**3GPP TSG-RAN4 Meeting #111  *R4-2409874***

**Fukuoka, Japan, 20 - 24 May 2024**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.101-4** | **CR** | **Draft** | **rev** | **-** | **Current version:** | **18.3.0** |  |
|  | | | | | | | | |
| *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 | **x** | Radio Access Network |  | Core Network |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Draft CR on the Introduction of PDCCH requirement for DSS enhancement -FDD 4Rx | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_DSS\_enh-Perf | | | | |  | ***Date:*** | | | 2024-05-21 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | Introduce PDCCH FDD 4Rx requirements for eDSS | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add eDSS PDCCH FDD 4Rx requirements | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | No requirements for eDSS PDCCH FDD 4Rx | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.3.3.1.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 draft CR is a revision of the already endorsed draftCR R4-2406018, with the following changes:   * Adding a sentence: The parameters specified in Table 5.3.3.1.5-1 are additional prarameters for requirements with PDCCH overlapping with LTE CRS. * Moving the sentence: For the parameters specified in Table 5.3.3.1.5-1, the average probability of a missed downlink scheduling grant (Pm-dsg) shall be below the specified value in Table 5.3.3.1.5-2. The downlink physical setup is in accordance with Annex C.3.1. to be directly before Table 5.3.3.1.5-2 with additional editorial changes highlighted in turquoise. * Change the test number from 2 to 1 (marked in turquoise). * Update the SNR requirement value based on updated simulation results with impairments. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

***<Start of Change 1>***

##### 5.3.3.1.5 Minimum requirements for PDCCH overlapping with LTE CRS

The parameters specified in Table 5.3.3.1.5-1 are additional parameters for requirements with PDCCH overlapping with LTE CRS.

**Table 5.3.3.1.5-1: Test parameters**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | | **Unit** | **Value** |
| Duplex mode | |  | FDD |
| Active DL BWP index | |  | 1 |
| NR UL transmission with a 7.5 kHz shift to the LTE raster | |  | true |
| 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: NR PDCCH data REs and DMRS REs overlapped with LTE CRS are punctured at the transmitter side. | | | |

For the parameters specified in Table 5.3.3.1.5-1, the average probability of a missed downlink scheduling grant (Pm-dsg) shall be below the specified value in Table 5.3.3.1.5-2. The downlink physical setup is in accordance with Annex C.3.1.

Table 5.3.3.1.5-2: Minimum performance for PDCCH with 15 kHz 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 | 8 | R.PDCCH.1-2.9 FDD | TDLC300-100 | 2x4 Low | 1 | [-0.5] |

***<End of Change 1>***