**3GPP TSG-RAN WG4 Meeting # 104-e R4-22XXXXX**

**Electronic Meeting, 15 – 26 August, 2022**

**Agenda item:** 9.8.3

**Source:** Moderator (vivo)

**Title:** Email discussion summary for [104-e][209] NR\_RRM\_enh2\_2

**Document for:** Information

# Introduction

This email discussion summary covers agendas 9.8.1.2 for core requirement maintenance and 9.8.2.2 for performance requirements for topic HO with PSCell under FeRRM WI.

It is appreciated that the delegates for this topic put their contact information in the table below.

Contact information

|  |  |  |
| --- | --- | --- |
| **Company** | **Name** | **Email address** |
| Apple | Jie Cui | Jie\_cui@apple.com |
| Huawei | Zhongyi Shen | shenzhongyi3@huawei.com |
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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)

# Topic #1: HO with PSCell core requirement maintenance

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2213948 | Ericsson | In this CR, we provide correction for fine timing for HO with PSCell when PSCell is on CCA in EN-DC to EN-DC scenario |
| R4-2213949 | Ericsson | In this CR, we provide correction for fine timing for HO with PSCell when PSCell is on CCA in NR SA to EN-DC scenario |

## Open issues summary

Comments are provided to CRs directly. No specific open issue to be discussed.

## Companies views’ collection for 1st round

### Open issues

No open issues in the 1st round.

### CRs/TPs comments collection

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| XXX | Company A |
| Company B |
|  |
| R4-2213948  Ericsson | Apple: fine with CR |
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|  |
| R4-2213949  Ericsson | Apple: fine with CR |
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## Summary for 1st round

### Open issues

No open issues in the 1st 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.*

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| --- | --- |
| **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”* |
| R4-2213948 |  |
| R4-2213949 |  |

## Discussion on 2nd round (if applicable)

# Topic #2: HO with PSCell test cases

*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** | **Proposals / Observations** |
| R4-2211619 | Qualcomm Incorporated | Observation: FR2 testability issue is understood. However, it does not mean test case cannot be introduced in R17. It is much beneficial for UE and infra vender to define test case and maintain it in the future release when testability issue is resolved. If RAN4 do not introduce FR1+FR2 testcase in R17, it will require more efforts to define R17 test case in future release.  Proposal: Introduce the test case and define the applicability. |
| R4-2211633 | CATT | Proposal 1: The design for FR1+FR2 test cases should be delayed until testability issues are solved. |
| R4-2211634 | CATT | Draft CR: Test case of handover with PSCell from EN-DC to EN-DC with known target PSCell in FR1 |
| R4-2211842 | Apple | Proposal 1:  FR1+FR2 test cases for HO with PSCell shall be delayed until testability issues are solved, including:  • FR1+FR2 NR-DC to FR1+FR2 NR-DC  • EN-DC with FR1 PSCell to EN-DC with FR2 PSCell  • EN-DC with FR2 PSCell to EN-DC with FR1 PSCell  • EN-DC with FR2 PSCell to EN-DC with FR2 PSCell  • NR-SA FR2 to EN-DC with FR1 PSCell  • NR-SA FR2 to EN-DC with FR2 PSCell  • NR-SA FR1 to EN-DC with FR2 PSCell |
| R4-2211843 | Apple | Draft CR on TC for HO with PSCell from NR-SA to EN-DC with parallel processing and known FR2 PSCell in TS38.133 R17 |
| R4-2211956 | Xiaomi | CR on test case for handover with PSCell from NR SA to EN-DC with sequential processing |
| R4-2212033 | OPPO | draft CR on TC2 for HO with PSCell from NR SA to EN-DC with parallel processing |
| R4-2212129 | Intel Corporation | DraftCR to TS 38.133: Handover with PSCell from NR-DC to NR-DC with sequential processing |
| R4-2212660 | vivo | draft CR on test cases for Handover with PSCell from NE-DC to NE-DC with known target PSCell |
| R4-2212860 | Nokia, Nokia Shanghai Bell | DraftCR for Correction on test cases for Handover with PSCell from NE-DC to NE-DC |
| R4-2212953 | Huawei, HiSilicon | Draft CR on TC for HO with PSCell from NR SA to EN-DC |
| R4-2213747 | MediaTek inc. | Proposal 1: For FR1+FR2 test cases, the test case design is delayed until testability issues are solved. |
| R4-2213952 | Ericsson | Draft CR: TC for EN-DC to EN-DC Handover with PSCell using CCA with known target PSCell |
| R4-2213953 | Ericsson | Draft CR: TC for NR SA to EN-DC Handover with PSCell using CCA with known target PSCell |

## Open issues summary

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

### Sub-topic 2-1: FR1+FR2 test cases

*Sub-topic description:*

**Issue 2-1-1: Test cases design principle - FR1+FR2 test cases**

* Proposals
  + Option 1 (CATT, Apple, MTK): Test case design is delayed until testability issues are solved
  + Option 2 (Qualcomm): Introduce the test case in R17 and define applicability
* Recommended WF
  + Companies are encouraged to provide views on the two options for FR1+FR2 test cases design. Other options are not precluded in the 1st round.
* 1st round Comment collection:

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| --- | --- |
| **Company** | **Comments** |
| Apple | Support option 1 based on the previous agreed WF R4-2115240. |
| Intel | Support option 1. |
| Huawei | First, we don’t think a test case has testability issue as long as the test including FR1/LTE and FR2 cells. Whether there is testability issue shall be based on principles as agreed in WF R4-2115240.  For HO with PSCell involving FR1+FR2, some of them may not be able to be tested (e.g. based on PCell’s timing for sequential processing case). Other can be tested only the performance in FR1 cannot be verified.  For above options on how to treat FR1+FR2 test cases, we prefer option 2. |
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**Issue 2-1-2: Test cases list for FR1+FR2 test cases**

* Proposals
  + FR1+FR2 NR-DC to FR1+FR2 NR-DC
  + EN-DC with FR1 PSCell to EN-DC with FR2 PSCell
  + EN-DC with FR2 PSCell to EN-DC with FR1 PSCell
  + EN-DC with FR2 PSCell to EN-DC with FR2 PSCell
  + NR-SA FR2 to EN-DC with FR1 PSCell
  + NR-SA FR2 to EN-DC with FR2 PSCell
  + NR-SA FR1 to EN-DC with FR2 PSCell
* Recommended WF
  + Interested companies are encouraged to share views on potential FR1+FR2 test cases, regardless of whether it will be introduced in Rel-17.
* 1st round Comment collection:

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| **Company** | **Comments** |
| Apple | We think all of them are not needed at this stage for testing, but those scenarios in requirement are valid. |
| Intel | Same view as Apple. Don’t need to consider the testcase until the testability issue is solved. |
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## Companies views’ collection for 1st round

### Open issues

Comments are collected in section 2.2.1

### CRs/TPs comments collection

*Companies are encouraged to provide comments in the 1st round since the draft CRs will be endorsed in the meeting for finalization of performance work of FeRRM WI.*

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| --- | --- |
| **CR/TP number** | **Comments collection** |
| XXX | Company A |
| Company B |
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| R4-2211634  CATT |  |
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| R4-2211843  Apple |  |
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| R4-2211956  Xiaomi |  |
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| R4-2212033  OPPO |  |
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| R4-2212129  Intel |  |
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| R4-2212660  vivo |  |
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| R4-2212860  Nokia |  |
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| R4-2212953  Huawei |  |
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| R4-2213952  Ericsson |  |
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| R4-2213953  Ericsson | Huawei: The title seems not correct. And test cases related to CCA (3952/3953) shall be included in dedicated clause (e.g. A.10/A.11) |
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## 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.*

**Sub-topic 2-1: FR1+FR2 test cases**

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| --- | --- |
|  | **Status summary** |
| **Issue 2-1-1: Test cases design principle - FR1+FR2 test cases** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |
| **Issue 2-1-2: Test cases list for FR1+FR2 test cases** | *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”* |
| R4-2211634 |  |
| R4-2211843 |  |
| R4-2211956 |  |
| R4-2212033 |  |
| R4-2212129 |  |
| R4-2212660 |  |
| R4-2212860 |  |
| R4-2212953 |  |
| R4-2213952 |  |
| R4-2213953 |  |

## 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**

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

**Existing tdocs**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tdoc number** | **Revised to** | **Title** | **Source** | **Recommendation** | **Comments** |
| R4-22xxxxx |  | CR on … | XXX | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
|  |  |  |  |  |  |
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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** | **Revised to** | **Title** | **Source** | **Recommendation** | **Comments** |
| R4-22xxxxx |  | CR on … | XXX | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
| R4-22xxxxx |  | WF on … | YYY | Agreeable, Revised, Noted |  |
| R4-22xxxxx |  | LS on … | ZZZ | Agreeable, Revised, Noted |  |
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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