**3GPP TSG-RAN WG4 Meeting # 98-e R4-200XXXX**

**Electronic Meeting, Jan. 25 – Feb.05, 2021**

**Agenda item:** 7.19.5

**Source:** Apple

**Title:** Email discussion summary for [98e][204] R16\_NR\_RRM\_maintenance

**Document for:** Information

# Introduction

In this email thread, R16 NR RRM maintenance in 7.19.5 will be discussed

# Topic #1: R16 IDLE/INACTIVE RRM requirement with SMTC2-LP

## Companies’ contributions summary

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| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2100185**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100185.zip) | Apple | ***Proposal 1: the legacy serving cell measurement and evaluation requirement in IDLE/INACTIVE mode shall not be changed by introducing SMTC2-LP.***  ***Proposal 2: revise the note 2 in Table 4.2.2.3-1 as:***  ***M2 = 1.5 if SMTC periodicity of measured intra-frequency cell > 20 ms; otherwise M2=1. If different SMTC periodicities are configured for different cells, the SMTC periodicity in this note is the one used by the cell being identified.***  ***Proposal 3: revise the applicability condition in TS38.133 section 4.2.2.4 as:***  ***The UE is not expected to meet the measurement requirements for an inter-frequency carrier under DRX cycle=320 ms defined in Table 4.2.2.4-1 under the following conditions:***  ***- TSMTC\_intra = TSMTC\_inter = 160 ms; where***  ***TSMTC\_intra is periodicity of the SMTC configured for the intra-frequency carrier if no identified intra-frequency cell is in the PCI list of SMTC2-LP on this intra-frequency carrier; TSMTC\_intra is periodicity of the SMTC2-LP configured for the intra-frequency carrier if at least one identified intra-frequency cell is in the PCI list of SMTC2-LP on this intra-frequency carrier.***  ***TSMTC\_inter is the actual SMTC periodicity used by the inter-frequency cell being identified.***  ***- SMTC occasions configured for the inter-frequency carrier occur up to 1 ms before the start or up to 1 ms after the end of the SMTC occasions configured for the intra-frequency carrier, and***  ***- SMTC occasions configured for the intra-frequency carrier and for the inter-frequency carrier occur up to 1 ms before the start or up to 1 ms after the end of the paging occasion in TS38.304 [1].***  ***Proposal 4: revise the maximum interruption requirement in paging reception in TS38.133 section 4.2.2.6 as:***  ***At intra-frequency and inter-frequency cell re-selection, the UE shall monitor the downlink of serving cell for paging reception until the UE is capable to start monitoring downlink channels of the target intra-frequency and inter-frequency cell for paging reception. The interruption time shall not exceed TSI-NR + 2\*Ttarget\_cell\_SMTC\_period ms. Ttarget\_cell\_SMTC\_period is the periodicity of the SMTC occasions configured for the target NR cell. If the target cell is in the PCI list of smtc2-LP, the SMTC periodicityfollows smtc2-LP; otherwise, the SMTC periodicity follows smtc.*** |
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## Open issues summary

Issue 1-1: the legacy serving cell measurement and evaluation requirement in IDLE/INACTIVE mode shall not be changed by introducing SMTC2-LP.

Option 1: Yes

Option 2: No

Issue 1-2: Further clarify the note 2 in Table 4.2.2.3-1 that if different SMTC periodicities are configured for different cells, the SMTC periodicity in this note is the one used by the cell being identified.

Option 1: Yes

Option 2: No

Issue 1-3: revise the applicability condition, in bold, in TS38.133 section 4.2.2.4 as:

The UE is not expected to meet the measurement requirements for an inter-frequency carrier under DRX cycle=320 ms defined in Table 4.2.2.4-1 under the following conditions:

- TSMTC\_intra = TSMTC\_inter = 160 ms; **where TSMTC\_intra is periodicity of the SMTC configured for the intra-frequency carrier if no identified intra-frequency cell is in the PCI list of SMTC2-LP on this intra-frequency carrier; TSMTC\_intra is periodicity of the SMTC2-LP configured for the intra-frequency carrier if at least one identified intra-frequency cell is in the PCI list of SMTC2-LP on this intra-frequency carrier.**

TSMTC\_inter is the actual SMTC periodicity used by the inter-frequency cell being identified.

- SMTC occasions configured for the inter-frequency carrier occur up to 1 ms before the start or up to 1 ms after the end of the SMTC occasions configured for the intra-frequency carrier, and

- SMTC occasions configured for the intra-frequency carrier and for the inter-frequency carrier occur up to 1 ms before the start or up to 1 ms after the end of the paging occasion in TS38.304 [1].

Option 1: Yes

Option 2: No

Issue 1-4: revise the maximum interruption requirement in paging reception in TS38.133 section 4.2.2.6 as:

At intra-frequency and inter-frequency cell re-selection, the UE shall monitor the downlink of serving cell for paging reception until the UE is capable to start monitoring downlink channels of the target intra-frequency and inter-frequency cell for paging reception. The interruption time shall not exceed TSI-NR + 2\*Ttarget\_cell\_SMTC\_period ms. **Ttarget\_cell\_SMTC\_period is the periodicity of the SMTC occasions configured for the target NR cell. If the target cell is in the PCI list of smtc2-LP, the SMTC periodicityfollows smtc2-LP; otherwise, the SMTC periodicity follows smtc.**

Option 1: Yes

Option 2: No

## Companies views’ collection for 1st round

### Open issues

Moderator: Please add your comments to sub-topic 1-1 and 1-2 here. Instead, you can directly comment to CR draft.

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

### CRs/TPs comments collection

Moderator: Please add comments to CR drafts here.

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| **CR/TP number** | **Comments collection** | |
| [**R4-2100186**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100186.zip)  CR on IDLE/INACTIVE RRM requirement with SMTC2-LP R16 | Company A |  |
| Company B |  |
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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.*

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

*Recommendations on WF/LS assignment*

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|  | **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*

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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”* |

## 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: Rel-16 MRTD/MTTD requirements for FR1 intra-band NCCA

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2101680**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101680.zip) | Huawei, Hsilicon | Proposal 1: It is suggested that define the MRTD/MTTD requirements of FR1 intra-band non-contiguous EN-DC/NR-CA for non-co-located deployment.  Proposal 2: For FR1 intra-band non-contiguous CA, 6us MRTD and 7.6us MTTD could be defined for non-co-located deployment, provided that performance degradation is allowed.  Proposal 3: For FR1 intra-band EN-DC, 6us MRTD and 8.21us MTTD could be defined for non-co-located deployment, provided that performance degradation is allowed. |
| [**R4-2101860**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101860.zip) | Ericsson | Proposal 1: Allow non-colocated deployment for intra-band con-contiguous carrier aggregation for FR1 in realse-16.  Proposal 2: MRTD and MTTD for intra-band non-contiguous carrier aggregation in FR1, are the same MRTD and MTTD for inter-band carrier aggregation in FR1. |

## Open issues summary

Issue 2-1: Can new MRTD/MTTD requirements of FR1 intra-band non-contiguous CA and EN-DC be specified for non-co-located deployment?

Option 1: Yes

Option 2: No

Issue 2-2: If yes for issue 1-1, is 6us MRTD and7.6us MTTD agreeable for intra-band non-co-located CA

Option 1: Yes

Option 2: other values

Issue 2-3: If yes for issue 1-1, is 6us MRTD and 8.21us MTTD agreeable for intra-band non-co-located EN-DC

Option 1: Yes

Option 2: other values

## Companies views’ collection for 1st round

### Open issues

Moderator: Please add your comments to sub-topic 1-1 and 1-2 here. Instead, you can directly comment to CR draft.

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

### CRs/TPs comments collection

Moderator: Please add comments to CR drafts here.

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| --- | --- | --- |
| **CR/TP number** | **Comments collection** | |
| [**R4-2101681**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101681.zip)  CR on MRTD/MTTD requirements for FR1 intra-band NCCA R16 | Company A |  |
| Company B |  |
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| [**R4-2101861**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101861.zip)  MRTD and MTTD in non-contiguous CA in FR1 | Company A |  |
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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.*

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

*Recommendations on WF/LS assignment*

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|  | **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 #3: Miscellaneous Rel-16 maintenance CRs

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2100117**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100117.zip) | ZTE Corporation | [CR] Core maintenance for 38.133 |
| [**R4-2100234**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100234.zip) | Apple | Interruption requirements maintenance in NR-DC (R16) |
| [**R4-2101075**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101075.zip) | NEC | CR for measurement period requirements correction |
| [**R4-2101530**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101530.zip) | OPPO | Maintenance CR on interruption at EUTRA SRS carrier switching in 38.133 |
| [**R4-2101531**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101531.zip) | OPPO | Maintenance CR on SCell activation delay requirement in TS38.133 |
| [**R4-2102250**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102250.zip) | Nokia, Nokia Shanghai Bell | Correction of band group notation for FR2 |
| [**R4-2102889**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102889.zip) | Qualcomm Incorporated | Cat-F CR to addition of TRS Configurations in Rel-16 Test Case |

## Open issues summary

Please make comments on listed CR in 3.3.2.

## Companies views’ collection for 1st round

### Open issues

Moderator: Please add your comments to sub-topic 1-1 and 1-2 here. Instead, you can directly comment to CR draft.

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

### CRs/TPs comments collection

Moderator: Please add comments to CR drafts here.

|  |  |  |
| --- | --- | --- |
| **CR/TP number** | **Comments collection** | |
| [**R4-2100117**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100117.zip)  [CR] Core maintenance for 38.133 | Company A |  |
| Company B |  |
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| [**R4-2100234**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100234.zip)  Interruption requirements maintenance in NR-DC (R16) | Company A |  |
| Company B |  |
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| [**R4-2101075**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101075.zip)  CR for measurement period requirements correction | Company A |  |
| Company B |  |
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| [**R4-2101530**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101530.zip)  Maintenance CR on interruption at EUTRA SRS carrier switching in 38.133 | Company A |  |
| Company B |  |
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| [**R4-2101531**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101531.zip)  Maintenance CR on SCell activation delay requirement in TS38.133 | Company A |  |
| Company B |  |
|  |  |
|  |  |
| [**R4-2102250**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102250.zip)  Correction of band group notation for FR2 | Company A |  |
| Company B |  |
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| [**R4-2102889**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102889.zip)  Cat-F CR to addition of TRS Configurations in Rel-16 Test Case | Company A |  |

## 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”* |