**3GPP TSG RAN Meeting #93-e RP-212567**

**Electronic Meeting, September 13 - 17, 2021**

**Agenda item:** 9.4.2.8

**Source:** Nokia (moderator)

**Title:** Moderator's summary for email discussion [93e-27-EN-DC-2+4Band]

**Document for:** Discussion

# Introduction

In this document, we will provide a summary for the email discussion on [93e-27-EN-DC-2+4Band] at RAN#93-e related to the WID on Rel-17 Dual Connectivity (DC) of x bands (x=1,2) LTE inter-band CA (xDL1UL) and 4 bands NR inter-band CA (4DL1UL).

# Topic #1: Removal of a note from the WID

## Proposed objectives

**Topic #1** will capture the outcome of the discussions related to the following proposal in RP-212097 [1]:

Remove the following note from the current WID on Rel-17 Dual Connectivity (DC) of x bands (x=1,2) LTE inter-band CA (xDL1UL) and 4 bands NR inter-band CA (4DL1UL) in RP-211592

* + For NR CA, at least one of the NR bands is FR2 band

## Initial round

### Open issues

Issue 1.2-1: Aim is to find a way forward for the proposal to remove the following note from the current WID

Note: For NR CA, a least one of the NR bands is a FR2 band.

The following summarizes the options to consider for Issue 1.2-1.

* **Option 1: Agree to remove the note**
* **Option 2: Disagree to remove the note**
* **Option 3: Other proposal as a way forward**

### Collection of company views

Issue 1.2-1: Indicate which option is preferred concerning the removal of the note “For NR CA, a least one of the NR bands is a FR2 band”:

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| **Company** | **Comments** |
| SoftBank | Our preference is Option 1.  If the reason for the note is just operators’ demand, we would clarify that we have a demand to have FR1-only band combination in this basket. If there is any reason why basket approach is not appropriate, we are fine to consider Option 3. |
| Verizon | Before a decision, we need to clarify if the Option 1 would NOT preclude the FR2 band(s) from this ED-DC WID. If not, we agree Option 1. Otherwise, we should consider Option 3.  For the Option 3 WF, it should further clarify the Note and states clearly that it does not exclude the FR2 band(s) from this WID. |
| NTT DOCOMO, INC. | We have same opinion with Verizon. We support Option 1 but FR2 band should not be completely precluded by removing the note. |
| SoftBank | Just to clarify the intention of our proposal, we don’t intend at all to preclude the inclusion of FR2 band(s) in NR-CA part. The intention is that the case of FR1-bands only for NR-CA part, e.g. LTE 2-band + NR FR1 4-band, should be allowed in this basket item. |
| ZTE | For the case as mentioned by SoftBank, “LTE 2 bands + NR 4 FR1 bands”, if it is not covered in other basket WIDs, and intended for this WID, then we are ok with Option 1. |
| Huawei, HiSilicon | We support option 1 to consider the requests from operators for consideration of deployment scenario. As rapporteur company of the WI, we can clarify that without the Note, there is no limitation or preclusion of FR2 bands.  If option 1 is agreeable, we will revise the WID accordingly to remove the note. |
| Nokia | We support Option 1.  38.101-3 has already captured EN-DC with six bands within FR1(three LTE bands + three NR bands, four LTE bands + two NR bands or five LTE bands + one NR band) so that there must not be any technical reason to exclude two LTE bands + four NR bands if there is a demand. |
| E/// | While we understand the motivation of Option 1. But there may be some confusion whether only FR1 bands are included. So to prevent ambiguity we prefer Option 3. We propose the following modified NOTE:   * *Note: For NR CA, any of the following applies:*   + *all NR bands are FR1,*   + *all NR band are FR2,*   + *NR bands are mix of FR1 and FR2 bands.* |
| MediaTek | We are fine with Option 1. Some clarification may also be needed. |
| Intel | We don’t have a strong view, but clarification is needed from interested operators. Overall, we think that FR2 shall not be precluded, and it should be clearly clarified if the note is removed or updated.  Depending on this note, we assume that different subclauses would be impacted in 38.101-3 (With the note, BCs will be introduced in 5.5B.5 but without the note, BCs will be introduced in 5.5B.4). So, further clarifications would be appreciated if the plan is to add new BCs to different tables depending on the FR2 presence. |

### Summary and recommendation for further discussion

In this section, the summary of comments on Topic#1 and the corresponding moderator recommendations are provided.

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| **Moderator** | **Summary:**  All companies seem to agree with the intent of the proposal to remove or update the note so the note does not require FR2 band and e.g. allows the following band combination: LTE 2 band + NR FR1 4 bands EN-DC but at the same time it should be clear in the WID that FR2 bands are not precluded. |
| **Moderator** | **Moderator Recommendation:**  The rapporteur (Huawei) will revise the WID by removing or updating the note so that FR2 bands are not required but also FR2 bands are not precluded.  The intermediate round discussion will focus on finalizing the WID update. |

## Intermediate and Final round

### Open issues

The aim of the intermediate and final round was to review and agree the revised WID from the rapporteur merging both the Topic #1 and Topic#2 related WID updates.

### Summary and recommendation

The revised WID provided by the rapporteur was seen acceptable by everybody. Thus, the revised WID is recommended to be approved in RAN#93.

# Topic #2:

## Proposed objectives

Topic #2 will capture the outcome of the discussions related to the rapporteur’s WID update for Rel-17 Dual Connectivity (DC) of x bands (x=1,2) LTE inter-band CA (xDL1UL) and 4 bands NR inter-band CA (4DL1UL) WID proposed in RP-212190 [2].

## Initial round

### Open issues

Issue 2.2-1: RAN needs to decide the approval of the WID updates from the rapporteur in RP-212190 [2]. The WID update includes regular rapporteur WID updates like Unique identifier, update to the rapporteur name etc.

The following summarizes the options to consider for Issue 2.2-1.

* **Option 1: Approve the WID update**
* **Option 2: Do not approve the update and why**
* **Option 3: Other/comments**

### Collection of company views

Issue 2.2-1: Indicate which option is preferred

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| **Company** | **Comments** |
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### Summary and recommendation for further discussion

In this section, the summary of comments on Topic#2 and the corresponding recommendations are provided.

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| **Moderator** | **Summary:**  No comments were received on the rapporteur’s WID update. Thus, the proposed updates from the rapporteur seem agreeable to everybody. |
| **Moderator** | **Moderator Recommendation:**  The rapporteur will merge the WID updates of RP-212190 to the updates discussed under the topic #1,  No intermediate round discussion is needed for this Topic #2. |

## Intermediate and Final round

### Open issues

The aim of the intermediate and final round was to review and agree the revised WID from the rapporteur merging both the Topic #1 and Topic#2 related WID updates.

### Summary and recommendation

The revised WID provided by the rapporteur was seen acceptable by everybody. Thus, the revised WID is recommended to be approved in RAN#93.

# Final Conclusions

**Moderator Recommendations: Approve the revised WID including the WID updates from the Topic #1 and Topic #2.**

# References

[1] RP-212097, Motivation on addition of FR1 4 Bands for 2+4 band EN-DC, SoftBank Corp.

[2] RP-212190, Revised WID on Rel-17 Dual Connectivity (DC) of x bands (x=1,2) LTE inter-band CA (xDL1UL) and 4 bands NR inter-band CA (4DL1UL), Huawei, HiSilicon