626.5-1660.5MHz in 37.105 spec.

**Decision:** The document was **not treated**.

**R4-2015366 draftCR to 37145-1 on introducing new SUL band n99**

*Type: CR For: Agreement  
 37.145-1 v16.4.0 CR-0219 Cat: B (Rel-17)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

This draftCR is to introduce new SUL band for 1626.5-1660.5MHz in 37.145-1 spec.

**Discussion:**

The secretary wondered what is the correct Version? It reads 16.5.0 on the coversheet but the CR is allocated for 16.4.0 (and 16.5.0 does not exist).

**Decision:** The document was **not treated**.

**R4-2015367 draftCR to 37145-2 on introducing new SUL band n99**

*Type: CR For: Agreement  
 37.145-2 v16.5.0 CR-0244 Cat: B (Rel-17)  
  
 Source: Huawei,HiSilicon*

**Abstract:**

This draftCR is to introduce new SUL band for 1626.5-1660.5MHz in 37.145-2 spec.

**Decision:** The document was **not treated**.

#### 10.30.3 RRM (38.133) [NR\_SUL\_UL\_n24-Core]

#### 10.30.4 Others [NR\_SUL\_UL\_n24-Core/Perf]

**R4-2014203 Draft CR for TS 36.104 Introduction of SUL for UL of NR band n24**

*Type: draftCR For: Endorsement  
 36.104 v16.7.0  
 Source: Ligado Networks*

**Abstract:**

Introduction of SUL Band n99 into the specifications

**Decision:** The document was **not treated**.

**R4-2014204 Draft CR for TS 36.141 Introduction of SUL for UL of NR band n24**

*Type: draftCR For: Endorsement  
 36.141 v16.7.0  
 Source: Ligado Networks*

**Abstract:**

Introduction of SUL Band n99 into the specifications

**Decision:** The document was **not treated**.

**R4-2014205 Draft CR for TS 37.104 Introduction of SUL for UL of NR band n24**

*Type: draftCR For: Endorsement  
 37.104 v16.7.0  
 Source: Ligado Networks*

**Abstract:**

Introduction of SUL Band n99 into the specifications

**Decision:** The document was **not treated**.

**R4-2014206 Draft CR for TS 37.105 Introduction of SUL for UL of NR band n24**

*Type: draftCR For: Endorsement  
 37.105 v16.5.0  
 Source: Ligado Networks*

**Abstract:**

Introduction of SUL Band n99 into the specifications

**Decision:** The document was **not treated**.

**R4-2014207 Draft CR for TS 37.141 Introduction of SUL for UL of NR band n24**

*Type: draftCR For: Endorsement  
 37.141 v16.7.0  
 Source: Ligado Networks*

**Abstract:**

Introduction of SUL Band n99 into the specifications

**Decision:** The document was **not treated**.

**R4-2014208 Draft CR for TS 37.145-1 Introduction of SUL for UL of NR band n24**

*Type: draftCR For: Endorsement  
 37.145-1 v16.4.0  
 Source: Ligado Networks*

**Abstract:**

Introduction of SUL Band n99 into the specifications

**Decision:** The document was **not treated**.

**R4-2014209 Draft CR for TS 37.145-2 Introduction of SUL for UL of NR band n24**

*Type: draftCR For: Endorsement  
 37.145-2 v16.5.0  
 Source: Ligado Networks*

**Abstract:**

Introduction of SUL Band nXX into the specifications

**Decision:** The document was **not treated**.

**R4-2014210 Draft CR for TS 38.141-1 Introduction of SUL for UL of NR band n24**

*Type: draftCR For: Endorsement  
 38.141-1 v16.5.0  
 Source: Ligado Networks*

**Abstract:**

Introduction of SUL Band n99 into the specifications

**Decision:** The document was **not treated**.

**R4-2014211 Draft CR for TS 38.141-2 Introduction of SUL for UL of NR band n24**

*Type: draftCR For: Endorsement  
 38.141-2 v16.5.0  
 Source: Ligado Networks*

**Abstract:**

Introduction of SUL Band n99 into the specifications

**Decision:** The document was **not treated**.

## 11 Reply to ITU-R LS (RP-200042)

### 11.1 Study on IMT parameters for frequency ranges 6.425-7.125GHz and 10.0-10.5GHz [FS\_6425\_10500MHz \_NR]

**R4-2015675 TR 38.921 V 0.2.0**

*Type: draft TR For: Agreement  
 38.921 v0.2.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015681 Draft reply LS on Parameters of terrestrial component of IMT for sharing and compatibility studies in preparation for WRC-23 (6.425 to 10.5 GHz)**

*Type: LS out For: Approval  
 to ITU-R WP5D, cc RAN  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016132 Maintenance TP to TR38.921**

*Type: other For: Approval  
 38.921 v..  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

#### 11.1.1 UE parameters

**R4-2014456 UE parameters for the frequency range 6.425-7.125GHz, 7.025-7.125GHz and 10.0-10.5GHz**

*Type: discussion For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014473 Proposals of UE Parameters for Frequency Ranges 6.425-7.125GHz and 10.0-10.5GHz**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides the proposals of UE parameters for frequency ranges 6.425-7.125GHz and 10.0-10.5GHz according to the downlink and uplink coexistence simulation results provided.

**Decision:** The document was **not treated**.

**R4-2015676 TP on UE IMT technology related parameters**

*Type: pCR For: Approval  
 38.921 v0.2.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015900 SI on IMT parameters - Remaining UE parameters**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution is discussing remaining UE parameters for the SI on IMT parameters

**Decision:** The document was **not treated**.

#### 11.1.2 BS parameters

**R4-2014457 BS parameters for the frequency range 6.425-7.125GHz, 7.025-7.125GHz and 10.0-10.5GHz**

*Type: discussion For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014474 Proposals of BS Parameters for Frequency Ranges 6.425-7.125GHz and 10.0-10.5GHz**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides the proposals of BS parameters for frequency ranges 6.425-7.125GHz and 10.0-10.5GHz according to the downlink and uplink coexistence simulation results provided.

**Decision:** The document was **not treated**.

**R4-2014738 Discussion on remaining issues for 6425-7125 BS parameter**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2014749 Discussion on remaining issues for 6425-7125 BS parameter**

*Type: discussion For: (not specified)  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2015677 TP on BS remaining parameters**

*Type: pCR For: Approval  
 38.921 v0.2.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015899 SI on IMT parameters - Remaining BS parameters**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution is discussing remaining BS parameters for the SI on IMT parameters

**Decision:** The document was **not treated**.

**R4-2016133 TP to TR38.921 : BS spurious emission**

*Type: other For: Approval  
 38.921 v..  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016369 Draft LS to ECC SE21 on Spurious emission limits for AAS BS in 6.425 – 7.125 GHz and 10-10.5 GHz**

*Type: LS out For: Approval  
 to ECC SE21, cc TSG RAN  
 Source: Ericsson*

**Abstract:**

The LS informs SE21 what limits RAN4 intends to choose for operation in frequency range 6.425-7.125 GHz and 10-10-.5 GHz, in its work to respond to ITU-R WP5D on sharing parameters for WRC-23.

**Decision:** The document was **not treated**.

#### 11.1.3 Coexistence study

##### 11.1.3.1 Simulation assumptions

**R4-2014475 TP to TR 38.921: Clarification of system level simulation assumptions for study on IMT parameters for frequency ranges 6.425-7.125GHz and 10.0-10.5GHz**

*Type: pCR For: Approval  
 38.921 v0.1.0  
 Source: Nokia, Nokia Shanghai Bell, ZTE*

**Abstract:**

This contribution proposes to use the term “cell range” instead of “cell radius” in table 4.2.1.1-1 to align with figure 4.2.1.1-2 and avoid the ambiguity. The text proposal to TR 38.921 is provided below for approval.

**Decision:** The document was **not treated**.

**R4-2015901 SI on IMT parameters - Simulation assumptions**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution is discussing some agreed UE assumptions that were challenged in previous meeting

**Decision:** The document was **not treated**.

##### 11.1.3.2 Downlink

**R4-2014458 Simulation results for 6425-7125MHz and 10-10.5GHz-downlink**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014476 Downlink Coexistence Simulation Results for Frequency Ranges 6.425-7.125GHz and 10.0-10.5GHz**

*Type: other For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides the downlink coexistence simulation results according to the agreed assumptions.

**Decision:** The document was **not treated**.

**R4-2015678 Simulation results on DL co-existence for 6.425-7.125GHz, 10.0-10.5 GHz**

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

**Decision:** The document was **not treated**.

**R4-2015897 SI on IMT parameters - DL simulations results**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution is providing coexistence simulations results in DL for the 6-7GHz and 10GHz bands

**Decision:** The document was **not treated**.

**R4-2016134 DL simulation results for 6425-7125MHz and 10-10.5GHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016236 Downlink co-existence simulation results for frequency ranges 6.425-7.125GHz and 10.0-10.5GHz**

*Type: discussion For: (not specified)  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

##### 11.1.3.3 Uplink

**R4-2014459 Simulation results for 6425-7125MHz and 10-10.5GHz-uplink**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014477 Uplink Coexistence Simulation Results for Frequency Ranges 6.425-7.125GHz and 10.0-10.5GHz**

*Type: other For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides the uplink coexistence simulation results according to the agreed assumptions.

**Decision:** The document was **not treated**.

**R4-2015679 Simulation results on UL co-existence for 6.425-7.125GHz, 10.0-10.5 GHz**

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

**Decision:** The document was **not treated**.

**R4-2015898 SI on IMT parameters - UL simulations results**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution is providing coexistence simulations results in UL for the 6-7GHz and 10GHz bands

**Decision:** The document was **not treated**.

**R4-2016135 UL simulation results for 6425-7125MHz and 10-10.5GHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016136 TP to TR38.921: uplink ACIR model**

*Type: other For: Approval  
 38.921 v..  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016237 Uplink co-existence simulation results for frequency ranges 6.425-7.125GHz and 10.0-10.5GHz**

*Type: discussion For: (not specified)  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

#### 11.1.4 Antenna characteristics

**R4-2014478 TP to TR 38.921: Clarification of BS array antenna element peak gain for study on IMT parameters for frequency ranges 6.425-7.125GHz and 10.0-10.5GHz**

*Type: pCR For: Approval  
 38.921 v0.1.0  
 Source: Nokia, Nokia Shanghai Bell, ZTE*

**Abstract:**

This contribution provides a TP to include the information on how the BS array antenna element peak gains were determined in the reply LSs directly into TR 38.921.

**Decision:** The document was **not treated**.

**R4-2014979 TP to TR 38.921: Correction to antenna parameter table in clause 3 and sub-clause 8.1**

*Type: pCR For: Approval  
 38.921 v0.1.0  
 Source: Ericsson*

**Abstract:**

In this contribution a text proposal has been created to update TR 38.921, subclause 8.1 according to the reply LS sent to ITU-R WP 5D at last meeting. Also, clause 3 is updated with all for the antenna model relevant definitions.

**Decision:** The document was **not treated**.

#### 11.1.5 Relevant information for the sharing and compatibility studies

**R4-2014978 On AAS base station array antenna model and spatial selectivity**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In addition, as RAN1 requests a timely feedback from RAN4 on phase noise, this contribution also contain a draft LS response to RAN1.

**Decision:** The document was **not treated**.

**R4-2015680 TP on spatial emission and interference mitigation**

*Type: pCR For: Approval  
 38.921 v0.2.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

## 12 Rel-17 non-spectrum related work items for NR

### 12.1 Multiple Input Multiple Output (MIMO) Over-the-Air (OTA) requirements for NR UEs [NR\_MIMO\_OTA]

#### 12.1.1 General [NR\_MIMO\_OTA]

**R4-2015311 Framework on NR MIMO OTA requirements development**

*Type: discussion For: Approval  
 Source: CAICT,vivo*

**Abstract:**

Framework on NR MIMO OTA requirements including a set of guidelines for laboratories alignment activities

**Decision:** The document was **not treated**.

**R4-2016216 TS 38.151 v0.1.0 NR MIMO OTA requirements**

*Type: draft TS For: Agreement  
 38.151 v0.1.0  
 Source: vivo*

**Abstract:**

New version TS

**Decision:** The document was **not treated**.

**R4-2016217 LS on FR1 MIMO OTA**

*Type: LS out For: Approval  
 to CTIA, CCSA  
 Source: vivo, CAICT*

**Abstract:**

LS to CTIA and CCSA

**Decision:** The document was **not treated**.

**R4-2016218 TP to TS 38.151 v0.0.1 on general part**

*Type: pCR For: Approval  
 38.151 v0.0.1  
 Source: vivo, CAICT*

**Decision:** The document was **not treated**.

**R4-2016588 Discussion on MIMO OTA framework**

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

**Decision:** The document was **not treated**.

#### 12.1.2 Performance Requirements [NR\_MIMO\_OTA-Core]

**R4-2014829 Proposal of FR2 MIMO OTA simulation approach workplan**

*Type: discussion For: Approval  
 Source: MediaTek Beijing Inc.*

**Abstract:**

Proposal: Approve FR2 MIMO OTA simulation approach workplan as Fig 1. i.e.

• RAN4#99-e (May, 2021): agree on simulation setting

• RAN4#100 to RAN4#101 (Aug to Nov, 2021): simulation data collection

**Decision:** The document was **not treated**.

##### 12.1.2.1 Performance Requirements for FR1 [NR\_MIMO\_OTA-Core]

**R4-2016209 On FR1 4x4 vs. 2x2 channel models**

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

**Decision:** The document was **not treated**.

**R4-2016220 Channel model simulation for FR1 performance requirement**

*Type: other For: Discussion  
 Source: vivo*

**Abstract:**

Channel model simulation to match 2x2 and 4x4 scenario

**Decision:** The document was **not treated**.

##### 12.1.2.2 Performance Requirements for FR2 [NR\_MIMO\_OTA-Core]

**R4-2015352 Analysis on the impact of number of test points**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2016208 On FR2 MIMO OTA channel model down selection**

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

**Decision:** The document was **not treated**.

**R4-2016219 Discussions on FR2 MIMO OTA requirements**

*Type: other For: Approval  
 Source: vivo, CAICT*

**Decision:** The document was **not treated**.

**R4-2016235 Views on for FR2 MIMO OTA**

*Type: discussion For: (not specified)  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2016539 Simulation assumptions for NR FR2 MIMO OTA**

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

**Decision:** The document was **not treated**.

#### 12.1.3 Testing methodologies [NR\_MIMO\_OTA-Core]

**R4-2014688 Effect of White Box Approach on Simple-Sectored Multi-Probe Anechoic Chamber Design**

*Type: discussion For: Information  
 Source: BUPT*

**Abstract:**

This paper focus on white box approach and evaluate the system design for SS-MPAC using the black box and white box approach.

**Decision:** The document was **not treated**.

**R4-2014710 Effect of White Box Approach on Simple-Sectored Multi-Probe Anechoic Chamber Design**

*Type: discussion For: Information  
 Source: BUPT*

**Abstract:**

This paper focus on white box approach and evaluate the system design for SS-MPAC using the black box and white box approach.

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

**R4-2015368 Discussion on MIMO OTA test methodologies**

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

**Abstract:**

Proposal 1: We prefer to keep UMi CDL-C as final requirement in NR FR2 MIMO OTA.

**Decision:** The document was **not treated**.

##### 12.1.3.1 Testing parameters for Performance [NR\_MIMO\_OTA-Core]

**R4-2014723 Discussion on FR1 and FR2 MIMO OTA**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2016222 TP to TS 38.151 v0.0.1 on FR1 test system for requirements**

*Type: pCR For: Approval  
 38.151 v0.0.1  
 Source: vivo, CAICT*

**Decision:** The document was **not treated**.

**R4-2016589 Discussion on MIMO OTA open issues**

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

**Decision:** The document was **not treated**.

##### 12.1.3.2 Optimization of test methodologies [NR\_MIMO\_OTA-Core]

**R4-2015258 on UE orientation clarification**

*Type: discussion For: Approval  
 Source: Xiaomi*

**Decision:** The document was **not treated**.

**R4-2015353 The rules for 3D-MPAC system implementation**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2016210 On Probe Configurations and Channel model vs. OTA test system coordinate systems for FR2 MIMO OTA**

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

**Decision:** The document was **not treated**.

##### 12.1.3.3 Channel model validation [NR\_MIMO\_OTA-Core]

**R4-2014536 Channel Model Assumptions**

*Type: other For: Approval  
 Source: Spirent Communications*

**Abstract:**

Ideal curves for the PDP and Doppler Temporal Correlation are shown for each of the FR2 channel models.

Proposal 1. Agree on ideal curves for FR2 channel models, for PDP, Doppler Temporal Correlation.

Proposal 2. Agree on additional values for FR2: PSP,

**Decision:** The document was **not treated**.

**R4-2016221 TP to TS 38.151 v0.0.1 on FR1 Channel model and RMC**

*Type: pCR For: Approval  
 38.151 v0.0.1  
 Source: vivo, CAICT, Spirent*

**Decision:** The document was **not treated**.

**R4-2016561 FR1 MIMO OTA channel model validation results**

*Type: discussion For: Approval  
 Source: CAICT,Keysight,vivo*

**Decision:** The document was **not treated**.

### 12.2 RF requirements enhancement for NR frequency range 1 (FR1) [NR\_RF\_FR1\_enh]

#### 12.2.1 General and work plan [NR\_RF\_FR1\_enh -Core]

#### 12.2.2 RF core requirements [NR\_RF\_FR1\_enh -Core]

##### 12.2.2.1 UL MIMO configuration for SUL band configurations [NR\_RF\_FR1\_enh -Core]

**R4-2014735 Draft CR: Introduce NR SUL bands n80 to UL-MIMO configuration**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: CMCC*

**Abstract:**

In RAN#89E meeting, RF requirements enhancement for NR frequency range (FR1) in Rel-17 was approved in RP-202088.

One of the objectives of this WID is:

1) Enable UL MIMO configuration for SUL band configurations

Specify UL MIMO requirements for example SUL configurations with SUL band n80

Take SUL\_n41A-n80A for the example SUL band configuration

Remove the RAN2 and RAN4 restriction on configuring UL MIMO for SUL band configurations

In RAN4#95e meeting, several lower NR bands including n3 were introduced to support UL-MIMO (R4-2009162). Since n80 is the SUL band with the same frequency range of n3 uplink, n80 should also support UL-MIMO.

**Decision:** The document was **not treated**.

**R4-2014736 LS on removing restriction on configuring UL MIMO for SUL band**

*Type: LS out For: Approval  
 to RAN2, cc RAN1  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2015181 Considerations on enabling UL-MIMO support for SUL**

*Type: discussion For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Decision:** The document was **not treated**.

**R4-2015284 Removing restrictions on SUL UL-MIMO in Rel-17**

*Type: discussion For: Decision  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016540 work plan for Rel-17 FR1 UE RF enhancement**

*Type: Work Plan For: Approval  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

##### 12.2.2.2 2Tx switching between carrier 1 and carrier 2 [NR\_RF\_FR1\_enh -Core]

**R4-2014465 Discussion on 2Tx switching between carrier 1 and carrier 2**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014717 Discussion on 2Tx-2tx switching comapred to the 1Tx-2Tx case**

*Type: discussion For: Approval  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2014739 UL Tx switching related RF requirements for R17 new scenarios**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2015182 Initial considerations on 2Tx switching between 2 carriers**

*Type: discussion For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Decision:** The document was **not treated**.

**R4-2015197 Discussion on 2Tx switching between carrier 1 and carrier 2**

*Type: other For: Approval  
 Source: China Telecom*

**Decision:** The document was **not treated**.

**R4-2015262 consideration on UL Tx switching enhancement in Rel 17**

*Type: other For: Approval  
 Source: Xiaomi*

**Decision:** The document was **not treated**.

**R4-2015283 Discussion on the introduction of 2Tx - 2Tx UE uplink switch**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015325 Enhancment of Tx Switching in R17**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2015355 Discussion on Rel-17 FR1 Tx switching**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

##### 12.2.2.3 Tx switching between 1 carrier on band A and 2 contiguous aggregated carriers on band B [NR\_RF\_FR1\_enh -Core]

**R4-2015198 Discussion on Tx switching between 1 carrier on band A and 2 contiguous aggregated carriers on band B**

*Type: other For: Approval  
 Source: China Telecom*

**Decision:** The document was **not treated**.

##### 12.2.2.4 HPUE for TDD intra-band contiguous UL CA [NR\_RF\_FR1\_enh -Core]

**R4-2014175 HPUE TDD+TDD considerations**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

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

**R4-2014392 Discussion on SAR solutions of TDD intra-band contiguous UL CA HPUE**

*Type: other For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014508 PC2 UL CA Class B/C UE Architecture and MPR/A-MPR evaluation**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Skyworks Solutions Inc., Apple Inc.*

**Abstract:**

This contribution discusses the transmitter architecture options and related preliminary MPR and A-MPR results valid for PC2 PA in class B and C UL CA.

**Decision:** The document was **not treated**.

**R4-2015038 Discussion on PC2 intra-band contiguous NR CA**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2015261 Discussion on HP UE for TDD intra-band contiguous UL CA**

*Type: other For: Approval  
 Source: Xiaomi*

**Decision:** The document was **not treated**.

**R4-2015326 Discussion on HPUE for TDD intra-band contiguous UL CA**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2015354 Discussion on Rel-17 FR1 intra-band contiguous HPUE**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2016537 on intra-band CA HPUE RF architecture**

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

**Decision:** The document was **not treated**.

### 12.3 NR RF requirement enhancements for frequency range 2 (FR2) [NR\_RF\_FR2\_req\_enh2]

#### 12.3.1 General and work plan [NR\_RF\_FR2\_req\_enh2-Core]

**R4-2014513 TR skeleton for Rel-17 FR2 UE RF WI**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2014514 Work plan for New WID on NR RF Enhancements for FR2**

*Type: Work Plan For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

#### 12.3.2 RF core requirements [NR\_RF\_FR2\_req\_enh2-Core]

**R4-2014724 Discussion on Rel-17 FR2 inter-band CA**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision:** The document was **not treated**.

##### 12.3.2.1 Inter-band DL CA enhancements [NR\_RF\_FR2\_req\_enh2-Core]

**R4-2014912 More on FR2 Inter-band DL CA**

*Type: other For: Approval  
 38.101-2 v..  
 Source: Apple Inc.*

**Decision:** The document was **not treated**.

**R4-2015327 Discussion on FR2 inter-band DL CA enhancements**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision:** The document was **not treated**.

###### 12.3.2.1.1 Applicability of CBM/IBM for different CA configurations [NR\_RF\_FR2\_req\_enh2-Core]

**R4-2014293 Inter-band DL CA CBM band pairs for FR2 Rel-17**

*Type: discussion For: Approval  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2014515 FR2 interband CA CBM vs IBM**

*Type: discussion For: (not specified)  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2014586 CBM IBM Applicability for Inter-Band DL CA**

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

**Decision:** The document was **not treated**.

**R4-2015348 Discussion on Rel-17 FR2 inter-band DL CA**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2016344 Views on applicability of CBM/IBM for different CA configurations**

*Type: other For: Approval  
 Source: Ericsson, Sony*

**Abstract:**

In this contribution we discuss CBM and IBM applicability and capability indication for CA configurations

**Decision:** The document was **not treated**.

**R4-2016523 On Rel-17 inter band DL CA\_FR2**

*Type: other For: Approval  
 38.101-2 v..  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

###### 12.3.2.1.2 Feasibility study for CA configurations within same frequency group based on IBM [NR\_RF\_FR2\_req\_enh2-Core]

**R4-2014233 On the feasibility of IBM for FR2 inter-band CA within the same frequency group**

*Type: discussion For: Approval  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014587 On IBM feasibility for CA configurations within same frequency group**

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

**Decision:** The document was **not treated**.

**R4-2015873 Views on Feasibility for CA configurations within same frequency group based on IBM**

*Type: other For: Approval  
 Source: Sony, Ericsson*

**Decision:** The document was **not treated**.

###### 12.3.2.1.3 Feasibility study for CA configurations between different frequency groups based on CBM [NR\_RF\_FR2\_req\_enh2-Core]

**R4-2014232 On the feasibility of CBM for FR2 inter-band CA cross different frequency groups**

*Type: discussion For: Approval  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2015874 Views on Feasibility for CA configurations between different frequency groups based on CBM**

*Type: other For: Approval  
 Source: Sony, Ericsson*

**Decision:** The document was **not treated**.

###### 12.3.2.1.4 UE requirements for CA configurations CA\_n258A-n260A and CA\_n257A-n259A based on IBM [NR\_RF\_FR2\_req\_enh2-Core]

**R4-2014589 UE requirements for CA\_258A-n260A and CA\_257A-n259A based on IBM**

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

**Decision:** The document was **not treated**.

**R4-2014966 DL Inter-band CA\_n257-n259**

*Type: other For: Approval  
 Source: NTT DOCOMO INC.*

**Decision:** The document was **not treated**.

**R4-2015875 Views on Rel-17 inter-band DL CA in FR2**

*Type: other For: Approval  
 Source: Sony, Ericsson*

**Decision:** The document was **not treated**.

###### 12.3.2.1.5 UE requirements for CA configurations within the same frequency group based on CBM [NR\_RF\_FR2\_req\_enh2-Core]

**R4-2014588 UE requirements for CA configurations within the same frequency group based on CBM**

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

**Decision:** The document was **not treated**.

##### 12.3.2.2 Inter-band UL CA [NR\_RF\_FR2\_req\_enh2-Core]

**R4-2014913 Views on FR2 Inter-band UL CA**

*Type: other For: Approval  
 38.101-2 v..  
 Source: Apple Inc.*

**Decision:** The document was **not treated**.

**R4-2015328 Discussion on FR2 inter-band UL CA**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision:** The document was **not treated**.

###### 12.3.2.2.1 Feasibility study for CA configurations within same frequency group based on IBM and CBM [NR\_RF\_FR2\_req\_enh2-Core]

###### 12.3.2.2.2 Feasibility study for CA configurations between different frequency groups based on CBM [NR\_RF\_FR2\_req\_enh2-Core]

**R4-2014715 Inter-band UL CA for FR2**

*Type: discussion For: (not specified)  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

###### 12.3.2.2.3 UE requirements for CA configuration CA\_n257A-n259A based on IBM [NR\_RF\_FR2\_req\_enh2-Core]

**R4-2016086 UL inter-band CA for different band group based on IBE**

*Type: other For: Approval  
 Source: NTT DOCOMO INC.*

**Decision:** The document was **not treated**.

##### 12.3.2.3 UL gaps for self-calibration and monitoring [NR\_RF\_FR2\_req\_enh2-Core]

**R4-2014218 Discusison on UL gaps for self-calibration/monitoring**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014393 Discussion on UL gaps for self-calibration and monitoring**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014516 FR2 gaps**

*Type: discussion For: (not specified)  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2014590 On performance improvements from self-calibration in UL gaps**

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

**Decision:** The document was **not treated**.

**R4-2014716 UE calibration gap motivation and view to the requirements**

*Type: discussion For: Approval  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2014963 Discussion on UL gap for self-calibration and monitoring**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2015349 Discussion on Rel-17 FR2 calibration gap**

*Type: discussion For: Approval  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2016061 Analysis on power calibration gaps**

*Type: discussion For: Endorsement  
 Source: Ericsson, Sony*

**Abstract:**

Paper contains an analysis on power calibration gaps. Including observation and proposal

**Decision:** The document was **not treated**.

**R4-2016536 on gaps for self-calibration and monitoring**

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

**Decision:** The document was **not treated**.

**R4-2016560 Further discusison on UL gaps for self-calibration and monitoring**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

### 12.4 NR RRM further enhancement [NR\_RRM\_enh2-Core]

#### 12.4.1 Work plan [NR\_RRM\_enh2-Core]

**R4-2014286 Work plan for R17 FeRRM**

*Type: discussion For: Agreement  
 38.133 v..  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2015310 Views on PUCCH SCell Activation/Deactivation delay requirements**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: NTT DOCOMO, INC.*

**Decision:** The document was **not treated**.

### 12.5 NR measurement gap enhancements [NR\_MG\_enh-Core]

#### 12.5.1 Work plan [NR\_MG\_enh-Core]

**R4-2014224 Work plan for measurement gap enhancement**

*Type: Work Plan For: Approval  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014628 Work plan of R17 NR and MR-DC measurement gap enhancements WI**

*Type: Work Plan For: Approval  
 Source: MediaTek inc., Intel Corporation*

**Decision:** The document was **not treated**.

### 12.6 Enhancement for NR high speed train scenario in FR1 [NR\_HST\_FR1\_enh-Core]

#### 12.6.1 Work plan [NR\_HST\_FR1\_enh-Core]

**R4-2014225 Work plan for NR high speed train scenario in FR1**

*Type: Work Plan For: Approval  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014705 Work plan for enhancement for NR high speed train scenario in FR1**

*Type: Work Plan For: Approval  
 Source: CMCC*

**Decision:** The document was **not treated**.

### 12.7 NR support for high speed train scenario in FR2 [NR\_HST\_FR2\_enh]

#### 12.7.1 General and work plan [NR\_HST\_FR2\_enh-Core]

**R4-2014846 Work plan for NR support for high speed train scenario in FR2**

*Type: Work Plan For: Approval  
 Source: Samsung, Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015859 General considerations for FR2 HST**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

General discussion on FR2 HST

**Decision:** The document was **not treated**.

**R4-2015880 TR skeleton for NR support for high speed train scenario in FR2**

*Type: other For: Approval  
 38.133 v..  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

#### 12.7.2 High speed train deployment scenario in FR2 [NR\_HST\_FR2\_enh-Core]

**R4-2014564 Views on high speed train deployments scenarios in FR2**

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

**Decision:** The document was **not treated**.

**R4-2014632 FR2 HST analysis framework**

*Type: discussion For: Discussion  
 Source: Qualcomm, Inc.*

**Decision:** The document was **not treated**.

**R4-2014834 Discussion on scenarios for FR2 high speed train**

*Type: discussion For: Discussion  
 Source: Verizon, Samsung*

**Decision:** The document was **not treated**.

**R4-2014847 Discussion on high speed train deployment scenario in FR2**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2015614 Discussion on high speed train deployment scenario in FR2**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015860 Deployment scenarios for FR2 HST**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Some deployment considerations for FR2 HST

**Decision:** The document was **not treated**.

**R4-2016387 On the high-speed train deployment scenario in FR2**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides an overview of HST deployment scenarios in FR2. We collect main deployment parameters, highlight the magnitude and potential impact of the Doppler effect, and discuss channel models.

**Decision:** The document was **not treated**.

#### 12.7.3 UE RF core requirements [NR\_HST\_FR2\_enh-Core]

**R4-2014848 Discussion on UE RF requirement for FR2 HST**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2015087 Power Class 4 for HST**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016058 On UE Core requirements for FR2 HST**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

UE RF core requirements affected by HST FR2 deployment(s)

**Decision:** The document was **not treated**.

**R4-2016538 on RF requirement for NR FR2 HST**

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

**Decision:** The document was **not treated**.

### 12.8 Solutions for NR to support non-terrestrial networks (NTN) [NR\_NTN\_solutions]

#### 12.8.1 General and work plan [NR\_NTN\_solutions]

**R4-2014066 On the status of NTN in 3GPP**

*Type: discussion For: (not specified)  
 Source: Fraunhofer HHI, Fraunhofer IIS*

**Abstract:**

This document analyses the work done by other WGs in NTN-related work and study items and shall serve as a starting point for delegates not yet involved in NTN to get an overview on the past work and open issues.

**Decision:** The document was **not treated**.

**R4-2014381 NR\_NTN\_solutions work plan**

*Type: Work Plan For: Endorsement  
 Source: THALES*

**Decision:** The document was **not treated**.

**R4-2014785 Views on NTN bands and coexistence study**

*Type: discussion For: Approval  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014880 Discussion on the applicability of DFT-S-OFDM for NTN**

*Type: discussion For: (not specified)  
 Source: CAICT*

**Decision:** The document was **not treated**.

**R4-2015905 Specification structure for NTN nodes**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution is proposing specification structure for the introduction of NTN

**Decision:** The document was **not treated**.

#### 12.8.2 Use cases, deployment scenarios, and regulatory information [NR\_NTN\_solutions-Core]

**R4-2014467 Possible FR2 exemplary band for NR based satellite networks**

*Type: discussion For: Discussion  
 Source: HUGHES Network Systems Ltd, Thales*

**Decision:** The document was **not treated**.

**R4-2015252 NTN - On use cases and deployment scenarios**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015263 Initial discussion for NR to support non-terrestrial networks**

*Type: other For: Approval  
 Source: Xiaomi*

**Decision:** The document was **not treated**.

**R4-2015547 General discussion about NTN topic**

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

**Decision:** The document was **not treated**.

**R4-2015906 NTN Scenarios and Regulatory overview**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

This conrtibution is clarifying NTN scenarios and associated wording. It analyze Radio Regulations to propose freqnecy bands for NTN

**Decision:** The document was **not treated**.

**R4-2015913 NTN use case scenarios and architectures**

*Type: discussion For: Discussion  
 Source: THALES*

**Abstract:**

The objective of this document is to establish working assumption for the scenarios and use cases to be considered by NTN RAN4 work for the definition of the generic and core requirements for NTN-NR.

**Decision:** The document was **not treated**.

**R4-2015915 Possible FR1 exemplary band for NR satellite networks**

*Type: discussion For: Discussion  
 Source: THALES*

**Abstract:**

The objective of this document is to provide an exemplary band in FR1 to be used by RAN4 work.

**Decision:** The document was **not treated**.

#### 12.8.3 Coexistence aspects [NR\_NTN\_solutions -Core]

**R4-2015945 NTN Proposed RF Core Requirements**

*Type: discussion For: Discussion  
 Source: THALES*

**Abstract:**

The objective of this document is to propose a framework for NTN core requirements and consider in particular the potential Key Performance Indicators (KPIs) to be considered by NTN RAN4 work.

**Decision:** The document was **not treated**.

##### 12.8.3.1 Simulation assumptions [NR\_NTN\_solutions -Core]

**R4-2015548 General discussion on NTN simulation assumptions**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015907 NTN Simulations discussion**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution provides an overview of the needed simulations for NTN and initiates related discussions

**Decision:** The document was **not treated**.

**R4-2016112 Discussion on simulation assumptions for NTN coexistence study**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

##### 12.8.3.2 UE requirements aspects [NR\_NTN\_solutions -Core]

##### 12.8.3.3 BS requirements aspects [NR\_NTN\_solutions -Core]

**R4-2015908 NTN coexistence - BS requirements aspects**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution introduces BS requirements aspects in the scope of NTN

**Decision:** The document was **not treated**.

#### 12.8.4 RRM requirements [NR\_NTN\_solutions-Core]

**R4-2014658 Initial discussion on RRM impact for NR NTN system**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision:** The document was **not treated**.

**R4-2014875 Discussion on RRM requirements in NTN**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014928 Satellite Position Accuracy**

*Type: discussion For: Decision  
 Source: Eutelsat S.A.*

**Decision:** The document was **not treated**.

**R4-2015730 Initial discussion on NTN RRM requirements**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Initial discussion on NTN RRM

**Decision:** The document was **not treated**.

**R4-2015946 NTN RRM and Demodulation KPIs**

*Type: discussion For: Discussion  
 Source: THALES*

**Abstract:**

The objective of this document is to propose a framework for NTN core requirements and consider in particular the potential demodulation Key Performance Indicators (KPIs) & RRM aspects to be considered by NTN RAN4 work.

**Decision:** The document was **not treated**.

**R4-2016037 NTN impact on RRM**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Analysis of RRM requirements of TS 38.133

**Decision:** The document was **not treated**.

### 12.9 UE Power Saving Enhancements [NR\_UE\_pow\_sav\_enh]

#### 12.9.1 General and work plan [NR\_UE\_pow\_sav\_enh]

**R4-2014366 Work plan of Rel-17 Power Saving Enhancements**

*Type: Work Plan For: Approval  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014367 Evaluation on Rel-17 RLM/BFD measurement relaxation**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Decision:** The document was **not treated**.

**R4-2014534 Evaluation assumptions for R17 RLM/BFD relaxation**

*Type: discussion For: Approval  
 Source: vivo, MediaTek*

**Decision:** The document was **not treated**.

#### 12.9.2 Feasibility and performance impact of relaxing UE measurements for RLM and/or BFD [NR\_UE\_pow\_sav\_enh]

**R4-2014219 Discussion on feasibility and performance impact of RLM/BFD relaxation**

*Type: discussion For: Discussion  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2014428 Discussion on RLM relaxition for NR power saving**

*Type: discussion For: Discussion  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014535 Discussion and initial results for R17 RLM/BFD relaxation**

*Type: discussion For: Discussion  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2014654 Discussion on RRM measurement relaxation in connected mode for NR power saving enhancement**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision:** The document was **not treated**.

**R4-2014797 Discussion on RLM BFD measurement relaxation**

*Type: discussion For: Discussion  
 38.133 v..  
 Source: OPPO*

**Decision:** The document was **not treated**.

**R4-2015199 Discussion about evaluation methodology for relaxation of RLM/BFD measurements**

*Type: discussion For: Discussion  
 Source: Nokia Solutions & Networks (I)*

**Decision:** The document was **not treated**.

**R4-2015485 Preliminary discussion on RLM/BFD relaxation in power saving enhancements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016150 Discussions on UE power saving for RLM and BM**

*Type: other For: Discussion  
 Source: Ericsson*

**Abstract:**

In this contribution, we discuss the power saving techniques for UEs in radio link monitoring (RLM) and beam management (BM) procedures from an RRM perspective.

**Decision:** The document was **not treated**.

### 12.10 NR Sidelink enhancement [NRSL\_enh]

#### 12.10.1 General and work plan [NRSL\_enh]

**R4-2014326 Work plan for SL enhancement for RF perspectives in Rel-17**

*Type: Work Plan For: Approval  
 Source: LG Electronics France*

**Decision:** The document was **not treated**.

**R4-2014973 General views on NR sidelink enhancements in R17**

*Type: discussion For: Approval  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2015256 on Rel-17 V2X work**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision:** The document was **not treated**.

**R4-2016281 General aspects on RAN4 work for public safety UC support**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, we present our view on general work aspects for RF work related to public safety UC.

**Decision:** The document was **not treated**.

**R4-2016484 On Rel-17 sidelink enhancement**

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

**Decision:** The document was **not treated**.

#### 12.10.2 Spectrum request for SL operation [NRSL\_enh-Core]

**R4-2016280 spectrum aspect on public saftey UC support**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, we present our view on spectrum aspects related to regulatory work.

**Decision:** The document was **not treated**.

## 13 Rel-17 Study Items for NR

### 13.1 Study on enhanced test methods for FR2 in NR [FS\_FR2\_enhTestMethods]

**R4-2014918 Updated work plan for FS\_FR2\_enhTestMethods**

*Type: Work Plan For: Approval  
 Source: Apple Inc., vivo*

**Decision:** The document was **not treated**.

#### 13.1.1 Test methodology for high DL power and low UL power test cases [FS\_FR2\_enhTestMethods]

**R4-2014267 Impact on beam management due to spherical wavefront in DL**

*Type: other For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

We discuss need for dual pol TE

**Decision:** The document was **not treated**.

**R4-2014919 TP to TR38.884 on High DL and Low UL power test cases**

*Type: other For: Approval  
 38.884 v..  
 Source: Apple Inc.*

**Decision:** The document was **not treated**.

**R4-2015319 Test methodology for high DL power and low UL power test cases**

*Type: discussion For: Approval  
 Source: CAICT*

**Decision:** The document was **not treated**.

**R4-2016213 On Test methodology for high DL power and low UL power test cases**

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

**Decision:** The document was **not treated**.

**R4-2016377 Impact of phase variation – Simulation Results**

*Type: other For: Approval  
 Source: MVG Industries, Sony*

**Abstract:**

During RAN4#e-96, a WF was agreed [1] for AI-enhanced test methods for NR FR2. Specifically, the simulation assumptions were agreed upon. The aim is to address the issue of UE beam management sensitivity to phase variation of the DL signal. Based on the a

**Decision:** The document was **not treated**.

**R4-2016562 Views on test methods for high DL power and low UL power TCs**

*Type: discussion For: Approval  
 Source: ROHDE & SCHWARZ*

**Decision:** The document was **not treated**.

#### 13.1.2 Polarization basis mismatch [FS\_FR2\_enhTestMethods]

**R4-2014266 FR2 testability enhancement for polarization mismatch**

*Type: other For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

We discuss need for dual pol TE

**Decision:** The document was **not treated**.

**R4-2014725 Discussion on FR2 EIRP measurement enhancement**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision:** The document was **not treated**.

**R4-2014827 Analysis on practical TPMI and 2-port CSI-RS for EIRP measurement**

*Type: discussion For: Approval  
 Source: MediaTek Beijing Inc.*

**Abstract:**

Proposal1: List and apply “TPMI side condition method” as one of EIRP measurement enhancement methods for Rel-15 and forward UE.

Proposal2: “Practical TPMI” shall be further applied for “TPMI side condition method”

Proposal3: “2-port CSI-RS” shall be prov

**Decision:** The document was **not treated**.

**R4-2014920 Views on polarization mismatch**

*Type: discussion For: Discussion  
 Source: Apple Inc.*

**Decision:** The document was **not treated**.

**R4-2015871 Views on testability enhancement for UE FR2 test**

*Type: other For: Discussion  
 Source: Sony, Ericsson*

**Decision:** The document was **not treated**.

**R4-2015872 Views on testability enhancement for UE FR2 test**

*Type: other For: Discussion  
 Source: Sony, Ericsson*

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

**R4-2015895 Views on testability enhancement for UE FR2 test**

*Type: other For: Discussion  
 Source: Sony, Ericsson*

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

**R4-2016212 On minimizing the impact of polarization basis mismatch between the TE and DUT**

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

**Decision:** The document was **not treated**.

**R4-2016568 Views on polarization basis mismatch**

*Type: discussion For: Approval  
 Source: ROHDE & SCHWARZ*

**Decision:** The document was **not treated**.

#### 13.1.3 Enhanced test methods for inter-band (FR2+FR2) CA [FS\_FR2\_enhTestMethods]

**R4-2014265 On impact of non-co-located test antennae for FR2 inter-band testing**

*Type: other For: Discussion  
 Source: Qualcomm Incorporated*

**Abstract:**

We study the effect of off-focus test system antenna in IFF systems before we list some ramifications to inter-band test requirements

**Decision:** The document was **not treated**.

**R4-2014492 Beam correspondence performance measurement improvements of FR2 UEs using carrier aggregation and shared antenna arrays**

*Type: discussion For: (not specified)  
 Source: Fraunhofer HHI*

**Abstract:**

This contribution identifies limitations in the current framework which could affect beam correspondence with carrier aggregation in FR2.

**Decision:** The document was **not treated**.

**R4-2014687 Testability of FR2 inter-band DL 2CA EIS by non co-located antenna**

*Type: discussion For: Approval  
 Source: Anritsu corporation*

**Decision:** The document was **not treated**.

**R4-2014921 Impact of AoA offset on inter-band CA PSD difference**

*Type: discussion For: Discussion  
 Source: Apple Inc.*

**Decision:** The document was **not treated**.

#### 13.1.4 Extreme temperature conditions [FS\_FR2\_enhTestMethods]

**R4-2016214 On extreme temperature condition testing**

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

**Decision:** The document was **not treated**.

**R4-2016223 Views on FR2 extreme condition testing**

*Type: other For: Approval  
 Source: vivo*

**Decision:** The document was **not treated**.

#### 13.1.5 Enhanced test methods for FR2 DL 256QAM RF [FS\_FR2\_enhTestMethods]

#### 13.1.6 Test time reduction [FS\_FR2\_enhTestMethods]

**R4-2014491 Beam sweeping and test time reduction in FR2**

*Type: discussion For: (not specified)  
 Source: Fraunhofer HHI, Fraunhofer IIS*

**Decision:** The document was **not treated**.

**R4-2014726 Discussion on FR2 test time reduction**

*Type: discussion For: Discussion  
 Source: Samsung*

**Decision:** The document was **not treated**.

#### 13.1.7 Testability for band n262 [FS\_FR2\_enhTestMethods]

**R4-2014922 Band n262 testability**

*Type: discussion For: Discussion  
 Source: Apple Inc.*

**Decision:** The document was **not treated**.

##### 13.1.7.1 Extension of frequency applicability of permitted methods in 38.810 [FS\_FR2\_enhTestMethods]

**R4-2016224 Discussion on Testability issue of 47GHz band**

*Type: other For: Approval  
 Source: vivo*

**Decision:** The document was **not treated**.

##### 13.1.7.2 Extension of frequency applicability of enhancement objectives 1-6 [FS\_FR2\_enhTestMethods]

### 13.2 Study on supporting NR from 52.6 GHz to 71 GHz [FS\_NR\_52\_to\_71GHz]

**R4-2014980 TP to TR 38.808: Addition of general RAN4 structure to sub-clause 4.2**

*Type: pCR For: Approval  
 38.808 v0.0.2  
 Source: Ericsson*

**Abstract:**

A common technical report (TR 38.808) has been created to capture background information for RAN1 and RAN4. In this contribution a text proposal is attached with a sub-structure to prepare TR 38.808 to capture RAN4 specific information.

**Decision:** The document was **not treated**.

#### 13.2.1 Numerology, Channel BW [FS\_NR\_52\_to\_71GHz]

##### 13.2.1.1 General [FS\_NR\_52\_to\_71GHz]

**R4-2014382 Further discussion on numerology and CBW for above 52.6 GHz**

*Type: other For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014737 Bandwidth and numerology for NR in 52.6GHz ~ 71GHz**

*Type: discussion For: Discussion  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2014892 Further considerations on the numerology and channel bandwidth sizes for the 60GHz frequency range**

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

**Decision:** The document was **not treated**.

**R4-2014974 Further discussion on channel bandwidths and numerology for B52.6G**

*Type: discussion For: Approval  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2015206 Numerology and channel bandwidth discussion for NR beyond 52.6 GHz**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015307 Channel bandwidth and subcarrier spacing for 52.6 GHz to 71GHz**

*Type: discussion For: Discussion  
 Source: NEC*

**Abstract:**

We show our view on the channel bandwidth and subcarrier spacing

**Decision:** The document was **not treated**.

**R4-2015563 On numerology and channel bandwidth in 52.6 - 71 GHz**

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

**Decision:** The document was **not treated**.

**R4-2015700 Discussion on 52.6 GHz to 71 GHz SI**

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

**Decision:** The document was **not treated**.

**R4-2015727 On 52.6 to 71 GHz numerology evaluation and channel bandwidths**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In RAN#86, a rel-17 SI covering support for NR in 52.6 – 71 GHz was approved [1]. The SI and the consecutive WI aims to maximize the leverage of FR2 based implementations and minimize the specification burden, where possible extension of FR2 operation up

**Decision:** The document was **not treated**.

**R4-2015886 Views on numerologies above 52 GHz**

*Type: other For: Discussion  
 Source: Sony*

**Decision:** The document was **not treated**.

**R4-2015890 Views on numerologies above 52 GHz**

*Type: other For: Discussion  
 Source: Sony*

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

**R4-2015891 Views on numerologies above 52 GHz**

*Type: other For: Discussion  
 Source: Sony*

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

**R4-2015892 Views on numerologies above 52 GHz**

*Type: other For: Discussion  
 Source: Sony*

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

**R4-2015893 Views on numerologies above 52 GHz**

*Type: other For: Discussion  
 Source: Sony*

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

**R4-2016110 Further discussion on numerology and BW for 52.6GHz-71GHz**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

**R4-2016299 Subcarrier spacing and minimum channel bandwidth**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

##### 13.2.1.2 Timing considerations [FS\_NR\_52\_to\_71GHz]

**R4-2015991 TP to TR 38.808: Timing considerations for operation between 52.6 and 71 GHz**

*Type: discussion For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

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

**R4-2016000 TP to TR 38.808: Timing considerations for operation between 52.6 and 71 GHz**

*Type: pCR For: Approval  
 38.808 v0.0.2  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016036 TP for NR Rel-17 TR 38.808: Time and synchronization impact**

*Type: pCR For: Approval  
 38.808 v0.0.2  
 Source: Ericsson*

**Abstract:**

Analysis of time and synchronization requirements of TS 38.133

**Decision:** The document was **not treated**.

##### 13.2.1.3 Phase noise and RF impairments related to response to RAN1 [FS\_NR\_52\_to\_71GHz]

**R4-2014893 Futher considerations on the phase noise for the 60GHz frequency range**

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

**Decision:** The document was **not treated**.

**R4-2014976 TP to TR 38.808: On 52.6 to 71 GHz phase noise characteristics, TP to TR and draft LS to RAN1**

*Type: pCR For: Approval  
 38.808 v0.0.2  
 Source: Ericsson*

**Abstract:**

In this paper, we further discuss the phase noise model described in [3] and elaborate more on comparison between characteristics of existing models, new proposed models and state-of-the-art high performance PLL published data.

**Decision:** The document was **not treated**.

**R4-2015443 Draft LS: Phase noise and RF impairment considerations**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015564 On 60 GHz Phase noise and RF impairments**

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

**Decision:** The document was **not treated**.

**R4-2016298 Phase noise and PTRS**

*Type: other For: Approval  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2016533 on PN model for 60GHz+reply LS RAN1**

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

**Decision:** The document was **not treated**.

#### 13.2.2 BS aspect [FS\_NR\_52\_to\_71GHz]

**R4-2014401 Discussion on the BS requirements for 52.6-71GHz**

*Type: other For: Approval  
 Source: CATT*

**Decision:** The document was **not treated**.

**R4-2014977 TP to TR 38.808: Addition of technical background information for base station in clause 2 and sub-clause 4.2.6**

*Type: pCR For: Approval  
 38.808 v0.0.2  
 Source: Ericsson*

**Abstract:**

In Annex A of this contribution, text proposal for technical report describing the new proposed model is attached.

**Decision:** The document was **not treated**.

**R4-2015200 TP to TR 38.808 BS RF for NR beyond 52.6 GHz**

*Type: pCR For: Approval  
 38.808 v0.0.2  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015947 TP to TR 38.808: BS architecture and BS classes for 52-71 GHz range**

*Type: pCR For: Approval  
 38.808 v0.0.2  
 Source: Huawei*

**Abstract:**

This contribution provides TP to TR 38.808 on selected BS aspects for 52.6 – 71 GHz range, including BS architecture and BS classes.

**Decision:** The document was **not treated**.

#### 13.2.3 UE aspect [FS\_NR\_52\_to\_71GHz]

**R4-2014975 Further discussion on PA model for B52.6G**

*Type: discussion For: Information  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2015444 UE RF for NR beyond 52.6 GHz**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2015984 On power amplifier aspects for UE in the 52.6-71 GHz range**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

In this contribution we propose and ACLR range for UEs operating in the 52.6-71 GHz range

**Decision:** The document was **not treated**.

**R4-2016371 A Survey on Memory Based PA Models**

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

**Abstract:**

In this contributions we will discuss some memory based models that could be suitable candidates.

**Decision:** The document was **not treated**.

#### 13.2.4 Others [FS\_NR\_52\_to\_71GHz]

**R4-2014894 Regulatory overview and input for the 60GHz frequency range**

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

**Decision:** The document was **not treated**.

**R4-2015728 Discussion on PTRS for 52 beyond**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

During last RAN4 meeting, RAN4 #96-e, contributions regarding technological impacts at 52.6 GHz and beyond were discussed. Interested companies brought studies on PN, antenna parameters, to name a few and impact of physical layer design, specifically PT-

**Decision:** The document was **not treated**.

**R4-2015948 TP to TR 38.808: PA trends and typical Noise Figure values**

*Type: pCR For: Approval  
 38.808 v0.0.2  
 Source: Huawei*

**Abstract:**

Based on the approved WF this contribution provides an updated TP for the PA trends analysis for 52.6 – 71 GHz range. Related TP to TR 38.808 is attached for approval. It shall be noted that the source PA database use for drafting the attached TP was rece

**Decision:** The document was **not treated**.

### 13.3 Study on Efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths [FS\_NR\_eff\_BW\_util]

#### 13.3.1 General and work plan [FS\_NR\_eff\_BW\_util]

**R4-2014895 Non-standard spectrum allocations for NR bands**

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

**Decision:** The document was **not treated**.

**R4-2015721 Work Plan for Study on Efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidth**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution provides description of the work plan for the study on efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidth [1]

**Decision:** The document was **not treated**.

**R4-2015722 TR Skeleton on CH BW not aligned with existing BWs**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Draft TR Skeleton for Study on Efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths

**Decision:** The document was **not treated**.

**R4-2016456 Revised SID: Study on Efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths**

*Type: SID revised For: Information  
 Source: T-Mobile USA, Ericsson*

**Decision:** The document was **not treated**.

#### 13.3.2 Input on operator licensed channel bandwidths in FR1 that do not align with existing NR channel bandwidths [FS\_NR\_eff\_BW\_util]

**R4-2014507 UE Support for Irregular Channel Bandwidths - Options and Constraints**

*Type: discussion For: Approval  
 38.101-1 v..  
 Source: Skyworks Solutions Inc.*

**Abstract:**

This contribution discusses the different cases from UE prospective and provides an analysis of potential solutions and their related constraints to enable irregular channel BW support using existing UE channel BW.

**Decision:** The document was **not treated**.

**R4-2015723 Considerations on Bandwidth Granularity**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

This contribution highlighted challenges around adding new channel bandwidths and its proposed to keep the study and work relating to this SI to consider a nominal granularity for new channel bandwidths of which to study

**Decision:** The document was **not treated**.

#### 13.3.3 Evaluation of use of larger channel bandwidths than operator licensed bandwidth [FS\_NR\_eff\_BW\_util]

**R4-2015724 Utilizing larger CBWs for available spectrum**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

In this contribution, further discussion on creating new channel bandwidth by means of utilizing the net wider channel bandwidth with only scheduling a subset of RBs

**Decision:** The document was **not treated**.

**R4-2016111 Discussion on irregular channel bandwidth for NR system**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Decision:** The document was **not treated**.

#### 13.3.4 Evaluation of use of overlapping UE channel bandwidths (from both UE and network perspective) [FS\_NR\_eff\_BW\_util]

**R4-2014487 Handling of Channel Bandwidths That Are Not Multiples of 5MHz**

*Type: discussion For: Discussion  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2015562 On efficient utilization of licensed spectrum**

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

**Decision:** The document was **not treated**.

**R4-2015713 Overlapping UE channel bandwidths**

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

**Decision:** The document was **not treated**.

##### 13.3.4.1 UE perspective [FS\_NR\_eff\_BW\_util]

**R4-2016201 On the use of overlapping channel bandwidths from UE perspective**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

##### 13.3.4.2 Network perspective [FS\_NR\_eff\_BW\_util]

**R4-2016455 Use of 5 MHz overlapping channel BWs to cover spectrum blocks between 5 and 10 MHz**

*Type: discussion For: Approval  
 Source: T-Mobile USA*

**Decision:** The document was **not treated**.

#### 13.3.5 Others [FS\_NR\_eff\_BW\_util]

## 14 Rel-17 Work Items for LTE

### 14.1 LTE inter-band Carrier Aggregation for 2 bands DL with 1 band UL [LTE\_CA\_R17\_2BDL\_1BUL]

#### 14.1.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R17\_2BDL\_1BUL-Core/Perf]

**R4-2016232 Revised WID: Rel17 LTE inter-band CA for 2 bands DL with 1 band UL**

*Type: WID revised For: (not specified)  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2016233 Introduction of Rel-17 LTE inter-band CA for 2 bands DL with 1 band UL combinations in TS36.101**

*Type: draftCR For: (not specified)  
 36.101 v16.7.0  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

**R4-2016234 TR 36.717-02-01 Rel-17 LTE inter-band CA for 2 bands DL and 1 band UL CA**

*Type: draft TR For: Agreement  
 36.717-02-01 v0.1.0  
 Source: Qualcomm Incorporated*

**Decision:** The document was **not treated**.

#### 14.1.2 UE RF with harmonic, close proximity and isolation issues [LTE\_CA\_R17\_2BDL\_1BUL-Core]

#### 14.1.3 UE RF without specific issues [LTE\_CA\_R17\_2BDL\_1BUL-Core]

**R4-2015392 TP for TR 36.717-02-01: CA\_2A-8A**

*Type: pCR For: Approval  
 36.717-02-01 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

### 14.2 LTE inter-band Carrier Aggregation for 3 bands DL with 1 band UL [LTE\_CA\_R17\_3BDL\_1BUL]

**R4-2014067 TP for TR 36.717-03-01: CA\_1-8-41**

*Type: pCR For: Approval  
 36.717-03-01 v0.1.0  
 Source: VODAFONE Group Plc*

**Abstract:**

This contribution provides a text proposal on LTE CA band combination CA\_1-8-41 for TR 36.717-03-01 [1]. Only 1 UL is considered.

**Decision:** The document was **not treated**.

**R4-2014068 TP for TR 36.717-03-01: CA\_1-40-41**

*Type: pCR For: Approval  
 36.717-03-01 v0.1.0  
 Source: VODAFONE Group Plc*

**Abstract:**

This contribution provides a text proposal on LTE CA band combination CA\_1-40-41 for TR 36.717-03-01 [1]. Only 1 UL is considered.

**Decision:** The document was **not treated**.

**R4-2014069 TP for TR 36.717-03-01: CA\_8-40-41**

*Type: pCR For: Approval  
 36.717-03-01 v0.1.0  
 Source: VODAFONE Group Plc*

**Abstract:**

This contribution provides a text proposal on LTE CA band combination CA\_8-40-41 for TR 36.717-03-01 [1]. Only 1 UL is considered.

**Decision:** The document was **not treated**.

#### 14.2.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R17\_3BDL\_1BUL-Core/Perf]

**R4-2016541 Introduction of completed R17 3DL band combinations to TS 36.101**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5709 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016542 Revised WID for LTE inter-band CA for 3 bands DL with 1 bands UL**

*Type: WID revised For: Agreement  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

#### 14.2.2 UE RF with harmonic, close proximity and isolation issues [LTE\_CA\_R17\_3BDL\_1BUL-Core]

#### 14.2.3 UE RF without specific issues [LTE\_CA\_R17\_3BDL\_1BUL-Core]

### 14.3 LTE inter-band Carrier Aggregation for x bands DL (x=4, 5) with 1 band UL

**R4-2014065 TP for TR 36.717-04-01: CA\_1-3-8-41**

*Type: pCR For: Approval  
 36.717-04-01 v0.1.0  
 Source: VODAFONE Group Plc*

**Abstract:**

This contribution provides a text proposal on LTE CA band combination CA\_1-3-8-41 for TR 36.717-04-01. Only 1 UL is considered.

**Decision:** The document was **not treated**.

**R4-2015201 Extension of LTE iterbCA 4/5 WI to include 6 bands**

*Type: discussion For: Approval  
 Source: VODAFONE Group Plc*

**Abstract:**

For LTE inter-band CA the existing work items currently support work on up to 5 bands for the downlink (DL). As there is now a desire to start work on 6 band DL combinations, a suitable work item needs to be identified. This document proposes extending th

**Decision:** The document was **not treated**.

#### 14.3.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R17\_xBDL\_1BUL-Core]

**R4-2015070 Introduction of LTE inter-band Carrier Aggregation for x bands DL (x=4, 5) with 1 band UL to TS36.101**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5687 Cat: B (Rel-17)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This is a big CR for the basket work item on LTE CA 4DL/1UL and 5DL/1UL.

**Decision:** The document was **not treated**.

**R4-2016181 Revised WID: LTE Advanced inter-band CA Rel-17 for x bands DL (x=4, 5) with 1 band UL**

*Type: WID revised For: Endorsement  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016182 Updated scope of TR: LTE inter-band CA for 4/5 bands DL with 1 band UL**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

**R4-2016183 TR 36.717-04-01 v0.2.0**

*Type: draft TR For: Agreement  
 36.717-04-01 v0.2.0  
 Source: Nokia, Nokia Shanghai Bell*

**Decision:** The document was **not treated**.

#### 14.3.2 UE RF with 4 LTE bands CA [LTE\_CA\_R17\_xBDL\_1BUL-Core]

**R4-2015393 Draft CR to 36.101 to add configuration CA\_1A-3A-8A-40C**

*Type: draftCR For: Endorsement  
 36.101 v16.7.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To add configuration CA\_1A-3A-8A-40C

**Decision:** The document was **not treated**.

**R4-2015394 Draft CR to 36.101 to add CA\_1A-3C-7A-8A with UL CA\_3C**

*Type: draftCR For: Endorsement  
 36.101 v16.7.0  
 Source: Huawei, HiSilicon*

**Abstract:**

To add configuration CA\_1A-3C-7A-8A with UL CA\_3C

**Decision:** The document was **not treated**.

**R4-2015395 TP for TR 36.717-04-01: CA\_1A-7A-8A-38A**

*Type: pCR For: Approval  
 36.717-04-01 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015396 TP for TR 36.717-04-01: CA\_1A-8A-20A-38A**

*Type: pCR For: Approval  
 36.717-04-01 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015397 TP for TR 36.717-04-01: CA\_3A-8A-20A-38A**

*Type: pCR For: Approval  
 36.717-04-01 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015398 TP for TR 36.717-04-01: CA\_1A-3C-8A-38A with UL CA\_3C**

*Type: pCR For: Approval  
 36.717-04-01 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015399 TP for TR 36.717-04-01: CA\_1A-3C-8A-20A with UL CA\_3C**

*Type: pCR For: Approval  
 36.717-04-01 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015400 Updated TP for TR 36.717-04-01: CA\_1A-3C-20A-38A with UL CA\_3C**

*Type: pCR For: Approval  
 36.717-04-01 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015402 Updated TP for TR 36.717-04-01: CA\_2A-5A-7A-66A-66A**

*Type: pCR For: Approval  
 36.717-04-01 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

#### 14.3.3 UE RF with 5 LTE bands CA [LTE\_CA\_R17\_xBDL\_1BUL-Core]

**R4-2015401 TP for TR 36.717-04-01: CA\_1A-3A-7A-8A-40A / CA\_1A-3A-7A-8A-40C**

*Type: pCR For: Approval  
 36.717-04-01 v0.1.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

### 14.4 LTE inter-band Carrier Aggregation for 2 bands DL with 2 band UL [LTE\_CA\_R17\_2BDL\_2BUL]

#### 14.4.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R17\_2BDL\_2BUL-Core]

**R4-2016488 Introduction of completed R17 2DL2UL band combinations to TS 36.101**

*Type: draftCR For: Endorsement  
 36.101 v16.7.0  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016489 Revised WID for LTE inter-band CA for 2 bands DL with 2 bands UL**

*Type: WID revised For: Endorsement  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

#### 14.4.2 UE RF with harmonic, close proximity and isolation issues [LTE\_CA\_R17\_2BDL\_2BUL-Core]

#### 14.4.3 UE RF without specific issues [LTE\_CA\_R17\_2BDL\_2BUL-Core]

### 14.5 LTE inter-band Carrier Aggregation for x bands DL (x= 3, 4, 5) with 2 band UL

#### 14.5.1 Rapporteur Input (WID/TR/CR) [LTE\_CA\_R17\_xBDL\_2BUL-Core]

**R4-2014300 TR 36.717-03-02 v0.2.0 TR Update for LTE-A inter-band CA for x bands (x=3,4,5) DL with 2 bands UL in Rel-17**

*Type: draft TR For: Agreement  
 36.717-03-02 v0.2.0  
 Source: LG Electronics Polska*

**Decision:** The document was **not treated**.

**R4-2014301 Revised WID on LTE-A inter-band CA for x bands (x=3,4,5) DL with 2 bands UL in Rel-17**

*Type: WID revised For: (not specified)  
 Source: LG Electronics Polska*

**Decision:** The document was **not treated**.

**R4-2014302 Introduction of LTE-A inter-band CA for x bands (x=3,4,5) DL with 2 bands UL to TS36.101**

*Type: CR For: Agreement  
 36.101 v16.7.0 CR-5680 Cat: B (Rel-17)  
  
 Source: LG Electronics Polska*

**Decision:** The document was **not treated**.

#### 14.5.2 UE RF with MSD [LTE\_CA\_R17\_xBDL\_2BUL-Core]

#### 14.5.3 UE RF without MSD [LTE\_CA\_R17\_xBDL\_2BUL-Core]

### 14.6 RRM for LTE CA basket WIs [LTE\_CA\_R17\_xxxx]

#### 14.6.1 RRM Core (36.133) [LTE\_CA\_R17\_xxxx-Core]

#### 14.6.2 RRM Perf (36.133) [LTE\_CA\_R17\_xxxx-Perf]

### 14.7 New WID on Additional LTE bands for UE category M1&M2 and/or NB1&NB2 in Rel-17 [LTE\_bands\_R17\_M1\_M2\_NB1\_NB2]

#### 14.7.1 Rapporteur Input (WID/TR/CR) [LTE\_bands\_R17\_M1\_M2\_NB1\_NB2-Core]

**R4-2016266 CR of adding LTE B24 for UE category NB1 in R17**

*Type: draftCR For: Endorsement  
 36.307 v13.12.0  
 Source: Ericsson, Ligado Networks*

**Abstract:**

UE cat. NB1 was introduced by REL-13.

In REL-17, requirements for additional bands have to be added UE category NB1 in a REL-independent way starting from REL-13

**Decision:** The document was **not treated**.

**R4-2016267 CR of adding LTE B24 for UE category NB1 in R17**

*Type: draftCR For: Endorsement  
 36.307 v14.9.0  
 Source: Ericsson, Ligado Networks*

**Abstract:**

CR of adding LTE B24 for UE category NB1 in R17

**Decision:** The document was **not treated**.

**R4-2016268 CR of adding LTE B24 for UE category NB1 in R17**

*Type: draftCR For: Endorsement  
 36.307 v15.6.0  
 Source: Ericsson, Ligado Networks*

**Abstract:**

CR of adding LTE B24 for UE category NB1 in R17

**Decision:** The document was **not treated**.

**R4-2016269 CR of adding LTE B24 for UE category NB1 in R17**

*Type: draftCR For: Endorsement  
 36.307 v16.2.0  
 Source: Ericsson, Ligado Networks*

**Abstract:**

CR of adding LTE B24 for UE category NB1 in R17

**Decision:** The document was **not treated**.

**R4-2016270 CR of adding LTE B24 for UE category NB1/NB2 in R17**

*Type: draftCR For: Endorsement  
 36.101 v16.7.0  
 Source: Ericsson, Ligado Networks*

**Abstract:**

Adding B24 for NB1/NB2

**Decision:** The document was **not treated**.

**R4-2016271 CR of adding LTE B24 for UE category NB1/NB2 in R17**

*Type: draftCR For: Endorsement  
 36.104 v16.7.0  
 Source: Ericsson, Ligado Networks*

**Abstract:**

Adding B24 for NB1/NB2

**Decision:** The document was **not treated**.

**R4-2016272 CR of adding LTE B24 for UE category NB1/NB2 in R17**

*Type: draftCR For: Endorsement  
 36.133 v16.7.0  
 Source: Ericsson, Ligado Networks*

**Abstract:**

Adding B24 for NB1/NB2

**Decision:** The document was **not treated**.

**R4-2016274 CR of adding LTE B24 for UE category NB1/NB2 in R17**

*Type: draftCR For: Endorsement  
 37.104 v16.7.0  
 Source: Ericsson, Ligado Networks*

**Abstract:**

Adding B24 for NB1/NB2

**Decision:** The document was **not treated**.

**R4-2016276 CR of adding LTE B24 for UE category NB2 in R17**

*Type: draftCR For: Endorsement  
 36.307 v14.9.0  
 Source: Ericsson, Ligado Networks*

**Abstract:**

UE cat. NB2 was introduced by REL-14 WI.

In REL-17, requirements for additional bands have to be added UE category NB2 in a REL-independent way starting from REL-14

**Decision:** The document was **not treated**.

**R4-2016277 CR of adding LTE B24 for UE category NB2 in R17**

*Type: draftCR For: Endorsement  
 36.307 v15.6.0  
 Source: Ericsson, Ligado Networks*

**Abstract:**

CR of adding LTE B24 for UE category NB2 in R17

**Decision:** The document was **not treated**.

**R4-2016278 CR of adding LTE B24 for UE category NB2 in R17**

*Type: draftCR For: Endorsement  
 36.307 v16.2.0  
 Source: Ericsson, Ligado Networks*

**Abstract:**

CR of adding LTE B24 for UE category NB2 in R17

**Decision:** The document was **not treated**.

#### 14.7.2 RF [LTE\_bands\_R17\_M1\_M2\_NB1\_NB2-Core]

**R4-2015794 Band 24 Cat M1/M2 A-MPR assumptions**

*Type: discussion For: Approval  
 36.101 v..  
 Source: Ligado Networks*

**Decision:** The document was **not treated**.

**R4-2016279 Further consideration of A-MPR simulation assumption for B24**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, we present our view on the new PA model for the LTE Cat-M1/M2 device and our view on the simulation work later on

**Decision:** The document was **not treated**.

#### 14.7.3 Others [LTE\_bands\_R17\_M1\_M2\_NB1\_NB2-Perf]

**R4-2016273 CR of adding LTE B24 for UE category NB1/NB2 in R17**

*Type: draftCR For: Endorsement  
 36.141 v16.7.0  
 Source: Ericsson, Ligado Networks*

**Abstract:**

Adding B24 for NB1/NB2

**Decision:** The document was **not treated**.

**R4-2016275 CR of adding LTE B24 for UE category NB1/NB2 in R17**

*Type: draftCR For: Endorsement  
 37.141 v16.7.0  
 Source: Ericsson, Ligado Networks*

**Abstract:**

Adding B24 for NB1/NB2

**Decision:** The document was **not treated**.

### 14.8 Modification of LTE Band 24 specifications to comply with updated regulatory emission limits [LTE\_B24\_mod]

#### 14.8.1 General and rapporteur input [LTE\_B24\_mod-Core]

#### 14.8.2 UE RF [LTE\_B24\_mod-Core]

**R4-2014161 Band 24 UE additional emissions requirements, A-MPR scenarios and assumptions, and UE REFSENS**

*Type: discussion For: Approval  
 Source: Ligado Networks*

**Decision:** The document was **not treated**.

#### 14.8.3 BS RF [LTE\_B24\_mod-Core]

**R4-2016197 Draft CR to 36.104: Correction to Band 24 requirements (Rel-10)**

*Type: draftCR For: Endorsement  
 36.104 v16.7.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

There are two regulatory updates related to BS operation in Band 24 which need to be reflected in 36.104:

Regulations limits the downlink power to 9.8 dBW/MHz and limits transmission between 1526 – 1536 MHz

OOBE emission limits have been modified.

**Decision:** The document was **not treated**.

**R4-2016198 Draft CR to 36.104: Correction to Band 24 requirements (Rel-10)**

*Type: draftCR For: Endorsement  
 36.141 v16.7.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

There are two regulatory updates related to BS operation in Band 24 which need to be reflected in 36.104:

Regulations limits the downlink power to 9.8 dBW/MHz and limits transmission between 1526 – 1536 MHz

OOBE emission limits have been modified.

**Decision:** The document was **not treated**.

**R4-2016199 Draft CR to 37.104: Correction to Band 24 requirements (Rel-10)**

*Type: draftCR For: Endorsement  
 37.104 v16.7.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

There are two regulatory updates related to BS operation in Band 24 which need to be reflected in 36.104:

Regulations limits the downlink power to 9.8 dBW/MHz and limits transmission between 1526 – 1536 MHz

OOBE emission limits have been modified.

**Decision:** The document was **not treated**.

**R4-2016200 Draft CR to 36.104: Correction to Band 24 requirements (Rel-10)**

*Type: draftCR For: Endorsement  
 37.141 v16.7.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

There are two regulatory updates related to BS operation in Band 24 which need to be reflected in 36.104:

Regulations limits the downlink power to 9.8 dBW/MHz and limits transmission between 1526 – 1536 MHz

OOBE emission limits have been modified.

**Decision:** The document was **not treated**.

#### 14.8.4 RRM and others [LTE\_B24\_mod-Core/Perf]

**R4-2014191 Draft CR for 37.105: Corrections related to Band 24 regulatory updates (Rel-15)**

*Type: draftCR For: Endorsement  
 37.105 v15.10.0  
 Source: Ligado Networks*

**Abstract:**

Regulatory requirements for Band 24 were updated in April, 2020

**Decision:** The document was **not treated**.

**R4-2014192 Draft CR for TS 37.105 Corrections related to Band 24 regulatory updates (Rel-16)**

*Type: draftCR For: Endorsement  
 37.105 v16.5.0  
 Source: Ligado Networks*

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

**R4-2014193 Draft CR for TS 37.105 Corrections related to Band 24 regulatory updates (Rel-17)**

*Type: draftCR For: Endorsement  
 37.105 v16.5.0  
 Source: Ligado Networks*

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

**R4-2014194 Draft CR for 37.145-1: Corrections related to Band 24 regulatory updates (Rel-13)**

*Type: draftCR For: Endorsement  
 37.145-1 v13.10.0  
 Source: Ligado Networks*

**Abstract:**

Regulatory requirements for Band 24 were updated in April, 2020

**Decision:** The document was **not treated**.

**R4-2014195 Draft CR for TS 37.145-1 Corrections related to Band 24 regulatory updates (Rel-14)**

*Type: draftCR For: Endorsement  
 37.145-1 v14.8.0  
 Source: Ligado Networks*

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

**R4-2014196 Draft CR for TS 37.145-1 Corrections related to Band 24 regulatory updates (Rel-15)**

*Type: draftCR For: Endorsement  
 37.145-1 v15.7.0  
 Source: Ligado Networks*

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

**R4-2014197 Draft CR for TS 37.145-1 Corrections related to Band 24 regulatory updates (Rel-16)**

*Type: draftCR For: Endorsement  
 37.145-1 v16.4.0  
 Source: Ligado Networks*

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

**R4-2014198 Draft CR for TS 37.145-1 Corrections related to Band 24 regulatory updates (Rel-17)**

*Type: draftCR For: Endorsement  
 37.145-1 v16.4.0  
 Source: Ligado Networks*

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

**R4-2014199 Draft CR for 37.145-2: Corrections related to Band 24 regulatory updates (Rel-15)**

*Type: draftCR For: Endorsement  
 37.145-2 v15.8.0  
 Source: Ligado Networks*

**Abstract:**

Regulatory requirements for Band 24 were updated in April, 2020

**Decision:** The document was **not treated**.

**R4-2014200 Draft CR for TS 37.145-2 Corrections related to Band 24 regulatory updates (Rel-16)**

*Type: draftCR For: Endorsement  
 37.145-2 v16.5.0  
 Source: Ligado Networks*

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

**R4-2014201 Draft CR for TS 37.145-2 Corrections related to Band 24 regulatory updates (Rel-17)**

*Type: draftCR For: Endorsement  
 37.145-2 v16.5.0  
 Source: Ligado Networks*

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

## 15 Rel-17 Study Items for LTE

### 15.1 High-power UE operation for fixed-wireless/vehicle-mounted use cases in LTE bands 5 and 12 and NR band n71 [FS\_LTE\_NR\_HPUE\_FWVM]

#### 15.1.1 General

**R4-2014479 TR 37.880 V0.1.0: High-power UE operation for fixed-wireless/vehicle-mounted use cases in Band 12, Band 5, and Band n71**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Updated TR for Study on High-power UE operation for fixed-wireless/vehicle-mounted use cases in Band 12, Band 5, and Band n71.

**Decision:** The document was **not treated**.

#### 15.1.2 Coexistence study

**R4-2014480 Coexistence Simulation Results for High-power UE operation for fixed-wireless/vehicle-mounted use cases in Band 12, Band 5, and Band n71**

*Type: other For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides the coexistence simulation results for this scenario according to the agreed assumptions.

**Decision:** The document was **not treated**.

#### 15.1.3 UE RF

**R4-2014481 TP to TR 37.880: High-power UE transmitter/receiver architecture for fixed-wireless/vehicle-mounted use cases in Band 12, Band 5, and Band n71**

*Type: pCR For: Approval  
 37.880 v0.0.1  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This contribution provides a TP to include the UE transmitter/receiver architecture in TR 37.880.

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

## 16 Liaison and output to other groups

### 16.1 R17 related

### 16.2 Others

**R4-2014917 LS response on simultaneous Rx/Tx for inter-band NR-DC**

*Type: LS out For: Approval  
 to RAN2  
 Source: Apple Inc.*

**Decision:** The document was **not treated**.

## 17 Revision of the Work Plan

### 17.1 Simplification of band combinations in RAN4 specifications

**R4-2014482 On a request sheet/WID template for band combinations**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discuss one remaining issue on request sheet template for band combinations.

**Decision:** The document was **not treated**.

**R4-2014598 More on an alternative to creating new BCSs**

*Type: other For: Approval  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This paper addresses raised concerns over the discussion on R4-2010062 in RAN4#96-e.

**Decision:** The document was **not treated**.

**R4-2014959 Further considerations on simplification of band combination**

*Type: discussion For: Approval  
 Source: ZTE Corporation*

**Abstract:**

In this contribution, we provide our considerations on how to simplify the configuration tables and the detail of specification splitting.

**Decision:** The document was **not treated**.

**R4-2014960 CR to TS 38.101-1 on simplification for inter-band CA configuration**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0524 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

In current spec, most of the channel bandwidth for NR band with single carrier is described very cumbersome because of the triple SCSs of {15kHz, 30kHz, 60kHz}. To simplify the NR configuration table, a bit map to represent the different SCS values for the NR channel bandwidth is introduced. The size of configuration table is greatly reduced accordingly.

**Decision:** The document was **not treated**.

**R4-2014961 CR to TS 38.101-2 on simplification for inter-band CA configuration**

*Type: CR For: Agreement  
 38.101-2 v16.5.0 CR-0283 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

In current spec, most of the channel bandwidth for NR band with single carrier is described very cumbersome because of the duple SCSs of {60kHz ,120kHz}. To simplify the NR configuration table, a bit map to represent the different SCS values for the NR channel bandwidth is introduced. The size of configuration table is greatly reduced accordingly.

**Decision:** The document was **not treated**.

**R4-2014962 CR to TS 38.101-3 on simplification for inter-band CA configuration between FR1 and FR2**

*Type: CR For: Agreement  
 38.101-3 v16.5.0 CR-0383 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Abstract:**

In current spec, most of the channel bandwidth for NR band with single carrier is described very cumbersome because of the triple SCSs of {15kHz, 30kHz, 60kHz } in FR1 and the duple SCSs of {60kHz, 120kHz} in FR2. To simplify the NR configuration table, a bit map to represent the different SCS values for the NR channel bandwidth is introduced. The size of configuration table for inter-band CA between FR1 and FR2 is greatly reduced accordingly.

**Decision:** The document was **not treated**.

**R4-2015320 Further consideration on simplification of band configuration**

*Type: other For: Approval  
 Source: NTT DOCOMO INC.*

**Decision:** The document was **not treated**.

**R4-2015546 To update the coversheet of Excel table based on the Rel-17 band combination basket WI**

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

**Decision:** The document was **not treated**.

**R4-2016007 LTE Rel'17 MSD Table Simplification**

*Type: discussion For: Approval  
 36.101 v..  
 Source: Skyworks Solutions Inc.*

**Decision:** The document was **not treated**.

**R4-2016297 CA/DC Band configurations notations and usage in 3GPP**

*Type: discussion For: Approval  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2016453 An alternative to creating new BCSs**

*Type: discussion For: Approval  
 Source: T-Mobile USA, Deutsche Telekom, AT&T, TELUS, Bell Mobility, Rogers Communications, Telstra, Telecom Italia, KDDI, Vodafone, BT plc, Ericsson*

**Decision:** The document was **not treated**.

**R4-2016454 Draft CR for 38.101-1: Introduction of BCS4**

*Type: draftCR For: Endorsement  
 38.101-1 v16.5.0  
 Source: T-Mobile USA*

**Abstract:**

The number of bandwidth combination sets is growing too large to be manageable.

**Decision:** The document was **not treated**.

**R4-2016457 NR-CA and NR-DC 3 band requests and fallbacks**

*Type: discussion For: Approval  
 Source: T-Mobile USA, TELUS, Bell Mobility, AT&T*

**Decision:** The document was **not treated**.

### 17.2 R17 new proposals

#### 17.2.1 Spectrum related

**R4-2015285 New basket WID on bands with UL-MIMO PC3**

*Type: WID new For: Information  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2015909 New WI: Specification of band n67**

*Type: WID new For: Information  
 Source: Ericsson*

**Abstract:**

This new WI is introduced band n67 which is refarmed LTE band 67

**Decision:** The document was **not treated**.

**R4-2016543 New basket WID NR\_PC2\_CA\_R17\_intra**

*Type: WID new For: Information  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

#### 17.2.2 Non-spectrum related

**R4-2014352 Motivation for new WI on air-to-ground network for NR**

*Type: WID new For: Information  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2014353 New WID on air-to-ground network for NR**

*Type: WID new For: Information  
 Source: CMCC*

**Decision:** The document was **not treated**.

**R4-2014594 Proposal to extend R17 FeRRM WI scope**

*Type: discussion For: Information  
 Source: Apple*

**Decision:** The document was **not treated**.

**R4-2015115 Discssion on EMC Test Simplification for Rel-17 EMC enhancement**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

Discussion paper on EMC test simplification for Rel 17 EMC enhancement

**Decision:** The document was **not treated**.

**R4-2015116 New WID proposal on RAN4 Rel-17 EMC enhancement**

*Type: WID new For: Information  
 Source: Ericsson, ZTE*

**Abstract:**

Proposal on a WID for Rel-17 EMC enhancement

**Decision:** The document was **not treated**.

**R4-2015254 [UE EMC] Further discussion on UE EMC enhancement**

*Type: discussion For: Discussion  
 Source: Xiaomi*

**Decision:** The document was **not treated**.

**R4-2015670 New objectives for Rel-17 demodulation performance work item**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Decision:** The document was **not treated**.

**R4-2016002 CRS-IC requirements for LTE-NR coexistence scenario**

*Type: other For: Information  
 Source: Intel Corporation*

**Decision:** The document was **not treated**.

**R4-2016180 Email summary of UE and BS EMC discussion**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

This document summarizes discussion on EMC on the RAN draft reflector

**Decision:** The document was **not treated**.

**R4-2016230 Motivation for WI: NR FR1 UE SA and EN-DC TRP and TRS**

*Type: discussion For: Information  
 Source: vivo*

**Decision:** The document was **not treated**.

**R4-2016231 New WID: NR FR1 UE SA and EN-DC TRP and TRS**

*Type: WID new For: Information  
 Source: vivo, OPPO, CMCC, CAICT, Rohde & Schwarz*

**Decision:** The document was **not treated**.

### 17.3 Others

**R4-2016464 NR Sidelink Operating Bands**

*Type: discussion For: (not specified)  
 Source: AT&T, FirstNet*

**Decision:** The document was **not treated**.

## 18 Any other business

**R4-2014327 LTE/NR spectrum sharing in Band 40/n40**

*Type: CR For: Agreement  
 38.101-1 v16.5.0 CR-0408 rev 2 Cat: B (Rel-17)  
  
 Source: Reliance Jio*

(Replaces R4-2011822)

**Abstract:**

To enable dynamic spectrum sharing between LTE and NR in B40/n40 band

**Decision:** The document was **not treated**.

**R4-2014328 LTE/NR spectrum sharing in Band 40/n40**

*Type: CR For: Agreement  
 38.104 v16.5.0 CR-0214 rev 2 Cat: B (Rel-17)  
  
 Source: Reliance Jio*

(Replaces R4-2011823)

**Abstract:**

To enable dynamic spectrum sharing between LTE and NR in B40/n40 band

**Decision:** The document was **not treated**.

**R4-2014329 LTE/NR spectrum sharing in Band 40/n40**

*Type: CR For: Agreement  
 38.307 v16.4.0 CR-0024 rev 2 Cat: B (Rel-17)  
  
 Source: Reliance Jio*

(Replaces R4-2011824)

**Abstract:**

To enable dynamic spectrum sharing between LTE and NR in B40/n40 band

**Decision:** The document was **not treated**.

## 19 Close of the E-meeting

Report prepared by: MCC