**3GPP TSG-RAN WG4 Meeting # 97-e R4-200XXXX**

**Electronic Meeting, 2-13 Nov., 2020**

**Agenda item:** 7.15.1&7.15.2

**Source:** Moderator (CMCC)

**Title:** Email discussion summary for [97e][223] NR\_HST\_RRM

**Document for:** Information

# Introduction

This email discussion focuses on RRM for Rel-16 NR HST, and in particular the agenda items are:

7.15.1 RRM core requirements maintenance

7.15.2 RRM perf. requirements

7.15.2.1 General

7.15.2.2 Test cases

The targets of email discussion for 1st round and 2nd round are:

* 1st round: discuss the open issues and strive to minimize the open issues, and provide comments on the CRs.
* 2nd round: according to 1st round discussion, discuss left open issues for 2nd round, and strive to minimize the open issues. Strive to agree on CRs

# Topic #1: RRM core requirements

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2014691**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014691.zip) | CMCC | 38.133 CR on CSSFintra for measurement period for intra-frequency measurements in connected mode for Rel-16 NR HST |
| [**R4-2014964**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014964.zip) | vivo,Huawei, HiSilicon | CR on IDLE state cell re-selection requirements for HST in 38.133 |
| [**R4-2014981**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014981.zip) | vivo, Huawei, HiSilicon | CR on IDLE state cell re-selection requirements for HST in 36.133 |
| [**R4-2015156**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015156.zip) | Ericsson | Correction to high speed idle mode core requirement |
| [**R4-2015492**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015492.zip) | Huawei, HiSilicon | Correction on SSB based L1-RSRP Reporting for HST |
| [**R4-2015804**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015804.zip) | ETSI MCC | Correction of CR0972 implementation |
| [**R4-2016207**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2016207.zip) | Nokia, Nokia Shanghai Bell | CR to TS 38.133: Corrections to Tables 9.5.4.1-1 and 9.5.4.2-1.  |
| [**R4-2014220**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014220.zip) | Apple | Observation 1: scaling factor CSSF is missing in high speed measurement period requirement.Proposal 1: introduce CSSF in high speed measurement period requirement. |
| [**R4-2014221**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014221.zip) | Apple | CR for HST intra-frequency measurement 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 are encouraged to provide comments to the CRs.

## Companies views’ collection for 1st round

### Open issues

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX | Sub topic 1-1: Sub topic 1-2:….Others: |

### 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 related to the inter-RAT layer of higher priority when Srxlev > SnonIntraSearchP and Squal > SnonIntraSearchQ |
| [**R4-2014964**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014964.zip)**(vivo, Huawei, HiSilicon)** | Company A |
| Company B |
|  |
| [**R4-2014981**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014981.zip)**(vivo, Huawei, HiSilicon)** | Company A |
| Company B |
|  |
| CRs related to CSSFintra for measurement period for intra-frequency measurements in connected mode |
| [**R4-2014691**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014691.zip) **(CMCC)** | Company A |
| Company B |
|  |
| [**R4-2014221**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014221.zip) **(Apple)** | Company A |
| Company B |
|  |
| CRs related to the correction of the title and table number for Table 4.2.2.3-1 and Table 4.2.2.3-2 (agreed CR R4-2010078 in RAN4 #96 was not correctly implemented to the spec) |
| [**R4-2015804**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015804.zip) **(ETSI MCC)** | Company A |
| Company B |
|  |
| [**R4-2015156**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015156.zip) **(Ericsson)** | Company A |
| Company B |
|  |
| CRs related to L1-RSRP |
| [**R4-2016207**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2016207.zip) **(Nokia, Nokia Shanghai Bell)** | Company A |
| Company B |
|  |
| [**R4-2015492**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015492.zip) **(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#1** | *Tentative agreements:**Candidate options:**Recommendations for 2nd round:* |

*Recommendations on WF/LS assignment*

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

### CRs/TPs

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

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

## Discussion on 2nd round (if applicable)

## Summary on 2nd round (if applicable)

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

|  |  |
| --- | --- |
| **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: RRM performance part

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2014695**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014695.zip) | CMCC | CR on release independent for Rel.16 NR HST RRM requirements |
| [**R4-2014697**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014697.zip) | CMCC | CR on release independent for Rel.16 NR HST RRM requirements |
| [**R4-2015494**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015494.zip) | Huawei, HiSilicon | Accuracy requirements for NR high speed |
| [**R4-2014533**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014533.zip) | vivo | CR on test case for EUTRAN-NR cell re-selection in HST |
| [**R4-2014630**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014630.zip) | Qualcomm, Inc. | **Proposal 1: Parameters and configuration in RRM tests for Pcell idle and connected mode with 500km/h train speed are as listed in Table 2‑1.**

|  |  |  |
| --- | --- | --- |
| Test to be added | Relevant configurations/requirements | Proposed values |
| Intra-frequency Pcell idle mode test | Newly detectable reselection delay | 3s/2s |
| Propagation condition | AWGN/AWGN 1944 (15kHz SCS) and 3333 (30kHz SCS) Hz |
| Intra-frequency Pcell connected mode test (NR-SA and EN-DC) | Event triggered reporting delay | 5.12s |
| Propagation condition | AWGN/AWGN 1944 (15kHz SCS) and 3333 (30kHz SCS) Hz |
| Inter-RAT NR to E-UTRA idle mode test | Reselection delay | 2s |
| Propagation condition | AWGN/AWGN 1944 Hz |
| Inter-RAT E-UTRA to NR idle mode test | Reselection delay | 2s |
| Propagation condition | AWGN/AWGN 1944 Hz |
| Inter-RAT NR to E-UTRA connected mode test | Event triggered reporting delay | 4.8s |
| Propagation condition | AWGN/AWGN 1944 Hz |
| Inter-RAT E-UTRA to NR connected mode test | Event triggered reporting delay | 4.8s |
| Propagation condition | AWGN/AWGN 1944 (15kHz SCS) and 3333 (30kHz SCS) Hz |

 |
| [**R4-2014631**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014631.zip) | Qualcomm, Inc. | CR-NR HST RRM test cases |
| [**R4-2014692**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014692.zip) | CMCC | Draft CR on NR-NR intra-frequency reselection for FR1 for high speed scenario |
| [**R4-2015147**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015147.zip) | Ericsson | Test cases for NR -NR cell identification in connected mode for high speed |
| [**R4-2015493**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015493.zip) | Huawei, HiSilicon | Test cases for inter-RAT cell identification in connected mode for HST |
| [**R4-2016215**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2016215.zip) | Nokia, Nokia Shanghai Bell | CR to TS 38.133: Test cases for L1-RSRP measurement for beam reporting for NR HST |

## 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 are encouraged to provide comments to the CRs.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Background:**the agreed test cases and responsible company are listed as following:*

|  |  |  |  |
| --- | --- | --- | --- |
| *Test scenario* | *Test cases*  | *Test parameters* | *Responsible company* |
| *1. NR SA* | *NR-NR intra-frequency reselection for FR1*  | * *DRX cycle: 320ms*
* *SMTC period: 20ms*
 | *CMCC* |
| *2a. ENDC**2b. NR SA* | *NR-NR intra-frequency event triggered reporting tests without gap under DRX without SSB index reading for FR1 intra-frequency case* | * *DRX cycle: 640ms*
* *SMTC period: 20ms*
 | *Ericsson* |
| *4. NR SA* | *NR-EUTRA inter-RAT cell re-selection* | * *DRX cycle: 320ms*
* *SMTC period: 20ms*
 | *Qualcomm* |
| *5. NR SA* | *NR-EUTRA inter-RAT event triggered reporting test under DRX in FR1* | * *DRX cycle: 320ms*
* *SMTC period: 20ms*
* *MGRP: 40ms*
* *MGL: 6ms*
 | *Huawei* |
| *6. E-UTRAN* | *EUTRA-NR inter-RAT cell re-selection* | * *DRX cycle: 320ms*
* *SMTC period: 20ms*
 | *vivo* |
| *7. E-UTRAN*  | *EUTRA-NR inter-RAT event triggered reporting for FR1 with SSB time index detection when DRX is used* | * *DRX cycle: 320ms*
* *SMTC period: 20ms*
* *MGRP: 40ms*
* *MGL: 6ms*
 | *Huawei* |
| *8a. ENDC**8b. NR SA* | *SSB based L1-RSRP measurement when DRX is used* | * *DRX cycle: 320ms*
* *SMTC period: 20ms*
 | *Nokia, Nokia Shanghai Bell* |

 |

## Companies views’ collection for 1st round

### Open issues

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX | Sub topic 2-1: Sub topic 2-2:….Others: |

### 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 related to release independent for Rel-16 HST RRM requirements |
| [**R4-2014695**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014695.zip)**(CMCC)** | Company A |
| Company B |
|  |
| [**R4-2014697**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014697.zip)**(CMCC)** | Company A |
| Company B |
|  |
| CRs related to measurement accuracy |
| [**R4-2015494**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015494.zip)**(Huawei, HiSilicon)** | Company A |
| Company B |
|  |
| CRs related to test cases |
| [**R4-2014533**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014533.zip)**(vivo)**EUTRAN-NR cell re-selection | Company A |
| Company B |
|  |
| [**R4-2014631**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014631.zip)**(Qualcomm)**NR-EUTRA cell reselection | Company A |
| Company B |
|  |
| [**R4-2014692**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2014692.zip)**(CMCC)**NR-NR intra-frequency cell reselection | Company A |
| Company B |
|  |
| [**R4-2015147**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015147.zip)**(Ericsson)**NR -NR cell identification in connected mode | Company A |
| Company B |
|  |
| [**R4-2015493**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2015493.zip)**(Huawei, HiSilicon)**NR-E-UTRAN event-triggered reporting + E-UTRAN- NR Inter-RAT event triggered reporting | Company A |
| Company B |
|  |
| [**R4-2016215**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_97_e/Docs/R4-2016215.zip)**(Nokia, Nokia Shanghai Bell)**L1-RSRP | 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** | *Tentative agreements:**Candidate options:**Recommendations for 2nd round:* |

*Suggestion on WF/LS assignment*

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

### 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)

## 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”* |