**3GPP TSG-RAN WG4 Meeting # 107 R4-2310006**

**Incheon, KR, May 22nd – May 26th , 2023**

**Agenda item:** 9.6

**Source:** Moderator (MediaTek)

**Title:** Topic summary for [107][123] IoT\_NTN\_FDD\_LS\_band

**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.*

*Agenda items:*

|  |
| --- |
| *9.6 Introduction of a new FDD band (L+S band) for IoT NTN operation**9.6.1 General and work plan (3)**9.6.2 Band definition and system parameters (1)**9.6.3 UE RF requirements (6)**9,6.4 SAN RF requirements (1)**9.6.5 RRM core requirements (0)* |

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| --- | --- | --- | --- |
| **TDoc** | **Title** | **Source** | **Observations/Proposals****Moderator’s remark** |
| [**R4-2308391**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308391.zip) | General aspects for IoT NTN band | MediaTek Inc. | Discussing the common TR:Observation: The approved TR skeleton can accommodate different bands for IoT NTN operation, thus acts as the common TR for all IoT NTN bands.Proposal: Add the common TR information into the revised WID for L+S band for IoT NTN operation. |
| [**R4-2308392**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308392.zip) | Further discussion on system parameters for L+S IoT NTN band | MediaTek Inc. | Proposal 1: For variable duplex, RAN4 to consider if the same conclusion for band n254 for NR NTN applies for band 254 for IoT NTN once a conclusion is drawn in NR NTN thread by considering spectrum ownership and demands for flexible deployments.Proposal 2: For IoT NTN band 254, RAN4 not to introduce asymmetric UL/DL operation. |
| [**R4-2308393**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308393.zip) | Further discussion on UE RF requirements for L+S IoT NTN band | MediaTek Inc. | Proposal 1: For minimum output power, reuse the current TS 36.102 requirements for L+S IoT NTN bands.Proposal 2: For transmit OFF power, reuse the current TS 36.102 requirements for L+S IoT NTN bands.Proposal 3: For ON/OFF time mask, reuse the current TS 36.102 requirements for L+S IoT NTN bands.Proposal 4: For maximum input level, reuse the current TS 36.102 requirements for L+S IoT NTN bands. |
| [**R4-2308394**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308394.zip) | Draft running CR to TS 36.102 on introducing L+S FDD band for IoT NTN operation | MediaTek Inc. | Running draft CR for TS 36.102. To be revised according to the discussion. |
| [**R4-2308395**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308395.zip) | TP to TR 36.xxxx on introducing L+S FDD band for IoT NTN operation | MediaTek Inc. | TP to the common TR |
| [**R4-2308396**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308396.zip) | Revised WID: FDD band (L+S band) for IoT NTN operation | MediaTek Inc. | Adding the common TR applicable for all IoT NTN bands. |
| [**R4-2308594**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308594.zip) | Discussion on UE RF requirements for FDD band (L+S band) for IoT NTN operation | ZTE Corporation | Proposal 1: For the new FDD frequency bands for NB-IoT/eMTC NTN operation, the TX–RX frequency separation defined as Table 2.1-1 can be used as the starting point. 🡪 Agreed in the previous meeting.Proposal 2: For the new FDD frequency bands for NB-IoT/eMTC NTN operation, the UE maximum output power for category M1 and category NB1 and NB2 can be specified in Table 2.2-1 and 2.2-2, respectively. 🡪 Agreed in the previous meeting.Proposal 3: For the new FDD frequency bands for NB-IoT/eMTC NTN operation, the UE co-existence emission requirements for band 255 can be reused as a baseline and additional bands of NR band n54, n105 and E-UTRA band 31, 54, 72, 73, 87, 88, 103 should be added to the list of protected bands.Proposal 4: For the new FDD frequency bands for NB-IoT/eMTC NTN operation, the reference sensitivity level for eMTC NTN can be defined as Table 2.4-1 and the reference sensitivity level for NB-IoT can be defined as Table 2.4-2.Proposal 5: For the new FDD frequency bands for NB-IoT/eMTC NTN operation, the out-of-band blocking requirement for eMTC NTN can be defined as Table 2.5-1 and the out-of-band blocking requirement for NB-IoT can be defined as Table 2.5-2. |
| [**R4-2308595**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308595.zip) | CR to TS36.102 Introduction of a new FDD band (L+S band) for IoT NTN operation | ZTE Corporation | Draft CR recommended before all works are done. It can be merged into the running draft CR for TS 36.102 according to the discussion outcome. |
| [**R4-2308596**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308596.zip) | CR to TS36.108 Introduction of a new FDD band (L+S band) for IoT NTN operation | ZTE Corporation | Draft CR recommended before all works are done. To be revised as the running draft CR for TS 36.108 according to the discussion outcome. |
| [**R4-2309510**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2309510.zip) | L-/S- NTN band ETSI requirements for the UE | Qualcomm Incorporated | Proposal 1: Send a liaison statement to ETSI to recommend aligning the MES emission requirements to existing 3GPP LTE and NR requirements.Proposal 2: Define the ETSI requirements under NS. However, A-MPR may not be effective to meet these requirements; rather, hardware changes may be needed. Since it may not be desirable to mandate these hardware changes to countries where ETSI requirements do not apply, UE support of the NS should be optional.Proposal 3: Define a separate band for Europe to include the ETSI requirements.Proposal: It is proposed that A-MPR is studied to fulfil the ETSI in-band emission requirements. It is expected the A-MPR, if any, should be minimized so the Earth-to-space link budget can be maintained. If this is not found to be fulfilled, then alternate solutions should be discussed.Proposal: The ETSI in-band emission requirement when CDMA is present is not necessary to capture.Observation: The in-band PSD mean limit is inherently met for PC3.Proposal: No in-band PSD requirement needs to be captured in the 3GPP specification. This may be revisited if/when PC2 and higher power classes are defined in this band.Proposal: The 3GPP requirement for OFF power ensures the ETSI off power emissions are met. No off power emissions requirements need to be captured in 3GPP specifications.Proposal: Self monitoring requirement is not standardized by 3GPP. It is left for implementation since it is based on declaration.Proposal: No explicit RF requirement for protection of radio astronomy in 1610.6 – 1613.8 MHz is needed.Proposal: Further study is needed to map the existing 3GPP ACS test conditions to the ETSI requirement. Whether a new requirement is needed to align to the ETSI specification (i.e., wanted signal power, interferer power, throughput mapping to SNR) is to be further discussed.Proposal: Further study is needed to map the existing 3GPP in-band blocking test conditions to the ETSI requirement. Whether a new requirement is needed to align to the ETSI specification (i.e., wanted signal power, interferer power, throughput mapping to SNR) is to be further discussed. |
| [**R4-2309511**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2309511.zip) | Specification of wider channel bandwidths for FR1 NTN UE | Qualcomm Incorporated |  |

# Topic #1: General aspects and system parameters for band b254

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

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **TDoc** | **Title** | **Source** | **Observations/Proposals****Moderator’s remark** |
| [**R4-2308391**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308391.zip) | General aspects for IoT NTN band | MediaTek Inc. | Discussing the common TR:Observation: The approved TR skeleton can accommodate different bands for IoT NTN operation, thus acts as the common TR for all IoT NTN bands.Proposal: Add the common TR information into the revised WID for L+S band for IoT NTN operation. |
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## Open issues summary

*Before 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: General aspects are discussed here, in particular, on the common TR for all IoT NTN bands.*

*Open issues and candidate options before meeting:*

**Issue 1-1: Should the WID be revised by adding the common TR for all IoT NTN bands as in R4-2308396?**

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

### Sub-topic 1-2

*Sub-topic description: Remaining issues on system parameters: 1) variable duplex; 2) asymmetric UL/DL operation*

*Open issues and candidate options before meeting:*

**Issue 1-2-1: Should variable duplex be considered for band b254?**

* Proposals
	+ Option 1: Yes, consider if the same conclusion for band n254 for NR NTN applies for band b254 for IoT NTN once a conclusion is drawn in NR NTN thread by considering spectrum ownership and demands for flexible deployments.
	+ Option 2: No
* Recommended WF
	+ Option 1?

**Issue 1-2-2: Should asymmetric UL/DL operation be considered for band b254?**

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

# Topic #2: UE RF requirements for band b254

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

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **TDoc** | **Title** | **Source** | **Observations/Proposals****Moderator’s remark** |
| [**R4-2308393**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308393.zip) | Further discussion on UE RF requirements for L+S IoT NTN band | MediaTek Inc. | Proposal 1: For minimum output power, reuse the current TS 36.102 requirements for L+S IoT NTN bands.Proposal 2: For transmit OFF power, reuse the current TS 36.102 requirements for L+S IoT NTN bands.Proposal 3: For ON/OFF time mask, reuse the current TS 36.102 requirements for L+S IoT NTN bands.Proposal 4: For maximum input level, reuse the current TS 36.102 requirements for L+S IoT NTN bands. |
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| [**R4-2309510**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2309510.zip) | L-/S- NTN band ETSI requirements for the UE | Qualcomm Incorporated | Proposal 1: Send a liaison statement to ETSI to recommend aligning the MES emission requirements to existing 3GPP LTE and NR requirements.Proposal 2: Define the ETSI requirements under NS. However, A-MPR may not be effective to meet these requirements; rather, hardware changes may be needed. Since it may not be desirable to mandate these hardware changes to countries where ETSI requirements do not apply, UE support of the NS should be optional.Proposal 3: Define a separate band for Europe to include the ETSI requirements.Proposal: It is proposed that A-MPR is studied to fulfil the ETSI in-band emission requirements. It is expected the A-MPR, if any, should be minimized so the Earth-to-space link budget can be maintained. If this is not found to be fulfilled, then alternate solutions should be discussed.Proposal: The ETSI in-band emission requirement when CDMA is present is not necessary to capture.Observation: The in-band PSD mean limit is inherently met for PC3.Proposal: No in-band PSD requirement needs to be captured in the 3GPP specification. This may be revisited if/when PC2 and higher power classes are defined in this band.Proposal: The 3GPP requirement for OFF power ensures the ETSI off power emissions are met. No off power emissions requirements need to be captured in 3GPP specifications.Proposal: Self monitoring requirement is not standardized by 3GPP. It is left for implementation since it is based on declaration.Proposal: No explicit RF requirement for protection of radio astronomy in 1610.6 – 1613.8 MHz is needed.Proposal: Further study is needed to map the existing 3GPP ACS test conditions to the ETSI requirement. Whether a new requirement is needed to align to the ETSI specification (i.e., wanted signal power, interferer power, throughput mapping to SNR) is to be further discussed.Proposal: Further study is needed to map the existing 3GPP in-band blocking test conditions to the ETSI requirement. Whether a new requirement is needed to align to the ETSI specification (i.e., wanted signal power, interferer power, throughput mapping to SNR) is to be further discussed. |

## Open issues summary

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### Sub-topic 2-1

*Sub-topic description: This sub-topic addresses Tx requirements for band b254. Until RAN4#106bis-e, the status of Tx requirements is shown below:*

|  |  |
| --- | --- |
| (sub) Section in TS 36.102 | Discussed or not for L+S IoT NTN band |
| 6.2A.1 Maximum output power for Cat. M1 | Yes, agreed |
| 6.2A2 MPR for Cat. M1 | Yes, re-using 36.102 as a starting point |
| 6.2A.3 A-MPR for Cat. M1 | No |
| 6.2A.4 Configured transmitted power for Cat. M1 | No |
| 6.2B.1 Maximum output power for Cat. NB1/NB2 | Yes, agreed |
| 6.2B2 MPR for Cat. NB1/NB2 | Yes, re-using 36.102 as a starting point |
| 6.2B.3 A-MPR for Cat. NB1/NB2 | No |
| 6.2B.4 Configured transmitted power for Cat. NB1/NB2 | No |
| 6.3A.1 Minimum output power for Cat. M1 | No |
| 6.3A2 Transmit OFF power for Cat. M1 | No |
| 6.3A.3 ON/OFF time mask for Cat. M1 | No |
| 6.3A.4 Power control for Cat. M1 | No |
| 6.3B.1 Minimum output power for Cat. NB1/NB2 | No |
| 6.3B2 Transmit OFF power for Cat. NB1/NB2 | No |
| 6.3B.3 ON/OFF time mask for Cat. NB1/NB2 | No |
| 6.3B.4 Power control for Cat. NB1/NB2 | No |
| 6.4A.1 Frequency error for UE category M1 | No |
| 6.4A.2 Transmit modulation quality for category M1 | No |
| 6.4B.1 Frequency error for UE category NB1 and NB2 | No |
| 6.4B.2 Transmit modulation quality for Category NB1 and NB2 | No |
| 6.5A.1 General | No |
| 6.5A.2 Occupied bandwidth for category M1 | No |
| 6.5A.3 Out of band emission for category M1 | No |
| 6.5A.4 Spurious emission for category M1 | No |
| 6.5B.1 General | No |
| 6.5B.2 Occupied bandwidth for category NB1 and NB2 | No |
| 6.5B.3 Out of band emission for category NB1 and NB2 | No |
| 6.5B.4 Spurious emission for category NB1 and NB2 | No |
| 6.6A Transmit intermodulation for category M1 | No |
| 6.6B Transmit intermodulation for category NB1 and NB2 | No |

*Open issues and candidate options before meeting:*

**Issue 2-1-1: For minimum output power, should the current TS 36.102 requirements be reused for band b254?**

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

**Issue 2-1-2: For transmit OFF power, should the current TS 36.102 requirements be reused for band b254?**

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

**Issue 2-1-3: For ON/OFF time mask, should the current TS 36.102 requirements be reused for band b254?**

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

**Issue 2-1-4: For protected bands for UE coexistence, should the UE co-existence emission requirements for band b255 be reused as a baseline and additional bands of NR band n54, n105 and E-UTRA band 31, 54, 72, 73, 87, 88, 103 should be added for band b254?**

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

### Sub-topic 2-2

*Sub-topic description: This sub-topic addresses Rx requirements for band b254. Until RAN4#106bis-e, the status of Rx requirements is shown below:*

|  |  |
| --- | --- |
| Section in TS 36.102 | Discussed or not for L+S IoT NTN band |
| 7.3A Reference sensitivity power level for UE category M1 | No |
| 7.3B Reference sensitivity power level for UE category NB1 and NB2 | No |
| 7.4A Maximum input level for category M1 | No |
| 7.4B Maximum input level for category NB1 and NB2 | No |
| 7.5A Adjacent Channel Selectivity for category M1 | No |
| 7.5B Adjacent Channel Selectivity for category NB1 and NB2 | No |
| 7.6A Blocking characteristics for category M1 | Yes, agree to re-use 36.102 requirements except out-of-band blocking |
| 7.6B Blocking characteristics for category NB1 and NB2 | Yes, agree to re-use 36.102 requirements except out-of-band blocking |
| 7.7A Spurious response for category M1 | Yes, agree to re-use 36.102 requirements |
| 7.7B Spurious response for category NB1 and NB2 | Yes, agree to re-use 36.102 requirements |
| 7.8A Intermodulation characteristics for category M1 | No |
| 7.8B Intermodulation characteristics for category NB1 and NB2 | No |

*Open issues and candidate options before meeting:*

**Issue 2-2-1: For maximum input level, should the current TS 36.102 requirements be reused for band b254?**

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

**Issue 2-2-2: For REFSENS, what should be specified for band b254?**

* Proposals
	+ Option 1:

Table 2.4-1: Reference sensitivity for FDD UE category M1 QPSK PREFSENS

|  |  |  |
| --- | --- | --- |
| NTN Band | REFSENS (dBm) | Duplex Mode |
| 254 | -102.2 | FDD |
| NOTE 1: The transmitter shall be set to PUMAX as defined in subclause 6.2.5- in TS 36.101. |

Table 2.4-2: Reference sensitivity for UE category NB1 and NB2

|  |  |
| --- | --- |
| Operating band | REFSENS [dBm] |
| According to subclause 5.2B in TS 36.102 | - 108.2 |

* + Option 2: Others, please elaborate.
* Recommended WF
	+ Option 1?

**Issue 2-2-3: For out-of-band blocking, what should be specified for band b254?**

* Proposals
	+ Option 1:

Table 2.5-1: Out of-band blocking for category M1 UE

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Operating Band | Parameter | Unit | Range 1 | Range 2 | Range 3 |
|  | Pinterferer | dBm | -44 | -30 | -15 |
| 254 | Finterferer (C`W) | MHz | -60 < f – FDL\_low < -15or15 < f – FDL\_high < 60 | -85 < f – FDL\_low ≤ -60or60 ≤ f – FDL\_high < 85 | 1 ≤ f ≤ FDL\_low – 85orFDL\_high + 85 ≤ f≤ 12750 |
| NOTE 1: Band 256 lower frequency ranges are modified to enable specific implementations. |

Table 2.5-2: Out-of-band blocking parameters for category NB1 and NB2 UE

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Operating Band | Parameter | Unit | Range 1 | Range 2 | Range 3 |
| Pw | dBm | REFSENS + 6 dB |
| Pinterferer | dBm | -44 | -30 | -153 |
| 254 | Finterferer (CW) | MHz | -60 < f – FDL\_low < -15or15 < f – FDL\_high < 60 | -85 < f – FDL\_low ≤ -60or60 ≤ f – FDL\_high < 85 | 1 ≤ f ≤ FDL\_low – 85orFDL\_high + 85 ≤ f≤ 12750 |
| NOTE 1: The transmitter shall be set to 4dB below PCMAX\_L at the minimum uplink configuration specified in Table 7.3.1-2 in TS 36.101 [7] with PCMAX\_L as defined in subclause 6.2.5.NOTE 2: Band 256 lower frequency ranges are modified to enable specific implementations.NOTE 3: For operating bands which downlink band frequency range is between 1475.9 MHz < f < 2690 MHz the power level of the interferer (PInterferer) for Range 3 shall be modified to: -20 dBm for the frequency range which is bounded by FDL\_low- 200 MHz of the lowest band that UE supports in frequency range 1475.9 MHz < f < 2690 MHz and FDL\_high + 200 MHz of the highest band that UE supports in frequency range 1475.9 MHz < f < 2690 MHz.”NOTE 4: The power level of the interferer (PInterferer) for Range 3 shall be modified to -20 dBm for FInterferer > 2800 MHz and FInterferer < 4400 MHz. |

* + Option 2: Others, please elaborate.
* Recommended WF
	+ Option 1?

### Sub-topic 2-3

*Sub-topic description: This sub-topic addresses ETSI requirements (EN 301 441) over the band.*

**Issue 2-3-1: How should RAN4 handle discrepancy of out-of-band emission requirements between 3GPP and ETSI for band b254,?**

* Proposals
	+ Option 1: Send a liaison statement to ETSI to recommend aligning the MES emission requirements to existing 3GPP LTE and NR requirements.
	+ Option 2: Define the ETSI requirements under optional NS.
	+ Option 3: Define a separate band for Europe to include the ETSI requirements.
* Recommended WF
	+ TBD

**Issue 2-3-2: How should RAN4 handle discrepancy of in-band emission requirements between 3GPP and ETSI for band b254,?**

* Proposals
	+ Option 1: Study whether a minimized A-MPR could be possible to fulfil the ETSI in-band emission requirements to maintain the Earth-to-space link budget. If not, then check alternate solutions.
	+ Option 2: The ETSI in-band emission requirement when CDMA is present is not necessary to capture.
* Recommended WF
	+ TBD

**Issue 2-3-3: With the understanding that the in-band PSD mean limit is inherently met for PC3, should 3GPP specs capture in-band PSD?**

* Proposals
	+ Option 1: No
	+ Option 2: No, but revisit when PC2 and higher power classes are defined in this band.
	+ Option 3: Yes
* Recommended WF
	+ Option 2?

**Issue 2-3-4: With the understanding that the 3GPP requirement for OFF power ensures the ETSI off power emissions are met, should 3GPP specs capture OFF power emissions requirements?**

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

**Issue 2-3-5: With the understanding that self-monitoring requirement is not standardized by 3GPP, should 3GPP specs capture self-monitoring?**

* Proposals
	+ Option 1: No, left for implementation since it is based on declaration.
	+ Option 2: Yes
* Recommended WF
	+ Option 1?

**Issue 2-3-6: Should explicit RF requirement be specified for protection of radio astronomy in 1610.6 – 1613.8 MHz ?**

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

**Issue 2-3-7: Should RAN4 further study how to map the existing 3GPP ACS test conditions to the ETSI requirement, and whether a new requirement is needed to align to the ETSI specification (i.e., wanted signal power, interferer power, throughput mapping to SNR)?**

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

**Issue 2-3-8: Should RAN4 further study how to map the existing 3GPP in-band blocking test conditions to the ETSI requirement, and whether a new requirement is needed to align to the ETSI specification (i.e., wanted signal power, interferer power, throughput mapping to SNR)?**

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

# Topic #3: CR and TP handling

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

## Companies’ contributions summary

|  |  |  |  |
| --- | --- | --- | --- |
| **TDoc** | **Title** | **Source** | **Observations/Proposals****Moderator’s remark** |
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| [**R4-2308395**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308395.zip) | TP to TR 36.xxxx on introducing L+S FDD band for IoT NTN operation | MediaTek Inc. | TP to the common TR |
| [**R4-2308595**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308595.zip) | CR to TS36.102 Introduction of a new FDD band (L+S band) for IoT NTN operation | ZTE Corporation | Draft CR recommended before all works are done. It can be merged into the running draft CR for TS 36.102 according to the discussion outcome. |
| [**R4-2308596**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_107/Docs/R4-2308596.zip) | CR to TS36.108 Introduction of a new FDD band (L+S band) for IoT NTN operation | ZTE Corporation | Draft CR recommended before all works are done. To be revised as the running draft CR for TS 36.108 according to the discussion outcome. |

## Open issues summary

*Before 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: CR handling, running draft CR for 36.102 and 36.108 respectively by Dec 2023.*

*Open issues and candidate options before meeting:*

**Issue 3-1-1: Should two draft CRs (one for TS 36.102, the other for TS 36.108) be running by Dec 2023?**

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

### Sub-topic 3-2

*Sub-topic description: TP for the common TR to capture discussions and agreements.*

*Open issues and candidate options before meeting:*

**Issue 3-2: Is content in R4-2308395 agreeable as a TP to the common TR?**

* Proposals
	+ Option 1: Yes
	+ Option 2: No, please suggest your revision.
* Recommended WF
	+ TBA