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

**DRAFT Meeting Report  
for  
TSG RAN WG4  
meeting: e**

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## 1 Opening of the E-meeting

RAN4 Chairman (Steven Chen) opened the meeting on the RAN4 email reflector. The Chairman reminded delegates of their company's obligations under their SDO's IPR policies:

**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.

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

**1. Public Information is Not Subject to EAR**

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

In addition, since membership of email distribution lists is open to all, documents and emails distributed by that means are considered to be publicly available.

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

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

**2. Non-Public Information**

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

**3. Other Information**

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

**4. Conduct of Meetings**

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

**5. Responsibility of Individual Members**

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

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

**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 (Futurewei), 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 agenda3 Letters / reports from other groups / meetings4 Rel15 New radio access technology

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

**R4-2008693 Email discussion summary for [95e][304] NR\_EMC**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008873 Email discussion summary for [95e][304] NR\_EMC**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2007060 CR to 38.124 on Exclusion Bands**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0003 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

This CR to 38.124 proposes a change to the UE EMC Exclusion Bands

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007061 CR to 38.124 on Emissions and Immunity Applicability and ranges**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0004 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

CR to 38.124 includes considerations on the applicability of Emissions and Immunity tests and also updates the Frequency Ranges for RI test

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007062 CR to TS 38.124 adding Methods of measurement and limits for EMC emissions**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0005 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

CR to TS 38.124 adding Methods of measurement and limits for EMC emissions

**Discussion:**

.

**Decision: Revised to R4-2008716 (from R4-2007062).**

**R4-2008716 CR to TS 38.124 adding Methods of measurement and limits for EMC emissions**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0005 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

CR to TS 38.124 adding Methods of measurement and limits for EMC emissions

**Discussion:**

.

**Decision: Return to.**

**R4-2007063 CR to TS 38.124 on Definitions of Wired Network Port and UE**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0006 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

CR to TS 38.124 on Definitions of Wired Network Port and UE

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007064 CR to TS 38.124 adding Methods of measurement and limits for EMC immunity**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0007 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

CR to TS 38.124 adding Methods of measurement and limits for EMC immunity

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007065 CR to 38.124 References for Arrangements for establishing a communication link**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0008 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

CR to 38.124 References for Arrangements for establishing a communication link

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007066 CR to 38.124 on Emission Requirements**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0009 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

CR to 38.124 on Emission Requirements

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007444 CR to TS 38.124: specification corrections and removal of [], Rel-15**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0010 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides required specification corrections and removal of [], based on the content of draftCR endorsed in R4-2005473, with additional corrections introduced on top of it.

**Discussion:**

.

**Decision: Agreed.**

**R4-2007445 CR to TS 38.124: correction of UE radiated spurious emissons requirement, Rel-15**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0011 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides correction to UE radiated spur. emissons requirement, based on content of draftCR in R4-2003992 (which was NOT endorsed).

**Discussion:**

.

**Decision: Revised to R4-2008717 (from R4-2007445).**

**R4-2008717 CR to TS 38.124: correction of UE radiated spurious emissons requirement, Rel-15**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0011 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides correction to UE radiated spur. emissons requirement, based on content of draftCR in R4-2003992 (which was NOT endorsed).

**Discussion:**

.

**Decision: Return to.**

**R4-2007446 CR to TS 38.124: correction of the Rx exclusion band, Rel-15**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0012 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides correction to the Rx exclusion band section, based on the content of draftCR endorsed in R4-2003990.

**Discussion:**

.

**Decision: Revised to R4-2008718 (from R4-2007446).**

**R4-2008718 CR to TS 38.124: correction of the Rx exclusion band, Rel-15**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0012 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides correction to the Rx exclusion band section, based on the content of draftCR endorsed in R4-2003990.

**Discussion:**

.

**Decision: Return to.**

**R4-2007447 CR to TS 38.124: Performance assessment, Rel-15**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0013 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides content of the Performance assessment section, based on the content of draftCR endorsed in R4-2003991, with additional eridotial corrections introduced on top of it.

**Discussion:**

.

**Decision: Agreed.**

**R4-2007448 CR to TS 38.124: Performance criteria, Rel-15**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0014 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides content of the Performance criteria section, based on the content of draftCR endorsed in R4-2003992, with additional editorial corrections introduced on top of it.

**Discussion:**

.

**Decision: Agreed.**

**R4-2007527 [EMC] CR TS38.124 conducted emissions**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0015 Cat: B (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007528 [EMC] CR TS38.124 CS**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0016 Cat: B (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008719 (from R4-2007528).**

**R4-2008719 [EMC] CR TS38.124 CS**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0016 Cat: B (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007529 [EMC] CR TS38.124 dips**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0017 Cat: B (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008720 (from R4-2007529).**

**R4-2008720 [EMC] CR TS38.124 dips**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0017 Cat: B (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007530 [EMC] CR TS38.124 EFT**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0018 Cat: B (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008721 (from R4-2007530).**

**R4-2008721 [EMC] CR TS38.124 EFT**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0018 Cat: B (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007531 [EMC] CR TS38.124 ESD**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0019 Cat: B (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008722 (from R4-2007531).**

**R4-2008722 [EMC] CR TS38.124 ESD**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0019 Cat: B (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007532 [EMC] CR TS38.124 references**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0020 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008723 (from R4-2007532).**

**R4-2008723 [EMC] CR TS38.124 references**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0020 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007533 [EMC] CR TS38.124 Rx exclusion band**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0021 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007534 [EMC] CR TS38.124 spurious radiated**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0022 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007535 [EMC] CR TS38.124 surge**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0023 Cat: B (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008724 (from R4-2007535).**

**R4-2008724 [EMC] CR TS38.124 surge**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0023 Cat: B (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007536 [EMC] CR TS38.124 vehicular environment**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0024 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Session chair: Cover page error**

**Discussion:**

.

**Decision: Revised to R4-2008725 (from R4-2007536).**

**R4-2008725 [EMC] CR TS38.124 vehicular environment**

*Type: CR For: Agreement  
 38.124 v15.2.0 CR-0024 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007537 [EMC] Discussion on Transients and surges in vehicular environment for NR UE\_RZ**

*Type: discussion For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

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

**R4-2008691 Email discussion summary for [95e][302] NR\_maintenance\_RF\_BS**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008874 Email discussion summary for [95e][302] NR\_maintenance\_RF\_BS**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

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

**R4-2006092 CR to TR 38.817-02: Corrections of CR implementation errors**

*Type: CR For: Agreement  
 38.817-02 v15.7.0 CR-0066 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Correct the identified CR implementation errors.

**Discussion:**

.

**Decision: Agreed.**

**R4-2006889 Views on frequency band support for HAPS-based deployment**

*Type: discussion For: Approval  
 38.104 v..  
 Source: Google Inc., Loon Inc.*

**Discussion:**

.

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

**R4-2006893 CR to TS 38.104 on frequency band support for HAPS-based deployment**

*Type: CR For: Agreement  
 38.104 v15.9.0 CR-0173 Cat: F (Rel-15)  
  
 Source: Google Inc., Loon Inc.*

**Discussion:**

.

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

**R4-2006896 CR to TS 38.104 on frequency band support for HAPS-based deployment**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0174 Cat: A (Rel-16)  
  
 Source: Google Inc., Loon Inc.*

**Discussion:**

.

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

**R4-2006902 CR to TS 36.104 on frequency band support for HAPS-based deployment**

*Type: CR For: Agreement  
 36.104 v15.8.0 CR-4893 Cat: F (Rel-15)  
  
 Source: Google Inc., Loon Inc.*

**Discussion:**

.

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

**R4-2006914 CR to TS 36.104 on frequency band support for HAPS-based deployment**

*Type: CR For: Agreement  
 36.104 v16.5.0 CR-4894 Cat: A (Rel-16)  
  
 Source: Google Inc., Loon Inc.*

**Discussion:**

.

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

**R4-2007546 [R15]CR to TS 37.104 on channel spacing correction**

*Type: CR For: Agreement  
 37.104 v15.10.0 CR-0898 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Agreed.**

**R4-2007548 [R15]CR to TS 37.141 on channel spacing correction**

*Type: CR For: Agreement  
 37.141 v15.10.0 CR-0935 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Agreed.**

**R4-2007550 [R16]CR to TS 37.104 on channel spacing correction**

*Type: CR For: Agreement  
 37.104 v16.5.0 CR-0899 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Agreed.**

**R4-2007551 [R16]CR to TS 37.141 on channel spacing correction**

*Type: CR For: Agreement  
 37.141 v16.5.0 CR-0936 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Agreed.**

**R4-2008099 CR to 38.104 on Removal of brackets and TBD (Rel-15)**

*Type: CR For: Agreement  
 38.104 v15.9.0 CR-0206 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The Draft CR removes the remaining brackets in TS 38.104, which is necessary before it is being referenced from the ITU-R IMT-2020 specifications.

**Discussion:**

.

**Decision: Return to.**

**R4-2008100 CR to 38.104 on Removal of brackets and TBD (Rel-16)**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0207 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The Draft CR removes the remaining brackets in TS 38.104, which is necessary before it is being referenced from the ITU-R IMT-2020 specifications.

**Discussion:**

.

**Decision: Revised to R4-2008737 (from R4-2008100).**

**R4-2008737 CR to 38.104 on Removal of brackets and TBD (Rel-16)**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0207 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The Draft CR removes the remaining brackets in TS 38.104, which is necessary before it is being referenced from the ITU-R IMT-2020 specifications.

**Session chair: Change CR Type as CAT A and cover page error should be fixed**

**Discussion:**

.

**Decision: Return to.**

#### 4.6.2 Editorial CRs [NR\_newRAT-Core]

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

**R4-2006293 WRC-19 protection requirements for EESS operation in 36-37GHz**

*Type: discussion For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision: Noted.**

**R4-2006294 EESS protection requirements**

*Type: CR For: Agreement  
 38.104 v15.9.0 CR-0170 Cat: F (Rel-15)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Revised to R4-2008735 (from R4-2006294).**

**R4-2008735 EESS protection requirements**

*Type: CR For: Agreement  
 38.104 v15.9.0 CR-0170 Cat: F (Rel-15)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2006295 EESS protection requirements**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0171 Cat: A (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2006296 EESS protection requirements**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0155 Cat: F (Rel-15)  
  
 Source: CATT*

**Session chair: Cover page error for specification number**

**Discussion:**

.

**Decision: Revised to R4-2008736 (from R4-2006296).**

**R4-2008736 EESS protection requirements**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0155 Cat: F (Rel-15)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2006297 EESS protection requirements**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0156 Cat: A (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2007123 CR to TS 38.104: Additional OTA unwanted emissions requirements for EESS protection**

*Type: CR For: Agreement  
 38.104 v15.9.0 CR-0183 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this CR co-existence requirements towards EESS are introduced

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007124 CR to TS 38.104: Additional OTA unwanted emissions requirements for EESS protection**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0184 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this CR co-existence requirements towards EESS are introduced

**Discussion:**

.

**Decision: Withdrawn.**

**R4-2007125 CR to TS 38.141-2: Additional OTA unwanted emissions requirements for EESS protection**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0163 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this CR co-existence requirements towards EESS are introduced

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007126 CR to TS 38.141-2: Additional OTA unwanted emissions requirements for EESS protection**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0164 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this CR co-existence requirements towards EESS are introduced

**Discussion:**

.

**Decision: Withdrawn.**

**R4-2007177 Unwanted emission requirements for EESS (36-37GHz) protection**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007300 CR to 38.104: Additional requirements for EESS protection**

*Type: CR For: Agreement  
 38.104 v15.9.0 CR-0188 Cat: F (Rel-15)  
  
 Source: NEC*

**Abstract:**

Added the additional requirements for protection of EESS for OTA OBUE, OTA transmitter spurious, and OTA receiver spurious requirements.

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007301 CR to 38.104: Additional requirements for EESS protection**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0189 Cat: A (Rel-16)  
  
 Source: NEC*

**Abstract:**

Added the additional requirements for protection of EESS for OTA OBUE, OTA transmitter spurious, and OTA receiver spurious requirements.

**Discussion:**

.

**Decision: Withdrawn.**

**R4-2007302 CR to 38.141-2: Additional requirements for EESS protection**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0171 Cat: F (Rel-15)  
  
 Source: NEC*

**Abstract:**

Added the additional requirements for protection of EESS for OTA OBUE, OTA transmitter spurious, and OTA receiver spurious requirements.

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007303 CR to 38.141-2: Additional requirements for EESS protection**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0172 Cat: A (Rel-16)  
  
 Source: NEC*

**Abstract:**

Added the additional requirements for protection of EESS for OTA OBUE, OTA transmitter spurious, and OTA receiver spurious requirements.

**Discussion:**

.

**Decision: Withdrawn.**

**R4-2007518 [BS RF][R15]CR to TS 38.104 on EESS protection 36--37GHz catF**

*Type: CR For: Agreement  
 38.104 v15.9.0 CR-0200 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007519 [BS RF][R15]CR to TS 38.104 on EESS protection catF**

*Type: CR For: Agreement  
 38.104 v15.9.0 CR-0201 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007520 [BS RF][R15]CR to TS 38.141-2 on EESS protection 36--37GHz catF**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0186 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007521 [BS RF][R15]CR to TS 38.141-2 on EESS protection catF**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0187 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007522 [BS RF][R16]CR to TS 38.104 on EESS protection 36--37GHz catA**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0202 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Withdrawn.**

**R4-2007523 [BS RF][R16]CR to TS 38.104 on EESS protection catA**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0203 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Withdrawn.**

**R4-2007524 [BS RF][R16]CR to TS 38.141-2 on EESS protection 36--37GHz catA**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0188 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Withdrawn.**

**R4-2007525 [BS RF][R16]CR to TS 38.141-2 on EESS protection catA**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0189 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Withdrawn.**

**R4-2007526 [BS RF]further discussion on the EESS protection for 36--37GHz outcome of WRC-19**

*Type: discussion For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

**R4-2008107 CR to 38.104 on EESS protection for bands n257 and n258 (Rel-15**

*Type: CR For: Agreement  
 38.104 v15.9.0 CR-0210 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The Draft CR introduces EESS protection an in the NR BS specifications.

**Discussion:**

.

**Decision: Revised to R4-2008733 (from R4-2008107).**

**R4-2008733 CR to 38.104 on EESS protection for bands n257 and n258 (Rel-15**

*Type: CR For: Agreement  
 38.104 v15.9.0 CR-0210 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The Draft CR introduces EESS protection an in the NR BS specifications.

**Discussion:**

.

**Decision: Return to.**

**R4-2008108 CR to 38.104 on EESS protection for bands n257 and n258 (Rel-16)**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0211 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The Draft CR introduces EESS protection an in the NR BS specifications.

**Discussion:**

.

**Decision: Return to.**

**R4-2008109 CR to 38.141-2 on EESS protection for bands n257 and n258 (Rel-15)**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0197 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The Draft CR introduces EESS protection an in the NR BS specifications.

**Discussion:**

.

**Decision: Revised to R4-2008734 (from R4-2008109).**

**R4-2008734 CR to 38.141-2 on EESS protection for bands n257 and n258 (Rel-15)**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0197 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The Draft CR introduces EESS protection an in the NR BS specifications.

**Discussion:**

.

**Decision: Return to.**

**R4-2008110 CR to 38.141-2 on EESS protection for bands n257 and n258 (Rel-16)**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0198 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The Draft CR introduces EESS protection an in the NR BS specifications.

**Discussion:**

.

**Decision: Return to.**

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

**R4-2006917 CR to TS 38.104: Correction to out-of-band blocking requirements in subclause 7.5 and subclause 10.6**

*Type: CR For: Agreement  
 38.104 v15.9.0 CR-0175 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

A corresponding draft CR was technically endoorsed in R4-2003755 at last meeting.

**Discussion:**

.

**Decision: Agreed.**

**R4-2006918 CR to TS 38.104: Correction to out-of-band blocking requirements in subclause 7.5 and subclause 10.6**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0176 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

A corresponding draft CR was technically endoorsed in R4-2003755 at last meeting.

**Discussion:**

.

**Decision: Agreed.**

**R4-2008103 CR to 38.104 on Receiver spurious emissions exclusion band (Rel-15)**

*Type: CR For: Agreement  
 38.104 v15.9.0 CR-0208 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The CR adds the receiver exclusion band which was missing for FR1 and was not explicit for FR2.

Session Chair: Moved from AI 4.6.3

**Discussion:**

.

**Decision: Revised to R4-2008738 (from R4-2008103).**

**R4-2008738 CR to 38.104 on Receiver spurious emissions exclusion band (Rel-15)**

*Type: CR For: Agreement  
 38.104 v15.9.0 CR-0208 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The CR adds the receiver exclusion band which was missing for FR1 and was not explicit for FR2.

**Discussion:**

.

**Decision: Return to.**

**R4-2008104 CR to 38.104 on Receiver spurious emissions exclusion band (Rel-16)**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0209 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The CR adds the receiver exclusion band which was missing for FR1 and was not explicit for FR2.

Session Chair: Moved from AI 4.6.3

**Discussion:**

.

**Decision: Return to.**

**R4-2008105 CR to 38.141-2 on Receiver spurious emissions exclusion band (Rel-15)**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0195 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The CR adds the receiver exclusion band which was missing for FR1 and was not explicit for FR2.

Session Chair: Moved from AI 4.6.3

**Discussion:**

.

**Decision: Not pursued.**

**R4-2008106 CR to 38.141-2 on Receiver spurious emissions exclusion band (Rel-16)**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0196 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The CR adds the receiver exclusion band which was missing for FR1 and was not explicit for FR2.

Session Chair: Moved from AI 4.6.3

**Discussion:**

.

**Decision: Withdrawn.**

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

**R4-2008692 Email discussion summary for [95e][303] NR\_NewRAT\_Conformance\_BS**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008875 Email discussion summary for [95e][303] NR\_NewRAT\_Conformance\_BS**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008739 WF on DM-RS windowing for TM2**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008740 WF on out of band CLTA maximum height**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

**Discussion:**

**Decision: Return to.**

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

**R4-2007436 CR to 38.104: Annex B and C clarification on equlisation calculation (B.6, C.6)**

*Type: CR For: Agreement  
 38.104 v15.9.0 CR-0193 Cat: F (Rel-15)  
  
 Source: Keysight Technologies UK Ltd, Rohde & Schwarz*

**Discussion:**

.

**Decision: Return to.**

**R4-2007437 CR to 38.141-1: Annex H clarification on equlisation calculation (H.6)**

*Type: CR For: Agreement  
 38.141-1 v15.5.0 CR-0132 Cat: F (Rel-15)  
  
 Source: Keysight Technologies UK Ltd, Rohde & Schwarz*

**Discussion:**

.

**Decision: Return to.**

**R4-2007438 CR to 38.141-2: Annex L clarification on equlisation calculation (L.6)**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0177 Cat: F (Rel-15)  
  
 Source: Keysight Technologies UK Ltd, Rohde & Schwarz*

**Discussion:**

.

**Decision: Return to.**

**R4-2007439 Detail information on Clarification on EVM equalizer calculation for NR BS conformance testing**

*Type: discussion For: Agreement  
 Source: Keysight Technologies UK Ltd, Rohde & Schwarz*

**Discussion:**

.

**Decision: Noted.**

**R4-2007481 Discussion on EVM equalization for NR BS**

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

**Discussion:**

.

**Decision: Noted.**

#### 4.7.2 Editorial CRs [NR\_newRAT-Perf/Core]

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

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

**R4-2006093 CR to TS 37.145-2: Corrections on generation of test configurations**

*Type: CR For: Agreement  
 37.145-2 v15.6.0 CR-0219 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

1) Include the declaration “Rated transmitter TRP declared per RIB, Prated,t,TRP” in clause 4.10.

2) For power allocation for all test configurations except ACTR4 and ATCR6, set the power of each carrier to the same level, and use “Rated transmitter TRP d

**Discussion:**

.

**Decision: Revised to R4-2008745 (from R4-2006093).**

**R4-2008745 CR to TS 37.145-2: Corrections on generation of test configurations**

*Type: CR For: Agreement  
 37.145-2 v15.6.0 CR-0219 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

1) Include the declaration “Rated transmitter TRP declared per RIB, Prated,t,TRP” in clause 4.10.

2) For power allocation for all test configurations except ACTR4 and ATCR6, set the power of each carrier to the same level, and use “Rated transmitter TRP d

**Discussion:**

.

**Decision: Return to.**

**R4-2006094 CR to TS 37.145-2: Corrections on generation of test configurations**

*Type: CR For: Agreement  
 37.145-2 v16.3.0 CR-0220 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

1) Include the declaration “Rated transmitter TRP declared per RIB, Prated,t,TRP” in clause 4.10.

2) For power allocation for all test configurations except ACTR4 and ATCR6, set the power of each carrier to the same level, and use “Rated transmitter TRP d

**Discussion:**

.

**Decision: Return to.**

**R4-2006459 TS 37.145-1: Corrections related to Foffset**

*Type: CR For: Agreement  
 37.145-1 v15.6.0 CR-0210 Cat: F (Rel-15)  
  
 Source: Ericsson, Nokia, Nokia Shanghai Bell*

**Abstract:**

Corrections related to Foffset

**Discussion:**

.

**Decision: Agreed.**

**R4-2006460 TS 37.145-2: Corrections related to Foffset**

*Type: CR For: Agreement  
 37.145-2 v15.6.0 CR-0221 Cat: F (Rel-15)  
  
 Source: Ericsson, Nokia, Nokia Shanghai Bell*

**Abstract:**

Corrections related to Foffset

**Discussion:**

.

**Decision: Agreed.**

**R4-2006462 TS 37.145-1: Corrections related to Foffset**

*Type: CR For: Agreement  
 37.145-1 v16.3.0 CR-0211 Cat: A (Rel-16)  
  
 Source: Ericsson, Nokia, Nokia Shanghai Bell*

**Abstract:**

Corrections related to Foffset

**Discussion:**

.

**Decision: Agreed.**

**R4-2006463 TS 37.145-2: Corrections related to Foffset**

*Type: CR For: Agreement  
 37.145-2 v16.3.0 CR-0222 Cat: A (Rel-16)  
  
 Source: Ericsson, Nokia, Nokia Shanghai Bell*

**Abstract:**

Corrections related to Foffset

**Discussion:**

.

**Decision: Agreed.**

**R4-2006915 CR to TS 37.145-2: Additional information about alignment needed for TRP measurements in Annex F.1**

*Type: CR For: Agreement  
 37.145-2 v15.6.0 CR-0223 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

This is a resubmitted version of R4-2005518 technically endoorsed last meeting.

**Discussion:**

.

**Decision: Revised to R4-2008746 (from R4-2006915).**

**R4-2008746 CR to TS 37.145-2: Additional information about alignment needed for TRP measurements in Annex F.1**

*Type: CR For: Agreement  
 37.145-2 v15.6.0 CR-0223 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

This is a resubmitted version of R4-2005518 technically endoorsed last meeting.

**Discussion:**

.

**Decision: Return to.**

**R4-2006916 CR to TS 37.145-2: Additional information about alignment needed for TRP measurements in Annex F.1**

*Type: CR For: Agreement  
 37.145-2 v16.3.0 CR-0224 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

This is a Cat A CR technically endorsed in R4-2005518 last meeting.

**Discussion:**

.

**Decision: Return to.**

**R4-2007418 CR to 37.145-1: Correction on interference level of receiver dynamic range requirement**

*Type: CR For: Agreement  
 37.145-1 v15.6.0 CR-0212 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Agreed.**

**R4-2007419 CR to 37.145-1: Correction on interference level of receiver dynamic range requirement**

*Type: CR For: Agreement  
 37.145-1 v16.3.0 CR-0213 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Agreed.**

**R4-2007420 CR to 37.145-2: Correction on interference level of receiver dynamic range requirement**

*Type: CR For: Agreement  
 37.145-2 v15.6.0 CR-0225 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Agreed.**

**R4-2007421 CR to 37.145-2: Correction on interference level of receiver dynamic range requirement**

*Type: CR For: Agreement  
 37.145-2 v16.3.0 CR-0226 Cat: A (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Agreed.**

**R4-2007459 CR to TS 37.105: removal of [], Rel-15**

*Type: CR For: Agreement  
 37.105 v15.8.0 CR-0183 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides removal of outstanding [], with additional editorials corrections introduced to TS 37.105.

**Discussion:**

.

**Decision: Revised to R4-2008741 (from R4-2007459).**

**R4-2008741 CR to TS 37.105: removal of [], Rel-15**

*Type: CR For: Agreement  
 37.105 v15.8.0 CR-0183 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides removal of outstanding [], with additional editorials corrections introduced to TS 37.105.

**Discussion:**

.

**Decision: Return to.**

**R4-2007460 CR to TS 37.105: removal of [], Rel-16**

*Type: CR For: Agreement  
 37.105 v16.3.0 CR-0184 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

This CR provides removal of outstanding [], with additional editorials corrections introduced to TS 37.105.

**Discussion:**

.

**Decision: Return to.**

**R4-2007470 CR to 37.145-2 Corrections to OTA modulation quality test Rel-15**

*Type: CR For: Agreement  
 37.145-2 v15.6.0 CR-0229 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR introduces corrections to AAS specification TS 37.145-2 with introduction of reference directly to NR single RAT specification to avoid different approach in AAS and NR specification in term of test that are required.

**Discussion:**

.

**Decision: Revised to R4-2008742 (from R4-2007470).**

**R4-2008742 CR to 37.145-2 Corrections to OTA modulation quality test Rel-15**

*Type: CR For: Agreement  
 37.145-2 v15.6.0 CR-0229 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR introduces corrections to AAS specification TS 37.145-2 with introduction of reference directly to NR single RAT specification to avoid different approach in AAS and NR specification in term of test that are required.

**Discussion:**

.

**Decision: Return to.**

**R4-2007471 CR to 37.145-2 Corrections to OTA modulation quality test Rel-16**

*Type: CR For: Agreement  
 37.145-2 v16.3.0 CR-0230 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR introduces corrections to AAS specification TS 37.145-2 with introduction of reference directly to NR single RAT specification to avoid different approach in AAS and NR specification in term of test that are required.

**Discussion:**

.

**Decision: Return to.**

**R4-2008013 CR to TS 37.145-2: Correcting the reference angular step equations (Annex F.2.2)**

*Type: CR For: Agreement  
 37.145-2 v15.6.0 CR-0231 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The upper limit of 15 degrees is added to the reference angular step equations for ULA in Annex F.2.2. This CR is a resubmission of endorsed CR R4-2004463 at the last meeting.

**Discussion:**

.

**Decision: Agreed.**

**R4-2008015 CR to TS 37.145-2: Correcting the reference angular step equations (Annex F.2.2)**

*Type: CR For: Agreement  
 37.145-2 v16.3.0 CR-0232 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The upper limit of 15 degrees is added to the reference angular step equations for ULA in Annex F.2.2. This CR is based on endorsed CR R4-2004463 at the last meeting.

**Discussion:**

.

**Decision: Agreed.**

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

**R4-2006458 TS 37.141: Corrections related to Foffset**

*Type: CR For: Agreement  
 37.141 v15.10.0 CR-0929 Cat: F (Rel-15)  
  
 Source: Ericsson, Nokia, Nokia Shanghai Bell*

**Abstract:**

Corrections related to Foffset

**Discussion:**

.

**Decision: Agreed.**

**R4-2006461 TS 37.141: Corrections related to Foffset**

*Type: CR For: Agreement  
 37.141 v16.5.0 CR-0930 Cat: A (Rel-16)  
  
 Source: Ericsson, Nokia, Nokia Shanghai Bell*

**Abstract:**

Corrections related to Foffset

**Discussion:**

.

**Decision: Agreed.**

**R4-2007468 CR to 37.141 Rel-15 Corrections of references in Modulation quality test for NB-IoT**

*Type: CR For: Agreement  
 37.141 v15.10.0 CR-0931 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR removes for NB-IoT carrier steps in references

**Discussion:**

.

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

**R4-2007469 CR to 37.141 Rel-16 Corrections of references in Modulation quality test for NB-IoT**

*Type: CR For: Agreement  
 37.141 v16.5.0 CR-0932 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR removes for NB-IoT carrier steps in references

**Discussion:**

.

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

**R4-2007500 TS 37.141 - Issues with TC applicabilities for CS17 and CS18**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution highlights some issues with TC applicabilities for CS17 and CS18.

**Discussion:**

.

**Decision: Noted.**

**R4-2007501 CR to TS 37.141 Rel-15 - Issues with TC applicabilities CS17**

*Type: CR For: Agreement  
 37.141 v15.10.0 CR-0933 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

This CR is fixing the issues with TC applicabilities for CS17

**Discussion:**

.

**Decision: Agreed.**

**R4-2007502 CR to TS 37.141 Rel-16 - Issues with TC applicabilities CS17-CS18**

*Type: CR For: Agreement  
 37.141 v16.5.0 CR-0934 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

This CR is fixing the issues with TC applicabilities for CS17 and CS18

**Discussion:**

.

**Decision: Agreed.**

**R4-2008062 CR to 37.141: Rel'15 corrections**

*Type: CR For: Agreement  
 37.141 v15.10.0 CR-0939 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision: Agreed.**

**R4-2008063 CR to 37.141: Rel'16 corrections**

*Type: CR For: Agreement  
 37.141 v16.5.0 CR-0940 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Discussion:**

.

**Decision: Agreed.**

##### 4.7.3.3 NR conformance testing specifications [NR\_newRAT-Perf]

**R4-2006095 CR to TS 38.141-1: Corrections on generation of test configurations**

*Type: CR For: Agreement  
 38.141-1 v15.5.0 CR-0117 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell, Ericsson*

**Abstract:**

1) Remove the undefined symbol “Foffset” and clarify the wordings in the note in clause 4.7.1.

2) For NRTC3 generation, use the correct symbols “Foffset\_high“ and “Foffset\_low“ in clause 4.7.5.1 for sub-blocks generation.

3) For NRTC4 generation, clarify

**Discussion:**

.

**Decision: Agreed.**

**R4-2006096 CR to TS 38.141-1: Corrections on generation of test configurations**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0118 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell, Ericsson*

**Abstract:**

1) Remove the undefined symbol “Foffset” and clarify the wordings in the note in clause 4.7.1.

2) For NRTC3 generation, use the correct symbols “Foffset\_high“ and “Foffset\_low“ in clause 4.7.5.1 for sub-blocks generation.

3) For NRTC4 generation, clarify

**Discussion:**

.

**Decision: Agreed.**

**R4-2006097 CR to TS 38.141-1: Clarifications and corrections on extreme test environment**

*Type: CR For: Agreement  
 38.141-1 v15.5.0 CR-0119 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell, Ericsson*

**Abstract:**

Align the wording relating to extreme test environment for the conducted and OTA tests, and correct the wrong references to annexes.

**Discussion:**

.

**Decision: Return to.**

**R4-2006098 CR to TS 38.141-1: Clarifications and corrections on extreme test environment**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0120 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell, Ericsson*

**Abstract:**

Align the wording relating to extreme test environment for the conducted and OTA tests, and correct the wrong references to annexes.

**Discussion:**

.

**Decision: Return to.**

**R4-2006099 CR to TS 38.141-2: Correction on frequency offset symbols in test configurations**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0147 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Remove the undefined symbol “Foffset” and clarify the wordings in the note in clause 4.7.1, and use the correct symbols “Foffset\_high“ and “Foffset\_low“ in clause 4.7.2.4.1 for sub-blocks generation.

**Discussion:**

.

**Decision: Revised to R4-2008747 (from R4-2006099).**

**R4-2008747 CR to TS 38.141-2: Correction on frequency offset symbols in test configurations**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0147 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Remove the undefined symbol “Foffset” and clarify the wordings in the note in clause 4.7.1, and use the correct symbols “Foffset\_high“ and “Foffset\_low“ in clause 4.7.2.4.1 for sub-blocks generation.

**Discussion:**

.

**Decision: Return to.**

**R4-2006100 CR to TS 38.141-2: Correction on frequency offset symbols in test configurations**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0148 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Remove the undefined symbol “Foffset” and clarify the wordings in the note in clause 4.7.1, and use the correct symbols “Foffset\_high“ and “Foffset\_low“ in clause 4.7.2.4.1 for sub-blocks generation.

**Discussion:**

.

**Decision: Return to.**

**R4-2006101 CR to TS 38.141-2: Correction on test procedure of OTA in-channel selectivity**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0149 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Remove the phrase that asks to repeat the test for each supported NR channel BW, to align the test procedure with those of conducted in-channel selectivity and other receiver OTA requirements.

**Discussion:**

.

**Decision: Revised to R4-2008748 (from R4-2006101).**

**R4-2008748 CR to TS 38.141-2: Correction on test procedure of OTA in-channel selectivity**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0149 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Remove the phrase that asks to repeat the test for each supported NR channel BW, to align the test procedure with those of conducted in-channel selectivity and other receiver OTA requirements.

**Discussion:**

.

**Decision: Return to.**

**R4-2006102 CR to TS 38.141-2: Correction on test procedure of OTA in-channel selectivity**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0150 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Remove the phrase that asks to repeat the test for each supported NR channel BW, to align the test procedure with those of conducted in-channel selectivity and other receiver OTA requirements.

**Discussion:**

.

**Decision: Return to.**

**R4-2006730 CR 38.141-1 Rel15 4.9.2.3 corrections for random data generation**

*Type: CR For: Agreement  
 38.141-1 v15.5.0 CR-0123 Cat: F (Rel-15)  
  
 Source: Futurewei*

**Discussion:**

.

**Decision: Agreed.**

**R4-2006731 CR 38.141-1 Rel16 4.9.2.3 corrections for random data generation**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0124 Cat: A (Rel-16)  
  
 Source: Futurewei*

**Discussion:**

.

**Decision: Agreed.**

**R4-2006732 CR 38.141-2 Rel15 4.9.2.3 corrections for random data generation**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0157 Cat: F (Rel-15)  
  
 Source: Futurewei*

**Discussion:**

.

**Decision: Agreed.**

**R4-2006733 CR 38.141-2 Rel16 4.9.2.3 corrections for random data generation**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0158 Cat: A (Rel-16)  
  
 Source: Futurewei*

**Discussion:**

.

**Decision: Agreed.**

**R4-2007294 CR to TS 38.141-1: MU and TT value tables**

*Type: CR For: Agreement  
 38.141-1 v15.5.0 CR-0130 Cat: F (Rel-15)  
  
 Source: NEC*

**Abstract:**

Added NOTE to clarify the applicability of MU and TT values in the MU and TT value tables.

**Session chair: Cover page error**

**Discussion:**

.

**Decision: Revised to R4-2009050 (from R4-2007294).**

**R4-2009050 CR to TS 38.141-1: MU and TT value tables**

*Type: CR For: Agreement  
 38.141-1 v15.5.0 CR-0130 Cat: F (Rel-15)  
  
 Source: NEC*

**Abstract:**

Added NOTE to clarify the applicability of MU and TT values in the MU and TT value tables.

**Discussion:**

.

**Decision: Return to.**

**R4-2007295 CR to TS 38.141-1: MU and TT value tables**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0131 Cat: A (Rel-16)  
  
 Source: NEC*

**Abstract:**

Added NOTE to clarify the applicability of MU and TT values in the MU and TT value tables.

**Discussion:**

.

**Decision: Return to.**

**R4-2007296 CR to TS 38.141-2: MU and TT value tables**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0167 Cat: F (Rel-15)  
  
 Source: NEC*

**Abstract:**

Added NOTE to clarify the applicability of MU and TT values in the MU and TT value tables.

**Discussion:**

.

**Decision: Return to.**

**R4-2007297 CR to TS 38.141-2: MU and TT value tables**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0168 Cat: A (Rel-16)  
  
 Source: NEC*

**Abstract:**

Added NOTE to clarify the applicability of MU and TT values in the MU and TT value tables.

**Discussion:**

.

**Decision: Return to.**

**R4-2007298 CR to TS 38.141-2: OTA receiver intermodulation interference signal type**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0169 Cat: F (Rel-15)  
  
 Source: NEC*

**Abstract:**

Note number is corrected

**Discussion:**

.

**Decision: Agreed.**

**R4-2007299 CR to TS 38.141-2: OTA receiver intermodulation interference signal type**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0170 Cat: A (Rel-16)  
  
 Source: NEC*

**Abstract:**

Note number is corrected

**Discussion:**

.

**Decision: Agreed.**

**R4-2007472 CR to 38.141-1 Rel-15 with correction to TPDR test procedure**

*Type: CR For: Agreement  
 38.141-1 v15.5.0 CR-0135 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR introduce correction to clause with Total power dynamic range test procedure related to test model that used.

**Discussion:**

.

**Decision: Revised to R4-2008743 (from R4-2007472).**

**R4-2008743 CR to 38.141-1 Rel-15 with correction to TPDR test procedure**

*Type: CR For: Agreement  
 38.141-1 v15.5.0 CR-0135 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR introduce correction to clause with Total power dynamic range test procedure related to test model that used.

**Discussion:**

.

**Decision: Return to.**

**R4-2007473 CR to 38.141-1 Rel-16 with correction to TPDR test procedure**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0136 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR introduce correction to clause with Total power dynamic range test procedure related to test model that used.

**Discussion:**

.

**Decision: Return to.**

**R4-2007503 CR to TS 38.141-2 - Manufacturer declaration clarifications**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0184 Cat: F (Rel-15)  
  
 Source: Ericsson, Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR is resubmission from endorsed R4-2005602 and clarifies some manufacturer declarations in TS 38.141-2

**Discussion:**

.

**Decision: Agreed.**

**R4-2007504 CR to TS 38.141-2 - Manufacturer declaration clarifications**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0185 Cat: A (Rel-16)  
  
 Source: Ericsson, Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR clarifies some manufacturer declarations in TS 38.141-2

**Discussion:**

.

**Decision: Agreed.**

**R4-2007916 Discussion on out of band CLTA maximum height**

*Type: discussion For: Discussion  
 Source: Huawei*

**Abstract:**

Discussion on practical implementations of CLTA and the practicality of the current CTA definition.

**Discussion:**

.

**Decision: Noted.**

**R4-2008041 CR to TS 38.141-2: Adding spherical angle definitions to 3.2**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0191 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The definition of the spherical symbols (?, ?) is added to 3.2. This CR is a resubmission of endorsed draft CR R4-2005472 at the last meeting.

**Discussion:**

.

**Decision: Agreed.**

**R4-2008042 CR to TS 38.141-2: Adding spherical angle definitions to 3.2**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0192 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The definition of the spherical symbols (?, ?) is added to 3.2. This CR is based on endorsed draft CR R4-2005472 at the last meeting.

**Discussion:**

.

**Decision: Agreed.**

**R4-2008043 CR to TS 38.141-2: Correcting the reference angular step equations (Annex I.2.2)**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0193 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The upper limit of 15 degrees is added to the reference angular step equations for ULA in Annex I.2.2. This CR is a resubmission of endorsed draft CR R4-2004500 at the last meeting.

**Discussion:**

.

**Decision: Agreed.**

**R4-2008055 CR to TS 38.141-2: Correcting the reference angular step equations (Annex I.2.2)**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0194 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

The upper limit of 15 degrees is added to the reference angular step equations for ULA in Annex I.2.2. This CR is based on endorsed draft CR R4-2004500 at the last meeting.

**Discussion:**

.

**Decision: Agreed.**

#### 4.7.4 Conducted conformance testing (38.141-1) [NR\_newRAT-Perf]

**R4-2006919 CR to TS 38.141-1: Correction to out-of-band blocking requirement is subclause 7.5**

*Type: CR For: Agreement  
 38.141-1 v15.5.0 CR-0125 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

A correspondig draft CR in R4-2003760 was technically endoorsed at last meeting.

**Discussion:**

.

**Decision: Agreed.**

**R4-2006920 CR to TS 38.141-1: Correction to out-of-band blocking requirement is subclause 7.5**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0126 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

A correspondig draft CR in R4-2003760 was technically endoorsed at last meeting.

**Discussion:**

.

**Decision: Agreed.**

**R4-2006922 CR to TS 38.141-2: Correction to out-of-band blocking requirement in subclause 7.6**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0162 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

A correspondig draft CR in R4-2003761 was technically endoorsed at last meeting.

**Discussion:**

.

**Decision: Agreed.**

#### 4.7.5 Radiated conformance testing (38.141-2) [NR\_newRAT-Perf]

**R4-2006921 CR to TS 38.141-2: Correction to out-of-band blocking requirement in subclause 7.6**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0161 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

A correspondig draft CR in R4-2003761 was technically endoorsed at last meeting.

**Discussion:**

.

**Decision: Agreed.**

**R4-2007313 NR FR2 test models for 16QAM**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0173 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Agreed.**

**R4-2007314 NR FR2 test models for 16QAM**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0174 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Agreed.**

**R4-2007315 CR for TS 38.141-2: Total power dynamic range**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0175 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Revised to R4-2008744 (from R4-2007315).**

**R4-2008744 CR for TS 38.141-2: Total power dynamic range**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0175 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Return to.**

**R4-2007316 CR for TS 38.141-2: Total power dynamic range**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0176 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Return to.**

**R4-2007442 CR to TS 38.141-2: Corrections for the extreme environment testing, Rel-15**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0178 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR clarifies the ambiguity of the extreme test conditions applicability in TS 38.141-2, based on the draftCR endorsed in R4-2005571.

**Discussion:**

.

**Decision: Return to.**

**R4-2007443 CR to TS 38.141-2: Corrections for the extreme environment testing, Rel-16**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0179 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

This CR clarifies the ambiguity of the extreme test conditions applicability in TS 38.141-2, based on the draftCR endorsed in R4-2005571.

**Discussion:**

.

**Decision: Return to.**

### 4.8 BS EMC [NR\_newRAT-Core]

#### 4.8.1 Editorial CRs [NR\_newRAT-Perf/Core]

#### 4.8.2 Core requirements [NR\_newRAT-Core]

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

**R4-2007449 Further clarifications to the direct field strength measurement of unwanted radiated emissions from the BS enclosure port**

*Type: discussion For: Discussion  
 Source: Huawei*

**Abstract:**

Resubmission of the discussion paper on the direct field strength approach proposal to measure the EMC radiated emissions from the enclosure port of BS equipped with the antenna connectors / TAB connectors. This resubmission includes additional feedback t

**Discussion:**

.

**Decision: Noted.**

**R4-2007450 CR to TS 38.113: direct field strength measurements for the EMC RE, Rel-15**

*Type: CR For: Agreement  
 38.113 v15.9.0 CR-0019 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

CR for the direct field strength measurement method to measure the EMC radiated emissions from the enclosure port of BS equipped with the antenna connectors / TAB connectors.

**Discussion:**

.

**Decision: Revised to R4-2008727 (from R4-2007450).**

**R4-2008727 CR to TS 38.113: direct field strength measurements for the EMC RE, Rel-15**

*Type: CR For: Agreement  
 38.113 v15.9.0 CR-0019 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

CR for the direct field strength measurement method to measure the EMC radiated emissions from the enclosure port of BS equipped with the antenna connectors / TAB connectors.

**Discussion:**

.

**Decision: Return to.**

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

#### 4.8.3 Performance requirements [NR\_newRAT-Perf]

**R4-2007058 Proposal for EMC reduction of test configurations**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

Proposal for EMC reduction of test configurations

**Discussion:**

.

**Decision: Noted.**

**R4-2007059 Draft CR to 37.113 Introducing Reverberation Chamber**

*Type: CR For: Agreement  
 37.113 v15.8.0 CR-0109 Cat: F (Rel-15)  
  
 Source: Ericsson, ZTE*

**Abstract:**

A corresponding draft CR was technically endorsed in R4-2005565 at last meeting.

**Discussion:**

.

**Decision: Revised to R4-2008726 (from R4-2007059).**

**R4-2008726 Draft CR to 37.113 Introducing Reverberation Chamber**

*Type: CR For: Agreement  
 37.113 v15.8.0 CR-0109 Cat: F (Rel-15)  
  
 Source: Ericsson, ZTE*

**Abstract:**

A corresponding draft CR was technically endorsed in R4-2005565 at last meeting.

**Discussion:**

.

**Decision: Return to.**

**R4-2007547 [R15]CR to TS 37.114 Add the reverberation chamber for radiated immunity testing (clause 2 & subclause 9.2.1)**

*Type: CR For: Agreement  
 37.114 v15.8.0 CR-0097 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Session chair: Cover page error**

**Discussion:**

.

**Decision: Revised to R4-2008728 (from R4-2007547).**

**R4-2008728 [R15]CR to TS 37.114 Add the reverberation chamber for radiated immunity testing (clause 2 & subclause 9.2.1)**

*Type: CR For: Agreement  
 37.114 v15.8.0 CR-0097 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007549 [R15]CR to TS 38.113 Add the reverberation chamber for radiated immunity testing (clause 2 & subclause 9.2.2)**

*Type: CR For: Agreement  
 38.113 v15.9.0 CR-0020 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Session chair: Cover page error**

**Discussion:**

.

**Decision: Revised to R4-2008729 (from R4-2007549).**

**R4-2008729 [R15]CR to TS 38.113 Add the reverberation chamber for radiated immunity testing (clause 2 & subclause 9.2.2)**

*Type: CR For: Agreement  
 38.113 v15.9.0 CR-0020 Cat: F (Rel-15)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

### 4.11 Demodulation and CSI maintenance [NR\_newRAT-Perf]

**R4-2008701 Email discussion summary for [95e][312] Demod\_Maintenance**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008876 Email discussion summary for [95e][312] Demod\_Maintenance**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

#### 4.11.1 Editorial CRs [NR\_newRAT-Perf]

**R4-2006688 CR for correction of Angle of Arrival for Radiated Requirements in section 4**

*Type: CR For: Agreement  
 38.101-4 v15.5.0 CR-0048 Cat: F (Rel-15)  
  
 Source: LG Electronics Inc.*

**Discussion:**

.

**Decision: Agreed.**

**R4-2008753 CR for correction of Angle of Arrival for Radiated Requirements in section 4**

*Type: CR For: Agreement  
 38.101-4 v16.0.0 CR-? Cat: A (Rel-16)  
  
 Source: LG Electronics Inc.*

**Session Chair: Ask Kai-Erik to get CR number**

**Discussion:**

.

**Decision: Return to.**

**R4-2008753 Email discussion summary for**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

#### 4.11.2 UE demodulation and CSI (38.101-4) [NR\_newRAT-Perf]

**R4-2006069 CR to Aperiodic Report Slot Offset for CQI report**

*Type: CR For: Agreement  
 38.101-4 v15.5.0 CR-0039 Cat: F (Rel-15)  
  
 Source: ANRITSU LTD*

**Abstract:**

Aperiodic Report Slot Offset is changed from 7 to 6

**Discussion:**

.

**Decision: Agreed.**

**R4-2006070 CR to Aperiodic Report Slot Offset for CQI report**

*Type: CR For: Agreement  
 38.101-4 v16.0.0 CR-0040 Cat: A (Rel-16)  
  
 Source: ANRITSU LTD*

**Abstract:**

Aperiodic Report Slot Offset is changed from 7 to 6

**Discussion:**

.

**Decision: Agreed.**

**R4-2006134 CR on DL Physical Channel EPRE Ratios**

*Type: CR For: Agreement  
 38.101-4 v15.5.0 CR-0041 Cat: F (Rel-15)  
  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision: Not pursued.**

**R4-2006523 Discussion on DL physical channels power ratios**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2006524 CR to TS 38.101-4: Beamforming clarification (R15)**

*Type: CR For: Agreement  
 38.101-4 v15.5.0 CR-0043 Cat: F (Rel-15)  
  
 Source: Intel Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008749 (from R4-2006524).**

**R4-2008749 CR to TS 38.101-4: Beamforming clarification (R15)**

*Type: CR For: Agreement  
 38.101-4 v15.5.0 CR-0043 Cat: F (Rel-15)  
  
 Source: Intel Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2006525 CR to TS 38.101-4: Beamforming clarification (R16)**

*Type: CR For: Agreement  
 38.101-4 v16.0.0 CR-0044 Cat: A (Rel-16)  
  
 Source: Intel Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2006541 CR to TS 38.101-4: MIMO correlation matrices definition (R15)**

*Type: CR For: Agreement  
 38.101-4 v15.5.0 CR-0046 Cat: F (Rel-15)  
  
 Source: Intel Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008752 (from R4-2006541).**

**R4-2008752 CR to TS 38.101-4: MIMO correlation matrices definition (R15)**

*Type: CR For: Agreement  
 38.101-4 v15.5.0 CR-0046 Cat: F (Rel-15)  
  
 Source: Intel Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2006542 CR to TS 38.101-4: MIMO correlation matrices definition (R16)**

*Type: CR For: Agreement  
 38.101-4 v16.0.0 CR-0047 Cat: A (Rel-16)  
  
 Source: Intel Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2006959 Update of DL physical channels definitions**

*Type: CR For: Agreement  
 38.101-4 v15.5.0 CR-0049 Cat: F (Rel-15)  
  
 Source: Rohde & Schwarz*

**Session Chair: Missing CR CAT? in cover page**

**Discussion:**

.

**Decision: Revised to R4-2008750 (from R4-2006959).**

**R4-2008750 Update of DL physical channels definitions**

*Type: CR For: Agreement  
 38.101-4 v15.5.0 CR-0049 Cat: F (Rel-15)  
  
 Source: Rohde & Schwarz*

**Discussion:**

.

**Decision: Return to.**

**R4-2007226 CR: updates to NR CSI test**

*Type: CR For: Agreement  
 38.101-4 v15.5.0 CR-0050 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Submit the formal CR as per the endorsed draftCR R4-2003699

**Discussion:**

.

**Decision: Agreed.**

**R4-2008754 CR: updates to NR CSI test**

*Type: CR For: Agreement  
 38.101-4 v16.0.0 CR-? Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Submit the formal CR as per the endorsed draftCR R4-2003699

**Session chair: Ask Kai-Erik to get CR number**

**Discussion:**

.

**Decision: Return to.**

**R4-2007227 Discussion on DL channel mapping for NR UE performance tests**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per the approved WF R4-2005517, further check and share our views on the EPRE clarification in Table C.3.1-1 and Table C.5.1-1

**Discussion:**

.

**Decision: Noted.**

**R4-2007228 CR: clarification on EPRE ratio definition**

*Type: CR For: Agreement  
 38.101-4 v15.5.0 CR-0051 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

CR on EPRE clarification in Table C.3.1-1 and Table C.5.1-1

**Discussion:**

.

**Decision: Revised to R4-2008751 (from R4-2007228).**

**R4-2008751 CR: clarification on EPRE ratio definition**

*Type: CR For: Agreement  
 38.101-4 v15.5.0 CR-0051 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

CR on EPRE clarification in Table C.3.1-1 and Table C.5.1-1

**Discussion:**

.

**Decision: Return to.**

#### 4.11.3 BS demodulation (38.104) [NR\_newRAT-Perf]

**R4-2006048 CR for 38.104: Performance requirements clarification of PUSCH BS Type O-2 PT-RS configuration for MCS 2**

*Type: CR For: Agreement  
 38.104 v15.9.0 CR-0163 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

CR implementing endorsed draftCR R4-2005521.

This CR adds the PT-RS configuration option “Disabled” to table 11.2.2.1.1-1.

**Discussion:**

.

**Decision: Agreed.**

**R4-2006049 CR for 38.141-2: Radiated test requirements clarification of PUSCH BS Type O-2 PT-RS configuration for MCS 2**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0144 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

CR implementing endorsed draftCR R4-2005522.

This CR adds the PT-RS configuration option “Disabled” to table 8.2.1.4.2-1.

**Discussion:**

.

**Decision: Agreed.**

**R4-2006050 CR for 38.104: Performance requirements clarification of PUSCH BS Type O-2 PT-RS configuration for MCS 2**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0164 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Category A CR.

This CR adds the PT-RS configuration option “Disabled” to table 11.2.2.1.1-1.

**Discussion:**

.

**Decision: Agreed.**

**R4-2006051 CR for 38.141-2: Radiated test requirements clarification of PUSCH BS Type O-2 PT-RS configuration for MCS 2**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0145 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Category A CR.

This CR adds the PT-RS configuration option “Disabled” to table 8.2.1.4.2-1.

**Discussion:**

.

**Decision: Agreed.**

**R4-2006838 UCI multiplexed on PUSCH requirement**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0172 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

CR for 38.104 requirement of UCI multiplexed on PUSCH

**Discussion:**

.

**Decision: Revised to R4-2008870 (from R4-2006838).**

**R4-2008870 UCI multiplexed on PUSCH requirement**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0172 Cat: F (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

CR for 38.104 requirement of UCI multiplexed on PUSCH

**Session Chair: Fix Cover-page Error**

**Discussion:**

.

**Decision: Return to.**

**R4-2007461 CR to 38.104: Adding missing clause on Radiated Performance requirements for multi-slot PUCCH (11.3.1)**

*Type: CR For: Agreement  
 38.104 v15.9.0 CR-0194 Cat: F (Rel-15)  
  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

Resubmission of endorsed draft CR R4-2005469

**Discussion:**

.

**Decision: Agreed.**

**R4-2007462 CR to 38.104: Adding missing clause on Radiated Performance requirements for multi-slot PUCCH (11.3.1)**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0195 Cat: A (Rel-16)  
  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

Cat A CR

**Discussion:**

.

**Decision: Agreed.**

**R4-2007463 CR to 38.141-1: Adding missing TT value for BS demod testing (C.3)**

*Type: CR For: Agreement  
 38.141-1 v15.5.0 CR-0133 Cat: F (Rel-15)  
  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

Resubmission of endorsed draft CR R4-2005519

**Discussion:**

.

**Decision: Agreed.**

**R4-2007464 CR to 38.141-1: Adding missing TT value for BS demod testing (C.3)**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0134 Cat: A (Rel-16)  
  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

Cat A CR

**Discussion:**

.

**Decision: Agreed.**

**R4-2007465 CR to 38.141-2: Correction on required SNR value for multi-slot PUCCH testing (8.3.6) (C.3)**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0182 Cat: F (Rel-15)  
  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

Resubmission of endorsed draft CR R4-2005520

**Discussion:**

.

**Decision: Agreed.**

**R4-2007466 CR to 38.141-2: Correction on required SNR value for multi-slot PUCCH testing (8.3.6) (C.3)**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0183 Cat: A (Rel-16)  
  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

Cat A CR

**Discussion:**

.

**Decision: Agreed.**

### 4.13 Testability Maintenance (38.810) [FS\_NR\_test\_methods]

**R4-2008014 Beam correspondence – SRS configuration corrections in section 5.2.1.3.7**

*Type: CR For: Agreement  
 38.810 v16.5.0 CR-0012 Cat: F (Rel-16)  
  
 Source: Keysight Technologies UK Ltd*

**Session Chair: Cover page error**

**Discussion:**

.

**Decision: Revised to R4-2009049 (from R4-2008014).**

**R4-2009049 Beam correspondence – SRS configuration corrections in section 5.2.1.3.7**

*Type: CR For: Agreement  
 38.810 v16.5.0 CR-0012 Cat: F (Rel-16)  
  
 Source: Keysight Technologies UK Ltd*

**Discussion:**

.

**Decision: Return to.**

## 5 Rel-16 Work Items for LTE

### 5.10 Additional MTC enhancements for LTE [LTE\_eMTC5]

#### 5.10.4 Demodulation and CSI requirements (36.101/36.104) [LTE\_eMTC5-Perf]

**R4-2008702 Email discussion summary for [95e][313] LTE\_eMTC5\_Demod**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008877 Email discussion summary for [95e][313] LTE\_eMTC5\_Demod**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008758 Way forward on UE/BS demodulation performance for additional MTC enhancements for LTE**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2007111 UE and BS demodulation requirements for LTE\_eMTC5**

*Type: discussion For: Agreement  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discussion on open issues from RAN4 #94bis-e.

**Discussion:**

.

**Decision: Noted.**

**R4-2007208 Discussion on multi-TB requirements for LTE eMTC**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007209 Discussion and simulation reuslts for MPDCCH**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007210 Discussion and simulation results for PMI reporting test in eMTC**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007371 Simulation results of MPDCCH with DMRS+CRS**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution shows the simulation results of MPDCCH with DMRS+CRS according to the simulation assumption.

**Discussion:**

.

**Decision: Noted.**

**R4-2007372 Simulation results of CSI-RS based PMI reporting test**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution shows the simulation results of CSI-RS based PMI reporting according to the simulation assumption.

**Discussion:**

.

**Decision: Noted.**

**R4-2007373 Remaining open issues on eMTC demodulation requirements**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the open issues for UE/BS demodulation requirements for Rel-16 eMTC.

**Discussion:**

.

**Decision: Noted.**

**R4-2007374 Introduction of enhanced MPDCCH demodulation requirements**

*Type: CR For: Agreement  
 36.101 v16.5.0 CR-5630 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

This CR introduces the enhanced MPDCCH demodulation requirements.

**Discussion:**

.

**Decision: Postponed.**

**R4-2007375 Introduction of CSI-RS based PMI reporting test for non-BL UEs**

*Type: CR For: Agreement  
 36.101 v16.5.0 CR-5631 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

This CR introduces the CSI-RS based PMI reporting test for non-BL UEs.

**Discussion:**

.

**Decision: Postponed.**

**R4-2007376 Summary of simulation results for Rel-16 eMTC demodulation requirements**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

This spread sheet summarizes the simulation results for Rel-16 eMTC demodulation performance.

**Discussion:**

.

**Decision: Noted.**

### 5.11 Additional enhancements for NB-IoT [NB\_IOTenh3]

#### 5.11.4 Demodulation and CSI requirements (36.101/36.104) [NB\_IOTenh3-Perf]

**R4-2008703 Email discussion summary for [95e][314] NB\_IOTenh3\_Demod**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008878 Email discussion summary for [95e][314] NB\_IOTenh3\_Demod**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008759 WF on LTE UE and BS performance requirements for additional enhancements of NB-IoT**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2007112 UE and BS demodulation requirements for NB\_IOTenh3**

*Type: discussion For: Agreement  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discussion on open issues from RAN4 #94bis-e.

**Discussion:**

.

**Decision: Noted.**

**R4-2007211 Discussion on NPDSCH performance requirements for NB-IoT additional enhancements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Share our views on NPDSCH performance requirements for NB-IOT additional enhancements

**Discussion:**

.

**Decision: Noted.**

**R4-2007212 Discussion on NPUSCH format 1 performance requirements for NB-IoT additional enhancements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Share our views on NPUSCH format 1 performance requirements for NB-IOT additional enhancements

**Discussion:**

.

**Decision: Noted.**

**R4-2007377 NPDSCH/NPUSCH demodulation requirements with multi-TB transmission**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the open issues for UE/BS demodulation requirements for Rel-16 NB-IoT.

**Discussion:**

.

**Decision: Noted.**

### 5.13 LTE-based 5G terrestrial broadcast [LTE\_terr\_bcast]

#### 5.13.1 Demodulation and CSI requirements (36.101) [LTE\_terr\_bcast -Perf]

**R4-2008704 Email discussion summary for [95e][315] LTE\_terr\_bcast\_Demod**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008879 Email discussion summary for [95e][315] LTE\_terr\_bcast\_Demod**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

* Companies are encouraged to trigger email discussion on reflector if initial phase is identified to have significant impact on performance.

**R4-2008761 Summary of alignment and impairment results for 5G broadcast**

*Type: other For: Information  
 Source: Qualcomm*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2006720 5G broadcast simulation results collection**

*Type: discussion For: Approval  
 Source: Qualcomm, Inc.*

**Discussion:**

.

**Decision: Noted.**

**R4-2006721 On LTE-based 5G terrestrial broadcast demod requirement applicatioin rule**

*Type: discussion For: Discussion  
 Source: Qualcomm, Inc.*

**Abstract:**

LTE-based 5G terrestrial broadcast demod requirement applicatioin rule

**Discussion:**

.

**Decision: Noted.**

**R4-2006722 CR: 5G broadcast demod requirement**

*Type: draftCR For: Endorsement  
 36.101 v16.5.0  
 Source: Qualcomm, Inc.*

**Discussion:**

.

**Decision: Merged (with R4-208285).**

**R4-2007239 Discussion and simulation results on UE performance requirements for LTE-based 5G terrestrial broadcast**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007240 CR addition on FRC and propagation conditions definition for LTE-based 5G terrestrial broadcast**

*Type: CR For: Agreement  
 38.101-4 v16.0.0 CR-0052 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Discussion:**

.

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

**R4-2008284 CR addition on FRC and propagation conditions definition for LTE-based 5G terrestrial broadcast**

*Type: draftCR For: Endorsement  
 36.101 v16.0.0  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Endorsed.**

**R4-2007241 CR addition on performance requirements for LTE-based 5G terrestrial broadcast**

*Type: CR For: Agreement  
 38.101-4 v16.0.0 CR-0053 Cat: B (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Discussion:**

.

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

**R4-2008285 CR addition on performance requirements for LTE-based 5G terrestrial broadcast**

*Type: draftCR For: Endorsement  
 36.101 v16.0.0  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Revised to R4-2008760 (from R4-2008285).**

**R4-2008760 CR addition on performance requirements for LTE-based 5G terrestrial broadcast**

*Type: draftCR For: Endorsement  
 36.101 v16.0.0  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Return to.**

#### 5.13.2 Others [LTE\_terr\_bcast -Core/Perf]

**R4-2008869 WF on the measurement interval and observation time for frequency/time correction for 2kHz and 0.37kHz**

*Type: other For: Approval  
 Source: ZTE*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2007396 Impacts on BS RF requirement of new introduced numerology**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

**R4-2007397 CR to 36.104: Introduction of LTE based 5G terrestrial broadcast numerologies**

*Type: CR For: Agreement  
 36.104 v16.5.0 CR-4899 Cat: B (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007398 CR to 36.101: Introduction of LTE based 5G terrestrial broadcast numerologies**

*Type: CR For: Agreement  
 36.101 v16.5.0 CR-5632 Cat: B (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Not pursued.**

### 5.14 R16 LTE maintenance [WI code]

#### 5.14.3 Demodulation and CSI requirements [WI code]

**R4-2007178 CR to TS 36.104 Finalization on PUSCH performance requirements for enhanced HST scenario**

*Type: CR For: Agreement  
 36.104 v16.5.0 CR-4895 Cat: F (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision: Agreed.**

**R4-2007179 CR to TS 36.141 Finalization on PUSCH performance requirements for enhanced HST scenario**

*Type: CR For: Agreement  
 36.141 v16.5.0 CR-1254 Cat: F (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision: Agreed.**

**R4-2007180 CR to TS 36.104 Finalization on PRACH performance requirements for enhanced HST scenario**

*Type: CR For: Agreement  
 36.104 v16.5.0 CR-4896 Cat: F (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision: Agreed.**

**R4-2007181 CR to TS 36.141 Finalization on PRACH performance requirements for enhanced HST scenario**

*Type: CR For: Agreement  
 36.141 v16.5.0 CR-1255 Cat: F (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision: Agreed.**

## 6 Rel-16 non-spectrum related work items for NR

### 6.1 NR-based access to unlicensed spectrum [NR\_unlic]

#### 6.1.4 BS RF requirements [NR\_unlic-Core]

**R4-2008694 Email discussion summary for [95e][305] NR\_unlic\_RF\_BS**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008880 Email discussion summary for [95e][305] NR\_unlic\_RF\_BS**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008766 WF on NR-U BS OBUE**

*Type: other For: Approval  
 Source: ZTE*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2007414 CR to 25.104:Introduction of Band n46 in 25.104**

*Type: CR For: Agreement  
 25.104 v16.0.0 CR-0971 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007415 CR to 36.104:Introduction of Band n46 in 36.104**

*Type: CR For: Agreement  
 36.104 v16.5.0 CR-4900 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008763 (from R4-2007415).**

**R4-2008763 CR to 36.104:Introduction of Band n46 in 36.104**

*Type: CR For: Agreement  
 36.104 v16.5.0 CR-4900 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007416 CR to 37.104: Introduction of Band n46 in 37.104**

*Type: CR For: Agreement  
 37.104 v16.5.0 CR-0897 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008764 (from R4-2007416).**

**R4-2008764 CR to 37.104: Introduction of Band n46 in 37.104**

*Type: CR For: Agreement  
 37.104 v16.5.0 CR-0897 Cat: F (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007478 CR to TS 38.104: Introduction of NR-U in core specification**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0196 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This is draft CR with introduction of NR-U requirements to BS core specification 38.104.

**Discussion:**

.

**Decision: Revised to R4-2008762 (from R4-2007478).**

**R4-2008762 CR to TS 38.104: Introduction of NR-U in core specification**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0196 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This is draft CR with introduction of NR-U requirements to BS core specification 38.104.

**Discussion:**

.

**Decision: Return to.**

**R4-2007479 CR to 37.107 with introduction of NR-U feature – core part**

*Type: CR For: Agreement  
 37.107 v15.1.0 CR-0003 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This draft CR introduces NR-U feature to specification TS 37.107.

**Discussion:**

.

**Decision: Revised to R4-2008765 (from R4-2007479).**

**R4-2008765 CR to 37.107 with introduction of NR-U feature – core part**

*Type: CR For: Agreement  
 37.107 v15.1.0 CR-0003 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This draft CR introduces NR-U feature to specification TS 37.107.

**Discussion:**

.

**Decision: Return to.**

**R4-2007567 CR to TS 38.104: Introduction of NR-U in core specification**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0204 Cat: B (Rel-16)  
  
 Source: Eicsson*

**Abstract:**

Introduction of NR-U requirements to BS core specification TS 38.104.

**Discussion:**

.

**Decision: Not pursued.**

##### 6.1.4.1 Transmitter characteristics [NR\_unlic-Core]

**R4-2007411 NR-U BS UEM requirement**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

**R4-2007412 CR tO 38.104:Introduction of NR-U BS UEM requirement into TS38.104**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0191 Cat: B (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Not pursued.**

**R4-2007480 CR to TS 38.104 with BS NR-U operating band unwanted emissions**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0197 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This is CR to BS core specification that proposes introduction of oparting band unwanted emission requirements for NR-U.

**Discussion:**

.

**Decision: Not pursued.**

##### 6.1.4.2 Receiver characteristics [NR\_unlic-Core]

**R4-2007409 NR-U BS RX REFSENS and dynamic range requirement**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

**R4-2007410 NR-U BS RX ICS requirement**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

**R4-2007413 CR to 38.104:Introduction of NR-U BS RX requirement into TS38.104**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0192 Cat: B (Rel-16)  
  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007476 NR-U BS Dynamic range requirement**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007477 NR-U BS REFSENS and ICS requirements**

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

**Discussion:**

.

**Decision: Noted.**

### 6.5 Integrated Access and Backhaul for NR [NR\_IAB]

**R4-2008695 Email discussion summary for [95e][306] NR\_IAB\_General**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008881 Email discussion summary for [95e][306] NR\_IAB\_General**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008767 WF on IAB-MT class descriptions**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008768 TP to TR 38.809 – Correction of IAB-DU and IAB-MT permutation in subclause 4.8.**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: Huawei*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008770 WF on referencing rules and how updated to donor specs are applied to the IAB specification**

*Type: other For: Approval  
 Source: Nokia*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008696 Email discussion summary for [95e][307] NR\_IAB\_Featurelist**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008882 Email discussion summary for [95e][307] NR\_IAB\_Featurelist**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008771 WF on IAB-MT feature list**

*Type: other For: Approval  
 Source: CATT*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008772 WF on IAB-MT supported channel bandwidth**

*Type: other For: Approval  
 Source: Samsung*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008697 Email discussion summary for [95e][308] NR\_IAB\_RF\_Part\_1**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008883 Email discussion summary for [95e][308] NR\_IAB\_RF\_Part\_1**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008773** **WF on IAB-MT maximum output power and scaling factor for emission mask**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008774** **WF on IAB-MT Pc,max definition**

*Type: other For: Approval  
 Source: Samsung*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008775** **WF on IAB-MT output power dynamic**

*Type: other For: Approval  
 Source: Qualcomm*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008698 Email discussion summary for [95e][309] NR\_IAB\_RF\_Part\_2**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008884 Email discussion summary for [95e][309] NR\_IAB\_RF\_Part\_2**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008783 WF on transmit signal quality**

*Type: other For: Approval  
 Source: CATT*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008784 WF on IAB-MT unwanted emissions**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008699 Email discussion summary for [95e][310] NR\_IAB\_RF\_Part\_3**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008885 Email discussion summary for [95e][310] NR\_IAB\_RF\_Part\_3**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008785 WF on IAB-MT reference sensitivity**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008786 WF for In-band selectivity and blocking**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

**Discussion:**

**Decision: Return to.**

#### 6.5.1 General [NR\_IAB-Core]

**R4-2006378 TR38.809 V0.2.0**

*Type: draft TR For: Agreement  
 38.809 v0.2.0  
 Source: Samsung*

**Discussion:**

.

**Decision:** For email approval

**R4-2007467 Email discussion for updating IAB TS spec to capture RAN4 95 agreements**

*Type: draft TS For: Agreement  
 38.174 v0.0.2  
 Source: Qualcomm*

**Discussion:**

.

**Decision:** For email approval

##### 6.5.1.1 System parameters [NR\_IAB-Core]

**R4-2007577 TP to TS 38.174: system parameter**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, system parameter TP is provided

**Discussion:**

.

**Decision: Revised to R4-2008769 (from R4-2007577).**

**R4-2008769 TP to TS 38.174: system parameter**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, system parameter TP is provided

**Discussion:**

.

**Decision: Return to.**

##### 6.5.1.2 IAB-MT class [NR\_IAB-Core]

**R4-2007399 Discussion on IAB MT class**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

**R4-2007401 Further discussion on IAB-MT power requirement**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

**R4-2007903 IAB-MT class definitions**

*Type: discussion For: Discussion  
 Source: Huawei*

**Abstract:**

Discuss possible descriptions for the IAB-MT classes

**Discussion:**

.

**Decision: Noted.**

##### 6.5.1.3 IAB-MT feature list [NR\_IAB-Core]

**R4-2006279 Discussion on IAB-MT Feature list**

*Type: other For: Approval  
 Source: CATT*

**Discussion:**

.

**Decision: Noted.**

**R4-2006657 Support of Rel-15 UE features by IAB-MTs**

*Type: discussion For: Decision  
 Source: AT&T*

**Discussion:**

.

**Decision: Noted.**

**R4-2006797 Further discussion on IAB-MT feature**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision: Noted.**

**R4-2006798 Clarificaiton on IAB-MT channel bandwidth**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision: Noted.**

**R4-2006803 On IAB feature list**

*Type: discussion For: Discussion  
 Source: CMCC*

**Discussion:**

.

**Decision: Noted.**

**R4-2007119 IAB-MT features**

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

**Abstract:**

In this contribution we discuss and make proposals for rel-15 UE feature support of IAB-MT.

**Discussion:**

.

**Decision: Noted.**

**R4-2007131 IAB-MT Tx Features**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007317 Further discussion on R16 IAB MT RF features**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007400 Discussion on IAB MT feature list**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

**R4-2007571 IAB-MT madatory feature**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, the IAB MT feature is discussed.

**Discussion:**

.

**Decision: Noted.**

##### 6.5.1.4 Others [NR\_IAB-Core]

**R4-2006799 RAN4 implication due to Sync from multiple parenets for “Case 1” OTA timing**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision: Noted.**

#### 6.5.2 RF requirements [NR\_IAB-Core]

##### 6.5.2.1 Conductive RF core requirements [NR\_IAB-Core]

###### 6.5.2.1.1 Transmitter characteristics [NR\_IAB-Core]

**R4-2006276 Discussion on IAB-MT modulation quality requirements**

*Type: other For: Approval  
 Source: CATT*

**Discussion:**

.

**Decision: Noted.**

**R4-2006282 Discussion on IAB-MT power related issues**

*Type: other For: Approval  
 Source: CATT*

**Discussion:**

.

**Decision: Noted.**

**R4-2007402 frequency error requirement for IAB**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

**R4-2007403 Further discussion on FR1 IAB-MT ACLR and ACS requirement**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

**R4-2007543 [IAB RF] further discussion on IAB TX IMD**

*Type: discussion For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

**R4-2007573 IAB-MT Frequency error**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, the IAB-MT frequency erorr on system impact is discussed

**Discussion:**

.

**Decision: Noted.**

###### 6.5.2.1.2 Receiver characteristics [NR\_IAB-Core]

**R4-2006280 Discussion on IAB-MT REFSENS**

*Type: other For: Approval  
 Source: CATT*

**Discussion:**

.

**Decision: Noted.**

**R4-2007408 In-band blocking for IAB MT**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

###### 6.5.2.1.3 TP to TS/TR [NR\_IAB-Core]

**R4-2006272 TP for TR 38.809: Transmit ON/OFF power**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: CATT*

**Discussion:**

.

**Decision: Revised to R4-2008777 (from R4-2006272).**

**R4-2008777 TP for TR 38.809: Transmit ON/OFF power**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2006273 TP for TS 38.174: Transmit ON/OFF power**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: CATT*

**Discussion:**

.

**Decision: Revised to R4-2008778 (from R4-2006273).**

**R4-2008778 TP for TS 38.174: Transmit ON/OFF power**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2006274 TP for TR 38.809: IAB-DU Transmitted signal quality**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2006275 TP for TS 38.174: IAB-DU Transmitted signal quality**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2006277 TP for TR 38.809: IAB-MT Transmitted signal quality**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: CATT*

**Discussion:**

.

**Decision: Revised to R4-2008779 (from R4-2006277).**

**R4-2008779 TP for TR 38.809: IAB-MT Transmitted signal quality**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2006278 TP for TS 38.174: IAB-MT Transmitted signal quality**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: CATT*

**Discussion:**

.

**Decision: Revised to R4-2008780 (from R4-2006278).**

**R4-2008780 TP for TS 38.174: IAB-MT Transmitted signal quality**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2007404 TP to TR : IAB RX IM requirement (section 8.7 and 10.8)**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008787 (from R4-2007404).**

**R4-2008787 TP to TR : IAB RX IM requirement (section 8.7 and 10.8)**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007405 TP to TS 38.174: IAB RX IM requirement (section 7.7 and 10.8)**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008788 (from R4-2007405).**

**R4-2008788 TP to TS 38.174: IAB RX IM requirement (section 7.7 and 10.8)**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007406 TP to TR: IAB ICS requirement (section 8.8 and 10.9)**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008789 (from R4-2007406).**

**R4-2008789 TP to TR: IAB ICS requirement (section 8.8 and 10.9)**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007407 TP to TS 38.174: IAB ICS requirement (section 7.8 and 10.9)**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008791 (from R4-2007407).**

**R4-2008791 TP to TS 38.174: IAB ICS requirement (section 7.8 and 10.9)**

*Type: other For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007544 [IAB RF] TP to TR 38.809 IAB TX IMD**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008782 (from R4-2007544).**

**R4-2008782 [IAB RF] TP to TR 38.809 IAB TX IMD**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007545 [IAB RF] TP to TS 38.174 IAB TX IMD**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008781 (from R4-2007545).**

**R4-2008781 [IAB RF] TP to TS 38.174 IAB TX IMD**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

**R4-2007579 TP to TR 38.809: Conducted RX spurious**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

in this paper, the TP for the conducted spurious is proposed.

**Discussion:**

.

**Decision: Revised to R4-2008793 (from R4-2007579).**

**R4-2008793 TP to TR 38.809: Conducted RX spurious**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

in this paper, the TP for the conducted spurious is proposed.

**Discussion:**

.

**Decision: Return to.**

**R4-2007585 TP to TS 38.174: Conducted RX spurious**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, the TP for the conducted RX spurious is proposed.

**Discussion:**

.

**Decision: Revised to R4-2008799 (from R4-2007585).**

**R4-2008799 TP to TS 38.174: Conducted RX spurious**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, the TP for the conducted RX spurious is proposed.

**Discussion:**

.

**Decision: Return to.**

##### 6.5.2.2 Radiated RF core requirements [NR\_IAB-Core]

###### 6.5.2.2.1 Transmitter characteristics [NR\_IAB-Core]

**R4-2006760 Discussion on IAB-MT dynamic range**

*Type: discussion For: Approval  
 Source: CMCC*

**Discussion:**

.

**Decision: Noted.**

**R4-2006800 Further discussion on IAB-MT transmitter requriement**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision: Noted.**

**R4-2006931 IAB-MT Tx power dynamic range and power control requirements**

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

**Abstract:**

IAB-MT Tx power dynamic range with dependency on the two IAB-MT classes will be discussed in this contribution.

**Discussion:**

.

**Decision: Noted.**

**R4-2007120 IAB-MT emission requirements**

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

**Abstract:**

In this contribution we discuss and make proposals for IAB-MT emission requirements

**Discussion:**

.

**Decision: Noted.**

**R4-2007121 TP to TS 38.174: Output power requirements**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this text proposal we provide specification text for output power requirements

**Discussion:**

.

**Decision: Revised to R4-2008776 (from R4-2007121).**

**R4-2008776 TP to TS 38.174: Output power requirements**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this text proposal we provide specification text for output power requirements

**Discussion:**

.

**Decision: Return to.**

**R4-2007122 TP to TR 38.809: Emission requirements**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this text proposal capture to TR emission requirements related agreements and background

**Discussion:**

.

**Decision: Return to.**

**R4-2007130 IAB-MT Tx Requirements**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007574 IAB-MT TX dynamic range and power control**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, IAB-MT Tx dyanmic range and power control requirment is discussed.

**Discussion:**

.

**Decision: Noted.**

**R4-2007575 IAB-MT maximum output power**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, we present our view on maximum output power of IAB-MT for FR1

**Discussion:**

.

**Decision: Noted.**

**R4-2007576 IAB-MT unwanted emission for FR2 &FR1**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, we present our view on IAB-MT unwanted emission level for FR2

**Discussion:**

.

**Decision: Noted.**

**R4-2007904 IAB-MT min number of TRX and emissions scaling**

*Type: discussion For: Approval  
 Source: Huawei*

**Abstract:**

Discuss the min number of IAB classes and how this affects the scaling

**Discussion:**

.

**Decision: Noted.**

**R4-2007909 IAB-MT TX ACLR and dynamic range**

*Type: discussion For: Approval  
 Source: Huawei*

**Abstract:**

Discuss the remaining open ACLR and Tx dynamic range issues

**Discussion:**

.

**Decision: Noted.**

###### 6.5.2.2.2 Receiver characteristics [NR\_IAB-Core]

**R4-2006801 Further discussion on REFSENS for IAB-MT**

*Type: other For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision: Noted.**

**R4-2006932 IAB-MT blocking and selectivity requirements**

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

**Abstract:**

In this contribution we discuss the remaining open aspects of in-band selectivity requirements.

**Discussion:**

.

**Decision: Noted.**

**R4-2007572 IAB-MT REFSENS**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

in this paper, the remaining issue for IAB-MT REFSENS is discussed.

**Discussion:**

.

**Decision: Noted.**

**R4-2007900 IAB-MT LA FR2 Rx sensitivity requirement.**

*Type: discussion For: Discussion  
 Source: Huawei*

**Abstract:**

Discuss the gain range of the IAB-MT local area node

**Discussion:**

.

**Decision: Noted.**

**R4-2007901 FR1 IAB-MT sensitivity**

*Type: discussion For: Discussion  
 Source: Huawei*

**Abstract:**

Discuss the OTA REFSENS requirement applicability for FR1

**Discussion:**

.

**Decision: Noted.**

**R4-2007902 IAB-MT LA ACS and IBB**

*Type: discussion For: Approval  
 Source: Huawei*

**Abstract:**

Discuss the wanted signal level for ACS (and its relation to the IBB agreement)

**Discussion:**

.

**Decision: Noted.**

###### 6.5.2.2.3 TP to TS/TR [NR\_IAB-Core]

**R4-2007578 TP to TR 38.809: OTA In-band blocking**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

in this paper, the TP for the OTA IBB is proposed.

**Discussion:**

.

**Decision: Revised to R4-2008792 (from R4-2007578).**

**R4-2008792 TP to TR 38.809: OTA In-band blocking**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

in this paper, the TP for the OTA IBB is proposed.

**Discussion:**

.

**Decision: Return to.**

**R4-2007580 TP to TR 38.809: radiated RX spurious**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

in this paper, the TP for the radiated spurious is proposed.

**Discussion:**

.

**Decision: Revised to R4-2008794 (from R4-2007580).**

**R4-2008794 TP to TR 38.809: radiated RX spurious**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

in this paper, the TP for the radiated spurious is proposed.

**Discussion:**

.

**Decision: Return to.**

**R4-2007581 TP to TS 38.174: OTA ACS**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, the TP for the OTA ACS is proposed.

**Discussion:**

.

**Decision: Revised to R4-2008795 (from R4-2007581).**

**R4-2008795 TP to TS 38.174: OTA ACS**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, the TP for the OTA ACS is proposed.

**Discussion:**

.

**Decision: Return to.**

**R4-2007582 TP to TS 38.174: OTA RX spurious**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, the TP for the OTA RX spurious is proposed.

**Discussion:**

.

**Decision: Revised to R4-2008796 (from R4-2007582).**

**R4-2008796 TP to TS 38.174: OTA RX spurious**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, the TP for the OTA RX spurious is proposed.

**Discussion:**

.

**Decision: Return to.**

**R4-2007583 TP to TR 38.809: OTA ACS**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

in this paper, the TP for the OTA ACS spurious is proposed.

**Discussion:**

.

**Decision: Revised to R4-2008797 (from R4-2007583).**

**R4-2008797 TP to TR 38.809: OTA ACS**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

in this paper, the TP for the OTA ACS spurious is proposed.

**Discussion:**

.

**Decision: Return to.**

**R4-2007584 TP to TS 38.174: OTA Inband blocking**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, the TP for the OTA IBB is proposed.

**Discussion:**

.

**Decision: Revised to R4-2008798 (from R4-2007584).**

**R4-2008798 TP to TS 38.174: OTA Inband blocking**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Ericsson*

**Abstract:**

in this paper, the TP for the OTA IBB is proposed.

**Discussion:**

.

**Decision: Return to.**

**R4-2007905 TP to TS 38.174 -IAB-DU TX dynamic range**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Huawei*

**Abstract:**

Tp to TS on clause allocated to Huawei

**Discussion:**

.

**Decision: Return to.**

**R4-2007906 TP to TS 38.174 -IAB-MT TX dynamic range**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Huawei*

**Abstract:**

Tp to TS on clause allocated to Huawei

**Discussion:**

.

**Decision: Return to.**

**R4-2007907 TP to TS 38.174 -IAB-DU RX sensitivity**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Huawei*

**Abstract:**

Tp to TS on clause allocated to Huawei

**Discussion:**

.

**Decision: Revised to R4-2008800 (from R4-2007907).**

**R4-2008800 TP to TS 38.174 -IAB-DU RX sensitivity**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Huawei*

**Abstract:**

Tp to TS on clause allocated to Huawei

**Discussion:**

.

**Decision: Return to.**

**R4-2007908 TP to TS 38.174 -IAB-DU Rx dynamic range**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Huawei*

**Abstract:**

Tp to TS on clause allocated to Huawei

**Discussion:**

.

**Decision: Revised to R4-2008801 (from R4-2007908).**

**R4-2008801 TP to TS 38.174 -IAB-DU Rx dynamic range**

*Type: pCR For: Approval  
 38.174 v0.0.1  
 Source: Huawei*

**Abstract:**

Tp to TS on clause allocated to Huawei

**Discussion:**

.

**Decision: Return to.**

#### 6.5.4 EMC core requirements [NR\_IAB-Core]

**R4-2008732 WF on IAB EMC**

*Type: other For: Approval  
 Source: ZTE*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2007054 Discussion on IAB EMC requirements**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

Discussion on IAB EMC requirements

**Discussion:**

.

**Decision: Noted.**

**R4-2007055 TP to TR 38.809 on IAB EMC Emissions**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP to TR 38.809 including text agreements on IAB EMC Emissions

**Discussion:**

.

**Decision: Revised to R4-2008730 (from R4-2007055).**

**R4-2008730 TP to TR 38.809 on IAB EMC Emissions**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP to TR 38.809 including text agreements on IAB EMC Emissions

**Discussion:**

.

**Decision: Return to.**

**R4-2007056 TP to TR 38.809 on IAB EMC Immunity**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP to TR 38.809 including text agreements on IAB EMC Immunity

**Discussion:**

.

**Decision: Noted.**

**R4-2007057 TP to TR 38.809 on IAB EMC General**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: Ericsson*

**Abstract:**

TP to TR 38.809 including text agreements on IAB EMC discussion

**Discussion:**

.

**Decision: Noted.**

**R4-2007538 [IAB EMC]further discussion on IAB EMC emission requirement**

*Type: discussion For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

**R4-2007539 [IAB EMC]further discussion on IAB EMC radiated immunity requirement**

*Type: discussion For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

**R4-2007540 [IAB EMC]on how to handle IAB EMC**

*Type: discussion For: Approval  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

**R4-2007541 [IAB EMC]TP to TR IAB EMC emission requirements**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Noted.**

**R4-2007542 [IAB EMC]TP to TR IAB EMC immunity requirements**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Revised to R4-2008731 (from R4-2007542).**

**R4-2008731 [IAB EMC]TP to TR IAB EMC immunity requirements**

*Type: pCR For: Approval  
 38.809 v0.1.0  
 Source: ZTE Corporation*

**Discussion:**

.

**Decision: Return to.**

### 6.7 UE power saving in NR [NR\_UE\_pow\_sav]

#### 6.7.3 Demodulation and CSI requirements (38.101-4) [NR\_UE\_pow\_sav-Perf

**R4-2008705 Email discussion summary for [95e][316] NR\_UE\_pow\_sav\_Demod**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008886 Email discussion summary for [95e][316] NR\_UE\_pow\_sav\_Demod**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008802 WF on power saving demodulation**

*Type: other For: Approval  
 Source: CATT*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008803 Simulation assumption for PDCCH-WUS test**

*Type: other For: Approval  
 Source: Media Tek*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2006199 Further discussion on demod test case with MIMO layer adaptation**

*Type: discussion For: Discussion  
 38.101-4 v..  
 Source: Apple*

**Discussion:**

.

**Decision: Noted.**

**R4-2006200 CR on max MIMO layer assumption in TS38.101-4**

*Type: CR For: Agreement  
 38.101-4 v16.0.0 CR-0042 Cat: F (Rel-16)  
  
 Source: Apple*

**Session Chair: Cover page error**

**Discussion:**

.

**Decision: Revised to R4-2008804 (from R4-2006200).**

**R4-2008804 CR on max MIMO layer assumption in TS38.101-4**

*Type: CR For: Agreement  
 38.101-4 v16.0.0 CR-0042 Cat: F (Rel-16)  
  
 Source: Apple*

**Discussion:**

.

**Decision: Return to.**

**R4-2006245 Further discussion on PDCCH-WUS demodulation test for power saving**

*Type: discussion For: Discussion  
 38.101-4 v..  
 Source: CATT*

**Discussion:**

.

**Decision: Noted.**

**R4-2006246 Applicability of 4Rx demodulation performance for UEs with max MIMO layer adaption**

*Type: discussion For: Discussion  
 38.101-4 v..  
 Source: CATT*

**Discussion:**

.

**Decision: Noted.**

**R4-2006811 Demodulation on UE power saving**

*Type: discussion For: Discussion  
 Source: CMCC*

**Discussion:**

.

**Decision: Noted.**

**R4-2006813 Discussion on performance requirements for PDCCH-WUS**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Discussion:**

.

**Decision: Noted.**

**R4-2007229 Discussion on the performance requirements for NR power saving**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007270 Discussion on demod requirement impact of UE power saving**

*Type: discussion For: Discussion  
 Source: vivo*

**Discussion:**

.

**Decision: Noted.**

**R4-2007381 Demodulation requirements for 4Rx UEs with maxMIMO-layers**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the 4Rx UE demodulation performance for UEs with max MIMO layer adaption capability.

**Discussion:**

.

**Decision: Noted.**

**R4-2007494 Impact of MIMO layer adaptation on demod requirements**

*Type: discussion For: (not specified)  
 Source: Qualcomm*

**Discussion:**

.

**Decision: Noted.**

### 6.9 Physical layer enhancements for NR URLLC [NR\_L1enh\_URLLC-Core]

#### 6.9.1 Demodulation and CSI requirements [NR\_L1enh\_URLLC-Perf]

**R4-2008706 Email discussion summary for [95e][317] NR\_L1enh\_URLLC\_Demod\_Part1**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008887 Email discussion summary for [95e][317] NR\_L1enh\_URLLC\_Demod\_Part1**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008805 WF on ultra-low BLER requirements**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008806 Simulation results summary for ULRRC Ultra-Low BLER test**

*Type: other For: Information  
 Source: Ericsson*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008707 Email discussion summary for [95e][318] NR\_L1enh\_URLLC\_Demod\_Part2**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008888 Email discussion summary for [95e][318] NR\_L1enh\_URLLC\_Demod\_Part2**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008807 Way forward on NR URLLC UE performance requirements**

*Type: other For: Approval  
 Source: Intel*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008808 Simulation assumptions for NR URLLC UE performance requirements test cases**

*Type: other For: Approval  
 Source: Intel*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008809 Summary of simulation results for NR URLLC UE FR1 performance requirements**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008810 Way forward on NR URLLC BS performance requirements**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008811 Simulation assumptions for NR URLLC BS performance requirements test cases**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008812 Summary of simulation results for NR URLLC BS FR1 performance requirements**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2007593 Discussion on URLLC UE requirements applicability**

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

**Discussion:**

.

**Decision: Noted.**

##### 6.9.1.1 Performance requirements with ultra-low BLER [NR\_L1enh\_URLLC-Perf]

**R4-2006526 Discussion on URLLC requirements for Ultra-low BLER**

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

**Discussion:**

.

**Decision: Noted.**

###### 6.9.1.1.1 UE demodulation and CSI requirements (38.101-4) [NR\_L1enh\_URLLC-Perf]

**R4-2006207 On UE demodulation and CSI requirements with Ultra-low BLER**

*Type: discussion For: Discussion  
 Source: Apple*

**Discussion:**

.

**Decision: Noted.**

**R4-2006656 Views on URLLC Ultra-low BLER Test Cases**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007190 Discussion and simulation on URLLC UE high reliability with ultra-low BLER**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Discussion on the open issues for URLLC high reliability with ultra-low BLER target for UE

**Discussion:**

.

**Decision: Noted.**

**R4-2007933 Discussion on UE URLLC performance requirements for Ultra low BLER**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

In this paper we provide simulation results and our views on Ultra-low BLER UE test

**Discussion:**

.

**Decision: Noted.**

###### 6.9.1.1.2 BS demodulation requirements (38.104) [NR\_L1enh\_URLLC-Perf]

**R4-2006060 On NR Rel-16 high reliability BS demodulation test feasibility and requirements**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we have provided our views on various open NR Rel-16 high reliability BS demodulation test feasibility and requirements issues. In particular we commented on how to capture “X” in the specification, BS TDD patterns, the number of BS t

**Discussion:**

.

**Decision: Noted.**

**R4-2006061 NR Rel-16 non-relaxed high reliability BS demodulation requirement simulation results**

*Type: discussion For: Information  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we provide the results of our NR URLLC performance requirements with Ultra-Low BLER simulation campaigns.

**Discussion:**

.

**Decision: Noted.**

**R4-2006325 Discussion and initial simulation results for URLLC ultra-low BLER requirement**

*Type: discussion For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision: Noted.**

**R4-2007187 Views on NR BS performance for ultra-low BLER**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007191 Discussion and simulation on URLLC BS high reliability with ultra-low BLER**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Discussion on the open issues for URLLC high reliability with ultra-low BLER target for BS

**Discussion:**

.

**Decision: Noted.**

**R4-2007364 URLLC BS ultra-low BLER test**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

Proposal for the ultra-low BLER requirement

**Discussion:**

.

**Decision: Noted.**

##### 6.9.1.2 Performance requirements with higher BLER [NR\_L1enh\_URLLC-Perf]

###### 6.9.1.2.1 UE demodulation and CSI requirements (38.101-4) [NR\_L1enh\_URLLC-Perf]

**R4-2006208 On UE demodulation and CSI requirements with higher BLER**

*Type: discussion For: Discussion  
 Source: Apple*

**Discussion:**

.

**Decision: Noted.**

**R4-2006527 Discussion on UE performance requirements for URLLC**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007141 Views on UE demodulation for URLLC requirements**

*Type: discussion For: Discussion  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision: Noted.**

**R4-2007192 Discussion and simulation on URLLC UE PDSCH demodulation requirements for high reliability with higher BLER**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Provide the simulation results for different MCS

**Discussion:**

.

**Decision: Noted.**

**R4-2007193 Discussion and simulation on URLLC UE performance requirements for PDSCH mapping Type B and processing capabiltiy 2**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Provide the simulation results for defined test

**Discussion:**

.

**Decision: Noted.**

**R4-2007194 Discussion on URLLC UE performance requirements for low latency for pre-emption**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

provide the simulation reuslts with different pre-emption periodicity and MCS

**Discussion:**

.

**Decision: Noted.**

**R4-2007195 Discussion on URLLC UE CQI reporting requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Discussion on the open issues.

**Discussion:**

.

**Decision: Noted.**

**R4-2007801 Views on URLLC High BLER Test Cases**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007929 Discussion on UE performance requirements for Pre-emption**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

In this paper we provide simulation results, and our views on pre-emption feature for URLLC.

**Discussion:**

.

**Decision: Noted.**

**R4-2007930 Discussion on UE URLLC performance requirements for Slot Aggregation**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

In this paper we provide simulation results, and our views on slot aggregation feature for URLLC.

**Discussion:**

.

**Decision: Noted.**

**R4-2007931 URLLC UE test applicability and specification layout**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper we provide our views on how URLLC testing framework should be captured in the 38.101-4 UE performance specification.

**Discussion:**

.

**Decision: Noted.**

**R4-2007932 Views on UE URLLC performance requirements for Type B and PDSCH capability 2**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

In this paper we provide simulation results and our views on Type B and PDSCH processing capability 2

**Discussion:**

.

**Decision: Noted.**

###### 6.9.1.2.2 BS demodulation requirements (38.104) [NR\_L1enh\_URLLC-Perf]

**R4-2006062 On NR Rel-16 relaxed high reliability and low latency BS demodulation requirements**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we have provided our views on various open issue in URLLC BS demodulation requirements for high reliability but with higher BLER and/or lower confidence level and low latency. In particular we commented on PUSCH aggregation factors, a

**Discussion:**

.

**Decision: Noted.**

**R4-2006326 View on remain issues for URLLC performance requirements in NR Rel-16**

*Type: discussion For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision: Noted.**

**R4-2006528 Discussion on BS performance requirements for URLLC**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2006582 NR Rel-16 relaxed high reliability and low latency BS demodulation requirement simulation results**

*Type: discussion For: Information  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we provide the results of our NR Rel-16 relaxed high reliability and low latency BS demodulation requirements simulation campaigns.

**Discussion:**

.

**Decision: Noted.**

**R4-2007188 Views on NR BS performance for high-reliability and low-latency**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007196 Discussion and simulation on URLLC BS PUSCH demodulation requirements for high reliability with higher BLER**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

provide the simulation results for defined test

**Discussion:**

.

**Decision: Noted.**

**R4-2007197 Discussion and simulation on URLLC BS performance requirements for low latency**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

provide the simulation results for defined test

**Discussion:**

.

**Decision: Noted.**

**R4-2007362 URLLC in BS specifications**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Discussion on how to capture the new requirements in the BS specs

**Discussion:**

.

**Decision: Noted.**

**R4-2007363 URLLC BS demod rquirements**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Proposals for the high BLER requirements

**Discussion:**

.

**Decision: Noted.**

### 6.11 Enhancements on MIMO for NR [NR\_eMIMO]

#### 6.11.3 Demodulation and CSI requirements (38.101-4) [NR\_eMIMO-Perf]

**R4-2008708 Email discussion summary for [95e][319] NR\_eMIMO\_Demod**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2008889 Email discussion summary for [95e][319] NR\_eMIMO\_Demod**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008813 WF for general and PDSCH requirements with Single-DCI SDM scheme and Multi-DCI transmission schemes (eMBB)**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008814 WF for PDSCH requirements with Single-DCI based multi-TRP/Panel transmission schemes (URLLC)**

*Type: other For: Approval  
 Source: Intel*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008815 Simulation assumption for PDSCH requirements with Single-DCI SDM scheme and Multi-DCI transmission schemes**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008816 WF for PMI test case with Rel-16 Type II codebook**

*Type: other For: Approval  
 Source: Qualcomm*

**Abstract:**

**Discussion:**

**Decision: Return to.**

##### 6.11.3.1 General [NR\_eMIMO-Perf]

**R4-2006627 Views on test cases for eMIMO**

*Type: discussion For: (not specified)  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision: Noted.**

##### 6.11.3.2 Demodulation requirements [NR\_eMIMO-Perf]

**R4-2006314 Test case design for PDSCH requirements with Multi-TRP/Pannel transmission**

*Type: discussion For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision: Noted.**

**R4-2006316 Simulation results for Multi-TRP/Pannel tranmission**

*Type: discussion For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision: Noted.**

**R4-2006539 Views on UE demodulation requirements for NR eMIMO**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2006814 Discussion on PDSCH performance requirements for Rel-16 eMIMO**

*Type: discussion For: Discussion  
 Source: MediaTek inc.*

**Discussion:**

.

**Decision: Noted.**

**R4-2007198 Discussion on Multi-DCI based PDSCH performance requirements for Multi-TRP in eMIMO**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007199 Discussion on test scopes and general test setup for PDSCH requirements of NR eMIMO**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007385 PDSCH requirements with multi-DCI based multi-TRP/Panel transmission**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the PDSCH demodulation requirements for eMBB multi-TRP transmission scheduled by multi-DCI.

**Discussion:**

.

**Decision: Noted.**

**R4-2007386 PDSCH requirements with single-DCI based multi-TRP/Panel transmission**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the PDSCH demodulation requirements for eMBB multi-TRP transmission scheduled by single-DCI.

**Discussion:**

.

**Decision: Noted.**

##### 6.11.3.3 CSI requirements [NR\_eMIMO-Perf]

**R4-2006315 Test case design for PMI test case with Rel-16 Type II codebook**

*Type: discussion For: Approval  
 Source: Samsung*

**Discussion:**

.

**Decision: Noted.**

**R4-2006317 Simulation results for PMI test cases with Rel-16 Type II codebook**

*Type: discussion For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision: Noted.**

**R4-2007200 Discussion on PMI reporting test for eMIMO**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007936 Evaluation on test setup for Rel-16 Type II codebook**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper we evaluate the test setup for Rel-16 Type II codebook and provide our views

**Discussion:**

.

**Decision: Noted.**

**R4-2007937 Simulation results for Rel-16 Type II codebook**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

In this paper we provide our simulation results for Rel-16 Type II codebook

**Discussion:**

.

**Decision: Noted.**

### 6.12 Add support of NR DL 256QAM for FR2 [NR\_DL256QAM\_FR2]

#### 6.12.4 Demodulation and CSI requirements (38.101-4) [NR\_DL256QAM\_FR2-Perf]

**R4-2008709 Email discussion summary for [95e][320] NR\_DL256QAM\_FR2\_Demod**

*Type: other For: Information  
 Source: Moderator (China Telecomm)*

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2009040 Email discussion summary for [95e][320] NR\_DL256QAM\_FR2\_Demod**

*Type: other For: Information  
 Source: Moderator (China Telecomm)*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008817 WF on UE demodulation and CSI reporting requirements for FR2 DL 256QAM**

*Type: other For: Approval  
 Source: China Telecomm*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2006041 UE demodulation and CSI reporting requirements for FR2 DL 256QAM**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Discussion:**

.

**Decision: Noted.**

**R4-2006529 Discussion on UE performance requirements for FR2 DL 256QAM**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007138 Views on DL 256QAM requirements for FR2**

*Type: discussion For: Discussion  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision: Noted.**

**R4-2007230 Discussion on the performance requirements for NR DL 256QAM for FR2**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007920 TP to TR 38.883: Section 7 Demod test challenges**

*Type: discussion For: Approval  
 38.883 v..  
 Source: Ericsson*

**Abstract:**

TP to TR for 38.883 on Demod testability challanges

**Discussion:**

.

**Decision: Revised to R4-2008818 (from R4-2007920).**

**R4-2008818 TP to TR 38.883: Section 7 Demod test challenges**

*Type: discussion For: Approval  
 38.883 v..  
 Source: Ericsson*

**Abstract:**

TP to TR for 38.883 on Demod testability challanges

**Discussion:**

.

**Decision: Return to.**

### 6.17 NR support for high speed train scenario [NR\_HST]

#### 6.17.2 Demodulation and CSI requirements (38.101-4 / 38.104) [NR\_HST-Perf]

**R4-2008710 Email discussion summary for [95e][321] NR\_HST\_Demod\_UE**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2009041 Email discussion summary for [95e][321] NR\_HST\_Demod\_UE**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008820 WF on NR HST demodulation requirements**

*Type: other For: Approval  
 Source: CMCC*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008711 Email discussion summary for [95e][322] NR\_HST\_Demod\_BS**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2009042 Email discussion summary for [95e][322] NR\_HST\_Demod\_BS**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008821 WF on Rel-16 NR HST BS demodulation requirements**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

##### 6.17.2.1 UE demodulation and CSI requirements (38.101-4) [NR\_HST-Perf]

**R4-2006612 Views on Tests for High Speed Train Scenarios**

*Type: discussion For: (not specified)  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision: Noted.**

**R4-2006768 Further discussion on UE demodulation for NR HST**

*Type: discussion For: Approval  
 Source: CMCC*

**Discussion:**

.

**Decision: Noted.**

**R4-2007137 Views on applicability rule for HST demodulation requirements**

*Type: discussion For: Discussion  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision: Noted.**

**R4-2007234 Discussion on general issues for NR UE HST performance requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007274 Discussion on UE demodulation requirements for NR HST**

*Type: discussion For: Discussion  
 Source: vivo*

**Discussion:**

.

**Decision: Noted.**

**R4-2007384 Release independence and applicability rule for NR HST demodulation requirements**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the release independence requirements applicable for NR HST.

**Discussion:**

.

**Decision: Noted.**

**R4-2007921 Addition of Rel-16 HST FRC**

*Type: draftCR For: Endorsement  
 38.101-4 v16.0.0  
 Source: Ericsson*

**Abstract:**

In this contribution we provide the FRCs for the new Rel-16 HST test cases

**Discussion:**

.

**Decision: Revised to R4-2008819 (from R4-2007921).**

**R4-2008819 Addition of Rel-16 HST FRC**

*Type: draftCR For: Endorsement  
 38.101-4 v16.0.0  
 Source: Ericsson*

**Abstract:**

In this contribution we provide the FRCs for the new Rel-16 HST test cases

**Discussion:**

.

**Decision: Return to.**

###### 6.17.2.1.1 Scenarios and transmission schemes [NR\_HST-Perf]

**R4-2006534 Views on DL demodulation requirements for DPS transmission scheme**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007233 Discussion on UE performance requirements for DPS transmission scheme**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007382 Transmission scheme in NR PDSCH demodulation requirements for HST**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the transmission schemes used in PDSCH demodulation requirements for NR HST.

**Discussion:**

.

**Decision: Noted.**

###### 6.17.2.1.2 Requirements for HST-SFN [NR\_HST-Perf]

**R4-2006535 Views on NR UE demodulation requirements for HST-SFN scenario**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007135 Views on HST-SFN**

*Type: discussion For: Discussion  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision: Noted.**

**R4-2007235 Discussion and simulation results on NR UE HST performance requirements for SFN**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

###### 6.17.2.1.3 Requirements for HST single tap [NR\_HST-Perf]

**R4-2006536 Views on NR UE demodulation requirements for HST single tap scenario**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007136 Views on HST single-tap**

*Type: discussion For: Discussion  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision: Noted.**

**R4-2007236 Discussion and simulation results on NR UE HST performance requirements for single-tap**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007383 Discussion on PDSCH demodulation performance with HST single tap**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution discusses the UE receiver assumption for PDSCH demodulation performance with HST single tap.

**Discussion:**

.

**Decision: Noted.**

**R4-2007923 Simulation results for NR UE HST single tap**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

In this contribution we provide simulation results and our views on HST single tap

**Discussion:**

.

**Decision: Noted.**

###### 6.17.2.1.4 Requirements for multi-path fading channels [NR\_HST-Perf]

**R4-2006537 Simulation results for HST multi-path fading channel scenario**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007237 Simulation results on NR UE HST performance requirements for multi-path fading channel**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007922 Simulation results for HST Multipath fading channels**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

In this contribution we provide simulation results and our views on HST multipath

**Discussion:**

.

**Decision: Noted.**

###### 6.17.2.1.5 Network assistance and UE capability signalling [NR\_HST-Perf]

**R4-2006538 Views on UE demodulation requirements for NR HST**

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

**Discussion:**

.

**Decision: Noted.**

##### 6.17.2.2 BS demodulation requirements (38.104) [NR\_HST-Perf]

**R4-2006254 Summary of ideal and impairment results for NR HST demodulation requirements**

*Type: discussion For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision: Revised to R4-2008822 (from R4-2006254).**

**R4-2008822 Summary of ideal and impairment results for NR HST demodulation requirements**

*Type: discussion For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2006266 Discussion on high speed support declaration for NR HST**

*Type: discussion For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision: Noted.**

**R4-2006267 Discussion on multi-path fading channel for NR HST**

*Type: discussion For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision: Noted.**

**R4-2006270 CR for TS 38.141-1, Introduction of high speed support declaration for NR HST**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0122 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Revised to R4-2008871 (from R4-2006270).**

**R4-2008871 CR for TS 38.141-1, Introduction of high speed support declaration for NR HST**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0122 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2006271 CR for TS 38.141-2, Introduction of high speed support declaration for NR HST**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0154 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Revised to R4-2008872 (from R4-2006271).**

**R4-2008872 CR for TS 38.141-2, Introduction of high speed support declaration for NR HST**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0154 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2006769 Discussion on BS demodulation for NR HST**

*Type: discussion For: Approval  
 Source: CMCC*

**Discussion:**

.

**Decision: Noted.**

###### 6.17.2.2.1 PUSCH requirements [NR\_HST-Perf]

**R4-2006052 On NR Rel-16 HST BS demodulation PUSCH requirements**

*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 we commented on, the applicability rules and declaration categories, the 1T1R requirement configurations, DFT-s-OFDM introduction, and multi-path requirement i

**Discussion:**

.

**Decision: Noted.**

**R4-2006053 CR for 38.104: HST PUSCH demodulation requirements**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0165 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

CR implementing endorsed draftCR R4-2005537.

- Updated 350kh requirement TBDs to capture values agreed in last meeting. Remains in square brackets [R4-2003270].

- Captured agreement of “The performance requirements for PUSCH for high speed train shall onl

**Discussion:**

.

**Decision: Revised to R4-2008823 (from R4-2006053).**

**R4-2008823 CR for 38.104: HST PUSCH demodulation requirements**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0165 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

CR implementing endorsed draftCR R4-2005537.

- Updated 350kh requirement TBDs to capture values agreed in last meeting. Remains in square brackets [R4-2003270].

- Captured agreement of “The performance requirements for PUSCH for high speed train shall onl

**Discussion:**

.

**Decision: Return to.**

**R4-2006054 CR for 38.104: HST PUSCH demodulation FRC and channel model annexes**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0166 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

CR implementing endorsed draftCR R4-2005538.

- Removed square brackets from l0=2 or 3 option in FRC.

- fixed typo: “table A.4.2A” -> “table A.4-2A”

- Added new 500kph propagation models (NR500) with corresponding figures and text.

**Discussion:**

.

**Decision: Revised to R4-2008824 (from R4-2006054).**

**R4-2008824 CR for 38.104: HST PUSCH demodulation FRC and channel model annexes**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0166 Cat: B (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

CR implementing endorsed draftCR R4-2005538.

- Removed square brackets from l0=2 or 3 option in FRC.

- fixed typo: “table A.4.2A” -> “table A.4-2A”

- Added new 500kph propagation models (NR500) with corresponding figures and text.

**Discussion:**

.

**Decision: Return to.**

**R4-2006258 Simulation results for NR HST PUSCH demodulation requirement**

*Type: discussion For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision: Noted.**

**R4-2006265 Discussion on 1T1R for tunnel scenario for NR HST PUSCH**

*Type: discussion For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision: Noted.**

**R4-2006268 Discussion on the introduction of DFT-s-OFDM for NR HST PUSCH**

*Type: discussion For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision: Noted.**

**R4-2006323 Discussion and simulation results for NR HST PUSCH**

*Type: discussion For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision: Noted.**

**R4-2006666 Further discussion on HST PUSCH BS demodulation requirements**

*Type: discussion For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision: Noted.**

**R4-2006833 Discussion on HST PUSCH remain isses**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

declarations and configurations for HST PUSCH

**Discussion:**

.

**Decision: Noted.**

**R4-2006836 Introduction of conformance tests for 350kph and 500kph HST**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0159 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

CR for 38.141-2 Introduction of conformance tests for 350kph and 500kph HST

**Session chair: missing CR number in cover page**

**Discussion:**

.

**Decision: Revised to R4-2008825 (from R4-2006836).**

**R4-2008825 Introduction of conformance tests for 350kph and 500kph HST**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0159 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

CR for 38.141-2 Introduction of conformance tests for 350kph and 500kph HST

**Discussion:**

.

**Decision: Return to.**

**R4-2006837 HST PUSCH demodulation FRC and channel condition annex**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0160 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

CR for 38.141-2 HST PUSCH demodulation FRC and channel condition annex

**Discussion:**

.

**Decision: Revised to R4-2008826 (from R4-2006837).**

**R4-2008826 HST PUSCH demodulation FRC and channel condition annex**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0160 Cat: B (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

CR for 38.141-2 HST PUSCH demodulation FRC and channel condition annex

**Discussion:**

.

**Decision: Return to.**

**R4-2007182 Views on NR PUSCH for high speed**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007183 CR for TS 38.141-1: Introduction of NR PUSCH performance requirements for HST**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0127 Cat: B (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision: Revised to R4-2008827 (from R4-2007183).**

**R4-2008827 CR for TS 38.141-1: Introduction of NR PUSCH performance requirements for HST**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0127 Cat: B (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision: Return to.**

**R4-2007184 CR for TS 38.141-1: Introduction of NR PUSCH performance Annex including FRC and channel model for HST**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0128 Cat: B (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision: Revised to R4-2008828 (from R4-2007184).**

**R4-2008828 CR for TS 38.141-1: Introduction of NR PUSCH performance Annex including FRC and channel model for HST**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0128 Cat: B (Rel-16)  
  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision: Return to.**

**R4-2007231 Discussion and simulation results on the NR HST PUSCH performance requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007422 Views on PUSCH demodulation requirements for HST multi-path fading channel conditions**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007423 PUSCH simulation results for HST tunnel scenario**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2008206 Simulation results for NR HST PUSCH performance requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

###### 6.17.2.2.2 PRACH requirements [NR\_HST-Perf]

**R4-2006055 On NR Rel-16 HST BS demodulation PRACH requirements**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we have provided our views on various open PRACH HST issues. In particular we commented on, the applicability rules and declaration categories, and TDLC300-100 propagation condition.

**Discussion:**

.

**Decision: Noted.**

**R4-2006667 Further discussion on HST PRACH BS demodulation requirements**

*Type: discussion For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision: Noted.**

**R4-2006834 Discussion on HST PRACH remain isses**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

structures, declarations and configurations for HST PRACH

**Discussion:**

.

**Decision: Noted.**

**R4-2007185 Views on NR PRACH for high speed**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007204 CR for 38.104 Introduction of PRACH demodulation requirements for NR HST**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0186 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Resubmission of endorsed draftCR R4-2005539

**Discussion:**

.

**Decision: Revised to R4-2008829 (from R4-2007204).**

**R4-2008829 CR for 38.104 Introduction of PRACH demodulation requirements for NR HST**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0186 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Resubmission of endorsed draftCR R4-2005539

**Discussion:**

.

**Decision: Return to.**

**R4-2007205 CR for 38.141-1 Introduction of PRACH conducted conformance testing for NR HST**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0129 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Resubmission of endorsed draftCR R4-2005540

**Discussion:**

.

**Decision: Revised to R4-2008830 (from R4-2007205).**

**R4-2008830 CR for 38.141-1 Introduction of PRACH conducted conformance testing for NR HST**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0129 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Resubmission of endorsed draftCR R4-2005540

**Discussion:**

.

**Decision: Return to.**

**R4-2007206 CR for 38.141-2 Introduction of PRACH radiated conformance testing for NR HST**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0166 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Resubmission of endorsed draftCR R4-2005541

**Discussion:**

.

**Decision: Revised to R4-2008831 (from R4-2007206).**

**R4-2008831 CR for 38.141-2 Introduction of PRACH radiated conformance testing for NR HST**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0166 Cat: F (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Resubmission of endorsed draftCR R4-2005541

**Discussion:**

.

**Decision: Return to.**

**R4-2007207 Discussion on open issues of NR HST PRACH**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

###### 6.17.2.2.3 UL timing adjustment requirements [NR\_HST-Perf]

**R4-2006056 On NR Rel-16 HST BS demodulation UL timing adjustment requirements**

*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 we commented on the section organization, applicability rules, and declaration categories, as well as, the inclusion of scenario X, and additional SCS.CBW comb

**Discussion:**

.

**Decision: Noted.**

**R4-2006255 CR for TS 38.141-2: introduction of NR PUSCH UL timing adjustment**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0152 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Revised to R4-2008832 (from R4-2006255).**

**R4-2008832 CR for TS 38.141-2: introduction of NR PUSCH UL timing adjustment**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0152 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2006256 CR for TS 38.141-2: appendix for NR PUSCH UL timing adjustment**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0153 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Revised to R4-2008833 (from R4-2006256).**

**R4-2008833 CR for TS 38.141-2: appendix for NR PUSCH UL timing adjustment**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0153 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2006257 Simulation results for NR PUSCH UL timing adjustment demodulation requirement**

*Type: discussion For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision: Noted.**

**R4-2006269 Discussion on the remaining issues of NR HST PUSCH UL TA**

*Type: discussion For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision: Noted.**

**R4-2006321 CR on UL timing adjustment conducted performance requirement for TS 38.141-1**

*Type: draftCR For: Endorsement  
 38.141-1 v16.3.0  
 Source: Samsung*

**Discussion:**

.

**Decision: Revised to R4-2008834 (from R4-2006321).**

**R4-2008834 CR on UL timing adjustment conducted performance requirement for TS 38.141-1**

*Type: draftCR For: Endorsement  
 38.141-1 v16.3.0  
 Source: Samsung*

**Discussion:**

.

**Decision: Return to.**

**R4-2006322 CR on FRC and moving progagation condition for UL timing adjustment for TS 38.141-1**

*Type: draftCR For: Endorsement  
 38.141-1 v16.3.0  
 Source: Samsung*

**Discussion:**

.

**Decision: Revised to R4-2008835 (from R4-2006322).**

**R4-2008835 CR on FRC and moving progagation condition for UL timing adjustment for TS 38.141-1**

*Type: draftCR For: Endorsement  
 38.141-1 v16.3.0  
 Source: Samsung*

**Discussion:**

.

**Decision: Return to.**

**R4-2006324 Discussion and simulation results for NR HST UL timing requirement**

*Type: discussion For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision: Noted.**

**R4-2006664 CR for 38.104: Performance requirements for UL timing adjustment**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0187 Cat: B (Rel-16)  
  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision: Revised to R4-2008836 (from R4-2006664).**

**R4-2008836 CR for 38.104: Performance requirements for UL timing adjustment**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0187 Cat: B (Rel-16)  
  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision: Return to.**

**R4-2006665 Further discussion on BS demodulation performance requirements for UL TA**

*Type: discussion For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision: Noted.**

**R4-2006835 Discussion on HST UL TA remain isses**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

structures, declarations and configurations for HST UL TA

**Discussion:**

.

**Decision: Noted.**

**R4-2007186 Views on NR PUSCH for UL timing adjustment**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2007232 Discussion and simulation results on the NR HST UL timing performance requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

### 6.18 NR performance requirement enhancement [NR\_perf\_enh-Perf]

**R4-2008712 Email discussion summary for [95e][323] NR\_perf\_enh\_Demod\_UE**

*Type: other For: Information  
 Source: Moderator (China Telecomm)*

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2009043 Email discussion summary for [95e][323] NR\_perf\_enh\_Demod\_UE**

*Type: other For: Information  
 Source: Moderator (China Telecomm)*

**Abstract:**

**Discussion:**

**Decision: Return to.**

|  |
| --- |
| **GTW Session on May.29th**   * Issue 3-2-1: Test setup for type II PMI reporting requirements   + Option 1: Only use SU-MIMO test setup, i.e., one tested UE (CTC, Qualcomm, Huawei, Apple)   + Option 2: MU-MIMO based test setup,  i.e., one tested UE + one co-scheduled UE (generated by TE) (Ericsson, Verizon, Orange, VDF, TMUS)   Q1: From UE receiver processing aspect, whether there is difference among these two options?  Apple: We believe option 1 already meet test purpose to verify UE reporting PMI accuracy with Type II codebook. And no difference among option 1 and option 2 from UE processing aspect.  Huawei: Share similar view as Apple.  CTC: Share similar view as Apple.  E///: For MU-MIMO, UE need to take the inference for co-scheduled UE into account.  CTC: Seems What E/// would be advanced receiver; we suggest to first focus on baseline receiver type.  Whether UE will change PMI calculation processing with and without the present of co-schedule UE?  It’s RAN4 common understanding under the baseline UE receiver assumption, the PMI calculation processing will not been changed with and without co-schedule UE for Rel-16 test cases (for both Rel-15/Rel-16 Type II codebook test cases).  QC/Huawei/Apple: no change with the Rel-16 baseline receiver assumption not capable of interference cancellation.  E///: We should maximum overall SNR and overall system.  QC: UE only focus on SNR, not overall system.  What’s the receiver type assumption?   * Type 1: UE with Interference cancellation for Type II calculation * Type 2: UE without assumed interference cancellation for Type II codebook calculation   E///: The test purpose was to verify UE processing for type II codebook reporting under MU-MIMO set-up. No assumption for UE to handle interference  It’s RAN4 common understanding when defining requirements; the baseline receiver assumption is UE without interference cancellation capability with/without co-schedule UE for Rel-16 test cases.  Q2: How option 1 and option 2 can guarantee MU-MIMO NW scheduling performance?  Q3: What’s the detailed test set-up for option 2 especially how to model co-scheduled UE?  CTC: How null beamforming can be guaranteed by TE implementation, TE vendors feedback required.  Q4: Will the same test set-up applied for Rel-15/Rel-16 TyPe II codebook test cases?  Nokia: We are more care about Rel-16 Type II codebook. We are fine to start with single –user firstly.  CTC: We prefer same test set-up.  Q5: What’s the test purpose among option 1 and option 2?  CTC: we think same.  Q6: What’s the timeline for completing performance requirements with option 1 and option 2?  CTC: We do see urgency to complete the work as soon as possible as rapporteur and operator.  Keep these two options open; further discuss detailed test set-up and simulation assumption for option 1 and option 2 separately in 2nd round to facilitate evaluation work in future RAN4 meeting; and make decision among option 1 and option 2 in Q3 2020.   * TE vendors are encouraged to provide feedback for the test feasibility of option 2 set-up. * Proponents for each option need to provide technical analysis for how the test set-up can guarantee UE PMI reporting requirements with type II codebook for its intended purpose. * Issue 3-1-1: Whether to introduce subband PMI test for type I single-panel codebook   + Option 1: Introduce subband PMI requirements for 16 Tx ports (QC, Ericsson, Apple, Samsung, Intel)   + Option 2: Not introduce subband PMI requirements for 16Tx ports and covers 16Tx port requirements with wideband PMI (Huawei, Ericsson)   + Option 3: Note introduce PMI requirements for 16Tx ports (Samsung)   + Option 4: Introduce both subband and wideband PMI requirements for 16Tx ports (TMUS)   Q1: Do we need to differentiate UE performance with following wideband PMI and following sub-band PMI under this test case?  Apple/QC/Samsung/Intel: No need to differentiate UE performance, this is not test purpose. Sub-Band PMI can ensure test coverage for RAN1 feature.  Huawei: we need to differentiate performance. Type II codebook already covered sub-band PMI reporting.  Huawei: we observed that some companies’ results didn’t show gain with sub-band PMI compared to wideband PMI, meanwhile some other companies results show gain based on the agreed simulation assumption.  Option1:   * Introduce sub-band PMI test cases with current simulation assumption for 16 Tx port Type I PMI test case.   Samsung: we don’t agree with Huawei comment but will not object this agreement.   * Issue 2-1-2: Pcell configuration for CA normal PDSCH test   + For option 1, clarify what does it mean by saying “as per the real testing request”, and how to capture it in the spec.   + For option 2, clarify what is the issue to use option 2 for UE declaring the support of Pcell configurations in both carriers.   QC: For option 2. No issue, but no performance difference, option 1 is good comprise.  Intel: Share same view as QC. For option 1, we already similar rules in LTE specification. UE capability assumption? With option 1, we define requirements covering all the cases.  Huawei: Support larger SCS and smaller SCS in CA with mixed numerology it’s UE capability. It should follow UE capability. For FDD +TDD 15kHz +15kHz, no UE capability.  CTC: Regarding this capability, we share similar understanding as Huawei. UE always select test cases following UE capability. Here we are discussing if UE support both cases, then how to select.  It’s up to UE selection, or up to operator to select with option 1?  Intel: For UE capability, Support larger SCS and smaller SCS only applied for two PUCCH group, here we are introducing test cases with single PUCCH group.  Huawei: I check the 38.306, this is indicated with in a PUCCH group.  Action points for 2nd round:   * Further check the capability signalling * For option 1, how to decide the selected test cases? * Issue 5-3-1: Whether to define power imbalance requirement for FR1 intra-band non-contiguous EN-DC   + Views on whether to define the requirements     - Option 1: Yes (DCM, SoftBank)     - Option 2: No (QC)     - Option 3: More discussion is needed (Intel, HW)   + Feedback on the two questions in the 1st round:     - Whether it is feasible to assume single RF chain to receive two non-continuous carriers in co-located scenario?       * Yes: SoftBank, Intel, DCM         + SoftBank: the current spec does not prohibit the single RF receiver chain for intra-band non-contiguous EN-DC.     - If UE uses single RF chain, depending on channel spacing and LO allocation, whether or not the image issue can be observed?       * QC: It is questionable how image issue can be observed with non-contiguous EN-DC. But, we are open to discussion.       * DCM: In our understanding, Rx image issue can be observed with non-contiguous EN-DC. If the other companies say that the Rx image issue with non-contiguous EN-DC will not be observed in any case, we prefer to make agreement on this understanding. Otherwise, power imbalance requirement for FR1 intra-band non-contiguous EN-DC should be introduced.   Intel/Qualcomm: The issue only exist under certain configuration with certain band combinations, probably not band agonistic?  NTT DoCoMo: Since this issue still exist in some cases, why we can’t introduce test cases?  RAN4 agree to introduce test cases for power imbalance requirement for FR1 intra-band non-contiguous EN-DC with test applicable rules |

**R4-2008837 Way forward on release independent aspect for UE demodulation and CSI reporting requirements**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008838 Way forward on PDSCH CA normal demodulation requirements**

*Type: other For: Approval  
 Source: Intel*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008839 Simulation assumptions for NR normal CA UE performance requirements**

*Type: other For: Approval  
 Source: Intel*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008840 Summary of Normal CA simulation results (FR1 15 kHz FDD and TDD)**

*Type: other For: Information  
 Source: Intel*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008841 Summary of Normal CA simulation results (FR1 30 kHz TDD)**

*Type: other For: Information  
 Source: Intel*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008846 Way forward on PMI reporting requirements for Tx ports larger than 8 and up to 32**

*Type: other For: Approval  
 Source: Ericsson, Samsung*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008847 Simulation assumptions for NR PMI reporting requirements for more than 8 Tx ports**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008848 Way forward on UE power imbalance requirements for FR1 CA and EN-DC**

*Type: other For: Approval  
 Source: NTT DoCoMo*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008849 Way forward on CA CQI reporting requirements**

*Type: other For: Approval  
 Source: China Telecom*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008713 Email discussion summary for [95e][324] NR\_perf\_enh\_Demod\_BS**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2009044 Email discussion summary for [95e][324] NR\_perf\_enh\_Demod\_BS**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2006036 Updated CR work split for NR performance requirement enhancement WI**

*Type: discussion For: Approval  
 Source: China Telecom*

**Discussion:**

.

**Decision: Noted.**

#### 6.18.1 UE demodulation and CSI requirements (38.101-4) [NR\_perf\_enh-Perf]

**R4-2007220 Discussion on Release independent aspects for UE demod and CSI reporting requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per the approved WF R4-2005545, share our view on release independent aspects for PMI reporting

**Discussion:**

.

**Decision: Noted.**

##### 6.18.1.1 NR CA PDSCH requirements [NR\_perf\_enh-Perf]

**R4-2006037 On NR CA PDSCH normal demodulation requirements**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Discussion:**

.

**Decision: Noted.**

**R4-2006530 Discussion on NR CA UE demodulation requirements**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2006531 Summary of Normal CA simulation results (FR2)**

*Type: other For: Information  
 Source: Intel Corporation*

**Discussion:**

.

**Decision: Noted.**

**R4-2006628 Simulation Results for NR CA PDSCH Demodulation Performance Tests**

*Type: discussion For: (not specified)  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision: Noted.**

**R4-2006629 Views on NR CA PDSCH Demodulation Performance Tests**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2006808 Test applicability rule for NR CA PDSCH normal demodulation**

*Type: discussion For: Discussion  
 Source: CMCC*

**Discussion:**

.

**Decision: Noted.**

**R4-2007139 Views on PDSCH CA normal demodulation requirements**

*Type: discussion For: Discussion  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision: Noted.**

**R4-2007221 Discussion on HARQ timing for NR UE normal CA performance requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per the approved WF R4-2005546, share our views on HARQ timing for NR CA UE performance requirements

**Discussion:**

.

**Decision: Noted.**

**R4-2007222 Discussion on PDSCH CA normal demodulation requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

As per the approved WF R4-2005546, further share our views on left open issues

**Discussion:**

.

**Decision: Noted.**

**R4-2007223 draftCR for NR FR1 PDSCH CA normal demodulation requirements with 4Rx**

*Type: draftCR For: Endorsement  
 38.101-4 v15.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

Share our views on the specification structure for NR UE CA performance requirements

**Discussion:**

.

**Decision: Revised to R4-2008842 (from R4-2007223).**

**R4-2008842 draftCR for NR FR1 PDSCH CA normal demodulation requirements with 4Rx**

*Type: draftCR For: Endorsement  
 38.101-4 v15.5.0  
 Source: Huawei, HiSilicon*

**Abstract:**

Share our views on the specification structure for NR UE CA performance requirements

**Discussion:**

.

**Decision: Return to.**

##### 6.18.1.2 PMI reporting requirements with larger number of Tx ports [NR\_perf\_enh-Perf]

**R4-2006038 On PMI reporting requirements with larger number of Tx ports**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Discussion:**

.

**Decision: Noted.**

**R4-2006318 Views and simulation results for PMI test cases**

*Type: discussion For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision: Noted.**

**R4-2006615 Parameters and simulation results on PMI reporting requirements with larger number of Tx ports**

*Type: discussion For: (not specified)  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision: Noted.**

**R4-2007201 Simulation results for Single Panel Type I PMI reporting test with larger Tx ports**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007202 Discussion on open issues for Type II codebook PMI reporting test with larger Tx ports**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007203 Discussion on subband for Type I codebook PMI reporting test with larger Tx ports**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007924 Addition of High spatial correlation matrices for 2D antenna arrays**

*Type: draftCR For: Endorsement  
 38.101-4 v16.0.0  
 Source: Ericsson*

**Abstract:**

In this contribution we provide the equation for 2D antenna array correlation matrices for high correlation

**Discussion:**

.

**Decision: Revised to R4-2008843 (from R4-2007924).**

**R4-2008843 Addition of High spatial correlation matrices for 2D antenna arrays**

*Type: draftCR For: Endorsement  
 38.101-4 v16.0.0  
 Source: Ericsson*

**Abstract:**

In this contribution we provide the equation for 2D antenna array correlation matrices for high correlation

**Discussion:**

.

**Decision: Return to.**

**R4-2007925 Addition of Rel-16 PMI FRC**

*Type: draftCR For: Endorsement  
 38.101-4 v16.0.0  
 Source: Ericsson*

**Abstract:**

CR with addition of FRC for new PMI testing for 16, and 32 Tx ports

**Discussion:**

.

**Decision: Revised to R4-2008844 (from R4-2007925).**

**R4-2008844 Addition of Rel-16 PMI FRC**

*Type: draftCR For: Endorsement  
 38.101-4 v16.0.0  
 Source: Ericsson*

**Abstract:**

CR with addition of FRC for new PMI testing for 16, and 32 Tx ports

**Discussion:**

.

**Decision: Return to.**

**R4-2007926 Addition of Rel-16 SP type I PMI tests**

*Type: draftCR For: Endorsement  
 38.101-4 v16.0.0  
 Source: Ericsson*

**Abstract:**

CR with addition of PMI tests for SP Type I 16, and 32Tx ports

**Discussion:**

.

**Decision: Revised to R4-2008845 (from R4-2007926).**

**R4-2008845 Addition of Rel-16 SP type I PMI tests**

*Type: draftCR For: Endorsement  
 38.101-4 v16.0.0  
 Source: Ericsson*

**Abstract:**

CR with addition of PMI tests for SP Type I 16, and 32Tx ports

**Discussion:**

.

**Decision: Return to.**

**R4-2007927 Simulation results for CSI PMI SP type I test cases**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

In this paper we provide simulation results, and our views on SP Type I requirements for 16, and 32Tx ports

**Discussion:**

.

**Decision: Noted.**

**R4-2007928 Summary of simulation results of NR UE CSI PMI with 16, and 32Tx antennas**

*Type: discussion For: Information  
 Source: Ericsson*

**Abstract:**

In this paper we provide a summary of simulations for result collection and requirement alignment.

**Discussion:**

.

**Decision: Noted.**

**R4-2007934 Evaluation on test setup for Rel-15 Type II codebook**

*Type: discussion For: Approval  
 Source: Ericsson*

**Abstract:**

In this paper we evaluate the test setup for Rel-15 Type II codebook and provide our views

**Discussion:**

.

**Decision: Noted.**

**R4-2007935 Simulation results for Rel-15 Type II codebook**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

In this paper we provide our simulation results for Rel-15 Type II codebook

**Discussion:**

.

**Decision: Noted.**

##### 6.18.1.3 LTE-NR co-existence for TDD [NR\_perf\_enh-Perf]

**R4-2006532 CR to TS 38.101-4: CR on TDD LTE-NR coexistence requirements finalization**

*Type: CR For: Agreement  
 38.101-4 v16.0.0 CR-0045 Cat: F (Rel-16)  
  
 Source: Intel Corporation*

**Discussion:**

.

**Decision: Agreed.**

##### 6.18.1.4 FR1 CA and EN-DC power imbalance requirements [NR\_perf\_enh-Perf]

**R4-2006039 FR1 CA PDSCH demodulation requirement with power imbalance**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Discussion:**

.

**Decision: Noted.**

**R4-2006533 Discussion on FR1 CA and EN-DC power imbalance requirements**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2006809 Discussion on FR1 CA and EN-DC power imbalance requirements**

*Type: discussion For: Discussion  
 Source: CMCC*

**Discussion:**

.

**Decision: Noted.**

**R4-2007140 Views on power imbalance requirement**

*Type: discussion For: Discussion  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision: Noted.**

**R4-2007224 Discussion on UE power imbalance requirements for FR1 CA and EN-DC**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Share our evaluations on power imbalance for intra-band contiguous CA for left open issues.

Views on intra-band non-contiguous EN-DC

**Discussion:**

.

**Decision: Noted.**

**R4-2007882 Views on Power Imbalance Tests**

*Type: discussion For: (not specified)  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision: Noted.**

##### 6.18.1.5 NR CA CQI reporting requirements [NR\_perf\_enh-Perf]

**R4-2006040 On NR CA CQI reporting requirements**

*Type: discussion For: Discussion  
 Source: China Telecom*

**Discussion:**

.

**Decision: Noted.**

**R4-2007142 Views on UE demodulation requirements for CA CQI**

*Type: discussion For: Discussion  
 Source: NTT DOCOMO, INC.*

**Discussion:**

.

**Decision: Noted.**

**R4-2007225 Discussion on CA CQI reporting requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Share our views on CA CQI reporting requirements

**Discussion:**

.

**Decision: Noted.**

**R4-2008113 Views on CA CQI Reporting Tests**

*Type: discussion For: (not specified)  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision: Noted.**

#### 6.18.2 BS demodulation requirements (38.104) [NR\_perf\_enh-Perf]

##### 6.18.2.1 30% TP test point [NR\_perf\_enh-Perf]

**R4-2006057 On NR Rel-16 performance requirement enhancement BS demodulation 30% TP test point**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

In this contribution we have provided our views on the remaining task for BS demodulation performance enhancement. In particular we recommended to confirm the simulation results in the summary tables, and proposed a formulation of the agreed applicability

**Discussion:**

.

**Decision: Noted.**

**R4-2006250 Summary of ideal and impairment results for NR PUSCH with 30% throughput test point**

*Type: discussion For: Discussion  
 Source: CATT*

**Discussion:**

.

**Decision: Noted.**

**R4-2006251 CR for TS 38.104: Introduce PUSCH performance requirements at 30% throughput test point**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0168 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Revised to R4-2008850 (from R4-2006251).**

**R4-2008850 CR for TS 38.104: Introduce PUSCH performance requirements at 30% throughput test point**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0168 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2006252 CR for TS 38.141-1: Introduce PUSCH performance requirements at 30% throughput test point**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0121 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Revised to R4-2008851 (from R4-2006252).**

**R4-2008851 CR for TS 38.141-1: Introduce PUSCH performance requirements at 30% throughput test point**

*Type: CR For: Agreement  
 38.141-1 v16.3.0 CR-0121 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

**R4-2006253 CR for TS 38.141-2: Introduce PUSCH performance requirements at 30% throughput test point**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0151 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Revised to R4-2008852 (from R4-2006253).**

**R4-2008852 CR for TS 38.141-2: Introduce PUSCH performance requirements at 30% throughput test point**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0151 Cat: B (Rel-16)  
  
 Source: CATT*

**Discussion:**

.

**Decision: Return to.**

##### 6.18.2.2 Additional FR2 requirements [NR\_perf\_enh-Perf]

**R4-2006058 CR for 38.104: Performance requirements for FR2 PUSCH 2T2R 16QAM**

*Type: CR For: Agreement  
 38.104 v16.3.0 CR-0167 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

CR implementing endorsed draftCR R4-2003898.

This CR removes the square brackets around the recently introduced [R4-2002403] SNR values of performance requirements for FR2 PUSCH 2T2R 16QAM in section 11.

**Discussion:**

.

**Decision: Agreed.**

**R4-2006059 CR for 38.141-2: Radiated test requirements for FR2 PUSCH 2T2R 16QAM**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0146 Cat: F (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

CR implementing endorsed draftCR R4-2003899.

This CR removes the square brackets around the recently introduced [R4-2002404] SNR values of performance requirements for FR2 PUSCH 2T2R 16QAM in section 8.

**Discussion:**

.

**Decision: Agreed.**

### 6.19 Over the air (OTA) base station (BS) testing TR [OTA\_BS\_testing-Perf]

**R4-2008700 Email discussion summary for [95e][311] OTA\_BS\_testing**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2009045 Email discussion summary for [95e][311] OTA\_BS\_testing**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

#### 6.19.1 General [OTA\_BS\_testing-Perf]

**R4-2007566 TP to TR 37.941: Improvement of technical background information in Clause 6**

*Type: pCR For: Approval  
 37.941 v0.2.0  
 Source: Ericsson, Rohde & Schwarz*

**Abstract:**

In this contribution we have provided a text proposal to improve the readability by adding missing information, aligning information and correcting error

**Discussion:**

.

**Decision: Revised to R4-2008854 (from R4-2007566).**

**R4-2008854 TP to TR 37.941: Improvement of technical background information in Clause 6**

*Type: pCR For: Approval  
 37.941 v0.2.0  
 Source: Ericsson, Rohde & Schwarz*

**Abstract:**

In this contribution we have provided a text proposal to improve the readability by adding missing information, aligning information and correcting error

**Discussion:**

.

**Decision: Return to.**

**R4-2008137 TP to TR 37.941: editorial cleanup**

*Type: pCR For: Approval  
 37.941 v0.2.0  
 Source: Huawei*

**Abstract:**

TP to TR 37.941 for the general cleanup, before the submission to June RAN for Approval of the Rel-15 version of the TR.

**Discussion:**

.

**Decision: Revised to R4-2008853 (from R4-2008137).**

**R4-2008853 TP to TR 37.941: editorial cleanup**

*Type: pCR For: Approval  
 37.941 v0.2.0  
 Source: Huawei*

**Abstract:**

TP to TR 37.941 for the general cleanup, before the submission to June RAN for Approval of the Rel-15 version of the TR.

**Discussion:**

.

**Decision: Return to.**

#### 6.19.2 OTA calibration and test method procedures [OTA\_BS\_testing-Perf]

**R4-2007568 TP to TR 37.941: Improvement of the Clause 6.3.3**

*Type: pCR For: Approval  
 37.941 v0.2.0  
 Source: Ericsson*

**Abstract:**

In this contribution we have provided a text proposal to improve the applicability and readability of the clause by including interpolation, removing the misleading text and correcting the text according to the figure data.

**Discussion:**

.

**Decision: Revised to R4-2008855 (from R4-2007568).**

**R4-2008855 TP to TR 37.941: Improvement of the Clause 6.3.3**

*Type: pCR For: Approval  
 37.941 v0.2.0  
 Source: Ericsson*

**Abstract:**

In this contribution we have provided a text proposal to improve the applicability and readability of the clause by including interpolation, removing the misleading text and correcting the text according to the figure data.

**Discussion:**

.

**Decision: Return to.**

#### 6.19.3 Coordinate system [OTA\_BS\_testing-Perf]

#### 6.19.4 Conformance testing aspects [OTA\_BS\_testing-Perf]

#### 6.19.5 MU / TT values: derivation and tables [OTA\_BS\_testing-Perf]

**R4-2007595 TP to 37.941: MU tables for additional Tx test cases for PWS**

*Type: pCR For: Approval  
 37.941 v0.2.0  
 Source: ROHDE & SCHWARZ*

**Discussion:**

.

**Decision: Revised to R4-2008858 (from R4-2007595).**

**R4-2008858 TP to 37.941: MU tables for additional Tx test cases for PWS**

*Type: pCR For: Approval  
 37.941 v0.2.0  
 Source: ROHDE & SCHWARZ*

**Discussion:**

.

**Decision: Return to.**

**R4-2007910 TX directional FR2 MU budget spreadsheet**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Update of the FR2 Tx direction budget with new TE values

**Discussion:**

.

**Decision: Revised to R4-2008859 (from R4-2007910).**

**R4-2008859 TX directional FR2 MU budget spreadsheet**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Update of the FR2 Tx direction budget with new TE values

**Discussion:**

.

**Decision: Return to.**

**R4-2007911 TP to TR 37.941 FR2 TX directional**

*Type: pCR For: Approval  
 37.941 v0.2.0  
 Source: Huawei*

**Abstract:**

Add the FR2 Tx direction MU tables to the TR

**Discussion:**

.

**Decision: Approved.**

**R4-2007912 RX directional FR2 MU budget spreadsheet**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Update of the FR2 Rx direction budget with new TE values

**Discussion:**

.

**Decision: Revised to R4-2008860 (from R4-2007912).**

**R4-2008860 RX directional FR2 MU budget spreadsheet**

*Type: other For: Approval  
 Source: Huawei*

**Abstract:**

Update of the FR2 Rx direction budget with new TE values

**Discussion:**

.

**Decision: Return to.**

**R4-2007913 TP to TR 37.941 FR2 RX directional**

*Type: pCR For: Approval  
 37.941 v0.2.0  
 Source: Huawei*

**Abstract:**

Add the FR2 Rx direction MU tables to the TR

**Discussion:**

.

**Decision: Approved.**

**R4-2007914 TP to TR 37.941 MU budget procedure update**

*Type: pCR For: Approval  
 37.941 v0.2.0  
 Source: Huawei*

**Abstract:**

Update procedure to explain the single table approach with 2 table used for EIRP only

**Discussion:**

.

**Decision: Revised to R4-2008856 (from R4-2007914).**

**R4-2008856 TP to TR 37.941 MU budget procedure update**

*Type: pCR For: Approval  
 37.941 v0.2.0  
 Source: Huawei*

**Abstract:**

Update procedure to explain the single table approach with 2 table used for EIRP only

**Discussion:**

.

**Decision: Return to.**

**R4-2007915 TP to TR 37.941 EIRP MU budget procedure update**

*Type: pCR For: Approval  
 37.941 v0.2.0  
 Source: Huawei*

**Abstract:**

Update EIRP section with 2 tables as per the updated procedure

**Discussion:**

.

**Decision: Revised to R4-2008857 (from R4-2007915).**

**R4-2008857 TP to TR 37.941 EIRP MU budget procedure update**

*Type: pCR For: Approval  
 37.941 v0.2.0  
 Source: Huawei*

**Abstract:**

Update EIRP section with 2 tables as per the updated procedure

**Discussion:**

.

**Decision: Return to.**

#### 6.19.6 Annexes [OTA\_BS\_testing-Perf]

#### 6.19.7 Others [OTA\_BS\_testing-Perf]

**R4-2007451 CR to TR 37.842: internal TR references corrections and content redundancy removal (wrt. TR 37.941 for OTA BS testing), Rel-15**

*Type: CR For: Agreement  
 37.842 v13.3.0 CR-0016 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides corrections to the internal TR references in TR 37.842 and removes technical content already captured in the TR 37.941.

**Discussion:**

.

**Decision: Revised to R4-2008861 (from R4-2007451).**

**R4-2008861 CR to TR 37.842: internal TR references corrections and content redundancy removal (wrt. TR 37.941 for OTA BS testing), Rel-15**

*Type: CR For: Agreement  
 37.842 v13.3.0 CR-0016 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides corrections to the internal TR references in TR 37.842 and removes technical content already captured in the TR 37.941.

**Discussion:**

.

**Decision: Return to.**

**R4-2007452 CR to TR 37.843: internal TR references corrections and content redundancy removal (wrt. TR 37.941 for OTA BS testing), Rel-15**

*Type: CR For: Agreement  
 37.843 v15.6.0 CR-0040 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides corrections to the internal TR references in TR 37.843 and removes technical content already captured in the TR 37.941.

**Discussion:**

.

**Decision: Revised to R4-2008862 (from R4-2007452).**

**R4-2008862 CR to TR 37.843: internal TR references corrections and content redundancy removal (wrt. TR 37.941 for OTA BS testing), Rel-15**

*Type: CR For: Agreement  
 37.843 v15.6.0 CR-0040 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides corrections to the internal TR references in TR 37.843 and removes technical content already captured in the TR 37.941.

**Discussion:**

.

**Decision: Return to.**

**R4-2007453 CR to TR 38.817-02: internal TR references corrections and content redundancy removal (wrt. TR 37.941 for OTA BS testing), Rel-15**

*Type: CR For: Agreement  
 38.817-02 v15.7.0 CR-0067 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides corrections to the internal TR references in TR 38.817-02 and removes technical content already captured in the TR 37.941.

**Discussion:**

.

**Decision: Revised to R4-2008863 (from R4-2007453).**

**R4-2008863 CR to TR 38.817-02: internal TR references corrections and content redundancy removal (wrt. TR 37.941 for OTA BS testing), Rel-15**

*Type: CR For: Agreement  
 38.817-02 v15.7.0 CR-0067 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides corrections to the internal TR references in TR 38.817-02 and removes technical content already captured in the TR 37.941.

**Discussion:**

.

**Decision: Return to.**

**R4-2007454 CR to TS 37.145-2: internal TR references corrections (wrt. TR 37.941 for OTA BS testing), Rel-15**

*Type: CR For: Agreement  
 37.145-2 v15.6.0 CR-0227 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides corrections to the internal TR references in TS 37.145-2.

**Discussion:**

.

**Decision: Agreed.**

**R4-2007455 CR to TS 37.145-2: internal TR references corrections (wrt. TR 37.941 for OTA BS testing), Rel-16**

*Type: CR For: Agreement  
 37.145-2 v16.3.0 CR-0228 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

This CR provides corrections to the internal TR references in TS 37.145-2.

**Discussion:**

.

**Decision: Agreed.**

**R4-2007456 CR to TS 38.141-2: internal TR references corrections (wrt. TR 37.941 for OTA BS testing), Rel-15**

*Type: CR For: Agreement  
 38.141-2 v15.5.0 CR-0180 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides corrections to the internal TR references in TS 38.141-2.

**Discussion:**

.

**Decision: Agreed.**

**R4-2007457 CR to TS 38.141-2: internal TR references corrections (wrt. TR 37.941 for OTA BS testing), Rel-16**

*Type: CR For: Agreement  
 38.141-2 v16.3.0 CR-0181 Cat: A (Rel-16)  
  
 Source: Huawei*

**Abstract:**

This CR provides corrections to the internal TR references in TS 38.141-2.

**Discussion:**

.

**Decision: Agreed.**

**R4-2007458 CR to TS 37.114: internal TR reference corrections, Rel-15**

*Type: CR For: Agreement  
 37.114 v15.8.0 CR-0096 Cat: F (Rel-15)  
  
 Source: Huawei*

**Abstract:**

This CR provides corrections to the internal TR references in TS 37.114 (AAS BS EMC specification).

**Discussion:**

.

**Decision: Agreed.**

**R4-2008005 TP to TR 37.941 on editorial corrections for PWS references**

*Type: pCR For: Approval  
 37.941 v0.2.0  
 Source: ROHDE & SCHWARZ*

**Discussion:**

.

**Decision: Approved.**

### 6.20 2-step RACH for NR [NR\_2step\_RACH-Perf]

#### 6.20.2 BS Demodulation requirements (38.104/38.141-1/38.141-2) [NR\_2step\_RACH-Perf]

**R4-2008714 Email discussion summary for [95e][325] NR\_2step\_RACH\_Demod**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2009046 Email discussion summary for [95e][325] NR\_2step\_RACH\_Demod**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008864 WF on BS demodulation requirements for 2-step RACH**

*Type: other For: Approval  
 Source: ZTE*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2006540 Views on BS demodulation requirements for NR 2-Step RACH**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2006604 On 2-step RACH BS demodulation requirements**

*Type: discussion For: Discussion  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Discussion paper on configuration parameters for the 2-step RACH BS demodulation work.

**Discussion:**

.

**Decision: Noted.**

**R4-2006661 Initial simulation results on BS demodulation for 2-step RACH**

*Type: discussion For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision: Noted.**

**R4-2006662 Further discussion on BS demodulation performance requirements for 2-step RACH**

*Type: discussion For: Discussion  
 Source: ZTE Wistron Telecom AB*

**Discussion:**

.

**Decision: Noted.**

**R4-2007238 Discussion on NR 2-step RACH performance requirements**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Discussion:**

.

**Decision: Noted.**

**R4-2007365 2-step RACH parameter proposals**

*Type: other For: Approval  
 Source: Ericsson*

**Abstract:**

Proposals for parameters for the 2 step RACH requirement

**Discussion:**

.

**Decision: Noted.**

#### 6.20.3 Others [NR\_2step\_RACH-Perf]

### 6.21 R16 NR maintenance [WI code or TEI16]

#### 6.21.1 BS RF [WI code or TEI16]

#### 6.21.4 Demodulation and CSI [WI code or TEI16]

## 7 UE feature list

## 8 Rel-16 spectrum related Work Items for NR

## 9 Study Items for NR

### 9.1 Study on radiated metrics and test methodology for the verification of multi-antenna reception perf. of NR UEs [FS\_NR\_MIMO\_OTA\_test]

#### 9.1.1 General [FS\_NR\_MIMO\_OTA\_test]

**R4-2008715 Email discussion summary for [95e][326] FS\_NR\_MIMO\_OTA\_test**

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

**Abstract:**

**Discussion:**

**Decision: Revised to R4-2009047 (from R4-2008715).**

**R4-2009047 Email discussion summary for [95e][326] FS\_NR\_MIMO\_OTA\_test**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008865 WF on FR2 MIMO OTA**

*Type: other For: Approval  
 Source: CAICT*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2006307 TR38.827 v1.4.0 NR MIMO OTA**

*Type: draft TR For: Agreement  
 38.827 v1.4.0  
 Source: CAICT*

**Discussion:**

.

**Decision: Return to.**

**R4-2006308 TP to TR 38.827 v1.3.0 on RMC**

*Type: pCR For: Approval  
 38.827 v1.3.0  
 Source: CAICT*

**Abstract:**

correct RMC error

**Discussion:**

.

**Decision: Approved.**

#### 9.1.2 Performance metrics [FS\_NR\_MIMO\_OTA\_test]

**R4-2006310 FR1 MIMO OTA measurement results**

*Type: discussion For: Discussion  
 38.827 v..  
 Source: CAICT*

**Discussion:**

.

**Decision: Noted.**

**R4-2006431 Discussion on SNR analysis for FR2 3D-MPAC**

*Type: discussion For: Discussion  
 Source: Samsung*

**Discussion:**

.

**Decision: Noted.**

#### 9.1.3 Testing methodologies [FS\_NR\_MIMO\_OTA\_test]

##### 9.1.3.1 FR1 test methodologies [FS\_NR\_MIMO\_OTA\_test]

##### 9.1.3.2 FR2 test methodologies [FS\_NR\_MIMO\_OTA\_test]

**R4-2006740 FR2 Quality of Quiet Zone Procedure**

*Type: other For: Approval  
 38.827 v..  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

This contribution is discussing different options for the 3D MPAC quality of quiet zone procedure. The recommendation is to leverage the FR2 UE RF and RRM quality of quiet zone procedure.

**Discussion:**

.

**Decision: Approved.**

**R4-2006741 On FR2 PSP Validation**

*Type: other For: Approval  
 38.827 v..  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

This contribution is an update of the last meeting’s PSP validation approach using a two-step process to obtain the PAS for the PSP calculation [1] while utilizing the MUSIC algorithm. Additionally, this contribution also provides a comparison with the ap

**Discussion:**

.

**Decision: Noted.**

**R4-2006742 TP to 38.827 to add PSP validation procedure**

*Type: other For: Approval  
 38.827 v..  
 Source: Keysight Technologies UK Ltd, Spirent Communications*

**Abstract:**

This text proposal adds the PSP validation procedure to TR38.827.

**Discussion:**

.

**Decision: Return to.**

**R4-2006743 On FR2 3D MPAC Ambiguities and Blocking**

*Type: other For: Approval  
 38.827 v..  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

This contribution is addressing two topics on ambiguities of relative positioning and blocking effects captured in the WF of the previous meeting.

**Discussion:**

.

**Decision: Noted.**

**R4-2007084 Dynamic testing for FR2**

*Type: discussion For: Approval  
 Source: OPPO*

**Discussion:**

.

**Decision: Noted.**

**R4-2007085 Uplink communication path placement for FR2 3D-MPAC**

*Type: discussion For: Approval  
 Source: OPPO*

**Discussion:**

.

**Decision: Noted.**

**R4-2007285 FR2 MIMO-OTA Test Methodologies**

*Type: discussion For: Approval  
 38.827 v..  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision: Noted.**

**R4-2007563 TP to TR38.827 on FR2 test procedure**

*Type: pCR For: Approval  
 38.827 v1.3.0  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision: Revised to R4-2008866 (from R4-2007563).**

**R4-2008866 TP to TR38.827 on FR2 test procedure**

*Type: pCR For: Approval  
 38.827 v1.3.0  
 Source: Qualcomm Incorporated*

**Discussion:**

.

**Decision: Return to.**

**R4-2007592 PSP validation discussion**

*Type: other For: Approval  
 Source: Spirent Communications*

**Abstract:**

Observation 1. PSP validation most likely need some phase taper correction technique.

Observation 2. If the number of measurement time is limited, number of virtual elements will also become limiter mandating to use some super-resolution technique to esti

**Discussion:**

.

**Decision: Noted.**

**R4-2007594 TP on Verification of Channel Model implementation in TR38.827, PSP**

*Type: other For: Approval  
 Source: Spirent Communications*

**Abstract:**

In the last RAN4 e-meeting, verification of channel model implementation for FR2 MPAC was discussed [2] and agreed that PSP verification needs to be clarified with steps. The proposed changes in [1] are for chapter 7.4.1.6.

Proposal: Include the followi

**Discussion:**

.

**Decision: Noted.**

**R4-2007658 DUT relative orientation to channel model**

*Type: discussion For: Approval  
 38.827 v..  
 Source: ROHDE & SCHWARZ*

**Discussion:**

.

**Decision: Noted.**

**R4-2008273 TP to TR38.827 to avoid ambiguities for FR2 MIMO OTA Testing**

*Type: other For: Approval  
 38.827 v..  
 Source: Keysight Technologies UK Ltd*

**Abstract:**

This TP is to capture agreements to avoid ambiguities of relative positioning between probes, the 36 test points, the UE, and the channel model

**Discussion:**

.

**Decision: Return to.**

#### 9.1.4 Channel Models [FS\_NR\_MIMO\_OTA\_test]

## 10 Rel-17 spectrum related Work Items for NR

## 11 Reply to ITU-R LS (RP-200042)

## 12 LTE maintenance (up to Rel15) [WI code or TEI]

### 12.1 BS RF [WI code or TEI]

**R4-2008690 Email discussion summary for [95e][301] LTE\_maintenance\_RF\_BS**

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

**Abstract:**

**Discussion:**

**Decision: Noted.**

**R4-2009048 Email discussion summary for [95e][301] LTE\_maintenance\_RF\_BS**

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

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2008867 WF on modifying the ED Threshold**

*Type: other For: Approval  
 Source: Nokia*

**Abstract:**

**Discussion:**

**Decision: Return to.**

**R4-2006112 CR to TS 36.141: Corrections on table note index for test models**

*Type: CR For: Agreement  
 36.141 v14.10.0 CR-1251 Cat: F (Rel-14)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Align the note index to ‘1’ in tables 6.1.1.2-1 and 6.1.1.6-1. Typo are also corrected.

**Discussion:**

.

**Decision: Agreed.**

**R4-2006113 CR to TS 36.141: Corrections on table note index for test models**

*Type: CR For: Agreement  
 36.141 v15.8.0 CR-1252 Cat: A (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Align the note index to ‘1’ in tables 6.1.1.2-1 and 6.1.1.6-1. Typo are also corrected.

**Discussion:**

.

**Decision: Agreed.**

**R4-2006114 CR to TS 36.141: Corrections on table note index for test models**

*Type: CR For: Agreement  
 36.141 v16.5.0 CR-1253 Cat: A (Rel-16)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

Align the note index to ‘1’ in tables 6.1.1.2-1 and 6.1.1.6-1. Typo are also corrected.

**Discussion:**

.

**Decision: Agreed.**

**R4-2007474 CR to TS 37.107 with correction to interfering signal for conformance test for energy detection accuracy to align withTS 37.213**

*Type: CR For: Agreement  
 37.107 v15.1.0 CR-0002 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR introduces corrrection for interfering signal for test of energy detection accuracy to align with RAN1 specification TS 37.213.

**Discussion:**

.

**Decision: Revised to R4-2008868 (from R4-2007474).**

**R4-2008868 CR to TS 37.107 with correction to interfering signal for conformance test for energy detection accuracy to align withTS 37.213**

*Type: CR For: Agreement  
 37.107 v15.1.0 CR-0002 Cat: F (Rel-15)  
  
 Source: Nokia, Nokia Shanghai Bell*

**Abstract:**

This CR introduces corrrection for interfering signal for test of energy detection accuracy to align with RAN1 specification TS 37.213.

**Discussion:**

.

**Decision: Return to.**

**R4-2007475 Discussion on interfering signal for conformance test for ED accuracy for eLAA**

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

**Discussion:**

.

**Decision: Noted.**

**R4-2008101 CR to 37.104 on Removal of TBD for NB-IoT (Rel-15)**

*Type: CR For: Agreement  
 37.104 v15.10.0 CR-0902 Cat: F (Rel-15)  
  
 Source: Ericsson*

**Abstract:**

The Draft CR removes the TBDs for NB-IoT in TS 37.104 for the submission of specs to ITU-R.

**Discussion:**

.

**Decision: Agreed.**

**R4-2008102 CR to 37.104 on Removal of TBD for NB-IoT (Rel-16)**

*Type: CR For: Agreement  
 37.104 v16.5.0 CR-0903 Cat: A (Rel-16)  
  
 Source: Ericsson*

**Abstract:**

The Draft CR removes the TBDs for NB-IoT in TS 37.104 for the submission of specs to ITU-R.

**Discussion:**

.

**Decision: Agreed.**

### 12.4 Demodulation and CSI [WI code or TEI]

**R4-2007213 CR: Updates to FeNB-IoT NPRACH TDD performance requirements in TS 36.104 (Rel-15)**

*Type: CR For: Agreement  
 36.104 v15.8.0 CR-4897 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Update related performance requirements after more simulation results provided

**Discussion:**

.

**Decision: Revised to R4-2008755 (from R4-2007213).**

**R4-2008755 CR: Updates to FeNB-IoT NPRACH TDD performance requirements in TS 36.104 (Rel-15)**

*Type: CR For: Agreement  
 36.104 v15.8.0 CR-4897 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Update related performance requirements after more simulation results provided

**Discussion:**

.

**Decision: Return to.**

**R4-2007214 CR: Updates to FeNB-IoT NPRACH TDD performance requirements in TS 36.104 (Rel-16)**

*Type: CR For: Agreement  
 36.104 v16.5.0 CR-4898 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Mirror CR

**Discussion:**

.

**Decision: Return to.**

**R4-2007215 CR: Updates to FeNB-IoT NPRACH TDD conformance testing in TS 36.141 (Rel-15)**

*Type: CR For: Agreement  
 36.141 v15.8.0 CR-1256 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Update related performance requirements after more simulation results provided

**Discussion:**

.

**Decision: Revised to R4-2008756 (from R4-2007215).**

**R4-2008756 CR: Updates to FeNB-IoT NPRACH TDD conformance testing in TS 36.141 (Rel-15)**

*Type: CR For: Agreement  
 36.141 v15.8.0 CR-1256 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Update related performance requirements after more simulation results provided

**Discussion:**

.

**Decision: Return to.**

**R4-2007216 CR: Updates to FeNB-IoT NPRACH TDD conformance testing in TS 36.141 (Rel-16)**

*Type: CR For: Agreement  
 36.141 v16.5.0 CR-1257 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Mirror CR

**Discussion:**

.

**Decision: Return to.**

**R4-2007217 Summary of simulation results for Rel-15 FeNB-IoT NPRACH TDD formats**

*Type: discussion For: Discussion  
 Source: Huawei, HiSilicon*

**Abstract:**

Collect simulation results requirements

**Discussion:**

.

**Decision: Noted.**

**R4-2007218 CR: Updates to FeNB-IoT UE performance requirements in 36.101 (Rel-15)**

*Type: CR For: Agreement  
 36.101 v15.10.0 CR-5621 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Remove the square brackets of some performance requirements

**Discussion:**

.

**Decision: Agreed.**

**R4-2007219 CR: Updates to FeNB-IoT UE performance requirements in 36.101 (Rel-16)**

*Type: CR For: Agreement  
 36.101 v16.5.0 CR-5622 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Mirror CR

**Discussion:**

.

**Decision: Agreed.**

**R4-2007242 CR: Correction on LTE SRS configuration for UL timing adjustment conformance testing (Rel-8)**

*Type: CR For: Agreement  
 36.141 v8.12.0 CR-1258 Cat: F (Rel-8)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

correct the mislignment between TS 36.104 and TS 36.141

**Discussion:**

.

**Decision: Agreed.**

**R4-2007243 CR: Correction on LTE SRS configuration for UL timing adjustment conformance testing (Rel-9)**

*Type: CR For: Agreement  
 36.141 v9.11.0 CR-1259 Cat: A (Rel-9)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Mirror CR

**Discussion:**

.

**Decision: Agreed.**

**R4-2007244 CR: Correction on LTE SRS configuration for UL timing adjustment conformance testing (Rel-10)**

*Type: CR For: Agreement  
 36.141 v10.13.0 CR-1260 Cat: A (Rel-10)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Mirror CR

**Discussion:**

.

**Decision: Agreed.**

**R4-2007245 CR: Correction on LTE SRS configuration for UL timing adjustment conformance testing (Rel-11)**

*Type: CR For: Agreement  
 36.141 v11.16.0 CR-1261 Cat: A (Rel-11)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Mirror CR

**Discussion:**

.

**Decision: Agreed.**

**R4-2007246 CR: Correction on LTE SRS configuration for UL timing adjustment conformance testing (Rel-12)**

*Type: CR For: Agreement  
 36.141 v12.13.0 CR-1262 Cat: A (Rel-12)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Mirror CR

**Discussion:**

.

**Decision: Agreed.**

**R4-2007247 CR: Correction on LTE SRS configuration for UL timing adjustment conformance testing (Rel-13)**

*Type: CR For: Agreement  
 36.141 v13.13.0 CR-1263 Cat: A (Rel-13)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Mirror CR

**Discussion:**

.

**Decision: Agreed.**

**R4-2007248 CR: Correction on LTE SRS configuration for UL timing adjustment conformance testing (Rel-14)**

*Type: CR For: Agreement  
 36.141 v14.10.0 CR-1264 Cat: A (Rel-14)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Mirror CR

**Discussion:**

.

**Decision: Agreed.**

**R4-2007249 CR: Correction on LTE SRS configuration for UL timing adjustment conformance testing (Rel-15)**

*Type: CR For: Agreement  
 36.141 v15.8.0 CR-1265 Cat: A (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Mirror CR

**Discussion:**

.

**Decision: Agreed.**

**R4-2008757 CR: Correction on LTE SRS configuration for UL timing adjustment conformance testing (Rel-15)**

*Type: CR For: Agreement  
 36.141 v16.5.0 CR-? Cat: A (Rel-16)***Abstract:**

**Session Chair: Contact with Kai-Erik to get CR number**

**Discussion:**

**Decision: Return to.**

**R4-2007250 CR: Updates to LTE CQI test cases 9.2.1.7 and 9.2.1.8 (Rel-12)**

*Type: CR For: Agreement  
 36.101 v12.24.0 CR-5623 Cat: F (Rel-12)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Resubmission of endorsed draftCR R4-2005523

**Discussion:**

.

**Decision: Agreed.**

**R4-2007251 CR: Updates to LTE CQI test cases 9.2.1.7 and 9.2.1.8 (Rel-13)**

*Type: CR For: Agreement  
 36.101 v13.18.0 CR-5624 Cat: A (Rel-13)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Mirror CR

**Discussion:**

.

**Decision: Agreed.**

**R4-2007252 CR: Updates to LTE CQI test cases 9.2.1.7 and 9.2.1.8 (Rel-14)**

*Type: CR For: Agreement  
 36.101 v14.14.0 CR-5625 Cat: A (Rel-14)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Mirror CR

**Discussion:**

.

**Decision: Agreed.**

**R4-2007253 CR: Updates to LTE CQI test cases 9.2.1.7 and 9.2.1.8 (Rel-15)**

*Type: CR For: Agreement  
 36.101 v15.10.0 CR-5626 Cat: A (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Mirror CR

**Discussion:**

.

**Decision: Agreed.**

**R4-2007254 CR: Updates to LTE CQI test cases 9.2.1.7 and 9.2.1.8 (Rel-16)**

*Type: CR For: Agreement  
 36.101 v16.5.0 CR-5627 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Mirror CR

**Discussion:**

.

**Decision: Agreed.**

**R4-2007255 CR: Introduction for intra-band contiguous CA performance requirements for FDD with minimum channel spacing (Rel-15)**

*Type: CR For: Agreement  
 36.101 v15.10.0 CR-5628 Cat: F (Rel-15)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Resubmission of endorsed draftCR R4-2005524

**Discussion:**

.

**Decision: Agreed.**

**R4-2007256 CR: Introduction for intra-band contiguous CA performance requirements for FDD with minimum channel spacing (Rel-16)**

*Type: CR For: Agreement  
 36.101 v16.5.0 CR-5629 Cat: A (Rel-16)  
  
 Source: Huawei, HiSilicon*

**Abstract:**

Mirror CR

**Discussion:**

.

**Decision: Agreed.**

**R4-2007366 Simulation results on NB-IoT NPRACH demodulation performance for TDD**

*Type: discussion For: Discussion  
 Source: Ericsson*

**Abstract:**

This contribution shows TDD NPRACH simulation results according to TS36.104.

**Discussion:**

.

**Decision: Noted.**

## 13 Liaison and output to other groups

## 14 Revision of the Work Plan

## 15 Any other business

## 16 Close of the E-meeting

Report prepared by: Kai-Erik Sunell