**3GPP TSG-RAN4 Meeting # 102-e *R4-220xyz***

**Electronic Me**e**ting, 21st Feb – 3rd March 2022**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.101-2** | **CR** | **<CR#>** | **rev** | - | **Current version:** | **17.4.0** |  |
|  | | | | | | | | |
| *For* [***HELP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](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:*** | CR on RedCap UE FR2-TX and general | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson, Qualcomm Incorporated | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_redcap-Core | | | | |  | ***Date:*** | | | 2022-2-26 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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 can be 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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Redcap is introduced in Rel-17 in NR | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | introduce the REFSENS and EIS for Redcap UE in FR2 | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | No RedCap UE specificaion in specificaitons. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 7.3.2.6, 7.3.4.6 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **N** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **Y** |  | Test specifications | | | | TS 38.521-2 | | |
| ***(show related CRs)*** | |  | **N** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

## < start of changes >

#### 7.3.2.6 Reference sensitivity power level for power class 7

The throughput shall be ≥ 95 % of the maximum throughput of the reference measurement channels as specified in Annexes A.2.3.2 and A.3.3.2 (with one sided dynamic OCNG Pattern OP.1 TDD for the DL-signal as described in Annex A.5.2.1) with peak reference sensitivity specified in Table 7.3.2.6-1. The requirement is verified with the test metric of EIS (Link=RX beam peak direction, Meas=Link Angle).

Table 7.3.2.6-1: Reference sensitivity

|  |  |  |
| --- | --- | --- |
| Operating band | REFSENS (dBm) / Channel bandwidth | |
|  | 50 MHz | 100 MHz |
| n257 | -85.3 | -82.3 |
| n258 | -85.3 | -82.3 |
| n261 | -85.3 | -82.3 |
| NOTE 1: The transmitter shall be set to PUMAX as defined in clause 6.2.4 | | |

The REFSENS requirement shall be met for an uplink transmission using QPSK DFT-s-OFDM waveforms and for uplink transmission bandwidth of 50MHz and 100MHz specified in Table 7.3.2.1-2.

Unless given by Table 7.3.2.1-3, the minimum requirements for reference sensitivity shall be verified with the network signalling value NS\_200 (Table 6.2.3-1) configured.

## << Unchanged part is omitted>>

#### 7.3.4.6 EIS spherical coverage for power class 7

The reference measurement channels and throughput criterion shall be as specified in clause 7.3.2.6.

The maximum EIS at the 50th percentile of the CCDF of EIS measured over the full sphere around the UE is defined as the spherical coverage requirement and is found in Table 7.3.4.6-1 below. The requirement is verified with the test metric of EIS (Link=Spherical coverage grid, Meas=Link angle).

Table 7.3.4.6-1: EIS spherical coverage for power class 7

|  |  |  |
| --- | --- | --- |
| **Operating band** | **EIS at 50th %-tile CCDF (dBm) / Channel bandwidth** | |
|  | **50 MHz** | **100 MHz** |
| n257 | [-85.3 +x] | [-82.3 +x] |
| n258 | [-85.3 +x] | [-82.3 +x] |
| n261 | [-85.3 +x] | [-82.3 +x] |
| NOTE 1: The transmitter shall be set to PUMAX as defined in clause 6.2.4  NOTE 2: The EIS spherical coverage requirements are verified only under normal thermal conditions as defined in Annex E.2.1. | | |

The requirement shall be met for an uplink transmission using QPSK DFT-s-OFDM waveforms and for uplink transmission bandwidth of 50MHz and 100MHz specified in Table 7.3.2.1-2.

Unless given by Table 7.3.2.1-3, the minimum requirements for reference sensitivity shall be verified with the network signalling value NS\_200 (Table 6.2.3-1) configured.

## < end of changes >