**3GPP TSG-RAN WG4 Meeting # 97-e R4-20XXXXX**

**Electronic Meeting, 2 - 13 November 2020**

**Agenda item:** 7.1.1 & 7.1.3

**Source:** Moderator (Ericsson)

**Title:** Email discussion summary for [97e][106] NR\_unlic\_SysParameters

**Document for:** Information

# Introduction

This document summarizes the email discussion on topics related to NR-U system parameters in AIs 7.1.1 and 7.1.3.

Based on the contributions, following main topics are discussed in this thread:

* Spectrum Utilization and Channelization
* Wideband Operation
* NR-U CA BW Classes

Proposals 1&2 from R4-2015372 are also considered in this thread.

# Topic #1: Spectrum Utilization

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| **R4-2014496** | Skyworks Solutions, Inc. | **Proposal: Brackets can be removed from 38.101-1 Table 5.4.2.3-3 values.** |
| **R4-2015372** | Nokia | ***Proposal 1: It is proposed to removed brackets for NR-ARFCN for band n96 in*** ***table 5.4.2.3-1 in Note 2 in TS 38.104 (BS core spec)***  ***Proposal 2: It is proposed to removed brackets for GSCN for band n96 in Note 6 in table 5.4.3.3-1 of TS 38.104.*** |
| **R4-2015694** | Huawei, HiSilicon | ***Proposal 1: It is proposed to revise channel raster, GSCN and transmission bandwidth configuration as proposed in section 2.*** |
| **R4-2014887** | Apple Inc. | **Proposal: For 60kHz SCS, adopt alternative 1 for intra-carrier guard bands (i.e. 5 RBs for in-carrier guard band with 23-5-23 pattern).** |

## 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 1-1:** NR-ARFCN for band n96

* Proposals
  + Option 1: Remove Brackets from 38.101-1 Table 5.4.2.3-3 and TS 38.104 Table 5.4.2.3-1 in Note 2 values (Nokia, Skyworks)
  + Option 2: One 60MHz channel with Fc=7095MHz (NREF=873000) is missing. Revise 38.101-1 Table 5.4.2.3-3 and TS 38.104 Table 5.4.2.3-1 in Note 2 by adding NREF=873000 (Huawei)
* Recommended WF
  + Collect companies’ views in the 1st round discussions

### Sub-topic 1-2

*Sub-topic description*

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

**Issue 1-2:** GSCN for band n96

* Proposals
  + Option 1: Removed brackets for GSCN for band n96 in Note 6 in table 5.4.3.3-1 of TS 38.104(Nokia)
  + Option 2: Revise GSCN for band n96 in Note 4 in table 5.4.3.3-1 of TS 38.101-1 and Note 6 in table 5.4.3.3-1 of TS 38.104 as below: [Huawei]

GSCN = [9548, 9562, 9575, 9589, 9603, 9617, 9631, 9645, 9659, 9673, 9687, 9700, 9714, 9728, 9742, 9756, 9770, 9784, 9798, 9812, 9826, 9840, 9853, 9867, 9881, 9895, 9909, 9923, 9937, 9950, 9964, 9978, 9992, 10006, 10020, 10034, 10048, 10062, 10075, 10089, 10103, 10117, 10131, 10145, 10159, 10173, 10187, 10200, 10214, 10228, 10242, 10256, 10270, 10284, 10298, 10312, 10325, 10339, 10353]

* Recommended WF
  + Collect companies’ views in the 1st round discussions

### Sub-topic 1-3

*Sub-topic description*

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

**Issue 1-3:** Revise Table 5.3.2-1: Transmission bandwidth configuration NRB for FR1in 38.101-1 as follows (text in blue is added):

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SCS (kHz) | 5  MHz | 10  MHz | 15  MHz | 20 MHz | 25 MHz | 30  MHz | 40 MHz | 50 MHz | 60 MHz | 70  MHz | 80 MHz | 90  MHz | 100 MHz |
| NRB | NRB | NRB | NRB | NRB | NRB | NRB | NRB | NRB | NRB | NRB | NRB | NRB |
| 15 | 25 | 52 | 79 | 106 | 133 | 160 | 216 | 270 | N/A | N/A | N/A | N/A | N/A |
| 30 | 11 | 24 | 38 | 51 | 65 | 78 | 106 | 133 | 162 | 189 | 217 | 245 | 273 |
| 60 | N/A | 11 | 18 | 24  251 | 31 | 38 | 51 | 65 | 79 | 93 | 107 | 121 | 135 |
| Note 1 It is only applied for Band n46 and n96. | | | | | | | | | | | | | |

* Proposals
  + Option 1: Agreeable
  + Option 2: Not Agreeable
* Recommended WF
  + Collect companies’ views in the 1st round discussions

### Sub-topic 1-4

*Sub-topic description*

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

**Issue 1-4:** For 60kHz SCS, adopt alternative 1 for intra-carrier guard bands (i.e. 5 RBs for in-carrier guard band with 23-5-23 pattern). (Apple)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **SCS** | **20MHz Channels** | **40MHz Channels** | | **60MHz Channels** | | **80MHz Channels** | |
| 15KHz | 106 | 105-6-105 | Max. 216 | N/A | | N/A | |
| 30KHz | 51 | 50-6-50 | Max. 106 | 50-6-50-6-50 | Max. 162 | 50-6-50-5-50-6-50 | Max. 217 |
| Alt. 1 60KHz | 24 | [23-5-23] | Max. 51 | [23-5-23-5-23] | Max. 79 | [23-5-23-5-23-5-23] | Max. 107 |
| Alt. 2 60KHz | [25] | [24-3-24] | Max. 51 | [24-3-25-3-24] | Max. 79 | [24-4-24-3-24-4-24] | Max. 107 |

* Proposals
  + Option 1: Agreeable
  + Option 2: Not Agreeable
* Recommended WF
  + Collect companies’ views in the 1st round discussions

## 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** |
| 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:* |

*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: Wideband Operation

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| **R4-2014621** | *MediaTek inc.* | Proposal 1: UL wide-band transmission mode 1 assumes that LBT is successful in all LBT sub-bands of BWP, irrespective of which sub-bands are scheduled with data.  Proposal 2: For UL WB operation, only Mode 1 is introduced as a basic feature, while Mode 2A and 2B should be removed according to Section 4.2.1.0.4 of TS 37.213.  Proposal 3: For DL WB operation, Mode 1 is introduced as a basic feature, while Mode 2 and 3 are introduced as optional features. |
| **R4-2014888** | *Apple Inc.* | Proposal 1a: DL wide-band mode 1 can be construed as the baseline NR-U functionality.  Proposal 1b: DL wide-band mode 2 and 3 must be differentiated from mode 1.  Proposal 1c: Discuss further whether DL mode 2 and 3 should have separate capabilities or they can be covered by the same "mode 2/3" capability.  Proposal 1c: DL wide-band mode 1 UE performance requirements apply only if sub-bands of the configured channel contain serving gNB transmission.  Proposal 2a: A UE should perform LBT only for those sub-bands where data is scheduled.  Proposal 2b: If Proposal 2a is agreeable, then UL wide-band mode 1 is not needed as the UE behaviour will always correspond to UL mode 2A/2B.  Proposal 2c: It is preferable to have differentiation between 2A and 2B accounting for different UE LBT capabilities.  Proposal 3: Add the corresponding NR-U capabilities into the RAN WG4 feature list and inform other WGs about it. |
| **R4-2015251** | Nokia, Nokia Shanghai Bell | Proposal 1: Agree that there is no difference in UE capability between DL Cases 2a/2b/3 and DL Case 4.  Proposal 2: No UE capabilities are needed for DL wideband operation.  Observation 1: RAN2 did not reserve any bits for non-agreed UE capabilities based on the RAN1 request.  Proposal 3: Further discus UE capabilities for UL wideband operation. |
| **R4-2016438** | Qualcomm Incorporated | Proposal: From a RAN4 perspective, none of the feature groups is needed for Rel-16 since requirements are not available or the feature group is already part of the baseline assumption that all UE’s are expected to support. |
| **R4-2015972** | Ericsson | CR to TS 38.101-1 on Correction to the intra-cell guard band definition for wideband operation  38.101-1 v16.5.0 CR-0550 Cat: F (Rel-16)  The 38.101-1 defines ‘wideband operation’ as  Wideband operation: For a UE that supports shared spectrum channel access, wideband operation refers to operation within a channel larger than 20 MHz in which intra-cell guard bands may be configured to distinguish individual RB-sets  hence not including operations with the 10 MHz and 20 MHz channel bandwidths. However, it is not obvious from sub-clause 5.3.3 that that there are no intra-cell GB for these bandwidths; the 20 MHz channel bandwidth is nevertheless included in Table 5.3.3-2 defining the nominal GB for wideband operations.  Since 38.331 refers to 38.101-1 for the guard-band sizes when the above IEs are absent, the intra-cell GB configuration must be clearly defined for all channel bandwidths. |

## 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

*Sub-topic description:* NR-U UL Wideband operation

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

**Issue 2-1-1:** UL Wideband operation

* Proposals
  + Option 1: wide-band transmission mode 1 assumes that LBT is successful in all LBT sub-bands of BWP, irrespective of which sub-bands are scheduled with data. (MediaTek)
  + Option 2: A UE should perform LBT only for those sub-bands where data is scheduled. Then UL wide-band mode 1 is not needed as the UE behaviour will always correspond to UL mode 2A/2B (Apple)
* Recommended WF
  + Collect companies’ views in the 1st round discussions

**Issue 2-1-2:** UE capabilities for UL wideband operation.

* Proposals
  + Option 1: For UL WB operation, only Mode 1 is introduced as a basic feature, while Mode 2A and 2B should be removed according to Section 4.2.1.0.4 of TS 37.213. (MediaTek)
  + Option 2: If Option 2 of Issue 2-1-1 is adopted, it is preferable to have differentiation between 2A and 2B accounting for different UE LBT capabilities. (Apple)
  + Option 3: From a RAN4 perspective, none of the feature groups is needed for Rel-16 since requirements are not available or the feature group is already part of the baseline assumption that all UE’s are expected to support. (Qualcomm)
* Recommended WF
  + Collect companies’ views in the 1st round discussions

### Sub-topic 2-2

*Sub-topic description:* NR-U DL wideband operation

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

**Issue 2-2-1:** DL wide-band mode 1 UE performance requirements apply only if sub-bands of the configured channel contain serving gNB transmission.

* Proposals
  + Option 1: Agreeable
  + Option 2: Not agreeable
* Recommended WF
  + Collect companies’ views in the 1st round discussions

**Issue 2-2-2:** UE capabilities for DL wideband operation.

* Proposals
  + Option 1: There is no difference in UE capability between DL Cases 2a/2b/3 and DL Case 4. No UE capabilities are needed for DL wideband operation.(Nokia)
  + Option 2: From a RAN4 perspective, none of the feature groups is needed for Rel-16 since requirements are not available or the feature group is already part of the baseline assumption that all UE’s are expected to support. (Qualcomm)
  + Option 3: (Apple, MediaTek)
    - Proposal 1a: DL wide-band mode 1 can be construed as the baseline NR-U functionality.
    - Proposal 1b: DL wide-band mode 2 and 3 must be differentiated from mode 1.
    - Proposal 1c: Discuss further whether DL mode 2 and 3 should have separate capabilities or they can be covered by the same "mode 2/3" capability or they can be optional capabilities
* Recommended WF
  + Collect companies’ views in the 1st round discussions

## 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** |
| **R4-2015972** | 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:* |

*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”* |

# Topic #3: NR-U CA BW Classes

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| **R4-2014889** | Apple Inc. | Proposal 1: Revise NR CA BW classes definition based on the changes shown in Table 2.1-3 to support NR-U intra-band contiguous CA.  Proposal 2: Merge NR-U CA configurations CA\_n46G, CA\_n46H, and CA\_n46I into CA\_n46M, n46N, and n46O respectively as shown in Table 2.2-2.  Proposal 3: Remove CA BW class “I” from NR-U DL CA Rx requirements for ACS, in-band blocking, and out-of-band blocking as it can be covered by CA BW class “O”. |
| **R4-2015973** | Ericsson | CR to TS 38.101-1 on Correction to CA bandwidth classes M, N and O  38.101-1 v16.5.0 CR-0551 Cat: F (Rel-16)  The aggregated bandwidth of CA BW classes M, N and O should support bandwidth combinations down to 10 + 2\*20 MHz, 3\*20 MHz and 4\*20 MHz, respectively. This is not allowed by the strict inequalities in the lower limits for M and N.  The upper limits of the aggregated bandwidths are within square brackets, the tentative limits based on \*60 MHz. Aggregation of up to four carriers with 80 MHz and 100 MHz channel bandwidths is covered by the respective classes B, C, D and E. To that end, the square brackets for M and N can be removed. For 5 CC a new (general) CA BW class applicable for all relevant bands can be defined when needed.  Use of BCS is likely regardless of the value of the upper limit. |
| **R4-2014954** | ZTE Corporation | The notation of NR-U CA BW class is still unclear and need further clarifications.  Observation 1: The fallback group for NR CA bandwidth class “D” and “E” in the current specification does not match the agreement captured in [4].  Proposal 1: Keep the description of FBG 3 for NR CA bandwidth classes D and E unchanged in the current specification as it is.  Proposal 2: It is reasonable for classes M and N to capture sign “=” in the lower limits of aggregated channel bandwidth 50MHz and 80MHz respectively.  Proposal 3: It is suggested not to use notation N for NR CA BW class in FR1. |
| **R4-2014955** | ZTE Corporation | CR to TS 38.101-1 on NR CA bandwidth classes for unlicensed spectrum (Rel-16)  38.101-1 v16.5.0 CR-0522 Cat: F (Rel-16) |

## 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

*Sub-topic description:*

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

**Issue 3-1:** Keep the description of FBG 3 for NR CA bandwidth classes D and E unchanged in the current specification as it is. (ZTE)

* Proposals
  + Option 1: Agreeable
  + Option 2: Not agreeable
* Recommended WF
  + Collect companies’ views in the 1st round discussions

### Sub-topic 3-2

*Sub-topic description*

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

**Issue 3-2:** Revise NR CA BW classes definition based on the following changes:

1. Define the aggregated channel BW upper limits for classes M, N, and O as below: (Apple)

|  |  |  |
| --- | --- | --- |
| BW Class | Aggregated BW | No. of CC |
| M | 50 MHz ≤ BWChannel\_CA ≤ 200 MHz | 3 |
| N | 80 MHz ≤ BWChannel\_CA ≤ 300 MHz | 4 |
| O | 100 MHz ≤ BWChannel\_CA ≤ 400 MHz | 5 |

Also the aggregated channel BW lower limits of classes M, N and O in current specifications should have the “=” sign (ZTE, Apple)

* Proposals
  + Option 1: Agreeable
  + Option 2: Not agreeable
* Recommended WF
  + Collect companies’ views in the 1st round discussions

### Sub-topic 3-3

*Sub-topic description:*

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

**Issue 3-3:** Proposal 2: Merge NR-U CA configurations CA\_n46G, CA\_n46H, and CA\_n46I into CA\_n46M, n46N, and n46O respectively as shown in Table 2.2-2 in R4-2014889 (Apple)

* Proposals
  + Option 1: Agreeable
  + Option 2: Not agreeable
* Recommended WF
  + Collect companies’ views in the 1st round discussions

### Sub-topic 3-4

*Sub-topic description:*

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

**Issue 3-4:** Remove CA BW class “I” from NR-U DL CA Rx requirements for ACS, in-band blocking, and out-of-band blocking as it can be covered by CA BW class “O”. (Apple)

* Proposals
  + Option 1: Agreeable
  + Option 2: Not agreeable
* Recommended WF
  + Collect companies’ views in the 1st round discussions

### Sub-topic 3-5

*Sub-topic description:*

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

**Issue 3-5:** It is suggested not to use notation N for NR CA BW class in FR1 since NR band number begins with the letter “n”, CA BW class “N” is absent in FR2 to avoid unnecessary confusion. (ZTE)

* Proposals
  + Option 1: Agreeable
  + Option 2: Not agreeable
* Recommended WF
  + Collect companies’ views in the 1st round discussions

## 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** |
| **R4-2014955** | Company A |
| Company B |
|  |
| **R4-2015973** | 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”* |

# Topic #4: Others

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| **R4-2016123** | ZTE Corporation | Proposal 1: further discuss how to apply the FCC requirements and AFC or non-AFC policy for the carriers across U-NII bands;  Observation: it is very challenging to achieve the required attenuation for lower edge and upper edge of 6GHz assuming -27dBm/MHz emission limit needed out of 6GHz band in FCC report.  Proposal 2: to achieve emission limit -27dBm/MHz required by FCC, either lower the BS output power or reserve more guard band or reserve guard band and put the fitter within the 6GHz band. |
| **R4-2016501** | Skyworks Solutions Inc. | Proposal: Companies views on NRU continuation work in 2021/Release 17 should be collected in order to enable small enhancement steps from Release 16 and devise a strategy for December plenary RAN#90e. |

## 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 4-1

*Sub-topic description:*

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

**Issue 4-1:** Based on FCC report, for different U-NII-bands, there are different EIRP limit and different usage policy from regulator e.g. AFC or non-AFC, therefore it is necessary for further discuss how to apply the requirements and AFC policy for those carries across the U-NII bands. (ZTE)

* Recommended WF
  + Collect companies’ views on how to apply the FCC requirements and AFC or non-AFC policy for the carriers across U-NII bands

### Sub-topic 4-2

*Sub-topic description:* It is very challenging to achieve the required attenuation for lower edge and upper edge of 6GHz assuming -27dBm/MHz emission limit needed out of 6GHz band in FCC report. (ZTE)

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

**Issue 4-2:** How to achieve emission limit -27dBm/MHz required by FCC?

* Proposals
  + Option 1: lower the BS output power
  + Option 2: reserve more guard band
  + Option 3: reserve guard band and put the fitter within the 6GHz band
  + Option 4: other proposals
* Recommended WF
  + Collect companies’ views

### Sub-topic 4-3

*Sub-topic description:*

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

**Issue 4-3:** Companies views on NRU continuation work in 2021/Release 17 should be collected in order to enable small enhancement steps from Release 16 and devise a strategy for December plenary RAN#90e.(Skywork)

* Recommended WF
  + Collect companies’ views on NRU continuation work in 2021/Release 17

## 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** |
| 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:* |

*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”* |