**3GPP TSG-RAN WG4 Meeting #116bis  *R4-2515045***

**, CZ, - , Oct, 2025**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** |  | **rev** | **1** | **Current version:** |  |  |
|  | | | | | | | | |
| *For* [***HE******LP***](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 |  | Radio Access Network | **X** | Core Network |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | draft CR to 38.108 for SAN NR PUCCH format2 requriement with less than 5MHz | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** |  | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In Rel-19, RAN4 introduced SAN PUCCH format 2 requirment for less than 5MHz. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * Add new table for related confiuration and test cases for SAN PUCCH requirement with less then 5MHz | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The SAN PUCCH requirement with less than 5MHz can be not verfied | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.3.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **x** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **x** |  | Test specifications | | | | TS 38.181 | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Revison of R4-2513408 | | | | | | | | |

<Start of Change 1>

#### 8.3.4.2 UCI BLER performance requirements

##### 8.3.4.2.1 General

The UCI block error probability (BLER) is defined as the probability of incorrectly decoding the UCI information when the UCI information is sent. The UCI information does not contain CSI part 2.

The transient period as specified in TS 38.101-5 [11] clause 6.3.3 is not taken into account for performance requirement testing, where the RB hopping is symmetric to the CC centre, i.e. intra-slot frequency hopping is enabled.

The UCI block error probability performance requirement only applies to the PUCCH format 2 with 22 UCI bits.

Table 8.3.4.2.1-1: Test Parameters

|  |  |
| --- | --- |
| Parameter | Value |
| Modulation order | QSPK |
| First PRB prior to frequency hopping | 0 |
| Intra-slot frequency hopping | enabled |
| Frist PRB after frequency hopping | The largest PRB index – (Number of PRBs – 1) |
| Number of PRBs | 9 |
| Number of symbols | 2 |
| The number of UCI information bits | 22 |
| First symbol | 12 |
| DM-RS sequence generation | *NID*0=0 |
| Note: The first PRB after frequency hopping is 3 | |

##### 8.3.4.2.2 Minimum requirements

The UCI block error probability shall not exceed 1% at the SNR given in table 8.3.4.2.2-1 and table 8.3.4.2.2-2 for 22 UCI bits.

Table 8.3.4.2.2-1: Minimum requirements for PUCCH format 2, 15 kHz SCS and 5MHz channel bandwidth

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Number of  TX antennas | Number of RX  antennas | Cyclic Prefix | Propagation conditions and  correlation matrix (Annex D) | SNR (dB) |
| 1 | 1 | Normal | NTN-TDLA100-200 Low | 6.3 |
| 2 | Normal | NTN-TDLA100-200 Low | 0.8 |

*Table 8.3.4.2.2-2: Minimum requirements for PUCCH format 2, 30 kHz SCS and 10MHz channel bandwidth*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Number of*  *TX antennas* | *Number of RX*  *antennas* | *Cyclic Prefix* | *Propagation conditions and*  *correlation matrix (Annex D)* | *SNR (dB)* |
| *1* | *1* | *Normal* | *NTN-TDLA100-200 Low* | *6.4* |
| *2* | *Normal* | *NTN-TDLA100-200 Low* | *0.5* |

Table 8.3.4.2.2-x: Minimum requirements for PUCCH format 2, 15 kHz SCS and 3MHz channel bandwidth

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Number of  TX antennas | Number of RX  antennas | Cyclic Prefix | Propagation conditions and  correlation matrix (Annex D) | SNR (dB) |
| 1 | 1 | Normal | NTN-TDLA100-200 Low | [9.6] |
| 2 | Normal | NTN-TDLA100-200 Low | [2.4] |

<end of Change 1>