3GPP TSG-RAN WG4 meeting #100-eR4-21xxxx

Electronic Meeting, 16 – 27 August 2021

**Agenda item:** 6.1.1.5, 6.1.1.6.3.12-20

**Source:** Moderator (Ericsson)

**Title:** Email discussion summary for [100-e][206] NR\_unlic\_RRM\_1

**Document for:** Information

# Introduction

The discussion covers NR-U AIs within 6.1.1.5 and 6.1.1.6.3.12-20.

**When updating this document, please remember to:**

* **use track changes while adding your comments in this document (only updates marked with change marks will be taken into the next version),**
* **change the file name, adding your company name, according to the instructions from RAN4 chair:**
* **Length of file names shall be reduced, e.g.**
  + **At the beginning of first round, moderators share / ftp / tsg\_ran / WG4\_Radio / TSGR4\_98\_e / Inbox / Drafts / [98e][101] NR\_NewRAT\_SysParameters\Summary\_101\_1st round\_v01.docx**
  + **After update by company A: Summary\_101\_1st round\_v02\_companyA**
  + **After update by company B: Summary\_101\_1st round\_v03\_companyA\_companyB**
  + **After update by company C: Summary\_101\_1st round\_v04\_companyB\_companyC**

## 1st round

The following list of open issues was identified, based on the contributions, for the 1st round.

The following colour marking is used below:

* A topic/issue proposed for discussion in: GTW session 1
* **Topic #1: Availability of SSB**

Sub-topic 1-1: Availability of SSB occasions for RLM

* + Issue 1-1-1: Whether to consider P factor when determining availability of SSB occasions for RLM
  + Issue 1-1-2: How frequent the UE shall determine the availability of SSB occasions for RLM: case 1 if DRX is not used
  + Issue 1-1-3: How frequent the UE shall determine the availability of SSB occasions for RLM: case 2 if DRX ≤ 320ms
  + Issue 1-1-4: How frequent the UE shall determine the availability of SSB occasions for RLM: case 2 if DRX > 320ms

Sub-topic 1-2: Availability of SSB occasions for BFD

* + Issue 1-2-1: Whether to consider P factor when determining availability of SSB occasions for BFD

Sub-topic 1-3: Availability of SSB occasions for L1-RSRP

* + Issue 1-3-1: Whether to consider P factor when determining availability of SSB occasions for L1-RSRP
  + Issue 1-3-2: How frequent the UE shall determine the availability of SSB occasions for L1-RSRP: case 1 if DRX is not used
  + Issue 1-3-3: How frequent the UE shall determine the availability of SSB occasions for L1-RSRP: case 2 if DRX ≤ 320ms
  + Issue 1-3-4: How frequent the UE shall determine the availability of SSB occasions for L1-RSRP: case 2 if DRX > 320ms
* **Topic #2: SCell activation/deactivation (delay and interruption)**
* **Topic #3: Other requirements**
* **Topic #4: Performance requirements**

Sub-topic 4-1: CCA parameters for RLM test cases

* + Issue 4-1-1: CCA parameters for RLM in-sync test cases in non-DRX
  + Issue 4-1-2: CCA parameters for RLM out-of-sync test cases

Sub-topic 4-2: CCA parameters for BFD and link recovery test cases

* + Issue 4-2-1: CCA parameters for BFD and link recovery test cases
  + Issue 4-2-2: Whether to remove test 2 in current BFD and CBD test cases

Sub-topic 4-3: Test to verify delay in HARQ feedback transmission

* + Issue 4-3-1: Whether to introduce new test to verify delay in sending HARQ feedback transmissions with UL CCA failure

## 2nd round

TBD

# Topic #1: Availability of SSB

Contributions from AI 6.1.1.5.1 and 6.1.1.5.5 are discussed here.

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2112114 | Apple | Proposal 1: *For RLM, the UE is not required to determine the availability of SSB occasions more frequent than:*  *• Once per max(10ms, TSSB\* P) if DRX is not used*  *• Once per max(10ms, ceil(1.5 \* P) \* TDRX, ceil(1.5 \* P) \* TSSB) if TDRX ≤ 320ms*  *• Once per TDRX \* P if TDRX > 320ms.*  Proposal 2: *For NR-U BFD, no need to specify how frequent UE would determine the availability of SSB occasions.*  Proposal 3: *For L1-RSRP, the UE is not required to determine the availability of SSB occasions more frequent than:*  *• Once per max(TReport, TSSB \* P) if DRX is not used*  *• Once per max(TReport, ceil(1.5\*P)\*max(TDRX,TSSB)) if TDRX ≤ 320ms*  *• Once per TDRX \*P if TDRX > 320ms.* |
| R4-2113108 | MediaTek Inc. | Proposal 1: *Regarding the availability of SSB occasions, P factor should be considered for RLM INS and L1-RSRP.*   * *For RLM INS, clarify the note as “the UE is not required to determine the availability of SSB occasions more frequent than once per P\*DRX cycle length, when configured with DRX.”* * *For L1-RSRP, add note as “the UE is not required to determine the availability of SSB occasions more frequent than once per [Max(TReport, 1.5\*P\* max(TDRX,TSSB)) if TDRX ≤ 320ms or per P\* TDRX if TDRX > 320m]”* |
| R4-2113461 | Ericsson | Proposal 1: *For RLM Qin, the UE, which is configured in DRX, is not required to determine the availability of SSB occasions more frequent than:*   * *Once per Max(100ms, 1.5 x P x Max(TDRX, TSSB)) if TDRX ≤ 320ms* * *Once per P x TDRX if TDRX > 320ms*   Proposal 2: *For L1-RSRP measurement, the UE, which is configured in DRX, is not required to determine the availability of SSB occasions more frequent than:*   * *Once per Max(TReport, 1.5 x P x Max(TDRX, TSSB)) if TDRX ≤ 320ms* * *Once per P x TDRX if TDRX > 320ms* |
| R4-2113878 | ZTE Corporation | Proposal: *For RLM/BFD/L1-RSRP, the P factor should also be considered.* |
| R4-2112115 | Apple | Draft CR on SSB availability for RLM and L1-RSRP R16 |
| R4-2113109 | MediaTek inc. | CR on availability of SSB occasions in R16 |
| R4-2113462 | Ericsson | Draft CR: Clarification of availability of SSB monitoring occasions for RLM and BM |

## Open issues summary

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

Background:

At RAN4#99-e meeting following issue was identified for further study [R4-2108253]:

|  |
| --- |
| Availability of SSB occasions for RLM/BFD/L1-RSRP   * FFS: whether to consider P factor for RLM/BFD/L1-RSRP |

### Sub-topic 1-1: Availability of SSB occasions for RLM In-sync

**Issue 1-1-1: How frequent the UE shall determine the availability of SSB occasions for RLM In-sync**

* Proposal 1 (Apple): For RLM, the UE is not required to determine the availability of SSB occasions more frequent than:
* Once per max(10ms, TSSB\* P) if DRX is not used
* Once per max(10ms, ceil(1.5 \* P) \* TDRX, ceil(1.5 \* P) \* TSSB) if TDRX ≤ 320ms
* Once per TDRX \* P if TDRX > 320ms.
* Proposal 2 (Ericsson): For RLM Qin, the UE, which is configured in DRX, is not required to determine the availability of SSB occasions more frequent than:
* Once per Max(100ms, 1.5 x P x Max(TDRX, TSSB)) if TDRX ≤ 320ms
* Once per P x TDRX if TDRX > 320ms
* Proposal 3 (MTK): For RLM INS, clarify the note as:
* The UE is not required to determine the availability of SSB occasions more frequent than once per P\*DRX cycle length, when configured with DRX.”
* Recommended WF
* The moderator proposes to focus on two issues:
  + Minimum period is 10ms (Apple, based on L1 indication) or 100ms (Ericsson, based on evaluation period))
  + Whether to specify the availability of SSB occasions for non-DRX case also.

### Sub-topic 1-2: Availability of SSB occasions for RLM Out-of-sync

**Issue 1-2-1: Whether to specify the availability of SSB occasions for RLM Out-of-sync.**

* Proposal 1 (Ericsson, MTK, Apple): No need to specify how frequent the UE would determine the availability of SSB occasions.
* Proposal 2 (ZTE): P factor should also be considered.
* Recommended WF
  + Discuss the proposals.

### Sub-topic 1-3: Availability of SSB occasions for BFR

**Issue 1-3-1: Whether to specify the availability of SSB occasions for BFR**

* Proposal 1 (Ericsson, MTK, Apple): No need to specify how frequent the UE would determine the availability of SSB occasions.
* Proposal 2 (ZTE): P factor should also be considered.
* Recommended WF
  + Discuss the proposals.

### Sub-topic 1-4: Availability of SSB occasions for L1-RSRP

**Issue 1-4-1: How frequent the UE shall determine the availability of SSB occasions for L1-RSRP**

* Proposal 1 (Apple): For L1-RSRP, the UE is not required to determine the availability of SSB occasions more frequent than:
* Once per max(TReport, TSSB \* P) if DRX is not used
* Once per max(TReport, ceil(1.5\*P)\*max(TDRX,TSSB)) if TDRX ≤ 320ms
* Once per TDRX \*P if TDRX > 320ms
* Proposal 2 (Ericsson): For L1-RSRP measurement, the UE, which is configured in DRX, is not required to determine the availability of SSB occasions more frequent than:
* Once per Max(TReport, 1.5 x P x Max(TDRX, TSSB)) if TDRX ≤ 320ms
* Once per P x TDRX if TDRX > 320ms
* Proposal 3 (MTK): For L1-RSRP,
* add note as “the UE is not required to determine the availability of SSB occasions more frequent than once per [Max(TReport, 1.5\*P\* max(TDRX,TSSB)) if TDRX ≤ 320ms or per P\* TDRX if TDRX > 320m]”
* Recommended WF
* Companies’ proposals are aligned for DRX case. Apple also proposes to specify the case for non-DRX case but Ericsson and MediaTek do not. The moderator proposes to collect the view whether to specify the availability of SSB occasions for non-DRX case also.

## Companies views’ collection for 1st round

### Open issues

|  |  |
| --- | --- |
| **Company** | **Comments** |
| Company A | **Sub-topic 1-1: Availability of SSB occasions for RLM In-sync** **Issue 1-1-1: How frequent the UE shall determine the availability of SSB occasions for RLM In-sync** **Sub-topic 1-2: Availability of SSB occasions for RLM Out-of-sync** **Issue 1-2-1: Whether to specify the availability of SSB occasions for RLM Out-of-sync.** **Sub-topic 1-3: Availability of SSB occasions for BFR** **Issue 1-3-1: Whether to specify the availability of SSB occasions for BFR** **Sub-topic 1-4: Availability of SSB occasions for L1-RSRP** **Issue 1-4-1: How frequent the UE shall determine the availability of SSB occasions for L1-RSRP** |
| MTK | **Issue 1-1-1: How frequent the UE shall determine the availability of SSB occasions for RLM In-sync**   * no DRX case is clear from our view. But no strong preference on whether to specify the availability of SSB occasions for non-DRX case also. * Agree with minimum of 10ms, while this clarification is on per measurement basis.   **Issue 1-2-1: Whether to specify the availability of SSB occasions for RLM Out-of-sync.**  Proposal 1. No L in the formula.  **Issue 1-3-1: Whether to specify the availability of SSB occasions for BFR**  Proposal 1. No L in the formula.  **Issue 1-4-1: How frequent the UE shall determine the availability of SSB occasions for L1-RSRP**  Same comment as Issue 1-1-1. |

### CRs/TPs comments collection

*For close-to-finalize WIs and maintenance work, comments collections can be arranged for TPs and CRs. For ongoing WIs, suggest to focus on open issues discussion on 1st round.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2112115 (Apple) | Company A |
| Company B |
|  |
| R4-2113109 (MediaTek inc.) | Company A |
| Company B |
|  |
| R4-2113462 (Ericsson) | Company A |
| Company B |

## Summary for 1st round

### Open issues

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

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

### CRs/TPs

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

*Note: The tdoc decisions shall be provided in Section 3 and this table is optional in case moderators would like to provide additional information.*

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

## Discussion on 2nd round (if applicable)

# Topic #2: SCell activation/deactivation (delay and interruption)

Contributions from AI 6.1.1.5.3 are discussed here.

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2114099 | Huawei, HiSilicon | CR on maintenance of SCell activation requirements for NR-U R16 |

## Open issues summary

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

## Companies views’ collection for 1st round

### Open issues

|  |  |
| --- | --- |
| **Company** | **Comments** |
| Company A |  |

### CRs/TPs comments collection

*Major close to finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2114099 Huawei, HiSilicon | Company A |
| Company B |
|  |
|  | Company A |
| Company B |
|  |

## Summary for 1st round

### Open issues

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

|  |  |
| --- | --- |
|  | **Status summary** |
| **Sub-topic 2-1, issue 2-1-1:** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd 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** |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## Discussion on 2nd round (if applicable)

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

# Topic #3: Other requirements

Contributions from AI 6.1.1.5.5 are discussed here.

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| T-doc number | Company | Proposals / Observations |
| R4-2114101 | Huawei, HiSilicon | CR on maintenance of measurement requirements for NR-U R16 |
| R4-2113225 | Nokia, Nokia Shanghai Bell | Correction of NR-U inter-frequency cell identification and measurements requirements |

## Open issues summary

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

## Companies views’ collection for 1st round

### Open issues

|  |  |
| --- | --- |
| **Company** | **Comments** |
| Company A |  |

### CRs/TPs comments collection

*Major close to finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2114101 (Huawei, HiSilicon) | Company A |
| Company B |
|  |
| R4-2113225 (Nokia, Nokia Shanghai Bell) | Company A |
| Company B |
|  |

## Summary for 1st round

### Open issues

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

|  |  |
| --- | --- |
|  | **Status summary** |
| **Sub-topic 3-1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd 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** |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## Discussion on 2nd round (if applicable)

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

# Topic #4: Performance requirements

Contributions from AI 6.1.1.6.3.12- 6.1.1.6.3.20 are discussed here.

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2113240 | Nokia, Nokia Shanghai Bell | 1. Configure CCA model with LCCA\_DL=Lin,max and WCCA\_DL=Tidentify-NR\_CCA for the test cases of RLM in-sync test cases in non-DRX mode. 2. Do not configure the CCA parameters LCCA\_DL and WCCA\_DL for out-of-sync RLM test cases with CCA. |
| R4-2113241 | Nokia, Nokia Shanghai Bell | Draft CR correction RLM TCs for NR-U |
| R4-2114123 | Huawei, HiSilicon | CR on RLM for NR-U R16 |
| R4-2113243 | Nokia, Nokia Shanghai Bell | Proposal 1: *For the beam failure detection and link recovery test cases , configure LCCA\_DL=7 for TCs without DRX, LCCA\_DL=3 for TCs with DRX and WCCA\_DL= TEvaluate\_CBD\_SSB\_CCA.* |
| R4-2113244 | Nokia, Nokia Shanghai Bell | Correction of beam failure detection and link recovery TCs under CCA |
| R4-2113466 | Ericsson | Draft CR: Correction of beam management test cases for NR-U |
| R4-2114125 | Huawei, HiSilicon | Proposal: The PDCCH configuration shall be same as the hypothetical PDCCH in the spec and test 2 is not needed. |
| R4-2114126 | Huawei, HiSilicon | CR on TC of BFD and CBD for NR-U R16 |
| R4-2114128 | Huawei, HiSilicon | CR on TC of inter-RAT measurement procedure for NR-U R16 |
| R4-2113246 | Nokia, Nokia Shanghai Bell | Correction of inter-frequency measurement procedures TCs under CCA |
| R4-2114130 | Huawei, HiSilicon | CR on TC of inter-RAT SFTD measurement procedure for NR-U R16 |
| R4-2113470 | Ericsson | Paper explaining the design of intra-frequency/inter-frequency SS-RSRQ/SS-SINR measurement accuracy test cases for NR-U |
| R4-2113471 | Ericsson | Draft CR: Addition of SS-SINR/SS-RSRQ measurement accuracy tests for NR-U |
| R4-2114132 | Huawei, HiSilicon | CR on TC of intra-frequency measurement accuracy for NR-U R16 |
| R4-2113879 | ZTE Corporation | Observation: *Both DL and UL CCA failures need to be configured to the test equipment (TE), and the delay in sending HARQ feedback transmission should be included in the MAC CE based TCI state switch delay test case due to UL CCA failures.*  Proposal: *Define “MAC CE based TCI state switch delay” test case with UL CCA failure.* |
| R4-2113248 | Nokia, Nokia Shanghai Bell | Removal of TCI state switching TC for unlicensed bands |
| R4-2114134 | Huawei, HiSilicon | CR on removing TCI switching TC for NR-U R17 |

## Open issues summary

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

Background:

### Sub-topic 4-1: CCA parameters for RLM test cases

**Issue 4-1-1: CCA parameters for RLM in-sync test cases in non-DRX**

Proposals

* Proposal 1 (Nokia): Configure CCA model with LCCA\_DL=Lin,max and WCCA\_DL=Tidentify-NR\_CCA for the test cases of RLM in-sync test cases in non-DRX mode.

Recommended WF

* Discuss is proposal 1 can be agreed.

**Issue 4-1-2: CCA parameters for RLM out-of-sync test cases**

Proposals

* Proposal 1 (Nokia): Do not configure the CCA parameters LCCA\_DL and WCCA\_DL for out-of-sync RLM test cases with CCA.

Recommended WF

* Discuss is proposal 1 can be agreed.

### Sub-topic 4-2: CCA parameters for BFD and link recovery test cases

**Issue 4-2-1: CCA parameters for BFD and link recovery test cases**

Proposals

* Proposal 1 (Nokia): For the beam failure detection and link recovery test cases , configure LCCA\_DL=7 for TCs without DRX, LCCA\_DL=3 for TCs with DRX and WCCA\_DL= TEvaluate\_CBD\_SSB\_CCA .

Recommended WF

* Discuss is proposal 1 can be agreed.

**Issue 4-2-2: Whether to remove test 2 in current BFD and CBD test cases**

Proposals

* Proposal 1 (Huawei): The PDCCH configuration shall be same as the hypothetical PDCCH in the spec and test 2 is not needed.

Recommended WF

* Discuss is proposal 1 can be agreed.

### Sub-topic 4-3: Test to verify delay in HARQ feedback transmission

**Issue 4-3-1: Whether to introduce new test to verify delay in sending HARQ feedback transmissions with UL CCA failure**

Proposals

* Proposal 1 (ZTE): Define “MAC CE based TCI state switch delay” test case with UL CCA failure.

Recommended WF

* Discuss is proposal 1 can be agreed.

## Companies views’ collection for 1st round

### Open issues

|  |  |
| --- | --- |
| **Company** | **Comments** |
|  | **Sub-topic 4-1: CCA parameters for RLM test cases** **Issue 4-1-1: CCA parameters for RLM in-sync test cases in non-DRX**  **Issue 4-1-2: CCA parameters for RLM out-of-sync test cases** **Sub-topic 4-2: CCA parameters for BFD and link recovery test cases** **Issue 4-2-1: CCA parameters for BFD and link recovery test cases**  **Issue 4-2-2: Whether to remove test 2 in current BFD and CBD test cases** **Sub-topic 4-3: Test to verify delay in HARQ feedback transmission** **Issue 4-3-1: Whether to introduce new test to verify delay in sending HARQ feedback transmissions with UL CCA failure** |
| MTK | **Issue 4-1-1: CCA parameters for RLM in-sync test cases in non-DRX**  Fine with Proposal 1.  **Issue 4-1-2: CCA parameters for RLM out-of-sync test cases**  Fine with Proposal 1.  **Issue 4-2-1: CCA parameters for BFD and link recovery test cases**  Fine with Proposal 1.  **Issue 4-3-1: Whether to introduce new test to verify delay in sending HARQ feedback transmissions with UL CCA failure**  It should not be based on active TCI state switching delay, since there is no agreed TCs for it, as agreed in the last meeting [R4-2108261](https://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_99-e/Docs/R4-2108261.zip). |

### CRs/TPs comments collection

*Major close to finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| CRs on RLM | |
| R4-2113241 (Nokia, Nokia Shanghai Bell) | MTK:  On Table A.10.3.1.3.1-3, one typo on Note 9, LCCA\_DL and WCCA\_DL are defined in A.3.26.2.1 rather than Table 8.1A.2.2-1. Or Note 9 should be put on TEvaluate\_in\_SSB,CCA. |
| Company B |
|  |
| R4-2114123 (Huawei, HiSilicon) | Company A |
| Company B |
|  |
| CRs on BFD and Link Recovery | |
| R4-2113244 (Nokia, Nokia Shanghai Bell) | Company A |
| Company B |
| R4-2113466 (Ericsson) | Company A |
| Company B |
| R4-2114126 (Huawei, HiSilicon) | Company A |
| Company B |
| CR on inter-frequency/inter-RAT/SFTD measurement procedure | |
| R4-2114128 (Huawei, HiSilicon) | Company A |
| Company B |
| R4-2113246 (Nokia, Nokia Shanghai Bell) | Company A |
| Company B |
| R4-2114130 (Huawei, HiSilicon) | Company A |
| Company B |
| R4-2114132 (Huawei, HiSilicon) | Company A |
| Company B |
| CR on SS-SINR/SS-RSRQ measurement accuracy test cases | |
| R4-2113471 (Ericsson) | Company A |
| Company B |
| CR on TCI state switching test cases | |
| R4-2113248 (Nokia, Nokia Shanghai Bell) | Company A |
| Company B |
| R4-2114134 (Huawei, HiSilicon) | Company A |
| Company B |

## Summary for 1st round

### Open issues

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

|  |  |
| --- | --- |
|  | **Status summary** |
| **Sub-topic X-1** | **Issue 4-1-1: CCA parameters for RLM in-sync test cases in non-DRX**  **Issue 4-1-2: CCA parameters for RLM out-of-sync test cases**  **Issue 4-2-1: CCA parameters for BFD and link recovery test cases**  **Issue 4-2-2: Whether to remove test 2 in current BFD and CBD test cases**  **Issue 4-3-1: Whether to introduce new test to verify delay in sending HARQ feedback transmissions with UL CCA failure**  *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd 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** |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## Discussion on 2nd round (if applicable)

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

# Recommendations for Tdocs

## 1st round

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Comments** |
| WF on … | YYY |  |
| LS on … | ZZZ | To: RAN\_X; Cc: RAN\_Y |
|  |  |  |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation** | **Comments** |
| R4-210xxxx | CR on … | XXX | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

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** |
| R4-210xxxx | CR on … | XXX | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
| R4-210xxxx | WF on … | YYY | Agreeable, Revised, Noted |  |
| R4-210xxxx | LS on … | ZZZ | Agreeable, Revised, Noted |  |
|  |  |  |  |  |

Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics.
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. Do not include hyper-links in the documents

# Annex

Contact information

|  |  |  |
| --- | --- | --- |
| **Company** | **Name** | **Email address** |
| MediaTek Inc. | Hsuanli Lin | Hsuanli.Lin@mediatek.com |

Note:

1. Please add your contact information in above table once you make comments on this email thread.
2. If multiple delegates from the same company make comments on single email thread, please add you name as suffix after company name when make comments i.e. Company A (XX, XX)