**3GPP TSG-RAN WG4 Meeting #** **99-e R4-**

**Electronic Meeting, May. 19-27, 2021**

**Agenda item:** 5.1.3.1, 5.1.3.2.2.1, 5.1.3.2.2.3, 5.1.3.2.2.6

**Source:** Moderator (ZTE Corporation)

**Title:** Email discussion summary for [99-e][207] NR\_RRM\_Enh\_2

**Document for:** Information

# Introduction

TDocs submitted to the following agenda items will be treated:

- 5.1.3.1 RRM core requirements maintenance (38.133)

- 5.1.3.2.2.1 SRS carrier switching requirements

- 5.1.3.2.2.3 CGI reading requirements with autonomous gap

- 5.1.3.2.2.6 Mandatory MG patterns

List of candidate target of email discussion for 1st round and 2nd round

* 1st round: Companies provide comments on CRs and discuss open issues
* 2nd round: Finalize on the open issues. Check if revised CRs can be agreed.

# Topic #1: Core Maintenance

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| **[R4-2109564](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109564.zip)** | Qualcomm, Inc. | CR:Correction on SRS carrier switching |
| R4-2111497 | Qualcomm, Inc. | (R17mirror) CR:Correction on SRS carrier switching |
| **[R4-2109986](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109986.zip)** | Ericsson, Mediatek Inc. | CR on TS38.133 mandatory gaps - r16 |
| R4-2109987 | Ericsson, Mediatek Inc. | CR on TS38.133 mandatory gaps - r17 |
| **[R4-2109923](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109923.zip)** | vivo, Qualcomm, Huawei, HiSilicon, MediaTek Inc., Apple, Nokia | CR to 38.133 correction on SRS carrier based switching core requirements |
| R4-2109924 | vivo, Qualcomm, Huawei, HiSilicon, MediaTek Inc., Apple, Nokia | CR to 38.133 correction on SRS carrier based switching core requirements |
| **[R4-2109925](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109925.zip)** | vivo | CR to 38.133 correction on SRS carrier based switching test cases |
| R4-2109926 | vivo | CR to 38.133 correction on SRS carrier based switching test cases |
| **[R4-2110388](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2110388.zip)** | Huawei, HiSilicon | Correction on SRS carrier switching |
| R4-2110431 | Huawei, HiSilicon | Correction on SRS carrier switching |

## Open issues summary

*No open issues. Companies are encouraged to directly comment on the CRs.*

### 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** |
| **[R4-2109564](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109564.zip)** |  |
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| **[R4-2109986](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109986.zip)** |  |
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| **[R4-2109923](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109923.zip)** |  |
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| **[R4-2109925](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109925.zip)** |  |
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| **[R4-2110388](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2110388.zip)** |  |
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## Summary for 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.*

|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation** |
| **[R4-2109564](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109564.zip)** |  |
| **[R4-2109986](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109986.zip)** |  |
| **[R4-2109923](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109923.zip)** |  |
| **[R4-2109925](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109925.zip)** |  |
| **[R4-2110388](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2110388.zip)** |  |

## Discussion on 2nd round (if applicable)

# Topic #2: CGI reading requirements with autonomous gap (Perf)

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| **[R4-2109573](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109573.zip)** | Qualcomm, Inc. | CR: CGI reading test |
| R4-2111499 | Qualcomm, Inc. | (R17mirror) CR: CGI reading test |

## Open issues summary

Companies are encouraged to provide feedback directly for the CR.

## Companies views’ collection for 1st round

### 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** |
| **[R4-2109573](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109573.zip)** |  |
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## Summary for 1st 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** |
| **[R4-2109573](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109573.zip)** |  |

## 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: Mandatory MG patterns (Perf)

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| **[R4-2108767](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2108767.zip)** | ZTE Corporation | **Proposal 1: R15 test cases on mandatory gap patterns shall be inherited completely to R16 specifications, and R16 UEs shall pass all test cases.**  **Observation 1:** Whether to skip R15 TCs is beyond the scope of this WI (R16 RRM Enhancement). |
| **[R4-2109312](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109312.zip)** | Apple | CR for test applicability for mandatory gap patterns |
| **[R4-2110970](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2110970.zip)** | Ericsson | **Observation 1:** The newly defined test cases for mandatory measurement gap take approximately 10 minutes each for FR1 and FR2 which is an extremely small part of the total UE RRM certification testing time  **Observation 2:** It is not desirable to eliminate test coverage based on assumptions and pre-conceptions about likely failure modes in a very complicated implementation and system such as NR  **Observation 3:** Test case lists are developed and maintained by many bodies and organisations within the industry who do not expect that test coverage will be removed in a future release  **Observation 4:** The business incentive to develop and certify test implementation is less if they are only used for testing a single release of UE  **Proposal 1: A release 16 UE is expected to pass tests with release 15 MG patterns, and additionally the tests defined for release 16 mandatory gap patterns. This corresponds to Option 2 in the WF.** |
| **[R4-2111278](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2111278.zip)** | Nokia, Nokia Shanghai Bell | 1. RAN4 shall not introduce conditional skipping of test cases with fallback pass of legacy tests. 2. If any Rel-15 legacy test case is agreed redundant due to introduction of new Rel-16 test case, the UE will fail if the UE fails to pass the new Rel-16 test case. 3. No legacy test cases are skipped due to passing new Rel-16 test cases. 4. A Rel-16 UE shall pass all existing Rel-15 related measurement gap test cases and new Rel-16 defined measurement gap test cases. |
| **[R4-2111324](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2111324.zip)** | Ericsson | Correction to beam assumptions in FR2 tests on Rel-16 Mandatory gaps |
| R4-2111325 | Ericsson | Correction to beam assumptions in FR2 tests on Rel-16 Mandatory gaps |

## 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 3-1 Allowing UEs to skip R15 TCs?

*Sub-topic description:*

*Open issues and candidate options before e-meeting:*

**Issue 3-1: Whether to allow R16 UEs to skip some of R15 TCs**

* Proposals
  + Option 1: No (ZTE, Ericsson, Nokia)
  + Option 2: Yes, partly (Apple)
* Recommended WF
  + Discussion is needed

## Companies views’ collection for 1st round

### Open issues

|  |  |
| --- | --- |
| **Company** | **Comments** |
| ZTE | Issue 3-1: We believe that the issue if out of the scope of this WI since the WI focuses on R16 enhancements. Technically, we’re concerned on the possibility that certain parameters would trigger a bug depending on UE implementation even if generally a shorter MG can be seen as a stricter requirement. |
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### 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** |
| **[R4-2109312](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109312.zip)** |  |
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| **[R4-2111324](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2111324.zip)** |  |
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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.*

|  |  |
| --- | --- |
|  | **Status summary** |
| **Issue 3-1** | *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** |
| **[R4-2109312](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109312.zip)** |  |
| **[R4-2111324](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2111324.zip)** |  |

## Discussion on 2nd round (if applicable)

# 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** |
| **[R4-2109564](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109564.zip)** | CR:Correction on SRS carrier switching | Qualcomm, Inc. |  |  |
| R4-2111497 | (R17mirror) CR:Correction on SRS carrier switching | Qualcomm, Inc. |  |  |
| **[R4-2109986](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109986.zip)** | CR on TS38.133 mandatory gaps - r16 | Ericsson, Mediatek Inc. |  |  |
| R4-2109987 | CR on TS38.133 mandatory gaps - r17 | Ericsson, Mediatek Inc. |  |  |
| **[R4-2109573](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109573.zip)** | CR: CGI reading test | Qualcomm, Inc. |  |  |
| R4-2111499 | (R17mirror) CR: CGI reading test | Qualcomm, Inc. |  |  |
| **[R4-2109312](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109312.zip)** | CR for test applicability for mandatory gap patterns | Apple |  |  |
| **[R4-2111324](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2111324.zip)** | Correction to beam assumptions in FR2 tests on Rel-16 Mandatory gaps | Ericsson |  |  |
| R4-2111325 | Correction to beam assumptions in FR2 tests on Rel-16 Mandatory gaps | Ericsson |  |  |
| **[R4-2109923](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109923.zip)** | CR to 38.133 correction on SRS carrier based switching core requirements | vivo, Qualcomm, Huawei, HiSilicon, MediaTek Inc., Apple, Nokia |  |  |
| R4-2109924 | CR to 38.133 correction on SRS carrier based switching core requirements | vivo, Qualcomm, Huawei, HiSilicon, MediaTek Inc., Apple, Nokia |  |  |
| **[R4-2109925](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109925.zip)** | CR to 38.133 correction on SRS carrier based switching test cases | vivo |  |  |
| R4-2109926 | CR to 38.133 correction on SRS carrier based switching test cases | vivo |  |  |
| **[R4-2110388](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2110388.zip)** | Correction on SRS carrier switching | Huawei, HiSilicon |  |  |
| R4-2110431 | Correction on SRS carrier switching | Huawei, HiSilicon |  |  |

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 |  |
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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