**3GPP TSG-RAN4 Meeting #98e**

**Electronic Meeting, 25** **Jan - 5 Feb, 2021**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.101-4** | **CR** | **0128** | **rev** | **1** | **Current version:** | **16.3.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | CR to 38.101-4 for eMIMO demod requirements - General and Applicability rule | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Apple | | | | | | | | | |
| ***Source to TSG:*** | RAN4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_eMIMO-Perf | | | | |  | ***Date:*** | | | 2021-01-15 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | Under eMIMO WI, PDSCH demodulation requirements are agreed to be defined for multi-TRP multi-DCI and single DCI transmission schemes. The applicability of the newly defined tests needs to be captured. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Added features in section 5.1.1.3 and define applicability for the newly defined tests.  Added test applicability rules for multi-TRP transmission requirements. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The applicability of UE demodulation requirements for multi-TRP is not defined | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.1.1.3, 5.1.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | Re-submission of endorsed CR in RAN4#97e R4-2017601.  The section number is updated from the endorsed CR for applicability of requirements with multi-TRP transmission. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Revision of R4-2100210 | | | | | | | | |

Start of Change 1

#### 5.1.1.3 Applicability of requirements for optional UE features

The performance requirements in Table 5.1.1.3-1 shall apply for UEs which support optional UE features only.

Table 5.1.1.3-1: Requirements applicability for optional UE features

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| UE feature/capability [14] | Test type | | Test list | Applicability notes |
| SU-MIMO Interference Mitigation advanced receiver | FR1 FDD | PDSCH | Clause 5.2.2.1.1 (Test 3-1)  Clause 5.2.3.1.1 (Test 5-1) |  |
|  | FR1 TDD | PDSCH | Clause 5.2.2.2.1 (Test 3-1)  Clause 5.2.3.2.1 (Test 5-1) |  |
| Alternative additional DMRS position for co-existence with LTE CRS *(additionalDMRS-DL-Alt)* | FR1 FDD | PDSCH | Clause 5.2.2.1.4 (Test 1-2)  Clause 5.2.3.1.4 (Test 1-2) |  |
|  | FR1 TDD | PDSCH | Clause 5.2.2.2.4 (Test 1-2)  Clause 5.2.3.2.4 (Test 1-2) |  |
| Basic DL NR-NR CA operation (*supportedBandCombinationList*) | NR CA | SDR | Clause 5.5A.1 | 1)Up to 16 DL carriers  2)Same numerology across carrier for data/control channel at a given time |
| Enhanced demodulation processing for HST-SFN joint transmission scheme with velocity up to 500km/h | FR1 FDD | PDSCH | Clause 5.2.2.1.9 (Test 1-1)  Clause 5.2.3.1.9 (Test 1-1) |  |
|  | FR1 TDD | PDSCH | Clause 5.2.2.2.9 (Test 1-1)  Clause 5.2.3.2.9 (Test 1-1) |  |
| Alternative 64QAM MCS table for PDSCHNew 64QAM MCS table for PDSCH (*dl-64QAM-MCS-TableAlt*) | FR1 FDD | PDSCH | Clause 5.2.2.1.5  Clause 5.2.3.1.5  Clause 5.2.2.1.6  Clause 5.2.3.1.6 |  |
|  | FR1 TDD | PDSCH | Clause 5.2.2.2.5  Clause 5.2.3.2.5  Clause 5.2.2.2.6  Clause 5.2.3.2.6 |  |
| CQI table with target BLER of 10^-5New CQI table (cqi-TableAlt) | FR1 FDD | PDSCH | Clause 5.2.2.1.5  Clause 5.2.3.1.5 |  |
|  | FR1 TDD | PDSCH | Clause 5.2.2.2.5  Clause 5.2.3.2.5 |  |
| PDSCH repetitions over multiple slots *(pdsch-RepetitionMultiSlots)* | FR1 FDD | PDSCH | Clause 5.2.2.1.6  Clause 5.2.3.1.6 |  |
|  | FR1 TDD | PDSCH | Clause 5.2.2.2.6  Clause 5.2.3.2.6 |  |
| UE PDSCH processing capability #2 *(pdsch-ProcessingType2)* | FR1 FDD | PDSCH | Clause 5.2.2.1.7  Clause 5.2.3.1.7 |  |
|  | FR1 TDD | PDSCH | Clause 5.2.2.2.7  Clause 5.2.3.2.7 |  |
| Pre-emption indication for DL *(pre-EmptIndication-DL)* | FR1 FDD | PDSCH | Clause 5.2.2.1.8  Clause 5.2.3.1.8 |  |
|  | FR1 TDD | PDSCH | Clause 5.2.2.2.8  Clause 5.2.3.2.8 |  |
| Single DCI based SDM transmission for multi-TRxP (singleDCI-SDM-scheme-r16) | FR1 FDD | PDSCH | Clause 5.2.2.1.11  Clause 5.2.3.1.11 |  |
| FR1 TDD | PDSCH | Clause 5.2.2.2.11  Clause 5.2.3.2.11 |  |
| Multi DCI based multi-TRP support (multiDCI-MultiTRxP-r16) | FR1 FDD | PDSCH | Clause 5.2.2.1.12  Clause 5.2.3.1.12 |  |
| FR1 TDD | PDSCH | Clause 5.2.2.2.12  Clause 5.2.3.2.12 |  |
| Single DCI based FDM Scheme-A for multi-TRxP(supportFDM-SchemeA-r16) | FR1 FDD | PDSCH | Clause 5.2.2.1.13  Clause 5.2.3.1.13 |  |
| FR1 TDD | PDSCH | Clause 5.2.2.2.13  Clause 5.2.3.2.13 |  |
| Sinle DCI based inter-slot TDM for multi-TRxP (supportInter-slotTDM-r16) | FR1 FDD | PDSCH | Clause 5.2.2.1.14  Clause 5.2.3.1.14 |  |
| FR1 TDD | PDSCH | Clause 5.2.2.2.14  Clause 5.2.3.2.14 |  |

End of Change 1

Start of Change 2

#### 5.1.1.8 Applicability of different requirements with Multi-TRxP

The applicability rules for requirements with multi-TRxP transmission schemes in section 5 are specified in Table 5.1.1.8-1.

Table 5.1.1.8-1: Applicability of requirements with Multi-TRP Transmission

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| If UE has passed | | | UE can skip | | | Applicability notes |
| Test type | | Test list | Test type | | Test list |
| FR1 FDD | PDSCH | Clause 5.2.2.1.12 (Test 1-1) | FR1 FDD | PDSCH | Clause 5.2.2.1.11 (Test 1-1) |  |
| FR1 FDD | PDSCH | Clause 5.2.2.1.12 (Test 1-1) | FR1 FDD | PDSCH | Clause 5.2.2.1.13 (Test 1-1) |  |
| FR1 FDD | PDSCH | Clause 5.2.2.1.6 (Test 1-1) | FR1 FDD | PDSCH | Clause 5.2.2.1.14 (Test 1-1) |  |
| FR1 TDD | PDSCH | Clause 5.2.2.2.12 (Test 1-1) | FR1 TDD | PDSCH | Clause 5.2.2.2.11 (Test 1-1) |  |
| FR1 TDD | PDSCH | Clause 5.2.2.2.12 (Test 1-1) | FR1 TDD | PDSCH | Clause 5.2.2.2.13 (Test 1-1) |  |
| FR1 TDD | PDSCH | Clause 5.2.2.2.6 (Test 1-1) | FR1 TDD | PDSCH | Clause 5.2.2.2.14 (Test 1-1) |  |
| FR1 FDD | PDSCH | Clause 5.2.3.1.12 (Test 1-1) | FR1 FDD | PDSCH | Clause 5.2.3.1.11 (Test 1-1) |  |
| FR1 FDD | PDSCH | Clause 5.2.3.1.12 (Test 1-1) | FR1 FDD | PDSCH | Clause 5.2.3.1.13 (Test 1-1) |  |
| FR1 FDD | PDSCH | Clause 5.2.3.1.6 (Test 1-1) | FR1 FDD | PDSCH | Clause 5.2.3.1.14 (Test 1-1) |  |
| FR1 TDD | PDSCH | Clause 5.2.3.2.12 (Test 1-1) | FR1 TDD | PDSCH | Clause 5.2.3.2.11 (Test 1-1) |  |
| FR1 TDD | PDSCH | Clause 5.2.3.2.12 (Test 1-1) | FR1 TDD | PDSCH | Clause 5.2.3.2.13 (Test 1-1) |  |
| FR1 TDD | PDSCH | Clause 5.2.3.2.6 (Test 1-1) | FR1 TDD | PDSCH | Clause 5.2.3.2.14 (Test 1-1) |  |

End of Change 2