**3GPP TSG-RAN WG4 Meeting # 113 R4-24xxxxx**

**Orlando, US, 18th – 22nd November, 2024**

**Agenda item:** 5.1.3

**Source:** Moderator (Nokia)

**Title:** Offline minutes for [113][318] Demod\_Maintenance\_Part1

**Document for:** Information

# Introduction

*Briefly introduce background, the scope of this email discussion (e.g. list of treated agenda items) and provide some guidelines for email discussion if necessary.*

Offline minutes for [113][318] Demod\_Maintenance\_Part1, which uses NWM flagging process (“[113][318] Demod\_Maintenance\_Part1”).

# Topic #1: Up to Rel-17 maintenance for LTE and NR (4.6)

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

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| --- | --- | --- | --- | --- |
| **T-doc number** | **Company** | **Title** | **Flags and discussion** | **Related WI** |
| [**R4-2417610**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2417610.zip) | ROHDE & SCHWARZ, NOKIA | (NR\_cov\_enh-Perf) CR for 38.141-2 on removal of 4/8 Rx Branches for 8.2.13 test case | Moderator (Axel) flags R4-2417610: Coversheet says NR\_newRAT. Please check with MCC whether this needs correction.  == Offline discussion:  => Revise for coverpage and co-sources. | [**NR\_cov\_enh-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=900261) |
| R4-2417611 | ROHDE & SCHWARZ, NOKIA | (NR\_cov\_enh-Perf) CR for 38.141-2 on removal of 4/8 Rx Branches for 8.2.13 test case | Cat A  => Return to | [**NR\_cov\_enh-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=900261) |
| [**R4-2417562**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2417562.zip) | MediaTek inc., Huawei, HiSilicon | (NR\_demod\_enh2-Perf) CR for Rel-17 TS38.101-4, corrections on configurations for CQI reporting with inter-cell interference | Samsung(Lili) flags R4-2417562: we are fine with this correction, but please note for 6.2.2.2.2.3 and 6.2.3.2.2.3, if you'd like to update the row information for "First subcarrier index in the PRB used for CSI-RS (k0)" , you also need to update the information for "Number of CSI-RS ports (*X*)", since row 5 is for 4 ports.  == Offline discussion:  => Return to | [**NR\_demod\_enh2-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=890255) |
| R4-2417563 | MediaTek inc., Huawei, HiSilicon | (NR\_demod\_enh2-Perf) CR for Rel-18 TS38.101-4, corrections on configurations for CQI reporting with inter-cell interference | Cat A  => Return to | [**NR\_demod\_enh2-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=890255) |
| [**R4-2417964**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2417964.zip) | Rohde & Schwarz | (NR\_DL1024QAM\_FR1-Perf) Correction of Es level for SDR tests | => Agreed. | [**NR\_DL1024QAM\_FR1-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=890256) |
| R4-2417965 | Rohde & Schwarz | (NR\_DL1024QAM\_FR1-Perf) Correction of Es level for SDR tests | Cat A  => Agreed. | [**NR\_DL1024QAM\_FR1-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=890256) |
| [**R4-2418952**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418952.zip) | Huawei,HiSilicon | (NR\_eMIMO-Perf) CR on UE CSI requirements | Moderator note: Related to issue 1-1-1.  Nokia (Axel) flags R4-2418952: Note2 exactly tells us what to do if 6ms overlaps with special slot. No need to change 6ms, it is clear that first applicable slot (n+3) will be used. Also, wouldn't it be easier to change report slot offset to "3" (e.g., for FR1 FDD PMI <=4Tx) ?  Apple (Manasa) flags R4-2418952/R4-2418955/R4-2418945/R4-2418949/R4-2418961/R4-2418957 - wait for resolution of open issue. The requirements are derived based on the CQI/RI/PMI delay in the parameters table. Are we sure that requirements are still applicable with this update?  Qualcomm (Jahidur) flags:  R4-2418952/R4-2418955 - Similar concern as Apple posted above. We need to carefully check whether the requirements are still valid with the suggested changes.  Samsung(Lili) flags R4-2418952/R4-2418955/R4-2418945/R4-2418949/R4-2418957: for the CQI/PMI/RI delay value, we don't think current value has any problem.  == Offline discussion:  Huawei: Let’s discuss here. The proposed delays are not shorter than current. But if it’s shorter it may cause confusion. It does not match the assumptions in the core spec. We are not sure about real TE vendor implementation.  QC: Why was the value not aligned with the note before? Can anyone explain. At this point it may be too late to change this early feature and may have performance impact. Proposal: change the offset and not delay.  Apple: Similar concern as QC. Delay and note are not aligned, but we wonder why this setting from Rel-15 is only now a concern. So 5G UEs have been tested and should be able to deal with it. It is not preferable to change requirement at this point. What is the impact, if we just leave it? Any issues in testing.  Huawei: Want to check with TE vendors, what is the really used test configuration. From spec pov it is inconsistent. It is beneficial to keep spec consistent with note.  Nokia: The configuration will be adapted by the note during the test, so that there is no core spec violation.  KS: TE vendors will implement the delay configuration, then the delay config is considered to be consistent with core spec. Will need to check whether the note is then applied.  QC: There is no core spec requirement to offset the configuration so one would think that the configuration is directly applied.  Moderator: Is the note then simply ignored currently?  HW: There is no core spec, but RAN4 spec clearly has the note. We might even want to remove the note, if TE vendors don’t apply it.  Moderator: Come back in online with TE feedback if possible. | [**NR\_eMIMO-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=800285) |
| R4-2418953 | Huawei,HiSilicon | (NR\_eMIMO-Perf) CR on UE CSI requirements | Cat A | [**NR\_eMIMO-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=800285) |
| R4-2418954 | Huawei,HiSilicon | (NR\_eMIMO-Perf) CR on UE CSI requirements | Cat A | [**NR\_eMIMO-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=800285) |
| [**R4-2418955**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418955.zip) | Huawei, HiSilicon | (NR\_FeMIMO-Perf) CR on UE CSI requirements | Moderator note: Related to issue 1-1-1.  Nokia (Axel) flags R4-2418955: Same as R4-2418952.  Apple (Manasa) flags R4-2418952/R4-2418955/R4-2418945/R4-2418949/R4-2418961/R4-2418957 - wait for resolution of open issue. The requirements are derived based on the CQI/RI/PMI delay in the parameters table. Are we sure that requirements are still applicable with this update?  Qualcomm (Jahidur) flags:  R4-2418952/R4-2418955 - Similar concern as Apple posted above. We need to carefully check whether the requirements are still valid with the suggested changes.  Samsung(Lili) flags R4-2418952/R4-2418955/R4-2418945/R4-2418949/R4-2418957: for the CQI/PMI/RI delay value, we don't think current value has any problem.  == Offline discussion:  Please discuss under issue 1-1-1. | [**NR\_feMIMO-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=860240) |
| R4-2418956 | Huawei,HiSilicon | (NR\_FeMIMO-Perf) CR on UE CSI requirements | Cat A | [**NR\_feMIMO-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=860240) |
| [**R4-2419497**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2419497.zip) | Keysight Technologies | [NR\_HST\_FR1\_enh-Perf] Update FrequencyOccupation for CSI-RS for tracking in HST-SFN CA | Anritsu (Yamashita) flags R4-2419497 (KS). The explanation looks valid, but it appears that it only considered the case of u=1. Should we also consider the case of u=0? For example, FDD with SCS 15kHz, the CSI-RS periodicity is defined to be 10 slots. For FDD with BW 15 MHz or higher, the nrofRB for CSI-FrequencyOccupation for TRS will be higher than 52 based on TS38.508-1 Table 5.4.2.0-11.  Ericsson (Uesaka) flags R4-2419497: It has already been captured in FRC e.g., TS 38.101-4 Table A.3.2.2.2-10 Note 3. But we are also fine if TE vendor wants to capture it for clarification.  Apple (Manasa) flags R4-2419497 – Cover sheet -test spec is missing. For other BWs < 20MHz should be Number of PRB = ceil(BWP size/4)\*4  == Offline discussion:  KS: Offline discussion has been had. Draft revision is uploaded. Final version needs some format change.  HW: Wording needs further revision. The FRC is correct.  => Revise, revision available in draft folder. | [**NR\_HST\_FR1\_enh-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=890258) |
| R4-2419498 | Keysight Technologies UK Ltd | [NR\_HST\_FR1\_enh-Perf] Update FrequencyOccupation for CSI-RS for tracking in HST-SFN CA (Rel-18) | Cat A | [**NR\_HST\_FR1\_enh-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=890258) |
| [**R4-2417975**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2417975.zip) | Nokia | (NR\_L1enh\_URLLC-Perf) CR for 38.101-4 on missing MCS table name in FRC | => Agreed. | [**NR\_L1enh\_URLLC-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=830274) |
| R4-2417976 | Nokia | (NR\_L1enh\_URLLC-Perf) CR for 38.101-4 on missing MCS table name in FRC | Cat A  => Agreed. | [**NR\_L1enh\_URLLC-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=830274) |
| R4-2417977 | Nokia | (NR\_L1enh\_URLLC-Perf) CR for 38.101-4 on missing MCS table name in FRC | Cat A  => Agreed. | [**NR\_L1enh\_URLLC-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=830274) |
| [**R4-2417968**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2417968.zip) | Nokia | (NR\_newRAT-Perf) CR for 38.101-4 on FRC corrections | Moderator note: Related to issue 1-2-1.  Huawei (Li Ke) flags R4-2417968: Same as R4-2418116  Moderator: R4-2418116 is MTEK CR. Was this supposed to read R4-2418117?  == Offline discussion:  Moderator:  Was this checked with MCC? Please discuss technical content under issue 1-2-1.  Nokia: MCC is fine using newRAT.  Please discuss under issue 1-2-1.  => Return to | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| [**R4-2417969**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2417969.zip) | Nokia | (NR\_newRAT-Perf) CR for 38.101-4 on FRC corrections | Related to issue 1-2-1.  Moderator (Axel) flags R4-2417969 to R4-2417971: Please check with MCC, whether NR\_newRAT WIC can be re-used.  == Offline discussion:  => Return to | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| [**R4-2417970**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2417970.zip) | Nokia | (NR\_newRAT-Perf) CR for 38.101-4 on FRC corrections | Moderator notes:  Related to issue 1-2-1. Additional changes to initial Cat-F. Please check with MCC, whether NR\_newRAT WIC can be re-used.  Huawei (Li Ke) flags R4-2417970: Same as R4-2418116  Moderator: R4-2418116 is MTEK CR. Was this supposed to read R4-2418118?  == Offline discussion:  => Return to | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| [**R4-2417971**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2417971.zip) | Nokia | (NR\_newRAT-Perf) CR for 38.101-4 on FRC corrections | Moderator notes:  Related to issue 1-2-1. Additional changes to initial Cat-F. Please check with MCC, whether NR\_newRAT WIC can be re-used  Huawei (Li Ke) flags R4-2417971: Same as R4-2418116  Moderator: R4-2418116 is MTEK CR. Was this supposed to read R4-2418119?  == Offline discussion:  => Return to | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| [**R4-2417972**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2417972.zip) | Nokia | (NR\_newRAT-Perf) Discussion on FRC corrections to maximum throughput | Discussion.  => Noted  Moderator note: Related to issue 1-2-1.  Huawei (Li Ke) flags R4-2417972: Same as R4-2418116  Moderator: R4-2418116 is MTEK CR. Was this supposed to read differently? | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| [**R4-2418012**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418012.zip) | Qualcomm Incorporated | (NR\_newRAT-Perf) Clarify CSI-RS multiplexing for PMI Reporting Requirements | Moderator (Axel) flags R4-2418012: Initial release is 16, but WI code is NR\_newRAT. Please check with MCC, if mismatched WI can be used in this instance. Notes are using spaces instead of tab.  Huawei (Li Ke) flags R4-2418012: We are OK with change1 but not sure if change#2 to 5 are needed since they have been noted in the common parameter table.  R&S (Niels) flags R4-2418012 changes to the common section seem to be in conflict with existing notes in Annex A.4. Also not clear from our side why only slots CSI-RS for acquisition should be blanked and not all slots with CSI-RS as before.  Apple (Manasa) flags R4-2418012 – this change is not needed. The FRC clearly captures that no PDSCH in CSI-RS slots.  == Offline discussion:  QC: Only R&S gave feedback.  HW: First change ok, for change 2-5 same view as Apple. It is clear.  Apple: Need to discuss with QC offline. There is a note in the common part, and in RMC tables there is no scheduling for CSI-RS slots. Is the additional note needed.  QC: TRS is not there in CQI/RI. R&S thinks all slots are blanked, which is not the case.  MTEK: Agree with CR. Good to have note. Not aligned.  Apple: CQI/RI use different FRC table. No exact TPUT values etc.  HW: Revise change 1 wording to “no TRS for the CQI/RI test”.  QC: Now we would add C2-5 into C1. We propose a self-contained set. The CQI/RI FRCs are correct but the common parameters are not. We fix and then add note to PMI test. Partial change in 2021 was not enough.  Apple: We are fine with change.  HW: Now the note would be applicably for all testing. Why putting note in FRC.  MTEK: QC intention is to clarify. We have different setting for different test.  => Return to | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| R4-2418013 | Qualcomm Incorporated | (NR\_newRAT-Perf) Clarify CSI-RS multiplexing for PMI Reporting Requirements | Cat A | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| R4-2418014 | Qualcomm Incorporated | (NR\_newRAT-Perf) Clarify CSI-RS multiplexing for PMI Reporting Requirements | Cat A | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| [**R4-2418116**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418116.zip) | MediaTek inc. | CR for Rel-15 TS38.101-4, alignments on the expression of CSI-RS conigurations for CQI, PMI and RI requirements | Nokia (Axel) flags R4-2418116 to R4-2418118: I don't see the difference. Only () around l0?  Huawei (Li Ke) flags R4-2418116: Generally we are OK to align the expression of different clause. My preference is no bracket if there is only one argument.  Furthermore, maybe we also need Row configuration for the “First OFDM symbol in the PRB used for CSI-RS” to be aligned with “First subcarrier index in the PRB used for CSI-RS”?  Qualcomm (Jahidur) flags:  R4-2418116 - Not sure whether we need parentheses for "first OFDM symbol in the PRB used for CSI-RS". Also, we tend to think even a comma is not needed in between row information and subcarrier index. We can just follow what has already being used in RI TC, e.g., Row 3 (6)  == Offline discussion:  MTEK: Talked to Huawei and QC. It’s only about parenthesis, to align them.  HW: We are undoing a change from Ericsson a few years ago.  Apple: Supporting the CR.  QC: Also supporting.  => Return to, editorial change to be checked with chair. | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| [**R4-2418117**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418117.zip) | MediaTek inc. | CR for Rel-16 TS38.101-4, alignments on the expression of CSI-RS conigurations for CQI, PMI and RI requirements | Moderator note: Is Cat-F as it captures changes from prior release, plus additional ones.  == Offline discussion:  => Return to, editorial change to be checked with chair. | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| [**R4-2418118**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418118.zip) | MediaTek inc. | CR for Rel-17 TS38.101-4, alignments on the expression of CSI-RS conigurations for CQI, PMI and RI requirements | Moderator note: Is Cat-F as it captures changes from prior release, plus additional ones.  == Offline discussion:  => Return to, editorial change to be checked with chair. | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| [**~~R4-2418119~~**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418119.zip) | ~~MediaTek inc.~~ | ~~CR for Rel-18 TS38.101-4, alignments on the expression of CSI-RS conigurations for CQI, PMI and RI requirement~~ | ~~Withdrawn.~~ | [**~~NR\_newRAT-Perf~~**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| [**R4-2418597**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418597.zip) | Apple | (NR\_newRAT-Perf) Editorial CR to 38.101-4 on PDCCH requirements to unify table numbering format | Moderator (Axel) flags R4-2418597: 3GPP styles are missing from CR. Please check with MCC, if they are willing to implement, or fix. Start/end of change does not fit. Additionally, applicability references to PDCCH test case numbers seem unchanged (e.g., DRX Adaptation).  Huawei (Li Ke) flags R4-2418597: 1)   Prefix shoud start from 1 in each sub-clause rather than increasing with the chapter number increasing. 2)   The format is incorrect. Please change the format to be aligend spec.  MediaTek (Licheng) flags R4-2418597, R4-2418598, R4-2418599, R4-2418600: We are OK to add prefix to the PDCCH test case number. However, following the rule of PDSCH and PBCH requirements, the prefix shall be 1 as there is only one table in each Clause.  == Offline discussion:  => Revised | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| [**R4-2418598**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418598.zip) | Apple | (NR\_newRAT-Perf) Editorial CR to 38.101-4 on PDCCH requirements to unify table numbering format | Moderator (Axel) flags R4-2418598: Uploaded Cat A.  Huawei (Li Ke) flags R4-2418598: 1)    Prefix shoud start from 1 in each sub-clause rather than increasing with the chapter number increasing. 2)    The format is incorrect. Please change the format to be aligend spec. 3 )   The test number of PDCCH denoted in Table 5.1.1.3-1(Applicability rules for optional feature) shoud also be changed.  MediaTek (Licheng) flags R4-2418597, R4-2418598, R4-2418599, R4-2418600: We are OK to add prefix to the PDCCH test case number. However, following the rule of PDSCH and PBCH requirements, the prefix shall be 1 as there is only one table in each Clause.  == Offline discussion:  => Revised | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| [**R4-2418599**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418599.zip) | Apple | (NR\_newRAT-Perf) Editorial CR to 38.101-4 on PDCCH requirements to unify table numbering format | Moderator (Axel) flags R4-2418599: 3GPP styles are missing from CR. Please check with MCC, if they are willing to implement, or fix. Start/end of change does not fit. Additionally, applicability references to PDCCH test case numbers seem unchanged (e.g., DRX Adaptation).  Huawei (Li Ke) flags R4-2418599: Same as R4-2418598  MediaTek (Licheng) flags R4-2418597, R4-2418598, R4-2418599, R4-2418600: We are OK to add prefix to the PDCCH test case number. However, following the rule of PDSCH and PBCH requirements, the prefix shall be 1 as there is only one table in each Clause.  == Offline discussion:  => Revised | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| [**R4-2418600**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418600.zip) | Apple | (NR\_newRAT-Perf) Editorial CR to 38.101-4 on PDCCH requirements to unify table numbering format | Moderator (Axel) flags R4-2418600: Uploaded Cat A.  Huawei (Li Ke) flags R4-2418600: Same as R4-2418598  MediaTek (Licheng) flags R4-2418597, R4-2418598, R4-2418599, R4-2418600: We are OK to add prefix to the PDCCH test case number. However, following the rule of PDSCH and PBCH requirements, the prefix shall be 1 as there is only one table in each Clause.  == Offline discussion:  => Revised | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| Offline stopped here. | | | | |
| [**R4-2418944**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418944.zip) | Huawei,HiSilicon | Discussion on aperiodic CSI reporting requirements | Discussion.  => Noted  Moderator note: Related to issue 1-1-1.  Ericsson (Uesaka) flags: R4-2418944 et. al.: For Proposal 5, we should refer to TS 38.214 Table 5.4-2 because it is Type1 codebook with 2 CSI-RS ports. So we should keep 1.374 ms for FR2 CSI tests.  Qualcomm (Jahidur) flags:  R4-2418944: We share similar concerns as Ericsson. We don't think changes are needed for FR2 multi-Rx CSI tests.  == Offline discussion:  Discuss under 1-1-1. | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| [**R4-2418945**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418945.zip) | Huawei, HiSilicon | (NR\_newRAT-Perf) CR on UE CSI requirements | Moderator note: Related to issue 1-1-1.  Nokia (Axel) flags R4-2418945: Same as R4-2418952.  Ericsson (Uesaka) flags: R4-2418944 et. al.: For Proposal 5, we should refer to TS 38.214 Table 5.4-2 because it is Type1 codebook with 2 CSI-RS ports. So we should keep 1.374 ms for FR2 CSI tests.  Apple (Manasa) flags R4-2418952/R4-2418955/R4-2418945/R4-2418949/R4-2418961/R4-2418957 - wait for resolution of open issue. The requirements are derived based on the CQI/RI/PMI delay in the parameters table. Are we sure that requirements are still applicable with this update?  Samsung(Lili) flags R4-2418952/R4-2418955/R4-2418945/R4-2418949/R4-2418957: for the CQI/PMI/RI delay value, we don't think current value has any problem.  Qualcomm (Jahidur) flags:  R4-2418945/R4-2418949: Same comments apply as in R4-2418952/R4-2418955.  == Offline discussion:  Discuss under 1-1-1. | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| R4-2418946 | Huawei,HiSilicon | (NR\_newRAT-Perf) CR on UE CSI requirements | Cat A | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| R4-2418947 | Huawei,HiSilicon | (NR\_newRAT-Perf) CR on UE CSI requirements | Cat A | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| R4-2418948 | Huawei,HiSilicon | (NR\_newRAT-Perf) CR on UE CSI requirements | Cat A | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| R4-2419616 | MediaTek inc. | CR for Rel-18 TS38.101-4, alignments on the expression of CSI-RS conigurations for CQI, PMI and RI requirement | Cat A (of R4-2418118) | [**NR\_newRAT-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=750267) |
| [**R4-2417646**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2417646.zip) | CAICT | (NR\_NTN\_solutions-Perf) CR to 38.101-5 Rel-17 Cat-F for the Note in Table 8.2.1.1.2-1 | Huawei flags R4-2417646: Based on RAN4 agreements and our understanding,   * UE needs to pass TS38.101-4 **basic** requirements using TN test method   + UE needs to pass TS38.101-4 **mandatory** requirements anyway   + UE needs to pass TS38.101-4 **optional** requirements based on UE capability * UE needs to pass TS38.101-5 **additional optional** requirements based on UE capability of NTN using NTN test method   + If UE support NTN GSO only，**additional optional** requirements **shall not** apply   + If UE support NTN NGSO only，**additional optional** requirements **shall** apply   + If UE support both NTN NGSO and NTN GSO，**additional optional** requirements **shall** apply   Apple (Manasa) flags R4-2417646 – for R17 NTN, for NGSO both legacy requirements and new requirements are applicable in our understanding.  Ericsson (Jiakai) flags R4-2417646 Don't think this change is align with previous agreements.  Qualcomm (Jahidur) flags:  R4-2417646 – The legacy requirements in TS38.101-4 are applicable to both GSO and NGSO scenarios. The CR seems to suggest that requirements in TS38.101-4 are only applicable to NGSO scenarios. We don't think any changes are needed for this table.  == Offline discussion: | [**NR\_NTN\_solutions-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=860246) |
| [**R4-2417647**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2417647.zip) | CAICT | (NR\_NTN\_solutions-Perf) CR to 38.101-5 Rel-18 Cat-A for the Note in Table 8.2.1.1.2-1 | Moderator (Axel) flags R4-2418598: Uploaded Cat A. | [**NR\_NTN\_solutions-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=860246) |
| [**R4-2418965**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418965.zip) | Huawei,HiSilicon | (NR\_NTN\_solutions-Perf) CR on UE demodulation requirements | Moderator note: Clauses affected seems to be incorrect.  Ericsson (Jiakai) flags R4-2418965 Some are overlapped with another CR. Again, similar to CR R4-2418967, don't think it's needed.  [Wrong NWM thread] Qualcomm (Jahidur) flags: R4-2418965 Need to remove "and" from the first line under section 8.1.1.  == Offline discussion: | [**NR\_NTN\_solutions-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=860246) |
| R4-2418966 | Huawei,HiSilicon | (NR\_NTN\_solutions-Perf) CR on UE demodulation requirements | Cat A | [**NR\_NTN\_solutions-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=860246) |
| [**R4-2417669**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2417669.zip) | Anritsu Corporation | (NR\_perf\_enh-Perf) CR to minimum requirement for periodic CQI reporting | => Agreed?  Offline exchange between KS an Anritsu, lead to Anritsu asking for return to. | [**NR\_perf\_enh-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=840294) |
| R4-2417670 | Anritsu Corporation | (NR\_perf\_enh-Perf) CR to minimum requirement for periodic CQI reporting | Cat A  => Agreed.  Offline exchange between KS an Anritsu, lead to Anritsu asking for return to. | [**NR\_perf\_enh-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=840294) |
| R4-2417671 | Anritsu Corporation | (NR\_perf\_enh-Perf) CR to minimum requirement for periodic CQI reporting | Cat A  => Agreed.  Offline exchange between KS an Anritsu, lead to Anritsu asking for return to. | [**NR\_perf\_enh-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=840294) |
| [**R4-2418949**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418949.zip) | Huawei,HiSilicon | (NR\_perf\_enh-Perf) CR on UE CSI requirements | Moderator note: Related to issue 1-1-1.  Ericsson (Uesaka) flags: R4-2418944 et. al.: For Proposal 5, we should refer to TS 38.214 Table 5.4-2 because it is Type1 codebook with 2 CSI-RS ports. So we should keep 1.374 ms for FR2 CSI tests.  Apple (Manasa) flags R4-2418952/R4-2418955/R4-2418945/R4-2418949/R4-2418961/R4-2418957 - wait for resolution of open issue. The requirements are derived based on the CQI/RI/PMI delay in the parameters table. Are we sure that requirements are still applicable with this update?  Qualcomm (Jahidur) flags:  R4-2418945/R4-2418949: Same comments apply as in R4-2418952/R4-2418955.  == Offline discussion:  Discuss under 1-1-1. | [**NR\_perf\_enh-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=840294) |
| R4-2418950 | Huawei,HiSilicon | (NR\_perf\_enh-Perf) CR on UE CSI requirements | Cat A | [**NR\_perf\_enh-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=840294) |
| R4-2418951 | Huawei,HiSilicon | (NR\_perf\_enh-Perf) CR on UE CSI requirements | Cat A | [**NR\_perf\_enh-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=840294) |
| [**R4-2418961**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418961.zip) | Huawei, HiSilicon | (NR\_perf\_enh-Perf) CR on UE CA demodulation requirements | Ericsson (Uesaka) flags R4-2418961: It is correct 5MHz 30kHz can allocate up to 2 CCEs and 50MHz 120kHz can allocate up to 4 CCEs. It is reasonable to configure AL2 and AL4. However it implies to schedule DL scheduling only. We are not sure whether we need one more PDCCH for UL grant scheduling. Need feedback from TE vendors.  Apple (Manasa) flags R4-2418952/R4-2418955/R4-2418945/R4-2418949/R4-2418961/R4-2418957 - wait for resolution of open issue. The requirements are derived based on the CQI/RI/PMI delay in the parameters table. Are we sure that requirements are still applicable with this update?  Anritsu (Yamashita) flags R4-2418961: With regards to the comment from Ericsson on the number of DCIs to be scheduled, we agree that  it would be better to support the scheduling of two DCIs per slot to enable simultaneous scheduling of both DL and UL grants. To do that, we need to lower the aggregation level for both configurations.   * 5MHz BW 30kHz SCS => 2 CCEs -> AL1 to accommodate both DL grant and UL grant * 50MHz BW 30kHz SCS => 5 CCEs -> AL 2 to accommodate both DL grant and UL grant   == Offline discussion: | [**NR\_perf\_enh-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=840294) |
| R4-2418962 | Huawei,HiSilicon | (NR\_perf\_enh-Perf) CR on UE CA demodulation requirements | Cat A | [**NR\_perf\_enh-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=840294) |
| R4-2418963 | Huawei,HiSilicon | (NR\_perf\_enh-Perf) CR on UE CA demodulation requirements | Cat A | [**NR\_perf\_enh-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=840294) |
| [**R4-2418957**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418957.zip) | Huawei, HiSilicon | (NR\_redcap-Perf) CR on UE CSI requirements | Moderator note: Related to issue 1-1-1.  Nokia (Axel) flags R4-2418957: Same as R4-2418952.  Ericsson (Uesaka) flags: R4-2418944 et. al.: For Proposal 5, we should refer to TS 38.214 Table 5.4-2 because it is Type1 codebook with 2 CSI-RS ports. So we should keep 1.374 ms for FR2 CSI tests.  Apple (Manasa) flags R4-2418952/R4-2418955/R4-2418945/R4-2418949/R4-2418961/R4-2418957 - wait for resolution of open issue. The requirements are derived based on the CQI/RI/PMI delay in the parameters table. Are we sure that requirements are still applicable with this update?  Samsung(Lili) flags R4-2418952/R4-2418955/R4-2418945/R4-2418949/R4-2418957: for the CQI/PMI/RI delay value, we don't think current value has any problem.  == Offline discussion:  Discuss under 1-1-1. | [**NR\_redcap-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=900262) |
| R4-2418958 | Huawei,HiSilicon | (NR\_redcap-Perf) CR on UE CSI requirements | Cat A | [**NR\_redcap-Perf**](https://portal.3gpp.org/desktopmodules/WorkItem/WorkItemDetails.aspx?workitemId=900262) |

## Open issues summary

*Before Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies’ contributions.*

### Sub-topic 1-1: CQI/RI/PMI delay

*Sub-topic description:*

In R4-2418944 the proponent is highlighting a potential mismatch between CSI reporting settings (CQI/RI/PMI delay, report slot offset) and a common note on how quickly CQI/RI/PMI can be applied following the reception of a report.

One example given is as follows:

* FR1 FDD aperiodic PMI reporting requirements less or equal to 4Tx

|  |  |  |
| --- | --- | --- |
| Aperiodic Report Slot Offset |  | 4 |
| CQI/RI/PMI delay | ms | 6 |



*Note 2: If the UE reports in an available uplink reporting instance at slot#n based on PMI estimation at a downlink slot not later than slot#(n-3), this reported PMI cannot be applied at the gNB downlink before slot#(n+3).*

*Open issues and candidate options before meeting:*

**Issue 1-1-1: CSI reporting setting corrections given reporting quantity application timing notes**

* Proposals
  + Option 1 (Huawei): CSI reporting settings to obey reporting quantity application timing notes
    - Option 1a (Huawei): Make the following changes:  
      Change CQI/RI/PMI delay from 6 ms to 7 ms for FR1 FDD aperiodic PMI reporting requirements less or equal to 4Tx.  
      Change CQI/RI/PMI delay from 8 ms to 9 ms for FR1 FDD aperiodic PMI reporting requirements larger than 4Tx.  
      Change CQI/RI/PMI delay from 5.5 ms to 6 ms for FR1 TDD aperiodic PMI reporting requirements less or equal to 4Tx.  
      Change CQI/RI/PMI delay from 6.5 ms to 7 ms for FR1 TDD aperiodic PMI reporting requirements larger than 4Tx.  
      Change Aperiodic Report Slot Offset from 6 slots to 10 slots for FR2 TDD aperiodic CSI reporting requirements with DDSU TDD pattern.  
      Change CQI/RI/PMI delay from 1.375 ms to 2.375 ms for FR2 TDD aperiodic CSI reporting requirements with DDSU TDD pattern.
  + Option 2 (Offline; Huawei): Remove note 2, if TEs do not apply it.
  + Option 3 (Offline; Nokia): Change not needed. The note will change the configuration if required.
  + Other options not precluded.
* Recommended WF:
  + Discuss offline and online, whether any change is needed, and if yes, what changes to apply.
  + Decide related CRs after progress is made on the issue.
* Offline discussion
  + See discussion under R4-2418952.

### Sub-topic 1-2: Max Throughput calculation in RMCs

*Sub-topic description:*

In R4-2418944 the proponent is highlighting an agreement in a prior CR to use “floor()” operations, when calculating the max TPUT value in RMCs.  
A number of CRs is submitted to start unification of the application of this rule.

*Open issues and candidate options before meeting:*

**Issue 1-2-1: Max Throughput calculation in RMCs**

* Proposals
  + Option 1 (Nokia): Correct current specification and to use “floor()” of the “Max. Throughput averaged over x frames” parameters in the FRCs, where rounding has resulted in a higher throughput that is practically possible, and agree for future use of this rule.
  + Other options not precluded.
* Recommended WF:
  + Discuss offline and online.
  + Decide related CRs after progress is made on the issue.
* Offline discussion
  + Huawei: We don’t need this change. Rounding function is also common operation. No impact on test SNR.
  + Nokia: Similar CR was approved in Maastricht. In Maastricht the question was asked what to do about the remaining FRCs, so Nokia promised to check all FRCs. Several operations were found (floor, round, nothing). Hence, we promised to fix all FRCs.  
    With rounding there is the problem that an unreachable max TPUT is captured in some FRCs.
  + Huawei: We need to check if there a similar CR in Maastricht.  
    But we don’t need an agreement.
  + Nokia: In our companion tdoc we have listed the CR.
  + Huawei: In August meeting the CR from Nokia is agreed, it was good to be correct from here on out. No need to fix CRs all the way back, just fix from now on.  
    No error and no impact to testing.
  + Nokia: The value is not related to the 70% TPUT requirement. It is a calculated max TPUT value, and there not all rounding methods work, and it is not related or impacting the 70% operating point.
  + Huawei: It does not impact the real testing.
  + QC: This field is only there for RAN5 information purposes. But it can be corrected.
  + Huawei: We don’t see that this is needed. From technical pov rounding is also feasible. Alternative is add note at bottom of table rather than fixing 1 by 1.
  + Apple: This is for information. It’s good to have. But adding a note would require check in every table. Or we could just add to Nokia’s CR. In Maastricht we discussed that some TPUT values (if rounded up) it can never be achieved.

# Topic #2: Air-to-ground network for NR demodulation requirements (5.6.4)

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Company** | **Title** | **Flags and discussion** |
| [**R4-2418419**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418419.zip) | CMCC | Discussion on demod performance for ATG UE | Discussion.  => Noted |
| [**R4-2418420**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418420.zip) | CMCC | CR to TS 38.101-4 corrections of PDSCH and corresponding HARQ-ACK relationship for 30D4S6U TDD pattern for ATG | Moderator: Related to issue 2-1-1/2/3/4. Please discuss in the issues and agree recommendation after.  Huawei (Tricia Li) : We perfer to remove the HARQ-ACK feedback timing that requires UE to support *outOfOrderOperationDL-r16*, because this feature is designed for multi-TRP non-backhaul scenario that requires UE to support multi-DCI and multi-TRP. One HARQ-ACK timing scheme with HARQ-ACK disabled is enough for ATG demod perf testing.  ***outOfOrderOperationDL-r16*** Indicates whether the UE supports out of order operation for DL. The UE that indicates support of this feature shall support *multiDCI-MultiTRP-r16*. The capability signalling comprises the following parameters: *-     supportPDCCH-ToPDSCH-r16* indicates support out-of-order operation for PDCCH to PDSCH; *-        supportPDSCH-ToHARQ-ACK-r16* indicates support out-of-order operation for PDSCH to HARQ-ACK.  QC Pier flags ***R4-2418420*** We are fine with the PDSCH scheduling proposed to test UEs that do not support out of order, but there is no agreement on the test setup. We have not discussed using HARQ disabled in this WI, and propose to not schedule PDSCH on slot without an entry in the scheduled HARQ feedback table.  Extensive email discussion in “[113][318] Demod\_Maintenance\_Part1 - Comments Resolution for R4-2418420”.  == Recommendation: |
| [**R4-2419173**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2419173.zip) | ZTE Corporation, Sanechips | Discussion on R18 ATG HARQ k1 value | Discussion.  => Noted |

### Sub-topic 2-1: Timing relationship between PDSCH and HARQ-ACK

*Sub-topic description:*

In R4-2418944 the proponent is highlighting a proposal to enable PDSCH requirements with HARQ-ACK feedback for UE not supporting *outOfOrderOperationDL-r16.*

Additionally, an offline email exchange was observed before the meeting. We capture the opened issues here, which may inform the discussion around R4-2418944 and R4-2419173.

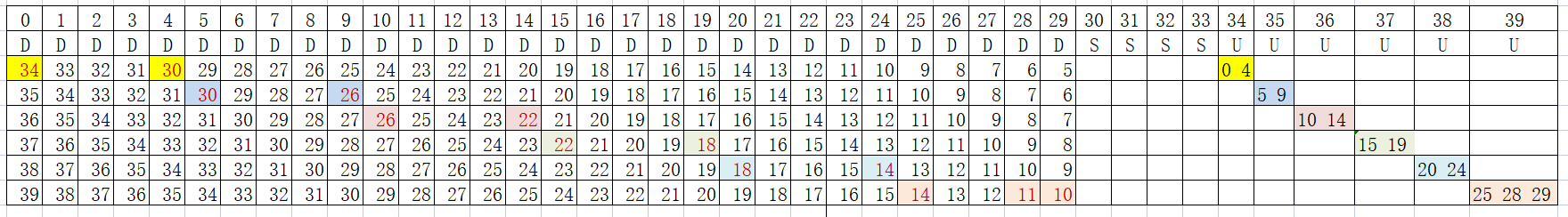
**Issue 2-1-1: TPUT counting of PDSCH slots with disabled HARQ**

* Proposals
  + Option 1 (QC): PDSCH is not allocated on slots with disabled HARQ, i.e., those that do not have a defined K1 value.
  + Other options not precluded.
* Recommended WF:
  + Discuss in first offline and collect/align understanding.
* Offline discussion

**Issue 2-1-2: HARQ-ACK feedback for UE that do support outOfOrderOperationDL-r16**

* Proposals
  + Option 1 (ZTE, Sanechips): Confirm that the outOfOrderOperationDL-r16 is a solution to the ATG HARQ timing issue.
  + Other options not precluded.
* Recommended WF:
  + Option 1 seems agreable.
* Offline discussion

**Issue 2-1-3: HARQ-ACK feedback for UE not supporting outOfOrderOperationDL-r16 – K1 setting**

* Background
  + Graphical representation of option 1 from R4-2418944  
      
    
* Proposals
  + Option 1 (CMCC): For UE not supporting outOfOrderOperationDL-r16, mapping relationship between PDSCH and HARQ-ACK as follows and capture K1 setting for both UE supporting and not supporting outOfOrderOperationDL-r16:

|  |  |  |
| --- | --- | --- |
| **The number of slots between PDSCH and corresponding HARQ-ACK information for UE not supporting outOfOrderOperationDL-r16 (Note 3)** |  | **34 if mod(i,40) = 0 30 if mod(i,40) = 4, 5 26 if mod(i,40) = 9,10 22 if mod(i,40) = 14,15 18 if mod(i,40) = 19,20 14 if mod(i,40) = 24,25 11 if mod(i,40) = 28 10 if mod(i,40) = 29** |

* + Other options not precluded.
* Recommended WF:
  + Option 1 seems agreeable.
* Offline discussion

**Issue 2-1-4: HARQ-ACK feedback for UE not supporting outOfOrderOperationDL-r16 – Requirement re-use**

* Proposals
  + Option 1 (CMCC): For UE not supporting outOfOrderOperationDL-r16, the current SNR requirement can be reused.
  + Option 2 (ZTE, Sanechips): Have different SNR requirements for both UE supporting and not supporting outOfOrderOperationDL-r16
  + Other options not precluded.
* Recommended WF:
  + Upon conclusion of issue 2-1-1, this issue may be decided quickly.
* Offline discussion

# Topic #3: Further RF requirements enhancement for NR and EN-DC in FR1 demodulation requirements (5.7.3)

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Company** | **Title** | **Flags and discussion** |
| [**R4-2418120**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2418120.zip) | MediaTek inc. | CR for Rel-18 TS38.101-4, alignments on the expression of CSI-RS conigurations for 8Rx CQI requirements | Nokia (Axel) flags R4-2418120: I don't see the difference. Only () around l0?  Huawei (Li Ke) flags R4-2418120:  Generally we are OK to align the expression of different clause. My preference is no bracket if there is only one argument.  Furthermore, maybe we also need Row configuration for the “First OFDM symbol in the PRB used for CSI-RS” to be aligned with “First subcarrier index in the PRB used for CSI-RS”?  == Offline discussion: |
| [**R4-2419332**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2419332.zip) | Ericsson | On the MIMO correlation matrices for 8Rx cases | Discussion.  => Noted |
| [**R4-2419333**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2419333.zip) | Ericsson | CR to 38101-4 Add MIMO correlation matrices for 8Rx cases | Nokia (Axel) flags R4-2419333: Added formula too large. Can we split  Huawei (Li Ke) flags R4-2419333: Maybe we can shrink the whole big matrix to make every element visiable in the table?  Apple (Manasa) flags R4-2419333 – the matrix is very large to fit in the page for 2x8 MedB and doesn’t serve the purpose. Suggest to not include it or use some way to split it / represent as smaller matrices if possible  == Offline discussion: |
| [**R4-2419335**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2419335.zip) | Ericsson | CR to 38101-4 Correction on the name of the 8Rx receiver | Nokia (Axel) flags R4-2419333: Added formula too large. Can we split?  Huawei (Li Ke) flags R4-2419335: 1)  We are OK to change the definition, but wording need to be refined to: **Baseline 8Rx Receiver:** 8Rx receivers with support of up to 8 layers with joint 8Rx MIMO detector. **Simplified 8Rx Receiver:** 8Rx receivers with support of only up to 4 layers with two joint 4Rx MIMO detectors. 2) The description of receiver type in Table 5.1.1.3-1 also need changes. 3) 38.306 also need changes  Apple (Manasa) flags R4-2419335 – We understand the motivation for this change, but we might also need to update RAN2 UE capability 38.306 with this. We would recommend to wait to see if we would need to define 2 sets of requirements for ICI and MU-MIMO for different receivers before updating the UE capabilities.  Nokia (Karsten) flags R4-2419335: For Rel-18 the current definition of baseline and simplified receiver is OK, hence no change currently needed. Pending discussion in Rel-19 on inter-cell and intra-cell inter-user interference, it can later be decided if it is required to change Rel-18 or if a change is only required in Rel-19. Suggest to postpone this CR to a later meeting.  Qualcomm (Dhananjaya) flags R4-2419335: Discussion required to agree on the proper definition for 8Rx receiver capabilities. In principle, agree t oremove SU-MIMO tag. Would prefer not to use word "two" instead use joint 4Rx receivers  == Offline discussion: |
| [**R4-2419406**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2419406.zip) | Huawei, HiSilicon | Updates to the requirements applicability for 8Rx | Nokia (Alexander) flags R4-2419406: Requirements are not defined according to device use. Such a note has not been discussed and cannot be agreed.  Ericsson (Jiakai) flags R4-2419406: Don't think this is needed.  == Offline discussion: |

## Open issues summary

*Before Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies’ contributions.*

None.

# NB-IoT/eMTC demodulation requirements (5.9.4)

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Company** | **Title** | **Flags and discussion** |
| [**R4-2417644**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2417644.zip) | CAICT | (LTE\_NBIoT\_eMTC\_NTN\_req-Perf) Discussion on the understanding of the Note in Table 8.2.1.2-1 of TS 36.102 | Linked to Issue 4-1-1.  Discussion.  => Noted  Nokia (Rafhael) flags R4-2417644: Should not only be applicable to GSO.  Huawei flags R4-2417644/5: Based on RAN4 agreements and our understanding,   * UE needs to pass TS36.101 **basic** requirements using TN test method   + UE needs to pass TS36.101 **mandatory** requirements for its UE category anyway   + UE needs to pass TS36.101 **optional** requirements for its UE category based on UE capability * UE needs to pass TS36.102 **additional optional** requirements for its UE category based on UE capability of NTN using NTN test method   + If UE support NTN GSO only，**additional optional** requirements **shall not** apply   + If UE support NTN NGSO only，**additional optional** requirements **shall** apply   + If UE support both NTN NGSO and NTN GSO，**additional optional** requirements **shall** apply   Ericsson (Uesaka) flags R4-2417644/5.  According to RAN4 agreement, NTN capable UE need to pass the existing TN tests in TS 36.101 according to the UE capability, regardless the UE supports NGSO or GSO. So I don't think we need "when ntn-ScenarioSupport-r17 is “gso” or is not included."  Qualcomm flags R4-2417644/5  According to R4-2220278, the applicability of 36.101 to NB-NTN access devices is clearly mentioned, and all legacy requirements shall be applicable irrespective of support to NGSO only, GSO only and/or both.  == Discussion under issue 4-1-1  == Recommendation: TBA |
| [**R4-2417645**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_113/Docs/R4-2417645.zip) | CAICT | (LTE\_NBIoT\_eMTC\_NTN\_req-Perf) CR to 36.102 Rel-18 Cat-F for the Note in Table 8.2.1.2-1 | Linked to Issue 4-1-1.  As in R4-2417645. |

## Open issues summary

*Before Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies’ contributions.*

### Sub-topic 4-1: Understanding of note in requirements applicability for optional UE features

*Sub-topic description:*

None.

**Issue 4-1-1: Understanding of note in requirements applicability for optional UE features**

* Background
  + The note under question is from TS 36.102:

**Table 8.2.1.2-1: Requirements applicability for optional UE features**

|  |  |  |
| --- | --- | --- |
| **UE feature/capability** | **Test list** | **Applicability notes** |
| […] | | |
| Operation in coverage enhancement mode B (ce-ModeB-r13) | Clause 8.2.1.1 (Test 3) | The requirements apply only for UE Category M1 |
| Note: For UE supports NTN access (*ntn-Connectivity-EPC-r17*), the requirements in TS36.101 Clause 8 and Clause 9 also applies to UE according to the UE category and capability | | |

* Proposals
  + Option 1 (CAICT): The Note in Table 8.2.1.2-1 of TS 36.102 only applies to GSO IoT NTN UE and does not apply to NGSO IoT NTN UE. For NGSO IoT NTN only UE that does not support TN and GSO, the requirements in TS36.101 Clause 8 and Clause 9 do not apply.  
    The Note in Table 8.2.1.2-1 of TS 36.102 needs to be revised to imply that it only apples to GSO IoT NTN UE and does not apply to NGSO IoT NTN UE.
  + Option 2 (CAICT): The Note in Table 8.2.1.2-1 of TS 36.102 applies to both GSO IoT NTN UE and NGSO IoT NTN UE. For NGSO IoT NTN only UE that does not support TN and GSO, the requirements in TS36.101 Clause 8 and Clause 9 also apply to UE according to the UE category and capability.  
    The Note in Table 8.2.1.2-1 of TS 36.102 remains as it is.
  + Other options not precluded.
* Recommended WF:
  + Discuss offline and online.
* Offline discussion
  + Moderator: The flags seem to align that “all legacy requirements shall be applicable irrespective of support to NGSO only, GSO only and/or both.”  
    Can we go with option 2 and set the CRs as not pursued?

# Tdoc and CR suggested status

Modified procedure

* Similar to the procedure during e-meetings, the moderator will provide a table at the end of the moderator summary listing all documents and their suggested status
* The format of this table should be 3 columns
  + First column is the tdoc number
  + Second column is the suggested status -> see options in the table on the right
  + Third column is any comments (optional)
* Please use this format because chair will try to directly import into chair’s spreadsheet

**Moderator’s note:**  
Note that these suggested statuses will only be created after the NWM flagging process. All non-flagged CRs will be recommended as “agreed”. All discussion tdocs will be proposed as “noted”.

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| **Up to Rel-17 maintenance for LTE and NR (4.6)** | | |
| **T-doc Number** | **Status** | **Comments (optional)** |
| R4-2417610 | Revise | Cover page fixes (NR\_cov\_enh-perf WI code) and add co-sources (China Telecom, Keysight) |
| R4-2417611 | Return to | Cat A |
| R4-2417562 | Return to |  |
| R4-2417563 | Return to | Cat A |
| R4-2417964 | Agreed |  |
| R4-2417965 | Agreed | Cat A |
| R4-2418952 | Return to | Discuss under issue 1-1-1. |
| R4-2418953 | Return to | Cat A |
| R4-2418954 | Return to | Cat A |
| R4-2418955 | Return to | Discuss under issue 1-1-1. |
| R4-2418956 | Return to | Cat A |
| R4-2419497 | Revise | Revision available in draft folder |
| R4-2419498 | Return to | Cat A |
| R4-2417975 | Agreed |  |
| R4-2417976 | Agreed | Cat A |
| R4-2417977 | Agreed | Cat A |
| R4-2417968 | Return to | Discuss under issue 1-2-1. |
| R4-2417969 | Return to | Discuss under issue 1-2-1. |
| R4-2417970 | Return to | Discuss under issue 1-2-1. |
| R4-2417971 | Return to | Discuss under issue 1-2-1. |
| R4-2417972 | Noted | Discussion |
| R4-2418012 | Return to |  |
| R4-2418013 | Return to | Cat A |
| R4-2418014 | Return to | Cat A |
| R4-2418116 | Return to | Editorial change to be checked with chair. |
| R4-2418117 | Return to | Editorial change to be checked with chair. |
| R4-2418118 | Return to | Editorial change to be checked with chair. |
| R4-2418597 | Revised |  |
| R4-2418598 | Revised |  |
| R4-2418599 | Revised |  |
| R4-2418600 | Revised |  |
| R4-2418944 | Noted | Discussion |
| R4-2418945 | Return to | Discuss under issue 1-1-1. |
| R4-2418946 | Return to | Cat A |
| R4-2418947 | Return to | Cat A |
| R4-2418948 | Return to | Cat A |
| R4-2419616 | Return to | Cat A (of R4-2418118) |
| R4-2417646 | Return to |  |
| R4-2417647 | Return to | Cat A (uploaded before meeting) |
| R4-2418965 | Return to |  |
| R4-2418966 | Return to | Cat A |
| R4-2417669 | Return to |  |
| R4-2417670 | Return to | Cat A |
| R4-2417671 | Return to | Cat A |
| R4-2418949 | Return to | Discuss under issue 1-1-1. |
| R4-2418950 | Return to | Cat A |
| R4-2418951 | Return to | Cat A |
| R4-2418961 | Return to |  |
| R4-2418962 | Return to | Cat A |
| R4-2418963 | Return to | Cat A |
| R4-2418957 | Return to | Discuss under issue 1-1-1. |
| R4-2418958 | Return to | Cat A |

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| **Air-to-ground network for NR demodulation requirements (5.6.4)** | | |
| **T-doc Number** | **Status** | **Comments (optional)** |
| R4-2418419 | Noted | Discussion |
| R4-2418420 | Return to | Related to issue 2-1-1/2/3/4. |
| R4-2419173 | Noted | Discussion |

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| **Further RF requirements enhancement for NR and EN-DC in FR1 demodulation requirements (5.7.3)** | | |
| **T-doc Number** | **Status** | **Comments (optional)** |
| R4-2418120 | Return to |  |
| R4-2419332 | Noted | Discussion |
| R4-2419333 | Return to |  |
| R4-2419335 | Return to |  |
| R4-2419406 | Return to |  |

|  |  |  |
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| **NB-IoT/eMTC demodulation requirements (5.9.4)** | | |
| **T-doc Number** | **Status** | **Comments (optional)** |
| R4-2417644 | Noted | Discussion |
| R4-2417645 | Return to |  |