**3GPP TSG-RAN WG4 Meeting#112bis R4-2415671**

**Hefei, Anhui, China, 14-18 October 2024**

**Agenda item:** 7.3

**Source:** Moderator (Apple)

**Title:** Topic summary for [112bis][224] Reply\_LS

**Document for:** Information

# Introduction

This topic summary covers AI 7.1, including the following incoming LS related topics.

* LS on FR2-NTN inclusion to specifications (R1-2407406)
* Reply LS on UE capability for multi-carrier enhancements (R4-2405992)

# Topic #1: LS on FR2-NTN inclusion to specifications (R1-2407406)

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

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Title** | **Company** | **Proposals / Observations** |
| [**R4-2415146**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_112bis/Docs/R4-2415146.zip) | Draft CR for update the note for NTN frequency range definition in RLM requirements | vivo |  |

## Open issues summary

RAN1 has completed the work on RAN1 specification changes to support NR NTN for the frequency bands defined as part of FR2-NTN, and has endorsed several CRs to include FR2-NTN. During this work, RAN1 identified that some RAN1 specifications are still unclear regarding whether FR2-1 or FR2-2 procedure should apply to the FR2-NTN, as the current RAN1 specifications define different behaviour between FR2-1 and FR2-2. The attached CR R1-2407407 has been agreed.

Furthermore, RAN1 understands that NOTE 2 in Table 5.1-1 of 38.101-5 states that FR2-NTN are regarded as FR2 bands, likely to minimize the impact when referencing RAN1 and RAN2 specifications. RAN1 would like to ask RAN4 to consider whether NOTE 2 may need to be updated.

Table 5.1-1: Definition of NTN frequency ranges

|  |  |
| --- | --- |
| Frequency range designation | Corresponding frequency range |
| FR1-NTN1 | 410 MHz – 7125 MHz |
| FR2-NTN2 | 17300 MHz – 30000 MHz |
| NOTE 1: [NTN bands within this frequency range are regarded as a FR1 band when references from other specifications.]  NOTE 2: [NTN bands within this frequency range are regarded as a FR2 band when references from other specifications.] | |

### Sub-topic 1-1: FR2 NTN inclusion for RRM

In relation to the above LS, it is noted that there is also a note mentioning NTN frequency range in RRM spec in Table 8.1C.1-2. Some update is also needed.

**Issue 1-1-1: do you agree with the changes in R4-2415146?**

* Proposals
  + Option 1: Yes
  + Proposal 2: No, please provide comments.
* Recommended WF
  + Similar discussion on NTN inclusion for RF spec will also happen in main session. Need to ensure the solutions are aligned between RF and RRM.

# Topic#2: LS on UE capability for multi-carrier enhancements (R4-2405992)

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

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Title** | **Company** | **Proposals / Observations** |
| [**R4-2415200**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_112bis/Docs/R4-2415200.zip) | Discussion on UE capability for multi-carrier enhancements | vivo |  |

## Open issues summary

UE capability for switching between non-dormant and dormant BWPs triggered by the new DCI format 0-3 and 1-3 was introduced. The conclusion was informed to RAN4

|  |
| --- |
| RAN2 discussed the two options and concluded to down-select approach 2 because Approach 1 is a non-backward compatible change from RAN2 perspective.  RAN2 introduced a field *bwp-SwitchingMultiDormancyCC-DCI-0-3-And-1-3-r18* corresponding to RAN4 feature 38-9, and a field *scellDormancyWithinActiveTime-DCI-0-3-And-1-3-r18* corresponding to its prerequisite feature (RAN1 feature 49-9). It is up to RAN4 whether the UE shall report the same value between RAN4 features 6-3 and 38-9. |

### Sub-topic 1-1

D value forBWP switch within the time duration TMultipleBWPswitchDelay + Ywas updated in last RAN4 meeting.

TMultipleBWPswitchDelay = TBWPswitchDelay + D\*(N-1)

Where:

- D is the incremental delay for each additional CC involved in simultaneous BWP switch and depends on UE capability *bwp-SwitchingMultiCCs-r16* [TS 38.306, 14] for switching between non-dormant BWPs, and *bwp-SwitchingMultiDormancyCCs-r16* or *bwp-SwitchingMultiDormancyCC-DCI-0-3-And-1-3-r18* for switching between non-dormant and dormant BWPs.

Some companies think that it’s necessary to clarify whether different D values are allowed on additional CCs related to different UE capability reporting.

**Issue 1-1-1: whether different D values are allowed for different capability reporting related to *bwp-SwitchingMultiDormancyCC-DCI-0-3-And-1-3-r18*?**

* Proposals
  + Proposal 1: UE is allowed to report different incremental value than D for the new introduced UE capability *bwp-SwitchingMultiDormancyCC-DCI-0-3-And-1-3-r18* and requirements are changed accordingly. (vivo)
* Recommended WF