**3GPP TSG-RAN WG4 Meeting #94-e R4-20xxxxx**

**Electronic Meeting, Feb.24th – Mar.6th 2020**

**Agenda item:** 6.11.3

**Source:** Moderator (Huawei)

**Title:** Email discussion summary for RAN4#94e\_#44\_NR\_NewRAT\_RRM\_Perf\_Part\_2

**Document for:** Information

# Introduction

This email discussion is for AI 6.11.3 – Rel-15 NR RRM test cases. There are 26 CRs (excluding Cat-A CRs) submitted and 25 are available. As most of the CRs are addressing separate and very detailed issues, the main changes and the reason for change will be listed for each CR in section X.1, but there will be no summary for technical open issues in section X.2. For comment collection, please provide your comments directly for each CR in section X.3.2.

According to the guidelines from the Chair, please try to provide comments by Wednesday 5pm UTC Feb. 26. If no comment is received for a CR by then, it will be recommended to be agreed in the summary for the 1st round.

# Topic #1: Ilde and Connected mobility test cases

## Companies’ contributions summary

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| --- | --- | --- |
| **T-doc number** | **Company** | **Summary of changes** |
| **Idle state mobility** |
| [**R4-2000082**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000082.zip) | ANRITSU LTD | TC: Cell reselection to FR2 inter-frequency NR caseReason: changes to Es/Noc values were agreed in R4-1914411 but not fully implemented.1. Update the Es/Noc values to align with the intended Es/Iot values.
2. Specify Noc values per frequency and propagation per cell.
 |
| R4-2000083 | ANRITSU LTD | Not available |
| [**R4-2000163**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000163.zip) | ANRITSU LTD | TC: Inter-RAT E-UTRAN cell re-selectionReason: with current index E-UTRA PRACH will be in DL subframes. Initial cell should be the NR cell (Cell1).1. prach-ConfigurationIndex = 87 is changed to 102 for E-UTRA cell
2. Initial Cell is changed from Cell2 to Cell1
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| [**R4-2001617**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001617.zip) | Huawei, HiSilicon | TC: Cell reselection to FR2 intra-frequency NR caseReason: currently the RSRP difference between the two cells is 3dB, while in the core requirements in section 4.2.2.3 the ranking margin is 4.5dB. However, if the difference is set to 4.5dB, the Es/Iot of the weaker cell would be below -4dB, which is the side condition of cell reselection requirements. 1. The test setup is updated so that there is no inter-cell interference between the two cells on the SSB symbols. This is achieved by- Using two different SSB indices for the two cells, and - Removing the OCNG on the SSB symbols
2. The RSRP, Es/Noc, Es/Iot and Io are also updated accordingly.
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| **Connected state mobility** |
| [**R4-2001611**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001611.zip) | Huawei, HiSilicon | TC: Random Access for FR2 in EN-DC and SAReason: one of the test requirements is to verify that the power of preamble transmission is with the accuracy as defined in section 6.3.4 of 38.101-2. However, in 38.101-2, the power tolerance requirements are only defined in beam peak direction.1. Change the AoA setup for random access test cases to setup 1.
 |
| [**R4-2001602**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001602.zip) | Huawei, HiSilicon | TC: RRC Connection Release with Redirection for FR1 and FR2Reason: In RAN4 #91 R4-1905803 was agreed to remove the case TSI-NR = 0 in RRC release with redirection delay requirements because NR RRCRelease message can’t carry SI.1. Update test requirements where TSI-NR is changed from 0 to 1280ms.
2. Related descriptions in TCs are corrected.
 |

## Open issues summary

## Companies views’ collection for 1st round

### Open issues

### CRs/TPs comments collection

|  |  |
| --- | --- |
| **CR number** | **Comments collection** |
| R4-2000082 | Ericsson : OK |
|  Nokia: OK, it was agreed in last meeting. |
|  |
| R4-2000163 | Ericsson : OK |
|  |
|  |
| R4-2001617 | Ericsson : OK |
| Nokia: need more study |
|  |
| [R4-2001611](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001611.zip) | Ericsson : OK |
| QC: We would want to keep this in setup 2b as testing RACH from multiple directions is important. We can remove testing the preamable transmission power from this test and a separate test in beam peak direction to test that.  |
|  |
| [R4-2001602](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001602.zip) | Ericsson : OK |
|  |
|  |

## Summary for 1st round

### Open issues

### CRs/TPs

Moderator’s suggestions are made for the following CRs based on comments received from 1st round.

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Company** | **Recommendation** | **Moderator’s Remarks** |
| [**R4-2000082**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000082.zip) | ANRITSU LTD | Agree | No concern received from 1st round. |
| R4-2000083 | ANRITSU LTD | Withdraw | Not available |
| [**R4-2000163**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000163.zip) | ANRITSU LTD | Agree | No concern received from 1st round. |
| [**R4-2001611**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001611.zip) | Huawei, HiSilicon | Return to | Concern from QC. |
| [**R4-2001602**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001602.zip) | Huawei, HiSilicon | Agree | No concern received from 1st round. |

## Discussion on 2nd round (if applicable)

Notes from moderator after 1st round discussion:

Note 1: R4-2000083 is the intended Cat-A CR for R4-2000082, so it is agreed in the Chairman Notes with the CR category changed to Cat-A.

Note 2: Conclusion for R4-2001617 is missing, and it will be further discussed in the 2nd round.

|  |  |
| --- | --- |
| R4-2001617 | Ericsson : OK |
| Nokia: need more study |
| Huawei, HiSilicon: In current test case for FR2, the RSRP difference between the two cells is 3dB, while in the core requirements in section 4.2.2.3 the ranking margin is 4.5dB. However, if the difference is set to 4.5dB, the Es/Iot of the weaker cell would be below -4dB, which is the side condition of cell reselection requirements.To make the test setup aligned to the ranking margin and at the same time maintaining side conditino for both serving and neighbor cells, we need to make the SSBs from the two cells TDM-ed, and that’s the change to the test case in the CR. Hope this clarifies for Nokia. |
| Nokia: OK |
| [R4-2001611](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001611.zip) | Ericsson : OK |
| QC: We would want to keep this in setup 2b as testing RACH from multiple directions is important. We can remove testing the preamable transmission power from this test and a separate test in beam peak direction to test that.  |
| Huawei, HiSilicon: We do not see the point to have RACH test using both AoA setup 1 and setup 2b. We prefer to define the test under setup 1. We agreed to use setup 2b because in real world UE may conduct RACH towards a cell in spherical coverage direction, but for spherical coverage directions,- The RRM measurement performance can already be verified by other test cases, e.g. event triggered reporting tests and measurement accuracy tests. - The Tx power requirements cannot be verified anyway because there is no RF requriement. There seems to be not much improvement on the test coverage by using setup 2b while one test requriement (preamble Tx power accuracy) is not testable.  |
| QC:The RACH test is pretty much the only test that actually checks that UE can perform proper UL transmissions in multiple directions. We see more value in testing that functionality rather that TX power. As we said, if TX power testing is a concern we are ok to add another test in beam peak direction.  |
| Huawei, HiSilicon: Our preference is AoA setup 1 as we can test all the RRM related requirements with it. However, given the concern from QC, for this meeting we can accept to keep the AoA setup as 2b and remove the power accuracy related test requirements. Companies can further check if another set of RACH test cases should be defined with AoA setup 1 to verify the power accuracy.  |

## 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*

|  |  |
| --- | --- |
| **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: Timing and signaling characteristics test cases

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Summary of changes** |
| **Timing** |
| [**R4-2000168**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000168.zip) | ANRITSU LTD | TC: NR UE Transmit Timing Test for FR1 for EN-DC and SAReason: SRS timing is configured on slot 0 which is not UL slot.1. Update SRS configuration such that

- SCS=30KHz : periodicityAndOffset-p = sl640:5- SCS=15KHz : periodicityAndOffset-p= sl320:3 |
| **RLM and BFR** |
| [**R4-2002135**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2002135.zip) | Qualcomm | TC: SSB based RLM for FR1 in EN-DC and SAReason: the PRACH configurations used in the existing specs are using CSI-RS based BFR-RACH configurations1. Replace PRACH config 4 with PRACH config 1
 |
| [**R4-2002160**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2002160.zip) | Qualcomm | TC: SSB based RLM for FR1 in EN-DC and SAReason: the PRACH configurations used in the existing specs are using CSI-RS based BFR-RACH configurationsReplace PRACH config 4 with PRACH config 1 |
| [**R4-2002134**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2002134.zip) | Qualcomm | TC: SSB based BFR for FR1 in EN-DC and SAReason: the PRACH configurations used in the existing specs are using CSI-RS based BFR-RACH configurationsReplace PRACH config 4 with PRACH config 1 |
| [**R4-2001613**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001613.zip) | Huawei, HiSilicon | TC: SSB based RLM for FR1 and FR2 in EN-DCReason: to avoid SSB being used for BFD1. Clarify that the purpose field included in RadioLinkMonitoringRS IE is set to ‘rlf’.
 |
| [**R4-2001615**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001615.zip) | Huawei, HiSilicon | TC: SSB based RLM for FR1 and FR2 in SAReason: to avoid SSB being used for BFD1. Clarify that the purpose field included in RadioLinkMonitoringRS IE is set to ‘rlf’.
 |
| **Interruption** |
| [**R4-2001596**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001596.zip) | Huawei, HiSilicon | TC: Interruption for FR1 in EN-DC/SA and FR2 in EN-DCReason: There are some errors in Io calculation, RF channel numbers, as well as the applicable test requirements.1. The values of Io in A.4.5.2 and A.6.5.2 are corrected. (Already agreed in R4-19114428 in RAN4 #93 meeting)
2. The 3rd RF channel is added and allocated to SCell in test case 4.5.2.3/4.5.2.4/4.5.2.5/4.5.2.6/5.5.2.3/5.5.2.4/5.5.2.5/5.5.2.6
3. Test requirements in 4.5.2.3/4.5.2.4/4.5.2.6 is corrected.
4. Table A.5.5.2.5.2-2 and Table A.5.5.2.6.2-2 are voided. Reference of these two tables in test cases are also removed.
 |
| **UL carrier RRC reconfiguration** |
| [**R4-2001604**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001604.zip) | Huawei, HiSilicon | TC: UE UL carrier RRC reconfiguration Delay for FR1 and FR2 in EN-DCReason: The PUSCH configuration in TS 38.104 referred by the test cases Table A.3-1 has been voided. 1. Update the PUSCH configuration to use the nearest configuration in 38.104.- G-FR1-A3-3 is changed to G-FR1-A3-10;- G-FR1-A3-7 is changed to G-FR1-A3-14;
2. Typos are corrected.
 |
| **Other** |
| [**R4-2001600**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001600.zip) | Huawei, HiSilicon | TC: a number of test cases, please refer to the CR for detailsReason: RF channel setting in several test cases are incorrect. 1. A RF channel is added for PSCell in A.4.5.5.3 and A.4.5.5.4;
2. A RF channel is added for SCell in A.7.5.3.1;
3. RF channel for E-UTRA PCell is removed in A.7.5.8.1.1;
4. Meaning of “RF channel number” is changed in A.6.5.6.1.1, A.7.5.6.1.1, and A.8.4.2.1-A.8.4.2.8
5. Typos are corrected.
 |

## Open issues summary

## Companies views’ collection for 1st round

### Open issues

### CRs/TPs comments collection

|  |  |
| --- | --- |
| **CR number** | **Comments collection** |
| R4-2000168 | Ericsson: OK |
| Nokia: Could Anritsu give further information on how the offsets were calculated? |
|   |
| R4-2002135 | Ericsson : OK |
| QC: this is withdrawn. 2160 covers the same material |
|  |
| R4-2002160 | Ericsson : OK |
| QC: Would need revision number to update cover sheet |
| Nokia: OK with the PRACH configuration change. |
| R4-2002134 | Ericsson : OK, change to PRACH config seems reasonable |
| Nokia: OK with the PRACH configuration change. |
|  |
| R4-2001613 | Ericsson : OK |
|  |
|  |
| R4-2001615 | Ericsson : OK |
|  |
|  |
| R4-2001596 | Ericsson : OK |
| Nokia: OK |
|  |
| R4-2001604 | Ericsson : OK |
| Nokia: OK |
|  |
| R4-2001600 | Ericsson : OK |
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## Summary for 1st round

### Open issues

### CRs/TPs

Moderator’s suggestions are made for the following CRs based on comments received from 1st round.

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| --- | --- | --- | --- |
| **T-doc number** | **Company** | **Recommendation** | **Moderator’s Remarks** |
| [**R4-2000168**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000168.zip) | ANRITSU LTD | Return to | Clarification question from Nokia |
| [**R4-2002135**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2002135.zip) | Qualcomm | Withdraw | Sourcing company requested to withdraw |
| [**R4-2002160**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2002160.zip) | Qualcomm | Revise | Sourcing company indicated cover sheet issueNo concern received from 1st round. |
| [**R4-2002134**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2002134.zip) | Qualcomm | Agree | No concern received from 1st round. |
| [**R4-2001613**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001613.zip) | Huawei, HiSilicon | Agree | No concern received from 1st round. |
| [**R4-2001615**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001615.zip) | Huawei, HiSilicon | Agree | No concern received from 1st round. |
| [**R4-2001596**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001596.zip) | Huawei, HiSilicon | Agree | No concern received from 1st round. |
| [**R4-2001604**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001604.zip) | Huawei, HiSilicon | Agree | No concern received from 1st round. |
| [**R4-2001600**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001600.zip) | Huawei, HiSilicon | Agree | No concern received from 1st round. |

## Discussion on 2nd round (if applicable)

|  |  |
| --- | --- |
| R4-2000168 | Ericsson: OK |
| Nokia: Could Anritsu give further information on how the offsets were calculated? |
| Anritsu: Other offset values are possible, but it is best to standardise the test implementation. The offset value derivation is basically just to choose a slot# which is an UL slot.Some freedom of choice is possible, for example in 15kHz either #2 or #3 is UL slot then #2 would be also possible. The values chosen have been checked to work on our system with UEs, and should also be OK for other implementations that follow 38.133.  |
| Nokia: #2 and #3 is UL slot in 15kHz, #4,#5, #6, #7 is UL slot in 30kHz, they are all possible, #1 slot in 15kHz and #3 slot in 3kHz for “S” slot, SRS could also be sent in “S” slot. Since all these slots are possible, Do we have any rule to choose the slot?  |
| Anritsu: In terms of the test purpose, which is “*to verify that the UE can follow frame timing change of the connected gNodeb and that the UE initial transmit timing accuracy, maximum amount of timing change in one adjustment, minimum and maximum adjustment rate are within the specified limits*” we didn’t see a need for a have any specific rule to choose the slot.The actual test requirements in 38.133 clause A.4.4.1.1.2 state:2)  After connection set up with the cell, the test equipment will verify that the timing of the NR cell is within (NTA + NTA\_offset)×Tc ± Te of the first detected path of DL SSB.…4)  The test system shall verify that the adjustment step size and the adjustment rate shall be according to requirements specified in Clause 7.1.2 Table 7.1.2-3 until the UE transmit timing offset is within (NTA + NTA\_offset) ×Tc ± Te respective to the first detected path (in time) of DL SSB. Skip this step for test 2 with DRX configured.5)  The test system shall verify that the UE transmit timing offset stays within (NTA + NTA\_offset) ×Tc ± Te of the first detected path of DL SSB. For Test 2 the UE transmit timing offset shall be verified for the first transmission in the DRX cycle immediately after DL timing adjustment.In our understanding these test requirements can be tested adequately by using any of the allowed slots (for example there would be no benefit to testing all the possible slots). |
| R4-2002160 | Ericsson : OK |
| QC: Would need revision number to update cover sheet |
| Nokia: OK with the PRACH configuration change. |
| From Chairman Notes: The Draft CR is requested as Rel-16 but cover sheet has Rel-15. Proponents need to clarify the applicable release in the 2nd round and inform session chair. |
| R4-2002134 | Ericsson : OK, change to PRACH config seems reasonable |
| Nokia: OK with the PRACH configuration change. |
| From Chairman Notes: This is Draft CR and cannot be agreed (only endorsed). The Draft CR is requested as Rel-16 but cover sheet has Rel-15. Proponents need to clarify the applicable release in the 2nd round and inform session chair. |

## 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*

|  |  |
| --- | --- |
| **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 #3: measurement procedure and measurement accuracy test cases

## Companies’ contributions summary

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| --- | --- | --- |
| **T-doc number** | **Company** | **Summary of changes** |
| **Measurement procedure** |
| [**R4-2000161**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000161.zip) | ANRITSU LTD | TC: Intra-frequency event triggered reporting for FR1 in EN-DC/SAReason: in some of test cases, DLBWP.1.2 is used as active DL BWP and ULBWP.1.1 is used as active UL BWP, but they are with different BW. This is not aligned with the other similar test cases.1. Active UL BWP for test case A.4.6.1.6, A.6.6.1.3, A.6.6.1.4 and A.6.6.1.6 are changed to ULBWP.1.2
 |
| [**R4-2001598**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001598.zip) | Huawei, HiSilicon | TC: Intra-frequency event triggered reporting for FR1 in EN-DC/SAReason: in some of test cases, DLBWP.1.2 is used as active DL BWP and ULBWP.1.1 is used as active UL BWP, but they are with different BW. This is not aligned with the other similar test cases.Active UL BWP for test case A.4.6.1.6, A.6.6.1.3, A.6.6.1.4 and A.6.6.1.6 are changed to ULBWP.1.2 |
| [**R4-2000166**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000166.zip) | ANRITSU LTD | TC: Intra-frequency event triggered reporting for FR1 and FR2 in SAReason: ‘Time offset between PCell and PSCell’ parameter is not needed as no PSCell in SA mode.1. Time offset between PCell and PSCell” parameters are removed from SA test cases.
 |
| [**R4-2000382**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000382.zip) | Intel Corporation | TC: Inter-frequency event triggered reporting for FR2 in SAReason: R4-1914656 was agreed in RAN4 #93. However, it was somehow not implemented due to compatibility issue raised by R4-1911045.1. Correct AoA setup
 |
| [**R4-2001594**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001594.zip) | Huawei, HiSilicon | TC: Inter-RAT event triggered reporting for FR1 in SA Reason: The current input power level and B2 threshold did not consider margin for fading channel, which was agreed as 2dB by RAN5. 1. Update test parameters of input power level and B2 threshold to leave 2dB margin for fading channel.
2. Editorial errors are corrected.
 |
| [**R4-2001396**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001396.zip) | Ericsson | TC: L1-RSRP reporting delay for FR1 EN-DCReason: Clause A.4.6.3 contains the same group of L1-RSRP measurement test cases as in SA section 6.6.4 but the numbering between those two sections is misaligned. Current requirements do not specify whether to use absolute or relative accuracy values which may cause ambiguity.1. Clause A.4.6.3 changed to Void and new clause A.4.6.4 created to align with SA section A.6.6.4 containing the same group of L1-RSRP measurement for beam reporting test cases
2. Clarification regarding absolute accuracy requirement and relative accuracy requirement was added.
 |
| [**R4-2001398**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001398.zip) | Ericsson | TC: L1-RSRP reporting delay for FR1 SAReason: Current requirements do not specify whether to use absolute or relative accuracy values which may cause ambiguity.1. Clarification regarding absolute accuracy requirement and relative accuracy requirement was added.
 |
| **Measurement accuracy** |
| [**R4-2000170**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000170.zip) | ANRITSU LTD | TC: FR2 Intra-frequency SS-RSRP accuracy for EN-DC and SAReason: Test requirements in Test cases A.5.7.1.1 and A.7.7.1.1 FR2 Intra-frequency SS-RSRP accuracy are not defined.1. Update the Test requirements in Test cases A.5.7.1.1 and A.7.7.1.1 to take into account the UE gain range agreed in RAN4#93:

- For absolute SS-RSRP accuracy, update Tables A.5.7.1.1.3-1 and A.7.7.1.1.3-1. |
| [**R4-2000172**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000172.zip) | ANRITSU LTD | TC: FR2 Inter-frequency SS-RSRP accuracy for EN-DC and SAReason: The Test requirements in Test cases A.5.7.1.2 and A.7.7.1.2 FR2 Inter-frequency SS-RSRP accuracy are not defined.1. Update the Test requirements in Test cases A.5.7.1.2 and A.7.7.1.2 to take into account the UE gain range agreed in RAN4#93:

- For absolute SS-RSRP accuracy, add Tables A.5.7.1.2.3-1 and A.7.7.1.2.3-1 - For relative SS-RSRP accuracy, add Tables A.5.7.1.2.3-2 and A.7.7.1.2.3-2 |
| [**R4-2001373**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001373.zip) | Rohde & Schwarz | TC: Inter-frequency RSRQ measurement accuracy for FR1 in EN-DCReason: the test case was mistakenly removed in an earlier meeting and has not been added back.1. Added back TC A.4.7.2.2.
 |
| [**R4-2001565**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001565.zip) | Huawei, HiSilicon | TC: Inter-frequency RSRQ measurement accuracy for FR1 in EN-DCReason: the test case was mistakenly removed in an earlier meeting and has not been added back.1. Added back TC A.4.7.2.2.
 |

## Open issues summary

## Companies views’ collection for 1st round

### Open issues

### CRs/TPs comments collection

|  |  |
| --- | --- |
| **CR number** | **Comments collection** |
| R4-2000161 | Ericsson : OK |
| Huawei, HiSilicon: Our CR R4-2001598 made the same change. We can work on Anritsu CR. |
| Nokia: OK |
| R4-2001598 | Ericsson : Agree, with CR UL BWP is not critical to test purpose |
| Huawei, HiSilicon: can be merged into Anritsu CR R4-2000161. |
| Nokia: same change as Anritsu’s CR R4-2000161 |
| R4-2000166 | Ericsson : OK |
| Nokia: OK |
|  |
| R4-2000382 | Ericsson : This CR is OK. The reason this aspect of the CR was not implemented is that Intel used an out of date baseline to make a CR in October bis meeting which was technically endorsed. Then Ericsson updated other aspects of the CR (not related to OTA setup) in November, using the Intel CR as the starting point. However, it created a conflict when MCC tried to implement this particular change. Setup 3 is correct. |
| Intel: work item code is incorrect in the cover sheet. It needs to be revised. |
|  |
| R4-2001594 | Ericsson: Extra 2dB seems reasonable as fading margin. |
| Nokia: OK, it was agreed in last meeting. |
|  |
| R4-2001396 | Huawei, HiSilicon: OK. |
| Nokia: This change is not essential. let's minimize R15 changes. Spec is closed and only essential corrections should be allowed for R15. Maybe can update in R16 if needed. |
|  |
| R4-2001398 | Huawei, HiSilicon: OK. |
| Nokia: it is not essential to clarify absolute and relative accuracy requirement as the section 10.1.19.1 will indicate it anyway. let's minimize R15 changes. Spec is closed and only essential corrections should be allowed for R15. Maybe can update in R16 if needed. |
|  |
| R4-2000170  | Ericsson : OK |
| Nokia: OK |
|  |
| R4-2000172  | Ericsson : OK |
| Nokia: OK |
|  |
| R4-2001373  | Ericsson : OK, however Hauwei also has a CR to address the same issue |
| Huawei, HiSilicon: We have CR for the same issue. To R&S: per our email discussion in January, would it be ok to work on Huawei CR R4-2001565? |
| Nokia: OK |
| R&S: To HW, though the same technical content with R4-2001565, the format of Table A.4.7.2.2.2-2 has been improved. If HW implements the same table in their CR, we are fine to withdraw. |
| R4-2001565 | Ericsson : OK, however R&S also has a CR to address the same issue |
| Huawei, HiSilicon: R&S has same CR in R4-2001373. Please refer to our comments for R4-2001373. |
| Nokia: OK, same change as R&S CR R4-2001373 |
| R&S: Same technical content with R4-2001373 , but format of Table A.4.7.2.2.2-2 needs to be improved in a revision. Please refer to our comment for R4-2001373 . |

## Summary for 1st round

### Open issues

### CRs/TPs

Moderator’s suggestions are made for the following CRs based on comments received from 1st round.

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Company** | **Recommendation** | **Moderator’s Remarks** |
| [**R4-2000161**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000161.zip) | ANRITSU LTD | Agree  | No concern received from 1st round. |
| [**R4-2001598**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001598.zip) | Huawei, HiSilicon | Merge to R4-2000161 | Sourcing company agreed to merge. |
| [**R4-2000166**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000166.zip) | ANRITSU LTD | Agree  | No concern received from 1st round. |
| [**R4-2000382**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000382.zip) | Intel Corporation | Revise  | Sourcing company indicated cover sheet issueNo concern received from 1st round. |
| [**R4-2001594**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001594.zip) | Huawei, HiSilicon | Agree  | No concern received from 1st round. |
| [**R4-2001396**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001396.zip) | Ericsson | Return to  | Concern from Nokia |
| [**R4-2001398**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001398.zip) | Ericsson | Return to  | Concern from Nokia |
| [**R4-2000170**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000170.zip) | ANRITSU LTD | Agree  | No concern received from 1st round. |
| [**R4-2000172**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2000172.zip) | ANRITSU LTD | Agree  | No concern received from 1st round. |
| [**R4-2001373**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001373.zip) | Rohde & Schwarz | Agree  | No concern received from 1st round. |
| [**R4-2001565**](http://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_94_e/Docs/R4-2001565.zip) | Huawei, HiSilicon | Merge to R4-2001373 | Sourcing company agreed to merge. |

## Discussion on 2nd round (if applicable)

|  |  |
| --- | --- |
| R4-2000382 | Ericsson : This CR is OK. The reason this aspect of the CR was not implemented is that Intel used an out of date baseline to make a CR in October bis meeting which was technically endorsed. Then Ericsson updated other aspects of the CR (not related to OTA setup) in November, using the Intel CR as the starting point. However, it created a conflict when MCC tried to implement this particular change. Setup 3 is correct. |
| Intel: work item code is incorrect in the cover sheet. It needs to be revised. |
|  |
| R4-2001396 | Huawei, HiSilicon: OK. |
| Nokia: This change is not essential. let's minimize R15 changes. Spec is closed and only essential corrections should be allowed for R15. Maybe can update in R16 if needed. |
| Ericsson : RAN5 has already agreed to adopt a common numbering for SA and NSA tests. The RAN4 numbering of testcases is quite important since RAN5 follows this when they decide their numbering for tests (which is further used by GCF, PTCRB etc and copied into many different lists). Inconsistencies in RAN4 can cause a lot of confusion later on as to which tests are covering which areas between SA and NSA. Fixing this only in release 16 would be worse than doing nothing because we would end up with a release 15 and release 16 RAN4 RRM test with the same content and purpose, but different numbers. Note also that RAN5 does not follow the same approach as RAN4 when it comes to maintaining specifications to show RRM tests for different releases .My understanding then is that if this CR is not agreed for release 15, RAN5 would need to revert the decision to keep same numbering for SA and NSA testcases and revert the CRs they have already agreed to change the numbering of these tests in their spec, since maintaining commonality with RAN4 is an even higher priority, even though this would be an undesirable situation from their perspective not to align SA and NSA numbering.It is true that we also addressed other minor issues when changing the numbering, as a compromise we could consider other issues than section numbering only in release 16, however we consider the section numbering as essential for R15. Then we would have a cat F CR for release 15 with section number changes, and a cat F CR for R16 which includes section number and other changes. Nokia, please can you provide comment on whether this approach is OK for you? |
| Nokia: OK with the change in Rel-15 in this meeting. |
| R4-2001398 | Huawei, HiSilicon: OK. |
| Nokia: it is not essential to clarify absolute and relative accuracy requirement as the section 10.1.19.1 will indicate it anyway. let's minimize R15 changes. Spec is closed and only essential corrections should be allowed for R15. Maybe can update in R16 if needed. |
| Ericsson: We could follow a similar approach as R4-2001396. In this case there are no section number changes, so this would mean withdrawing rel15 CR and agreeing the content of R4-2001398 as a cat F CR for R16. Again, please can Nokia comment if this is acceptable for them? |
| Nokia: OK with the change in Rel-15 in this meeting. |

## 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*

|  |  |
| --- | --- |
| **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”* |