**3GPP TSG-RAN WG4 Meeting # 99-e R4-210XXXX**

**Electronic Meeting, 19th – 27th May, 2021**

**Agenda item:** 4.1.1

**Source:** Moderator (ZTE)

**Title:** Email discussion summary for [99-e][101] NR\_NewRAT\_SysParameters

**Document for:** Information

# Introduction

*Briefly introduce background, the scope of this email discussion (e.g. list of treated agenda items) and provide some guidelines for email discussion if necessary.*

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

* 1st round:
  + Discuss and reach consensus on the nominal channel spacing when there is no common µ found, and µ=1 is not supported for the two concerned CCs.
  + Discuss the necessity of further clarification on µ in the definition of nominal channel spacing.
* 2nd round: TBA
  + Final CRs if agreements are reached. In the case where there are agreements reached in both issues, CRs could be merged since proposed changes are within the same paragraph.

List of all documents under this Agenda Item (4.1.1):

|  |  |  |
| --- | --- | --- |
| [**R4-2109951**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109951.zip) | Correction to nominal CA carrier spacing (no common SCS) | Ericsson |
| R4-2109952 | Correction to nominal CA carrier spacing (no common SCS) | Ericsson |
| R4-2109953 | Correction to nominal CA carrier spacing (no common SCS) | Ericsson |
| [**R4-2109954**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109954.zip) | Correction to nominal CA carrier spacing (no common SCS) | Ericsson |
| R4-2109955 | Correction to nominal CA carrier spacing (no common SCS) | Ericsson |
| R4-2109956 | Correction to nominal CA carrier spacing (no common SCS) | Ericsson |
| [**R4-2111372**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2111372.zip) | discussion on Reply LS on CA nominal channel | Huawei, HiSilicon |
| [**R4-2111373**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2111373.zip) | CR for 38.101-1 channel space for CA\_Rel15 | Huawei, HiSilicon |
| R4-2111374 | CR for 38.101-1 channel space for CA\_Rel16 | Huawei, HiSilicon |
| R4-2111375 | CR for 38.101-1 channel space for CA\_Rel17 | Huawei, HiSilicon |
| [**R4-2111376**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2111376.zip) | CR for 38.101-2 channel space for CA\_Rel15 | Huawei, HiSilicon |
| R4-2111377 | CR for 38.101-2 channel space for CA\_Rel16 | Huawei, HiSilicon |
| R4-2111378 | CR for 38.101-2 channel space for CA\_Rel17 | Huawei, HiSilicon |

# Topic #1: Nominal channel spacing without common µ

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

*In current specs, nominal channel spacing for NR operating bands without 100kHz channel raster is calculated as:*



*Where guard bands are associated with a largest µ supported by both CCs. Furthermore, if no common µ is found, set µ0=1 for guard bands. In this case, anyway one of CCs has no support of SCS 30kHz.*

*Proponent suggests to use different µ for the guard bands in the calculation of nominal channel spacing.*

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2109951**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109951.zip) | Ericsson | Propose to change guard band for the CC without support of µ=1 (i.e., SCS 30 kHz is not supported) to µ=0. |
| R4-2109952 | Ericsson |  |
| R4-2109953 | Ericsson |  |
| [**R4-2109954**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2109954.zip) | Ericsson | Same changes proposed in R4-2109951 for TS 38.104 |
| R4-2109955 | Ericsson |  |
| R4-2109956 | Ericsson |  |

## Open issues summary

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

*For the sake of convenience, take nominal channel spacing for n40 with 5MHz and 60MHz channel bandwidth as one example, the below table shows the calculation per current specs and the new proposal:*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Band number | CBW for CC#1(MHz) | CBW for CC#2(MHz) | GB for CC#1(MHz) | GB for CC#2(MHz) | u0 | Channel spacing (MHz) |
| n40 | 5 | 60 | 0.505 | 0.825 | 1 | 32.16 |
| n40 | 5 | 60 | 0.2425 | 0.825 | 0, 1 | 31.89 |

### Sub-topic 1-1

*Sub-topic description:*

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

**Issue 1-1: Do you agree with the proposed change on calculating the nominal channel spacing for the case where no common µ is found? In the example channel bandwidth 5MHz and 60MHz of band n40, it means the nominal channel spacing is changed from 32.16MHz to 31.89MHz if following the proposed change.**

* Proposals
  + Option 1: Yes
  + Option 2: No
* Recommended WF
  + TBA

## Companies views’ collection for 1st round

### Open issues

Sub-topic 1-1

**Issue 1-1: Do you agree with the proposed change on calculating the nominal channel spacing for the case where no common µ is found? In the example channel bandwidth 5MHz and 60MHz of band n40, it means the nominal channel spacing is changed from 32.16MHz to 31.89MHz if follwing the proposed change.**

In case there is no common *μ* value for both of the channel bandwidths, *n* = 1 is selected and *GBChannel(i)* is the minimum guard band for channel bandwidth *i* according to Table 5.3.3-1 for *μ* = 0 or *μ* = 1 whichever is supported for the channel bandwidth with *μ* as defined in TS 38.211.

* Proposals
  + Option 1: Yes
  + Option 2: No

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX |  |
|  |  |
|  |  |

### 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.*

*Focus on discussing the issues (1-1/2/3) in the first round.*

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| XXX | Company A |
| Company B |
|  |
| YYY | 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:* |

### 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: Clarification on the selected µ in nominal channel spacing

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

*In current specs, nominal channel spacing for NR operating bands without 100kHz channel raster is calculated as:*



*Where guard bands are associated with a largest µ supported by both CCs.*

*In the current description, Proponent thinks a further clarification on the selected µ by adding “common”, and chaning “the said µ” to “the said µ0”.*

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2111372**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2111372.zip) | Huawei, HiSilicon | Propose to add “common” to the selected µ, and “the said µ0” |
| [**R4-2111373**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2111373.zip) | Huawei, HiSilicon | CR to TS 38.101-1 |
| R4-2111374 | Huawei, HiSilicon |  |
| R4-2111375 | Huawei, HiSilicon |  |
| [**R4-2111376**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_99-e/Docs/R4-2111376.zip) | Huawei, HiSilicon | CR to TS 38.104 |
| R4-2111377 | Huawei, HiSilicon |  |
| R4-2111378 | Huawei, HiSilicon |  |

## 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 1-1

*Sub-topic description:*

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

**Issue 2-1: Do you think it is necessary to add “common” before “ largest µ” in the description of calculating the nominal channel spacing?**

* Proposals
  + Option 1: Yes
  + Option 2: No
* Recommended WF
  + TBA

**Issue 2-2: Do you think it is necessary to change “the said µ” to “ the said µ0” in the description of calculating the nominal channel spacing?**

* Proposals
  + Option 1: Yes
  + Option 2: No
* Recommended WF
  + TBA

## Companies views’ collection for 1st round

### Open issues

Sub topic 2-1

**Issue 2-1: Do you think it is necessary to add “common” before “ largest µ” in the description of calculating the nominal channel spacing?**

* Proposals
  + Option 1: Yes
  + Option 2: No
* Recommended WF
  + TBA

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX |  |
|  |  |
|  |  |

**Issue 2-2: Do you think it is necessary to change “the said µ” to “ the said µ0” in the description of calculating the nominal channel spacing?**

* Proposals
  + Option 1: Yes
  + Option 2: No
* Recommended WF
  + TBA

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX |  |
|  |  |
|  |  |

### 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** |
| XXX | Company A |
| Company B |
|  |
| YYY | 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:* |

### 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)

# 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