**3GPP TSG-RAN WG4 Meeting # 108 R4-231xxxx**

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**Agenda item:** 5.1

**Source:** Moderator (Ericsson)

**Title:** Topic summary for [108][102] R17\_spectrum\_maintenance

**Document for:** Information

# Introduction

This document is a summary of the proposals made in the contributions submitted under AI 5.1 for the RAN4 #108 meeting.

# Topic #1: RMR bands n100 and n101.

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2313584**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2313584.zip) | Huawei, HiSilicon | **Proposal 1**: Not to remove additional RMR-specific BS output power requirements defined in TS 38.104 for BS type 1-C and bands n100/n101, and instead modify them to provide the intended (deployment) flexibility as outlined in ECC/DEC/(20)02.**Proposal 2**: Implement corrections for additional RMR-specific BS output power requirement in TS 38.104 and TS 38.141-1 by using manufacturer declarations for n100/n101 antenna gain values.**Proposal 3**: Apply the agreeable solution to all n100/n101 BS RF requirements defined based on the fixed antenna gain, i.e. BS output power, Tx spur emissions, OBUE, where applicable.**Proposal 4**: Add a clarification note in TS 38.104 and TS 38.141-1, clarifying applicability of additional BS output power requirements for n100 and n101 for the uncoordinated deployment.**Proposal 5**: Not to remove additional OBUE limits for n100 from TS 38.104 (clause 6.6.4.2.5.7) and TS 38.141-1 (clause 6.6.4.5.6.7), and provide related feedback to ECC WG FM. **Proposal 6**: Send related LS back to ECC WG FM to inform them on the approach taken by RAN4 for the additional RMR-specific BS output power requirements. Draft LSout was submitted in [5] under AI 10.2.3. |

## Open issues summary

### Sub-topic 1-1

*Sub-topic description:* ECC Decision(20)02 specified EIRP limits for non-AAS BS and uncoordinated deployment. As RAN4 specifies conducted limits, the ECC Decision limits were converted in conducted ones assuming a certain antenna gain and losses. The proposal would be to use another approach to handle those EIRP limits specified in ECC Decision, keeping the consideration of uncoordinated deployment.

**Issue 1-1-1: BS max output power for n100 and n101**

* Proposals: Not to remove additional RMR-specific BS output power requirements defined in TS 38.104 for BS type 1-C and bands n100/n101, and instead modify them to provide the intended (deployment) flexibility as outlined in ECC/DEC/(20)02.
	+ Agree
	+ Disagree
* Recommended WF
	+ TBA

**Issue 1-1-2: Introduce manufacturer declaration approach to convert EIRP limits**

* Proposals: Implement corrections for additional RMR-specific BS output power requirement in TS 38.104 and TS 38.141-1 by using manufacturer declarations for n100/n101 antenna gain values.
	+ Agree
	+ Disagree
* Recommended WF
	+ TBA

**Issue 1-1-3: Similar approach for other requirements specified as EIRP limits in ECC Decision**

* Proposals: Apply the agreeable solution to all n100/n101 BS RF requirements defined based on the fixed antenna gain, i.e. BS output power, Tx spur emissions, OBUE, where applicable.
	+ Agree
	+ Disagree
* Recommended WF
	+ TBA

**Issue 1-1-4: Clarify the BS maximum output power should be considered for uncoordinated deployment**

* Proposals: Add a clarification note in TS 38.104 and TS 38.141-1, clarifying applicability of additional BS output power requirements for n100 and n101 for the uncoordinated deployment.
	+ Agree
	+ Disagree
* Recommended WF
	+ TBA

### Sub-topic 1-2

*Sub-topic description:* The LS received from WG FM recommended RAN4 to remove the additional OBUE requirements specified for band n100, arguing it was assumed equivalent to the OBUE requirements for WA BS.

**Issue 1-2: Additional OBUE requirements for band n100**

* Proposals: Not to remove additional OBUE limits for n100 from TS 38.104 (clause 6.6.4.2.5.7) and TS 38.141-1 (clause 6.6.4.5.6.7), and provide related feedback to ECC WG FM.
	+ Agree
	+ Disagree
* Recommended WF
	+ TBA

### Sub-topic 1-3

*Sub-topic description* LS reply to WG FM

**Issue 1-3: LS Reply to WG FM**

* Proposals: Send related LS back to ECC WG FM to inform them on the approach taken by RAN4 for the additional RMR-specific BS output power requirements.
	+ Agree
	+ Disagree
* Recommended WF
	+ This topic is already handled in thread #304 and should not be discussed here.

# Topic #2: New UE capability for intra-band EN-DC BCS

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2313499**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2313499.zip) | Google Inc. | **Proposal 1: Introduce a new UE capability signaling to indicate intra-band EN-DC BCS for the second intra-band EN-DC component in inter-band EN-DC band combination with two additional intra-band EN-DC components.** **Proposal 2: Send LS in the Annex to RAN2.**  |

## Open issues summary

### Sub-topic 2-1

*Sub-topic description:* The contribution relates an ambiguous issue by indicating one IE for intra-band EN-DC BCS reporting in inter-band EN-DC band combination with two additional intra-band EN-DC components, this could be solved by introducing a new capability signalling to indicate intra-band EN-DC BCS for the second intra-band EN-DC component

**Issue 2-1: New UE capability**

* Proposals: Introduce a new UE capability signaling to indicate intra-band EN-DC BCS for the second intra-band EN-DC component in inter-band EN-DC band combination with two additional intra-band EN-DC components
	+ Agree
	+ Disagree
* Recommended WF
	+ TBA

### Sub-topic 2-2

*Sub-topic description* Pending on issue 2-1, send LS to RAN2.

**Issue 2-2: LS to RAN2**

* Proposals: Agree on the LS to RAN2 (proposed in Annex)
	+ Agree
	+ Disagree
* Recommended WF
	+ TBA

# Topic #3: CRs or Draft CRs

## Companies’ contributions summary

The following contributions give detailed rationale on the correponding CRs, proposing to approve those CRs.

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Source** | **Proposals** | **Corresponding CRs** |
| [**R4-2312175**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2312175.zip) | MediaTek Inc. | **Moved to [101]** |  |
| [**R4-2311140**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311140.zip) | Skyworks Solutions, Inc. | **Proposal 1: For Rel-18, add Band 7 protection at -50dBm/MHz to the Band n71 spurious emissions requirements for UE co-existence with Note 2.****Proposal 2: Adopt CR [1] to fix observation 1 issues on spurious emissions for UE co-existence in Rel 18.2.0.****Proposal 3: Adopt CR [2] to fix observation 2 issues on spurious emissions for UE co-existence in Rel 17.10.0.** | [**R4-2311124**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311124.zip)[**R4-2311125**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311125.zip) |
| [**R4-2311141**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311141.zip) | Skyworks Solutions, Inc. | **Observation 1: CA\_n7A-n38 is a band combination in which neither band n7 nor band n38 can be configured as an uplink band.****Observation 2: Table 2 shows that several 4, 5, 6-band CA combinations with DL fallback CA\_n7A-n38A are specified with uplink configuration "-". This is ambiguous since the concept of mandatory fall-back does not exist for CA\_n7A-n38A. Clarification is needed to remove these ambiguities.****Proposal: For Rel-18, endorse CR [1] to:** * **Add the equivalent of Table 5.5A.3.2-1 NOTE 10 to Table 5.5A.3.3-1, Table 5.5A.3.4-1, and Table 5.5A.3.5-1,**
* **Clarify the valid UL configurations for higher order 4,5,6-band combinations that are configured with DL fallback CA\_n7-n38 as proposed in Table 3.**
 | [**R4-2311131**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311131.zip) |
| [**R4-2311142**](https://protect2.fireeye.com/v1/url?k=31323334-501d5122-313273af-454445555731-aff9844c605144af&q=1&e=cab30a5e-ae29-4cb6-a5fe-1b28ba847050&u=https%3A%2F%2Fwww.3gpp.org%2Fftp%2FTSG_RAN%2FWG4_Radio%2FTSGR4_108%2FDocs%2FR4-2311142.zip) | Skyworks Solutions, Inc. | **Observation: For CA\_n41-n79, and CA\_n78-n79, the PC2, PC1.5 MSD test points due to cross-band isolation are specified for n79 40MHz DL CBW. According to WF [1], the request for BCS4/5 introduces a new band n79 lowest CBW of 10MHz. These MSD test points shall be updated.****Proposal: For Rel-18, endorse the Rel-18 and Rel-17 CRs [2,3] which capture the corrections to the band n79 MSD test point highlighted in green in Table 5 and Table 6.** | [**R4-2311131**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311131.zip)[**R4-2311132**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311132.zip) |

The following table lists all CRs submitted under AI 5.1. This list is also available in NWM to capture any early flag.

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Title** | **Source** |
| [**R4-2312751**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2312751.zip) | [NR\_n53-Core] CR on 38.101-1 Correction on the range of GSCN in 30 KHz SCS for Sync Raster of Band n53 | Huawei, Hisilicon. |
| [**R4-2312752**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2312752.zip) | [NR\_n53-Core] CR on 38.104: Correction on the range of GSCN in 30 KHz SCS for Sync Raster of Band n53 | Huawei, Hisilicon. |
| [**R4-2312318**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2312318.zip) | [NR\_6GHz-Core] CR to 38.104: applicability note for n104 | Huawei, HiSilicon, CMCC, China Telecom, China Unicom, CBN, CATT, OPPO, Vivo, Xiaomi |
| R4-2312319 | [NR\_6GHz-Core] CR to 38.104: applicability note for n104 | Huawei, HiSilicon, CMCC, China Telecom, China Unicom, CBN, CATT, OPPO, Vivo, Xiaomi |
| [**R4-2312320**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2312320.zip) | [NR\_6GHz-Core] CR to 38.101-1: applicability note for n104 | Huawei, HiSilicon, CMCC, China Telecom, China Unicom, CBN, CATT, OPPO, Vivo, Xiaomi |
| R4-2312321 | [NR\_6GHz-Core] CR to 38.101-1: applicability note for n104 | Huawei, HiSilicon, CMCC, China Telecom, China Unicom, CBN, CATT, OPPO, Vivo, Xiaomi |
| [**R4-2313224**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2313224.zip) | [NR\_CADC\_R17\_2BDL\_xBUL-Core] CR on TS38.101-1 Modification on MSD due to UL harmonic interference for CA \_n48A-n66A | Huawei,HiSilicon |
| [**R4-2313225**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2313225.zip) | [NR\_CADC\_R17\_2BDL\_xBUL-Core] CR on TS38.101-1 Modification on MSD due to UL harmonic interference for CA \_n48A-n66A | Huawei,HiSilicon |
| [**R4-2313226**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2313226.zip) | [NR\_CADC\_R17\_2BDL\_xBUL-Core] CR on R17 TS38.101-1 Remove the PC2 CA configuration | Huawei,HiSilicon |
| [**~~R4-2312176~~**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2312176.zip) | ~~CR for missing MSD due to 4th order harmonic mixing requirements~~**Moved to [101]** | ~~MediaTek Inc.~~ |
| ~~R4-2312177~~ | [~~NR\_CADC\_R17\_2BDL\_xBUL-Core]CR for missing MSD due to 4th order harmonic mixing requirements~~**Moved to [101]** | ~~MediaTek Inc.~~ |
| [**R4-2312275**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2312275.zip) | [NR\_CADC\_R17\_2BDL\_xBUL-Core ] CR on MSD for shared spectrum band  | LG Electronics France |
| R4-2312276 | [NR\_CADC\_R17\_2BDL\_xBUL-Core ] CR on MSD for shared spectrum band  | LG Electronics France |
| [**R4-2312983**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2312983.zip) | Rel17 Cat F CR for 38.101-3 Correct the UL configuration for some concerned FR1+FR2 combo | Samsung |
| R4-2312984 | [NR\_CADC\_R18\_3BDL\_xBUL]Rel-18 Cat A CR for 38.101-3 Correct the UL configuration for some concerned FR1+FR2 combo | Samsung |
| [**R4-2312453**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2312453.zip) | [DC\_R17\_1BLTE\_1BNR\_2DL2UL-Core] Corrections on Tx requirements for inter-band NEDC including FR2 | ZTE Corporation, CHTTL |
| R4-2312454 | [DC\_R17\_1BLTE\_1BNR\_2DL2UL-Core] Corrections on Tx requirements for inter-band NEDC including FR2 | ZTE Corporation, CHTTL |
| [**R4-2313585**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2313585.zip) | [NR\_RAIL\_EU\_900MHz-Core, NR\_RAIL\_EU\_1900MHz\_TDD-Core] CR to TS 38.104: corrections of RMR-specific BS requirements for band n100 and n101, Rel-17 | Huawei, HiSilicon |
| R4-2313586 | [NR\_RAIL\_EU\_900MHz-Core, NR\_RAIL\_EU\_1900MHz\_TDD-Core] CR to TS 38.104: corrections of RMR-specific BS requirements for band n100 and n101, Rel-18 | Huawei, HiSilicon |
| [**R4-2313587**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2313587.zip) | [NR\_RAIL\_EU\_900MHz-Perf, NR\_RAIL\_EU\_1900MHz\_TDD-Perf] CR to TS 38.141-1: corrections of RMR-specific BS requirements for band n100 and n101, Rel-17 | Huawei, HiSilicon |
| R4-2313588 | [NR\_RAIL\_EU\_900MHz-Core, NR\_RAIL\_EU\_1900MHz\_TDD-Core] CR to TS 38.141-1: corrections of RMR-specific BS requirements for band n100 and n101, Rel-18 | Huawei, HiSilicon |
| [**R4-2313589**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2313589.zip) | [NR\_RAIL\_EU\_900MHz-Core, NR\_RAIL\_EU\_1900MHz\_TDD-Core] CR to TR 38.852: corrections of RMR-specific BS requirements derivation for band n101, Rel-17 | Huawei, HiSilicon |
| R4-2313590 | [NR\_RAIL\_EU\_900MHz-Core, NR\_RAIL\_EU\_1900MHz\_TDD-Core] CR to TR 38.852: corrections of RMR-specific BS requirements derivation for band n101, Rel-18 | Huawei, HiSilicon |
| [**R4-2313591**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2313591.zip) | [NR\_RAIL\_EU\_900MHz-Core, NR\_RAIL\_EU\_1900MHz\_TDD-Core] CR to TR 38.853: corrections of RMR-specific BS requirements derivation for band n100, Rel-17 | Huawei, HiSilicon |
| R4-2313592 | [NR\_RAIL\_EU\_900MHz-Core, NR\_RAIL\_EU\_1900MHz\_TDD-Core] CR to TR 38.853: corrections of RMR-specific BS requirements derivation for band n100, Rel-18 | Huawei, HiSilicon |
| [**R4-2312985**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2312985.zip) | Rel17 Cat F CR for 38.101-3 Correct the note for HPUE indication in configuration table | Samsung |
| R4-2312986 | [HPUE\_FR1\_DC\_LTE\_NR\_R18]Rel18 Cat A CR for 38.101-3 Correct the note for HPUE indication in configuration table | Samsung |
| [**R4-2311124**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311124.zip) | CR to TS 38.101-1 Rel-18 Corrections to UE co-existence requirements | Skyworks Solutions Inc. |
| [**R4-2311125**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311125.zip) | CR to TS 38.101-1 Rel-17 Corrections to UE co-existence requirements | Skyworks Solutions Inc. |
| [**R4-2311126**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311126.zip) | CR to TS 38.101-1 Rel-18 Introduction of TDD uplink RMC for shorter transients | Skyworks Solutions, Inc. |
| [**R4-2311127**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311127.zip) | CR to TS 38.101-1 Rel-17 Introduction of TDD uplink RMC for shorter transients | Skyworks Solutions, Inc. |
| [**R4-2311129**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311129.zip) | CR to TS 38.101-1 Rel-18 SUL MSD alignment | Skyworks Solutions, Inc. |
| [**R4-2311130**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311130.zip) | CR to TS 38.101-1 Rel-17 SUL MSD alignment | Skyworks Solutions, Inc. |
| [**R4-2311131**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311131.zip) | CR to TS 38.101-1 Rel-18 Corrections to cross-band MSD and CA\_n7-n38 fallback | Skyworks Solutions, Inc. |
| [**R4-2311132**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311132.zip) | CR to TS 38.101-1 Rel-17 Corrections to cross-band MSD | Skyworks Solutions Inc. |
| [**R4-2311476**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311476.zip) | [TEI18] CR 38.101-1: Various maintenance issues R18 | Nokia |
| [**R4-2311477**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2311477.zip) | [TEI17] CR 38.101-1: Various maintenance issues R17 | Nokia |
| [**R4-2312981**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2312981.zip) | Rel17 Cat F CR for 38.101-1 Correct ?PPowerClass,CA relevant requirement in clause 6.2A.1.3 for inter-band ULCA | Samsung, Huawei, KT corporation, CHTTL, SGS Wireless |
| R4-2312982 | NR\_SAR\_PC2\_interB\_SUL\_2BUL]Rel18 Cat A CR for 38.101-1 Correct ?PPowerClass,CA relevant requirement in clause 6.2A.1.3 for inter-band ULCA | Samsung, Huawei, KT corporation,CHTTL, SGS Wireless |
| [**~~R4-2313582~~**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_108/Docs/R4-2313582.zip) | ~~[NR\_ext\_to\_71GHz-Perf] CR to TS 38.141-2: propagation conditions annex J reference corrections, Rel-17~~**Moved to [317], AI 5.2.4** | ~~Huawei, HiSilicon~~ |
| ~~R4-2313583~~ | ~~[NR\_ext\_to\_71GHz-Perf] CR to TS 38.141-2: propagation conditions annex J reference corrections, Rel-18~~**Moved to [317], AI 5.2.4** | ~~Huawei, HiSilicon~~ |