**3GPP TSG-RAN WG4 Meeting #97-e *R4-2017400***

**Electronic Meeting, 2 – 13 November, 2020**

**Agenda item:** 4.4, 4.5.2.2, 7.19.4

**Source:** Moderator (Ericsson)

**Title:** Email discussion summary for [97e][302] NR\_BSRF\_Maintenance

**Document for:** Information

# Introduction

The e-mail discussion covers Rel-15 and Rel-16 NR BS RF Core maintenance, including MSR specifications, i.e. Agenda items 4.4, 4.5.2.2 and 7.19.4.

The BS RF core spec TS 38.104 is very stable in Rel-15 and Rel-16 and there are few contributions in this area. Contributions were submitted within the following Topics:

1. Maintenance based on updated European regulation and standards
2. AAS capability set and support for NR+UTRA
3. Other maintenance

All topics include CRs for corrections, but no discussion papers.

# Topic #1: Maintenance based on updated European regulation and standards

A set of CRs refer to the LS in R4-2017800 from ETSI MSG TFES concerning Release 15 of the European Harmonised Standards.

## Companies’ contributions summary (CRs)

(Cat A CRs are not listed)

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2016345 R4-2016347 | Ericsson | **CR to 38.104/38.141-2 on Category B OTA spurious emissions for Band n257**  Summary of change:  The CR adds Band n257 to Category B limits for OTA spurious emissions. The step frequencies are aligned with the already existing ones for Rx spurious emissions. |
| R4-2016349 R4-2016351 | Ericsson | **CR to 37.104/37.141 on Removal of additional limit for Band 1**  Summary of change:  The additional limit for Band 1 is removed from the specification. |
| R4-2016353 R4-2016355 R4-2016357 | Ericsson | **CR to 37.105/37.141-1/37.141-2 on Removal of additional limit for Band 1**  Summary of change:  The additional limit for Band 1 is removed from the specification. |
| R4-2016359 R4-2016361 | Ericsson | **CR to 36.104/36.141 on Removal of additional limit for Band 1**  Summary of change:  The additional limit for Band 1 is removed from the specification. |

## Companies views’ collection for 1st round

### CRs/TPs comments collection

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| XXX | Company A |
| Company B |
|  |
| YYY | Company A |
| Company B |
|  |

## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

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| --- | --- |
|  | **Status summary** |
| **Sub-topic#1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

*Recommendations on WF/LS assignment*

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|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| #1 |  |  |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provides recommendation on CRs/TPs Status update*

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| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation** |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## Discussion on 2nd round (if applicable)

## Summary on 2nd round (if applicable)

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

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| --- | --- |
| **CR/TP/LS/WF number** | **T-doc Status update recommendation** |
| XXX | *Based on 2nd round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

# Topic #2: AAS capability set and support for NR+UTRA (CRs)

This is a continuing topic from RAN3 #96-e (Topic #2 for [302]), where three CRs were discussed and postponed. For this meeting, there are two sets of CRs available.

## Companies’ contributions summary

(Cat A CRs are not listed)

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2016367 | Ericsson | **CR to 37.105 on NR+UTRA support for AAS**  Summary of change:  It is added explicitly to the General section that for AAS BS, GSM/EDGE operation is not supported and that UTRA operation is only supported as single-RAT or in combination with E-UTRA. |
| R4-2015967 | Huawei | **CR to TS 37.105: Introduction of new BS capability set for NR+EUTRA+UTRA, Rel-16**  Summary of change: - 6.6.5.2.2, 6.6.5.2.3: conducted OBUE applicability table introduced for Band Category 1, 2, 3; table headers updated - 7.4.2.1: conducted general blocking table updated - 7.7.2.1: conducted Tx IMD table updated - 10.5.2.1: OTA general blocking table updated - 10.8.2.1: OTA Tx IMD table updated |
| R4-2015968 | Huawei | **CR to TS 37.145-1: Introduction of new BS capability set for NR+EUTRA+UTRA, Rel-16**  Summary of changes: - 4.9: introduction of CSA3B for UTRA, EUTRA, NR multi-RAT case. - 4.11.2.8.1.2 (ATC5a): applicabiltiy table updated with new CS - 4.11.2.8.2 (ATC5b): MSR changes reflected. Applicabiltiy table updated with new CS - 4.11.2.9, 4.11.2.10 (ATC6, ANTC6): MSR changes reflected. Power allocation section updated.  - 4.11.2.13, 4.11.2.14 (ATC8, ANTC8): new section for UTRA, E-UTRA and NR multi-RAT operation - 5.2: Test configuration applicability table updated with nes CSA3B test case  - 6.6.5.5.2, 6.6.5.5.3: conducted OBUE applicability table introduced for Band Category 1, 2, 3; table headers updated - 7.4.5.1.1: general blocking table updated - 7.7.5.1.1: Tx IMD table updated |
| R4-2015969 | Huawei | **CR to TS 37.145-2: Introduction of new BS capability set for NR+EUTRA+UTRA, Rel-16**  Summary of changes: - 4.9: introduction of RCSA3B for UTRA, EUTRA, NR multi-RAT case. - 4.11.2.8.1.2 (ATCR5): applicability table updated with new CS - 4.11.2.8.2 (ATCR5b): MSR changes reflected. Applicabiltiy table updated with new CS - 4.11.2.9, 4.11.2.10 (ATCR7, ANTCR7): MSR changes reflected. Power allocation section updated.  - 4.11.2.13, 4.11.2.14 (ATCR9, ANTCR9): new section for UTRA, E-UTRA and NR multi-RAT operation - 5.2: Test configuration applicability table updated with nes RCSA3B test case  - 6.6.5.5.2, 6.6.5.5.3: conducted OBUE applicability table introduced for Band Category 1, 2, 3; table headers updated - 7.8.5.1.1: Tx IMD table updated |

## Open issues summary

### Sub-topic 2-1 Options for Capability sets including UTRA in AAS specs

In the work item MSR\_GSM\_UTRA\_LTE\_NR, the MSR BS specification was extended with additional Capability Sets and requirements for NR + UTRA/GSM combinations. These were not reflected in the AAS specifications, which were not part of the work item.

The CRs submitted provides two different solutions for the AAS specifications.

**Issue 2-1: Options for Capability sets including UTRA in AAS specs**

* Proposals
  + **Option 1: (CR in R4-2016367)**Add an explicit statement in the AAS core spec that UTRA operation is only supported as single-RAT or in combination with E-UTRA.
  + **Option 2: (CRs in R4-2015967, R4-2015968, R4-2015969)**Update relevant AAS core and test requirements to cover combined NR & UTRA support, and add a new Capability Set for AAS with NR, E-UTRA and UTRA, plus two new Test Configurations.
* Recommended WF

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## Companies views’ collection for 1st round

### Open issues

|  |  |
| --- | --- |
| **Company** | **Comments** |
| Nokia | Sub topic 2-1: OK for option 1, for option 2 we would like to know if any operator is interested in UTRA+E-UTRA+NR CS in AAS specifications.  ….  Others: |

### CRs/TPs comments collection

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2016367 | Nokia: OK |
| Company B |
|  |
| YYY | Company A |
| Company B |
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## Summary for 1st round

### Open issues

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| **Sub-topic#1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

*Suggestion on WF/LS assignment*

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| --- | --- | --- |
|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| #1 |  |  |

### CRs/TPs

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|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation** |
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## Discussion on 2nd round (if applicable)

## Summary on 2nd round (if applicable)

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

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# Topic #3: Other maintenance (CRs)

A number of diverse topics are covered by CRs under “Other maintenance”.

## Companies’ contributions summary

(Cat A CRs are not listed)

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| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2015957 | Huawei | **CR to TS 37.104: addition of missing note for BC1/BC3 OBUE applicability table for WA BS, Rel-16**  Summary of change:  Addition of the missing note in table 6.6.2.1-0. |
| R4-2015966 | Huawei | **CR to TR 38.820: correction in the NF analysis for NR BS, Rel-16**  Summary of change: 5.5.1.2: cross-reference is corrected to point to the figure with the collection of the state-of-the-art LNA-only noise figure publications. |
| R4-2016184 R4-2016186 | Nokia, Nokia Shanghai Bell | **CR to 37.104/37.141: Correction to ACLR limit in non-contiguous spectrum (Rel-15)**  Summary of change:  “NR” is removed in NOTE 3 to address E-UTRA carrier transmitted at the other edge of the gap.. |
| R4-2016206 | Nokia, Nokia Shanghai Bell | **CR to 38.141-2: Correction to test system uncertainty**  Summary of change:  Test System uncertainty is extended up to 43.5GHz. |
| R4-2016363 R4-2016366 | Ericsson | **CR to 37.104/37.141 on MSR Blocking correction**  Summary of change:  The reference to the Void table (previously containing the frequency ranges) is removed. |
| R4-2016430 R4-2016431 R4-2016432 | Huawei | **CR to TS 37.105/37.145-1/37.145-2: addition of the OBUE applicability table, Rel-15**  Summary of change:  OBUE applicability table introduced for Band Category 1, 2, 3; table headers updated to align with MSR. |

## Companies views’ collection for 1st round

### CRs/TPs comments collection

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2016430 R4-2016431 R4-2016432 | Nokia: different wordings 'except operating', 'except operation', 'not supporting' would lead to different interpretations. |
| Company B |
|  |
| YYY | Company A |
| Company B |
|  |

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## Summary on 2nd round (if applicable)

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