**3GPP TSG-RAN4 Meeting #97eR4-2017514**

**Electronic Meeting, 2 - 13 Nov, 2020**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.101-4** | **CR** | **0085** | **rev** | **1** | **Current version:** | **16.2.0** |  |
|  | | | | | | | | |
| *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 requirements with slot aggreagation in FR2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Apple | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_L1enh\_URLLC-Perf | | | | |  | ***Date:*** | | | 2020-10-23 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Demodulation performance requirements for PDSCH slot aggregation feature in FR2 has been agreed to be introduced in RAN4 for URLLC. New requirements for this need to be added to for this. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | New section for Minimum requirements for PDSCH repetitions over multiple slots is added in clause 7.2.2.2. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Requirements for PDSCH repetitions over multiple slots in FR2 will be undefined | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS 38.521-4 | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | Section 7.2.2.2 | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Revision of R4-2014243 | | | | | | | | |

Start of Change 1

##### 7.2.2.2.2 Minimum requirements for PDSCH repetitions over multiple slots

For PDSCH with slot aggregation, the requirements are specified in Table 7.2.2.2.2-3, additional parameters in Table 7.2.2.2.2-2 and the downlink physical channel setup according to Annex C.5.1.

The test purpose is specified in Table 7.2.2.2.2-1.

Table 7.2.2.2.2-1: Test purpose

|  |  |
| --- | --- |
| Purpose | Test index |
| Verify the PDSCH repetitions over multiple slots performance under 2 receive antenna conditions | 1-1 |

Table 7.2.2.2.2-2: Test Parameters

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | | **Unit** | **Value** |
| Duplex mode | |  | TDD |
| Active DL BWP index | |  | 1 |
| PDSCH configuration | Mapping type |  | Type A |
| *k0* |  | 0 |
| Starting symbol (S) |  | 1 |
| Length (L) |  | 13 |
| PDSCH aggregation factor |  | 2 |
| PRB bundling type |  | Static |
| PRB bundling size |  | 2 |
| Resource allocation type |  | Type 0 |
| RBG size |  | Config2 |
| VRB-to-PRB mapping type |  | Non-interleaved |
| VRB-to-PRB mapping interleaver bundle size |  | N/A |
| PDSCH DMRS configuration | DMRS Type |  | Type 1 |
| Number of additional DMRS |  | 1 |
| Maximum number of OFDM symbols for DL front loaded DMRS |  | 1 |
| Number of HARQ Processes | |  | 2 |
| The number of slots between PDSCH and corresponding HARQ-ACK information | |  | As defined in Annex A.1.3 |

Table 7.2.2.2.2-3: Minimum performance for Rank 1 (FRC)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test num** | **Reference channel** | Bandwidth (MHz) / Subcarrier spacing (kHz) | **Modulation and code rate** | **TDD UL-DL pattern** | **Propagation condition** | **Correlation matrix and antenna configuration** | **Reference value** | |
| **Target BLER** | **SNR (dB)** |
| 1-1 | R.PDSCH.X1 TDD | 100 / 120 | TBD | [FR2.120-1A] | TDLA30-75 | 2x2 ULA Low | 1% (Note 1) | TBD |
| Note 1: BLER is defined as residual BLER; i.e. ratio of incorrectly received transport blocks / sent transport blocks, independently of the number HARQ transmission(s) for each transport block. | | | | | | | | |

End of Change 1