**3GPP TSG-RAN WG4 Meeting #111 R4-24XXXXX**

**Fukuoka, Japan, 20th – 24th May, 2024**

**Agenda item:**  4.8

**Source:** Moderator (Ericsson)

**Title:** Topic summary for [111][301] BSRF\_Maintenance

**Document for:** Information

# Introduction

The scope of this topic summary is BS RF maintenance agenda items. Topics are divided according to the agenda:

**Up to Rel-17 maintenance for LTE and NR:**

1. BS RF requirements and BS conformance testing (4.2)
2. UE/BS EMC requirements (4.3)

**Rel-18 maintenance for LTE and NR:**

1. NB-IoT/eMTC core & perf. requirements for NTN:   
   SAN RF requirement and conformance testing (5.2.2.2)
2. Other Rel-18 non-spectrum related WIs: BS RF requirements (5.2.8.2)

**Rel-18 on-going work Items for LTE:**

1. IoT NTN enhancements: SAN RF requirements maintenance (8.3.1)

# Topic #1: BS RF requirements and BS conformance testing (4.2)

## Companies’ contributions summary

**Discussion papers and LS**

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Title/Proposals** |
| [R4-2407121](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407121.zip)  (Sub-topic 1-1) | Union Inter. Chemins de Fer | Clarification of multiple carrier operation for n100/n101  **Proposal 1**: Agree that from CEPT Report 74 [3] it is concluded that the term “multiple carrier” applies to the use of more than one wideband carrier (LTE or NR including NB-IoT) in a single frequency band.  **Proposal 2**: Agree that, as the term “multiple carrier” in ECC DEC(20)02 [2] only applies to a single frequency band, the DEC(20)02 [2] does allow transmission of 1 carrier in band n100 and simultaneous transmission of 1 carrier in band n101 at the BS transmit power levels as per the DEC(20)02 [2]. Hence using CA/DC with 1 carrier in band n100 plus 1 carrier in band n101 is allowed at the BS transmit power levels as per the DEC(20)02 [2] without the need for the implementation of a coordination procedure or other mitigation measures. |
| [R4-2407216](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407216.zip) | Charter, Ericsson, Nokia | (NR\_newRAT-Core) TDOC for Total power dynamic range (TPDR)  **Proposal:** To change Table 9.4.3.3-2 for FR2-2 OTA (rounding of dynamic range numbers). |
| [R4-2407384](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407384.zip) | SoftBank Corp., Deutsche Telekom, NTT DOCOMO, KDDI | (NR\_NTN\_Solutions) Considerations on HAPS additional operating bands  **Proposal:** Add HAPS operating bands to Rel-17 and Rel-18 TS38.104 clause 5.2 |
| [R4-2409466](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409466.zip)  (Sub-topic 1-1) | Vodafone, Orange, Telecom Italia, Deutsche Telekom | Consideration of multiple carrier operation for n100/n101  **Proposal 1**: Add multi-carrier clarification to Rel-17 BS specifications TS 38.104 and TS 38.141-1, wishing to allow multiple carriers shall implement coordination procedure or other mitigation measures. |
| [R4-2409533](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409533.zip)  (Sub-topic 1-1) | Huawei, HiSilicon | Follow-up discussion on multiple carrier operation for n100/n101 bands  **Proposal 1**: Update TS 38.104 and TS 38.141-1 with the wording reusing Decides 4 text of ECC(20)02, in order to keep RAN4 specification fully transparent to the ECC regulation.  **Proposal 2**: Send LS to ETSI TC RT (and possibly also ECC technical bodies involved) asking for clarification on the multiple carrier wording. |
| [R4-2409538](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409538.zip)  (Sub-topic 1-1) | Huawei, HiSilicon | Draft LS on multiple carrier operation for n100/n101 bands |

**Submitted CRs (Cat A CRs not listed)**

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Title / Summary of change** |
| [R4-2407122](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407122.zip)  (Sub-topic 1-1) | Union Inter. Chemins de Fer | Clarification on multiple carrier operation for n100/n101, R17  **Summary of change:** Addition of clarification of multiple carrier operation, extending the existing text on coordinated deployments. |
| [R4-2407123](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407123.zip)  (Sub-topic 1-1) | Union Inter. Chemins de Fer | Clarification on multiple carrier operation for n100/n101, R17  **Summary of change:** Addition of clarification of multiple carrier operation, extending the existing text on coordinated deployments. |
| [R4-2407151](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407151.zip) | Charter, Ericsson, Nokia | (NR\_newRAT-Core) CR for Total power dynamic range (TPDR)  **Summary of change:** Values in Table 9.4.3.3-2 are updated to be consistent with other values for OTA total power dynamic range using the same rounding. |
| [R4-2407385](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407385.zip) | SoftBank Corp., Deutsche Telekom, NTT DOCOMO, KDDI | (NR\_NTN\_solutions) CR for TS 38.104: Modification of HAPS operationg bands description  **Summary of change:** Add description of NR operating bands for HAPS. |
| [R4-2407420](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407420.zip) | Nokia | (AAS\_BS\_LTE\_UTRA-Core) CR to TS 37.105 on correction for single RAT E-UTRA operation  **Summary of change:** Align the OTA spurious emission requirement for single RAT E-UTRA operation with the corresponding requirement is TS 36.104. |
| [R4-2407424](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407424.zip) | Nokia | (AAS\_BS\_LTE\_UTRA-Core) CR to TS 37.145-2 on correction for single RAT E-UTRA operation  **Summary of change:** Align the OTA spurious emission requirement for single RAT E-UTRA operation with the corresponding requirement is TS 36.141. |
| [R4-2407463](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407463.zip) | CATT | (NR\_IAB-Perf) CR for TS 38.176-2, Correction on notes for scaling factor for IAB-MT type 1-O  **Summary of change:**   1. Add Note 1 for IAB-MT type 1-O OTA ACLR absolute limit in Table 6.7.3.5.1-2. 2. Add Note 1 for IAB-MT type 1-O OTA CACLR absolute limit in Table 6.7.3.5.1-5. 3. Add Note 3(Y = - 9 + 10log10(NTXU,OTApercell) dB) in Table 6.7.5.5.5.1-1. |
| [R4-2407502](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407502.zip) | CATT | CR for TS 38.174, Correction on specification suffix information for IAB  **Summary of change:** To add the suffix none and A for IAB. |
| [R4-2408197](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2408197.zip) | NEC | CR to 38.108: Minimum requirements for unwanted emissions for SAN  **Summary of change:** For SAN type 1-H, rename the subclause titles for basic limits and add new subclauses for minimum requirements.  For SAN type 1-O, add text to specify the minimum requirements.  Typo correction in the OOBE basic limits table. |
| [R4-2408198](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2408198.zip) | NEC | CR to 38.108: Minimum requirements for unwanted emissions for SAN (rel-18)  **Summary of change:** For SAN type 1-H, rename the subclause titles for basic limits and add a new subclause for minimum requirements.  For SAN type 1-O, add text to specify the minimum requirements and correct a typo in the OOBE basic limits table.  For SAN type 2-O, “basic limit” is replaced by “limit” |
| [R4-2408203](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2408203.zip) | NEC | CR to 38.176-1: Correction of test tolerance value for IAB-MT total power dynamic range (rel-16)  **Summary of change:** In table C.1-1, “±1.0 dB for 40MHz < f ≤ 100MHz” was corrected to “±1.0 dB for 40MHz < BW ≤ 100MHz”. |
| [R4-2408472](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2408472.zip) | Ericsson | (TEI17) CR to 37.104 on Removal of Additional spurious emission limits for GSM (BC2)  **Summary of change:** The “Additional minimum requirement for BC2 (Category B)” for spurious emissions is removed. |
| [R4-2408474](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2408474.zip) | Ericsson | (TEI17) CR to 37.141 on Removal of Additional spurious emission limits for GSM (BC2)  **Summary of change:** The “Additional minimum requirement for BC2 (Category B)” for spurious emissions is removed. |
| [R4-2409067](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409067.zip) | Nokia, Skyworks Solutions, Inc. | (NR\_unlic\_enh-Core) CR to TS 38.104 NR-U Nominal channel spacing  **Summary of change:** To avoid introduction of [ ] in a frozen TS, the agreed changes of WF [R4-2406677](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_110bis/Docs//R4-2406677.zip) are implemented without brackets. |
| [R4-2409070](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409070.zip) | Nokia, Qualcomm Inc. | (NR\_IAB-Core) CR to TS 38.174: maintenance to IAB requirements  **Summary of change:** Removal of brackets for power control requirements for legacy IAB-MT. |
| [R4-2409395](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409395.zip) | Huawei, HiSilicon | (NR\_NTN\_solutions-Core) CR to TS 38.108: Channel raster to resource element mapping  **Summary of change:** Update the text in 5.4.2.2 to make it clear for Channel raster to resource element mapping. |
| [R4-2409436](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409436.zip) | Keysight Technologies UK Ltd | (NR\_ext\_to\_71GHz-Perf) CR to 37.941: 71 GHz Extension, update on missing Rx MU  **Summary of change:**  10.2.3.4, comment related C1-11 is missing  Modification originally in EIS table in 10.2.3 and MU/TT for EIS in 10.2.7 and 10.2.8 were done by other CR (in different format) so that these skipped.  Table 10.5.4-3 MU table for FR2 to include FR2-2 values and clarify on frequency range  Table 10.6.4-2 MU table for FR2 to include FR2-2 values and clarify on frequency range  Table 14.2.4-1 MU table for FR2 in include FR2-2 values and clarify on frequency range |
| [R4-2409448](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409448.zip)  (Sub-topic 1-1) | Vodafone,Orange, Telecom Italia, Deutsche Telekom | CR to TS 38.104: Clarification on multiple carrier operation for n100/n101, Rel 17  **Summary of change:** Addition of clarification for multiple carrier operation, extending the existing text on the coordinated deployments. |
| [R4-2409465](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409465.zip)  (Sub-topic 1-1) | Vodafone, Orange, Telecom Italia, Deutsche Telekom | CR to TS 38.141-1: Clarification on multiple carrier operation for n100/n101, Rel 17  **Summary of change:** Addition of clarification for multiple carrier operation, extending the existing text on the coordinated deployments. |
| [R4-2409519](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409519.zip) | Huawei, HiSilicon | CR to TS 38.104: Clarifications on RMR terminology and related operating bands  **Summary of change:** NR operating bands table updated with a new Note on RMR bands and their applicability.  Missing definition and abbreviations added. |
| [R4-2409530](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409530.zip) | Huawei, HiSilicon | CR to TS 38.104: Alignment with UE specification for n30 and n77 notes in Table 5.2-1  **Summary of change:** Note 5 and 6 added in Table 5.2-1. |
| [R4-2409531](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409531.zip) | Huawei, HiSilicon | CR to TS 38.104: Alignment with UE specification for n30 and n77 notes in Table 5.2-1  **Summary of change:** Note 5 and 6 added in Table 5.2-1 |
| [R4-2409534](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409534.zip)  (Sub-topic 1-1) | Huawei, HiSilicon | CR to TS 38.104: Clarification on multiple carrier operation for n100/n101  **Summary of change:** Addition of clarification for multiple carrier operation, extending the existing text on the coordinated deployments.. |
| [R4-2409536](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409536.zip)  (Sub-topic 1-1) | Huawei, HiSilicon | CR to TS 38.141-1: Clarification on multiple carrier operation for n100/n101  **Summary of change:** Addition of clarification for multiple carrier operation, extending the existing text on the coordinated deployments.. |
| [R4-2409548](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409548.zip) | Huawei, HiSilicon | CR to TS 38.108: Corrections for non-regenerative payload and gateway  **Summary of change:**   * Update scope to clarify on non-regenerative payload. * Update definitions, to align terminology with (non-)regenerative payload (instead of bend pipe, or NTN payload RF). * Update SAN definition to be generic enough to contain both non-regenerative and regenerative payload options. * Align usage of the “satellite-gateway” term. * Update SAN figures to align gateway terminology (gateway vs. satellite-gateway) and payload terminology (remove “NTN payload RF” and replace it with the “satellite payload”). |
| [R4-2409550](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409550.zip) | Huawei, HiSilicon | CR to TS 38.181: Corrections for non-regenerative payload and gateway  **Summary of change:**   * Update scope to clarify on non-regenerative payload. * Update definitions, to align terminology with (non-)regenerative payload (instead of bend pipe, or NTN payload RF). * Update SAN definition to be generic enough to contain both non-regenerative and regenerative payload options. * Align usage of the “satellite-gateway” term. * Update SAN figures to align gateway terminology (gateway vs. satellite-gateway) and payload terminology (remove “NTN payload RF” and replace it with the “satellite payload”). |
| [R4-2409554](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409554.zip) | Huawei, HiSilicon | CR to TS 38.106: removal of environmental annex  **Summary of change:** Removal of annex A. |
| [R4-2409557](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409557.zip) | Huawei, HiSilicon | CR to TS 38.181: test condition corrections  **Summary of change:**   * Introduction of missing declarations in table 4.6-1. * Simplified and clarified Annex B structure, based on declarations added to clause 4.6. * Correction of the wording in the Informative annex (shall 🡪 can) |
| [R4-2409559](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409559.zip) | Huawei, HiSilicon | CR to TS 38.181: Correction for OTA ICS test setup  **Summary of change:** Correction for OTA ICS test setup, to fix cross-reference and remove [].. |
| [R4-2409562](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409562.zip) | Huawei, HiSilicon | CR to TS 38.181: removal of [] for MU/TT values  **Summary of change:** Removal of outstanding [] from MU and TT values.  Other editorial corrections. |
| [R4-2409675](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409675.zip) | NTT DOCOMO, Inc. | (NR\_bands\_R17\_BWs-Core) CR for Tx intermodulation core requirements in certain region  **Summary of change:** Added NOTE in table 6.7.2.1-1, 6.7.3.1-1 and 9.8.2-1 for BS type 1-C/1-H/1-O Co-location Tx intermodulation regional requirements for Band n79.. |
| [R4-2409676](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409676.zip) | NTT DOCOMO, Inc. | (NR\_bands\_R17\_BWs-Core) CR for Tx intermodulation requirements in certain region  **Summary of change:** Added NOTE in table 6.7.5.1.1-1 and table 6.7.5.2.1-1 for BS type 1-C/1-H Co-location Tx intermodulation regional requirements for Band n79. |
| [R4-2409677](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409677.zip) | NTT DOCOMO, Inc. | (NR\_bands\_R17\_BWs-Core) CR for OTA Tx intermodulation requirements in band n79  **Summary of change:** Added NOTE in Table 6.8.5.1-1 for BS type 1-O OTA Tx intermodulation regional requirements for Band n79. |
| [R4-2409779](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409779.zip) | Huawei, HiSilicon | CR to TS 38.141-1: Clarification on RMR terminology  **Summary of change:** Missing definition and abbreviations added.. |
| [R4-2409780](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409780.zip) | Huawei, HiSilicon | CR to TS 38.108: Correction of the FR1-NTN frequency range  **Summary of change:** Removal of outstanding [], and other editorial corrections to follow drafting rules.. |

## Open issues summary

### Sub-topic 1-1: Multiple carrier operation for n100/n101

RAN4#110bis considered the topic of *Multiple carrier operation for n100/n101*, and agreed on a WF in [R4-2406624](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_110bis/Docs//R4-2406624.zip):

“During RAN4#111, RAN4 to reflect the “*multiple carriers using wideband technologies*” wording and related considerations on “*coordination procedure or other mitigation measures”* from Decides 4 in [ECC/DEC/(20)02](https://docdb.cept.org/download/4039), into Rel-17 versions of TS 38.104 and TS 38.141-1, where the exact wording to be implemented in related CRs is FFS.”

Several discussion papers ([R4-2407121](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407121.zip), [R4-2409466](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409466.zip), [R4-2409533](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409533.zip)) make proposals for how to address this topic and three sets of CRs are proposed (Cat F in [R4-2407122](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407122.zip), [R4-2407123](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407123.zip), [R4-2409448](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409448.zip), [R4-2409465](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409465.zip), [R4-2409534](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409534.zip), [R4-2409536](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409536.zip)). There is also a Draft LS proposed in [R4-2309538](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_107/Docs//R4-2309538.zip).

Two open issues are identified.

**Issue 1-1: How to include the multiple carrier clarification in specs**

* Proposals
  + Option 1: Add multi-carrier clarification to TS 38.104 and TS 38.141-1 (Rel-17), based on text in [ECC Decision (20)](https://docdb.cept.org/download/4039)02.
  + Option 2: Add multi-carrier clarification to TS 38.104 and TS 38.141-1 (Rel-17), based on text in [ECC Decision (20)02](https://docdb.cept.org/download/4039). Also add Note(s) that 1 carrier in n100 and 1 carrier in n101 are not considered multicarrier cases.
* Recommended WF
  + TBA

**Issue 1-2: LS response**

* Proposals
  + Option 0: No LS.
  + Option 1: Send an LS response to ETSI TC RT asking for feedback on the motivation and background for the multiple carrier scenario.
* Recommended WF
  + TBA

# Topic #2: UE/BS EMC requirements (4.3)

## Companies’ contributions summary

**Discussion papers**

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Title/Proposals** |
| [R4-2407801](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407801.zip) | ZTE Corporation, Sanechips | Discussion on NR repeater EMC performance criteria  **Proposal 1:** Edit the performance criteria of NR repeater, by improving the power accuracy test level from *±*2dB/*±*3dB to *±*1dB. |

**Submitted CRs (Cat A CRs not listed)**

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Title / Summary of change** |
| [R4-2407855](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407855.zip) | ZTE Corporation, Sanechips | (NR\_repeaters-Perf) CR to TS 38.114 EMC performance criteria R17  **Summary of change:** Edit the test level of NR repeater’s performance criteria to align with LTE repeater. |
| [R4-2408240](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2408240.zip) | ZTE Corporation, Sanechips | (NR\_newRAT) CR to TS 38.113 BS EMC maintenance R15  **Summary of change:** Editing the reference that is pointed to incorrect clauses in RF Spec. Updating the test configuration tables to align with RF Spec. Deleting some empty void tables and clauses. |

## Open issues summary

-

# Topic #3: NB-IoT/eMTC core & perf. requirements for NTN: SAN RF requirement and conformance testing (5.2.2.2)

## Companies’ contributions summary

**Submitted CRs**

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Title / Summary of change** |
| [R4-2407466](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407466.zip) | CATT | (LTE\_NBIOT\_eMTC\_NTN\_req-Core)CR for TS 36.108, Correction on antenna connector for RF requirements  **Summary of change:**   1. 1) Remove symbol Pmax,c,AC. 2. 2) Change “antenna connector” to “*TAB* *connector* for *SAN type 1-H*” in sub-clause 6.5.4.1. 3. 3) Remove “at the antenna connector” in sub-clause 7.5.2. |
| [R4-2407467](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407467.zip) | CATT | (LTE\_NBIOT\_eMTC\_NTN\_req-Core)CR for TS 36.108, Correction on general SAN transmitter spurious emission limits  **Summary of change:**   1. Change Prated,c,sys to Prated,t,sys in Table 6.6.5.2.1-1. 2. Change Prated,c,TRP to Prated,t,TRP in Table 9.7.5.2.2-1. |
| [R4-2407468](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407468.zip) | CATT | (LTE\_NBIOT\_eMTC\_NTN\_req-Perf)CR for TS 36.181, Correction on antenna connector for demodulatin requirements  **Summary of change:**   1. Remove symbol Pmax,c,AC. 2. Remove one of two symbols Prated,c,TRP. 3. Change “antenna connectors” to “*TAB* *connectors*”. 4. Change D54 to D44, and Change Dxx to D44 for OTA REFSENS *receiver target reference direction.* 5. Remove conducted initial conditions in sub-clause 11.5.1.4.1. |
| [R4-2407469](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407469.zip) | CATT | (LTE\_NBIOT\_eMTC\_NTN\_req-Perf)CR for TS 36.181, Correction on general SAN transmitter spurious emission limits  **Summary of change:**   1. Change Prated,c,sys to Prated,t,sys in Table 6.6.5.5-1. 2. Change Prated,c,TRP to Prated,t,TRP in Table 9.7.5.5-1. |
| [R4-2407470](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2407470.zip) | CATT | (LTE\_NBIOT\_eMTC\_NTN\_req-Perf)CR for TS36.181, Correction on Number of RX antennas in header row of tables for radiated demodulation test requirements  **Summary of change:** Change “Number of RX antennas” to “Number of demodulation branches”. |
| [R4-2409539](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409539.zip) | Huawei, HiSilicon | CR to TS 36.108: Band-agnostic OBUE requirement  **Summary of change:** Removal of band number, being replaced by reference to clause 5.2. |
| [R4-2409540](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409540.zip) | Huawei, HiSilicon | CR to TS 36.181: Band-agnostic OBUE requirement  **Summary of change:** Removal of band number, being replaced by reference to clause 5.2. |

## Open issues summary

-

# Topic #4: Other Rel-18 non-spectrum related WIs: BS RF requirements (5.2.8.2)

## Companies’ contributions summary

**Discussion papers**

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Title/Proposals** |
| [R4-2409120](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409120.zip) | NTT DOCOMO, Inc. | (TEI18) Discussion on definition of FR2 home class BS  Proposal 1: It’s suggested to regard home class as one type of LA with the note in the specification TS38.104 as follows. |

**Submitted CRs**

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Title / Summary of change** |
| [R4-2408081](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2408081.zip) | Ericsson | (NR\_ext\_to\_71GHz-Core) CR to TS 38.104: Correction of FR2-2 OTA total power dynamic range in sub-clause 9.4.3  **Summary of change:**   1. Values in Table 9.4.3.3-2 are updated to be consistent with other values for OTA total power dynamic range. 2. [] removed. |
| [R4-2409119](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2409119.zip) | NTT DOCOMO, Inc. | (TEI18) CR for TS38.104 define FR2 home class as one of kind of LA BS  **Summary of change:** Regard FR2 HBS as one kind of LA and clarify that all LA requirements are also applicable for such low power BS with following updates:   * Add some note in 4.4 for BS class definition. |

## Open issues summary

-

# Topic #5: IoT NTN enhancements: SAN RF requirements maintenance (8.3.1)

## Companies’ contributions summary

**Submitted CRs**

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Title / Summary of change** |
| [R4-2408199](http://www.3gpp.org/ftp//tsg_ran/WG4_Radio/TSGR4_111/Docs//R4-2408199.zip) | NEC | CR to 36.108: Minimum requirements for unwanted emissions for SAN  **Summary of change:** For SAN type 1-H, rename the subclause titles for basic limits and add new subclauses for minimum requirements.  For SAN type 1-O, add text to specify the minimum requirements. |

## Open issues summary

-