**3GPP TSG-RAN WG4 Meeting #112 draft R4-2413403**

**Maastricht, Netherlands, 19 – 23 August, 2024**

**Agenda item:** 5.23.9

**Source:** Moderator (Samsung)

**Title:** Topic summary for [112][303]NR\_NTN\_enh\_SysParams\_Coex\_UERF

**Document for:** Information

# Introduction

This document captures issues related to Agenda Item 5.23.1, 5.23.2 and 5.23.5 in TSG-RAN WG4 #112, together with identified key open issues, and recommends topics/questions to be handled during this meeting.

A total of 13 TDocs was received for AI mentioned above and 3 topics are listed below to cover proposals and contents in these documents as appropriate.

* Topic #1: Potential solution on Doppler shift issues
* Topic #2: CRs to TS 38.101-5
* Topic #3: CRs to TR 38.863

# Topic #1: Potential solution on Doppler shift issues

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2412949 | Huawei, HiSilicon | **Observation 1:** The issue is identified that one RB could be shifted into the guard for 60kHz SCS when VSAT is handling the doppler pre-compensation.  **Observation 2:** Both 3GPP spec and ITU regulation specified the out-of-band domain as the frequency range immediately outside the channel bandwidth.  **Observation 3:** based on the spectrum utilization and guard band specified in clause 5.3.2 and 5.3.3 from TS 38.101-5, that means NTN UE can’t meet current unwanted emission requirements which are specified immediately outside the channel bandwidth when the edge RB fall into the guard band due to the doppler shift pre-compensation.  **Proposal 1:** The following solutions are proposed to address the issue that the edge RB fall into the guard band due to the doppler shift pre-compensation.  Solution 1: the first RB and the last RB in the Maximum transmission bandwidth configuration can’t be deployed by NGSO SAN when the edge RB fall into the guard band due to the doppler shift pre-compensation.  Solution 2: UE can report a static capability whether UE is capable of supporting the deployment in NGSO scenario that the edge RB fall into the guard band.  Solution 3: UE can indicate a dynamic information to network whether the edge RB can be deployed or not based on whether the doppler shift is negligible or not. |
| R4-2412950 | Huawei, HiSilicon | CR for TS 38.101-5 to clarify Doppler shift issues for guard band and transmission bandwidth configuration |

## Open issues summary

**Issue 1-1: Potential solution on Doppler shift issues**

* Proposals
  + Option 1: The following solutions are proposed to address the issue that the edge RB fall into the guard band due to the doppler shift pre-compensation.
    - Solution 1: the first RB and the last RB in the Maximum transmission bandwidth configuration can’t be deployed by NGSO SAN when the edge RB fall into the guard band due to the doppler shift pre-compensation.
    - Solution 2: UE can report a static capability whether UE is capable of supporting the deployment in NGSO scenario that the edge RB fall into the guard band.
    - Solution 3: UE can indicate a dynamic information to network whether the edge RB can be deployed or not based on whether the doppler shift is negligible or not.
* Recommended WF
  + Discuss solutions listed above and others if any

**Issue 1-2: CR to clarify Doppler shift issues**

* Proposals
  + Option 1: Review and agree on R4-2412950 with changes if any
* Recommended WF
  + Option 1

# Topic #2: CRs to TS 38.101-5

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2411135 | CATT | Correction on ACS requirment for mobile VSAT and fixed VSAT |
| R4-2411185 | Ericsson, Huawei, HiSilicon | Clarification of the additional requirements for n512 + additional fixes |
| R4-2412046 | LG Electronics | CR on log formula for FR2-NTN UE RF requirement |
| R4-2412440 | Inmarsat, Viasat, Omnispace, Terrestar Solutions, Thuraya, Ligado Networks, EchoStar, Thales, Skyworks | CR to 38.101-5 Flexible TX-RX Separation for NR NTN Bands from Rel-18 |
| R4-2412443 | Inmarsat, Viasat, Omnispace, Terrestar Solutions, Thuraya, Ligado Networks, EchoStar, Thales, Skyworks | Inmarsat, Viasat, Omnispace, Terrestar Solutions, Thuraya, Ligado Networks, EchoStar, Thales, Skyworks CR to 38.101-5 Flexible TX-RX Separation for NR NTN Bands from Rel-17 |
| R4-2412480 | Anritsu Limited | Correct the definition of cross-polarized transmission - TS38.101-5 |
| R4-2412716 | ZTE Corporation | Maintenance CR for NTN VSAT in Ka-band |
| R4-2412951 | Huawei, HiSilicon | Modify the mistakes for Tx requirements (R18) |
| R4-2412952 | Huawei, HiSilicon | Modify the mistakes for Rx requirements (R18) |
| R4-2413033 | Huawei, HiSilicon, Ericsson | Clarify the applicability for different requirements (R18) |

## Open issues summary

**Issue 2-1: CRs to TS 38.101-5**

* Recommended WF
  + Review CRs and revise if needed for agreement.

# Topic #3: CR to TR 38.863

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

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2413460 | THALES | Maintenance CR for Ka-band coexistence results to TR 38.863 |

## Open issues summary

**Issue 3-1: CR to TR 38.863**

* Recommended WF
  + Review R4-2413460 and revise if needed for agreement.

# Annex: TDoc list

A total of 13 TDocs have been received for Agenda Item 5.23.1, 5.23.2, 5.23.5 and listed as below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **TDoc No.** | **Title** | **Source** | **Type** | **For** | **Agenda Item** | **Status** |
| R4-2411135 | (NR\_NTN\_enh-Core)CR for TS 38.101-5, Correction on ACS requirment for mobile VSAT and fixed VSAT | CATT | CR | Agreement | 5.23.5 | **available** |
| R4-2411185 | (NR\_NTN\_enh-Core) CR to TS 38.101-5: clarification of the additional requirements for n512 + additional fixes | Ericsson, Huawei, HiSilicon | CR | Agreement | 5.23.5 | **available** |
| R4-2412046 | CR on log formula for FR2-NTN UE RF requirement | LG Electronics | CR | Agreement | 5.23.5 | **available** |
| R4-2412440 | (NR\_NTN\_solutions-Core) CR to 38.101-5 Flexible TX-RX Separation for NR NTN Bands from Rel-18 | Inmarsat, Viasat, Omnispace, Terrestar Solutions, Thuraya, Ligado Networks, EchoStar, Thales, Skyworks | CR | Agreement | 5.35->  5.23.5 | **available** |
| R4-2412443 | (NR\_NTN\_solutions-Core) CR to 38.101-5 Flexible TX-RX Separation for NR NTN Bands from Rel-17 | Inmarsat, Viasat, Omnispace, Terrestar Solutions, Thuraya, Ligado Networks, EchoStar, Thales, Skyworks | CR | Agreement | 5.35->  5.23.5 | **available** |
| R4-2412480 | (NR\_NTN\_enh-Core) CR to correct the definition of cross-polarized transmission - TS38.101-5 | Anritsu Limited | CR | Agreement | 5.23.5 | **available** |
| R4-2412716 | Maintenance CR for NTN VSAT in Ka-band | ZTE Corporation | CR | Agreement | 5.23.5 | **available** |
| R4-2412949 | (NR\_NTN\_enh-Core) Discussion on potential solution on Doppler shift issues for guard band and transmission bandwidth configuration | Huawei, HiSilicon | discussion | Discussion | 5.23.5 | **available** |
| R4-2412950 | (NR\_NTN\_enh-Core) CR for TS 38.101-5 to clarify Doppler shift issues for guard band and transmission bandwidth configuration | Huawei, HiSilicon | CR | Agreement | 5.23.5 | **available** |
| R4-2412951 | (NR\_NTN\_enh-Core) CR for TS 38.101-5 to modify the mistakes for Tx requirements (R18) | Huawei, HiSilicon | CR | Agreement | 5.23.5 | **available** |
| R4-2412952 | (NR\_NTN\_enh-Core) CR for TS 38.101-5 to modify the mistakes for Rx requirements (R18) | Huawei, HiSilicon | CR | Agreement | 5.23.5 | **available** |
| R4-2413033 | (NR\_NTN\_enh-Core) CR for TS 38.101-5 to clarify the applicability for different requirements (R18) | Huawei, HiSilicon, Ericsson | CR | Agreement | 5.23.5 | **available** |
| R4-2413460 | Maintenance CR for Ka-band coexistence results to TR 38.863 | THALES | CR | Agreement | 5.23.2 | **available** |