**3GPP TSG- RAN WG4 Meeting #111R4-2409849**

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

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.101-4** | **CR** | **-** | **rev** | **-** | **Current version:** | **18.3.0** |  |
|  | | | | | | | | |
| *For* ***[HELP](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_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:*** | Draft CR to TS38.101-4: Introduction of PDCCH requirement for DSS enhancement -TDD 4Rx | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | ZTE Corporation,Sanechips | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_DSS\_enh-Perf | | | | |  | ***Date:*** | | | 2024-05-20 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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:*** | | Introduction of PDCCH requirement for DSS enhancement is missing. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Introduction of PDCCH requirement for DSS enhancement for TDD 4Rx. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | RAN4 introduced eDSS feature in R-18. Otherwise, PDCCH requirements for DSS enhancement is missing. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.3.3.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS/TR 38.521-4 | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

#### < START OF CHANGE>

##### 5.3.3.2.5 Minimum requirement for PDCCH overlapping with LTE CRS

The parameters specified in Table 5.3.3.2.5-1 are additional parameters for requirements with PDCCH overlapping with LTE CRS.

**Table 5.3.3.2.5-1: Test Parameters**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | | **Unit** | **Value** |
| TDD UL-DL pattern | |  | FR1.15-1 |
| NR UL transmission with a 7.5 kHz shift to the LTE raster | |  | true |
| CCE to REG mapping type | |  | Non-interleaved |
| REG bundle size | |  | 6 |
| Shift Index | |  | 0 |
| PDCCH Configuration | Symbols with PDCCH |  | Symbol#1 and #2 |
| CRS for rate matching (Note 1) | LTE carrier centre subcarrier location |  | Same as NR carrier centre subcarrier location |
| LTE carrier BW | MHz | 10 |
| Number of antenna ports |  | 4 |
| v-shift |  | 0 |
| Note 1: No MBSFN is configured on LTE carrier.  Note 2: LTE carrier is configured with Uplink-downlink configuration 2 [Table 4.2-2, TS 36.211] and Special subframe configuration 7 [Table 4.2-1, TS 36.211]. The start of transmission of LTE frame is delayed by 2 LTE subframes with respect to the start of transmission of NR frame.  Note 3: NR PDCCH data REs and DMRS REs overlapped with LTE CRS are punctured at the transmitter side | | | |

For the parameters specified in Table 5.3.3.2.5-1, the average probability of a missed downlink scheduling grant (Pm-dsg) shall be below the specified value in Table 5.3.3.2.5-2. The downlink physical setup is in accordance with Annex C.3.1.

Table 5.3.3.2.5-2: Minimum performance for PDCCH with 15kHz SCS

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test number** | **Bandwidth (MHz)** | **CORESET RB** | **CORESET duration** | **Aggregation level** | **Reference Channel** | **Propagation Condition** | **Antenna configuration and correlation Matrix** | **Reference value** | |
| **Pm-dsg (%)** | **SNR (dB)** |
| 1 | 10 | 48 | 2 | 4 | R.PDCCH.1-2.7 TDD | TDLA30-10 | 4x4 Low | 1 | [-0.1] |

#### < End OF CHANGE>