**3GPP TSG-RAN4 Meeting #112 *R4-241XXXX***

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

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **38.133** | **CR** | **4711** | **rev** | **1** | **Current version:** | **17.14.0** |  |
|  |
| *For* ***[HE](http://www.3gpp.org/3G_Specs/CRs.htm%22%20%5Cl%20%22_blank)******[LP](http://www.3gpp.org/3G_Specs/CRs.htm%22%20%5Cl%20%22_blank)*** *on using this form: comprehensive instructions can be found at <http://www.3gpp.org/Change-Requests>.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

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| ***Title:***  | (NR\_NTN\_solutions-Perf) CR to TS 38.133 measurement accuracy related corrections for NR NTN |
|  |  |
| ***Source to WG:*** | CMCC |
| ***Source to TSG:*** | RAN4 |
|  |  |
| ***Work item code:*** | NR\_NTN\_solutions-Perf |  | ***Date:*** | 2024-08-05 |
|  |  |  |  |  |
| ***Category:*** | F |  | ***Release:*** | Rel-17 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)Rel-20 (Release 20)* |
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| ***Reason for change:*** | The CSI-RS based L1-RSRP measurement core requirement and test cases has been introduced for NTN, however, the corresponding measurement accuracy requirement is missing. |
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| ***Summary of change:*** | Introduce CSI-RS based L1-RSRP accuracy requirements |
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| ***Consequences if not approved:*** | The NTN spec will be incomplete |
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| ***Clauses affected:*** | 10.1.19C.2(new clause) |
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|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** | **X** |  |  Test specifications | TS 38.533  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Revised of R4-2411749 |

**<Start of change#1>**

#### 10.1.19C.2 CSI-RS based L1-RSRP accuracy requirements

##### 10.1.19C.2.1 Absolute Accuracy

Unless otherwise specified, the requirements for absolute accuracy of CSI-RS based L1-RSRP in this clause apply to all CSI-RS resources of the serving cell configured for L1-RSRP measurement.

The accuracy requirements in Table 10.1.19C.2.1-1 are valid under the following conditions:

- Conditions defined in clause 7.3 of TS 38.101-5 [39] for reference sensitivity are fulfilled.

- Conditions for L1-RSRP measurements are fulfilled according to Annex B.2.19.2 for a corresponding Band for each relevant CSI-RS.

- The bandwidth of CSI-RS is 48 PRBs and the density is 3.

- Valid information for the SAN serving the target cell has been provided.

The performance with larger bandwidth of CSI-RS is equal to or better than the accuracy requirements in Table 10.1.19C.2.1-1.

Table 10.1.19C.2.1-1: CSI-RS based L1-RSRP absolute accuracy in FR1

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| --- | --- |
| Accuracy | Conditions |
| Normal condition | Extreme condition | CSI-RS Ês/Iot | Io Note 1 range |
|  |  |  | NR operating band groups Note 2 | Minimum Io | Maximum Io |
| dB | dB | dB |  | dBm / SCSCSI-RS | dBm/BWChannel | dBm/BWChannel |
|  |  |  |  | SCSCSI-RS = 15 kHz | SCSCSI-RS = 30 kHz |  |  |
| ±[5] | ±[9.5] | ≥-3 | NR\_FDD\_SAB\_FR1\_A | -121 | -118 | N/A | -70 |
| ±[8.5] | ±[11.5] | ≥-3 | NR\_FDD\_SAB\_FR1\_A | N/A | N/A | -70 | -50 |
| NOTE 1: Io is assumed to have constant EPRE across the bandwidth.NOTE 2: NR operating band groups in FR1 are as defined in clause 3.5.2A. |

##### 10.1.19C.2.2 Relative Accuracy

The relative accuracy of CSI-RS based L1-RSRP is defined as the L1-RSRP measured from one CSI-RS compared to the largest measured value of L1-RSRP among all CSI-RS resources of the serving cell.

The accuracy requirements in Table 10.1.19C.2.2-1 are valid under the following conditions:

- Conditions defined in clause 7.3 of TS 38.101-5 [39] for reference sensitivity are fulfilled.

- Conditions for L1-RSRP measurements are fulfilled according to Annex B.2.19.2 for a corresponding Band for each relevant CSI-RS.

- The bandwidth of CSI-RS is 48 PRBs and the density is 3.

- Valid information for the SAN serving the target cell has been provided.

The performance with larger bandwidth of CSI-RS is equal to or better than the accuracy requirements in Table 10.1.19C.2.2-1.

Table 10.1.19C.2.2-1: CSI-RS based L1-RSRP relative accuracy in FR1

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| Accuracy | Conditions |
| Normal condition | Extreme condition | CSI-RS Ês/Iot Note 2 | Io Note 1 range |
|  |  |  | NR operating band groups Note 4 | Minimum Io | Maximum Io |
| dB | dB | dB |  | dBm / SCSCSI-RS | dBm/BWChannel | dBm/BWChannel |
|  |  |  |  | SCSCSI-RS = 15 kHz | SCSCSI-RS = 30 kHz |  |  |
| ±[3] | ±[4] | ≥-3 | NR\_FDD\_SAB\_FR1\_A | -121 | -118 | N/A | -50 |
| NOTE 1: Io is assumed to have constant EPRE across the bandwidth.NOTE 2: The parameter CSI-RS Ês/Iot is the minimum CSI-RS Ês/Iot of the pair of CSI-RS resources to which the requirement applies.NOTE 3: VoidNOTE 4: NR operating band groups in FR1 are as defined in clause 3.5.2A. |

**<End of change#1>**

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