**3GPP TSG-RAN WG4 Meeting # 99-e R4-2108681**

**Electronic Meeting, 19th – 27th May 2021**

**Agenda item:** 5.3.1

**Source:** Moderator (CATT)

**Title:** Email discussion summary for [99-e][305] NR\_IAB\_RF\_Maintenance

**Document for:** Information

# Introduction

The email thread [99-e] [305] NR\_IAB\_RF\_Maintenance covers the contributions in agenda 6.3.1. The targets of the two rounds are as following.

* 1st round:
  + Review the maintenance CRs to collect comments.
* 2nd round:
  + Revise and endorse the CRs.

# Topic #1: Maintenance CRs

## Companies views’ collection for 1st round

### CRs/TPs comments collection

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2109016, Draft CR for TS 38.174: IAB-MT EVM measurement, CATT | Ericcson: ok |
| Huawei: I think the text introduced at the start of Annex D and E is hanging text and not strictly correct – as all sections introduced are new it should be easy enough to add in a general sub-clause. Bullet 2 in both introductory sections states D.1 to D7 (and E) it should say annex D.1 to annex D.7 I think.  In general the approach is not very consistent as 38.521-1 annex E is referenced in its entirety whilst 38.104 is referenced section by section – maybe this is because EVM section needs modifying in the 38.104 case but maybe you could just reference 38.108 except EVM?  On the whole its ok if everybody else thinks its ok like this then we are ok. |
| Nokia: Text does not cover the EVM measurement of UL signal in DL slots.  ZTE: okay for that and try to align conformance testing part with core part.  CATT: Thanks all for the comments.  For Huawei comment, I’ll add a general sub-clause and add “annex” to the reference clause names. The comment in the second paragraph was not totally understood by me. Does it mean, TS 38.104 can be just refered? I think that was discussed in the last meeting, there’re many adaptions for E.7, so they’re written explicitly.  For Nokia comment, I think I responded that comment in the offline email discussion before the meeting, but there was no further feedback from you. So I thought you already understood my clarification. But I can still copy the response here, and I didn’t change my understanding.  -----------------  For the DL slots related issues, it was proposed by Ericsson and it’s related to all of the IAB-MT requirements and test cases. For the EVM test, I’m not sure if the test should explicitly include that case. There’re several reasons I didn’t implement the comment,  1.      The IAB-MT EVM requirement is defined as following, 6.5.2.2.3              EVM frame structure for measurement EVM shall be evaluated for each NR carrier over all allocated resource blocks and uplink subframes for IAB-MT. Different modulation schemes listed in Table 6.5.2.2.2-1 shall be considered for rank 1.  For NR, for all bandwidths, the EVM measurement shall be performed for each NR carrier over all allocated resource blocks and uplink subframes within 10 ms measurement periods. The boundaries of the EVM measurement periods need not be aligned with radio frame boundaries.  The above wording was approved after the discussion in many meetings, Nokia was also very active in that discussion. I’m not sure if it’ll be easy to reverse the agreement and add some extra description on “DL slots”.  2.      The current EVM test already can measure the RF performance for IAB-MT. Even IAB-MT transmits signals in DL slots, it still transmits on Tx path, the measurement for UL slots already can cover the performance of transmitting in DL slots. So I’m no confident the necessity of adding the DL slots measurement case.  3.      E.7 part was revised compared with BS spec that downlink related description is changed to uplink related description. If ‘the procedure should apply to DL slots’ is added, the spec is not clear any more.  Based on the above consideration, I don’t see there’ll be problem if no clarification on “DL slots” in the Annex.  ---------------------------------- |
| R4-2110000, Big CR for update on TR38.809, Samsung | Moderator’s note: This big CR is intended for email approval after the meeting. |
| R4-2110137, CR to TS 38.174 – corrections to general and transmitter part, Nokia, Nokia Shanghai Bell | Moderator’s note: Big CR approach for TS 38.174 is still planned to be used in this meeting. The content of this CR is the same as the endorsed CR in last RAN4 meeting. So this CR will be noted and the big CR will include the endorsed CR.  Huawei: Is this note correct?  NOTE 2: It is possible for the IAB to transmit to and/or receive from one or more UE bandwidth parts that are smaller than or equal to the *IAB transmission bandwidth configuration*, in any part of the *IAB transmission bandwidth configuration*.  I agree the BS part s obviously not correct but an IAB-DU communicates with a IAB-MT not a UE? So what do the UE BW parts have to do with it?  And  *Aggregated IAB-DU Channel Bandwidth* or *IAB-MT Channel Bandwidth*  Aggregated IAB-DU channel bandwidth is not defined. Also should the added term here not also be aggregated IAB-MT channel bandwidth (also not defined at this stage). The term aggregated IAB-MT channel bandwidth is added in the correction in 9.5.2.1 – so it definitely needs defining anyway.  Nokia: To Huawei  On Note 2: UE can be replaced by IAB-MT.  Agree, aggregated IAB-DU and MT channel bandwidth definitions should be added. |
| R4-2110138, CR to TS 38.174 – corrections to receiver part, Nokia, Nokia Shanghai Bell | Moderator’s note: As above. |
| R4-2111183, CR on the further clear up the IAB specification,  Ericsson | CATT: The title is not correct, but it maybe ok to endorse it because it’s a draft CR. Moderator can ask chairman to include the comment in the meeting minutes. |
| Ericsson: Thanks for comment. CR can be revised. |
| Samsung: support to include conformance testing specification as reference and update the 4.2 accordingly. However, it is suggested to further modify the text as example below with specific TS#.  “Conformance to the present specification is demonstrated by fulfilling the test requirements specified in the conformance specification TS38.176-1[23] and TS38.176-2[24].”  Huawei: Reference format is incorrect the spec number should be listed before the reference. 1st instance refers to “conformance specifications” 2nd instance refers to “test specifications” this should be consistent. |

## Summary for 1st round

### CRs/TPs

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

|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation** |
| [R4-2109016](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109016.zip) | Revised |
| R4-2110000 | For email approval |
| R4-2110137 | Revised  This revision CR will be endorsed in this meeting and merged to the big CR for TS 38.174. |
| R4-2110138 | Revised  This revision CR will be endorsed in this meeting and merged to the big CR for TS 38.174. |
| R4-2111183 | Revised |

## Discussion on 2nd round (if applicable)

*Moderator can provide summary of 2nd round here. Note that recommended decisions on tdocs should be provided in the section titled ”Recommendations for Tdocs”.*

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| --- | --- |
| **CR/TP number** | **Comments** |
| R4-2108536  (Revision of [R4-2109016](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109016.zip)) |  |
| R4-2108537  (Revision of R4-2110137) |  |
| R4-2108538  (Revision of R4-2110138) |  |
| R4-2108539  (Revision of R4-2111183) |  |

# Recommendations for Tdocs

## 1st round

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation** | **Comments** |
| [R4-2109016](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109016.zip) | Draft CR for TS 38.174: IAB-MT EVM measurement | CATT | Revised |  |
| R4-2110000 | Big CR for update on TR38.809 | Samsung | For email approval |  |
| R4-2110137 | CR to TS 38.174 – corrections to general and transmitter part | Nokia, Nokia Shanghai Bell | Revised |  |
| R4-2110138 | CR to TS 38.174 – corrections to receiver part | Nokia, Nokia Shanghai Bell | Revised |  |
| R4-2111183 | CR on the further clear up the IAB specification | Ericsson | Revised |  |

Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics incl. existing and new tdocs.
2. For the Recommendation column please include one of the following:
   1. CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
   2. Other documents: Agreeable, Revised, Noted
3. For new LS documents, please include information on To/Cc WGs in the comments column
4. Do not include hyper-links in the documents

## 2nd round

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation** | **Comments** |
| R4-2108536 | Draft CR for TS 38.174: IAB-MT EVM measurement | CATT | Endorsed |  |
| R4-2108537 | CR to TS 38.174 – corrections to general and transmitter part | Nokia, Nokia Shanghai Bell | Endorsed |  |
| R4-2108538 | CR to TS 38.174 – corrections to receiver part | Nokia, Nokia Shanghai Bell | Withdrawn | No need to revise R4-2110138. |
| R4-2108539 | CR on the further clear up the IAB specification | Ericsson | Endorsed |  |
| R4-2110138 | CR to TS 38.174 – corrections to receiver part | Nokia, Nokia Shanghai Bell | Noted | The status of R4-2110138 is changed from revised to noted. The endorsed R4-2106043 in RAN4#98b-e will be merged to the final big CR to TS 38.174. |

Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics.
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   2. Other documents: Agreeable, Revised, Noted
3. Do not include hyper-links in the documents