**3GPP TSG Meeting #116-bisR4- 2514853**

**Prague, Czech, 13th Oct – 17th Oct**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.101-4** | **CR** |  | **rev** |  | **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 | **X** | Radio Access Network |  | Core Network |  |

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|  | | | | | | | | | | |
| ***Title:*** | Minimum requirement for wideband CQI reporting with inter-cell interference [FDD] | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_demod\_Ph5- Perf | | | | |  | ***Date:*** | | | 2025-10-02 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | 9 |
|  | *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 Table 6.2.4.1.2.1-1, a) CSI-IM of serving cell and ZP CSI-RS of interfering cell are overlapping with current settings. Instead, CSI-IM should overlap with PDSCH of intefering cell, and b) The agreed codebook restriction was not present. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Correction to incorrect CQI FDD test settings of ZP CSI-RS of interfering cell, and agreed codebook restriction was introduced | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Incorrect CQI test settings shall be present | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | Clause 6.2.4.1.2 and Clause 6.2.4.1.2.1 shall be added to 38.101-4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**<Start of change1>**

6.2.4.1.2 CQI reporting under fading conditions

6.2.4.1.2.1 Minimum requirement for wideband CQI reporting with inter-cell interference

The purpose of the requirements is to verify that the UE is tracking the channel variations and selecting the largest transport format possible based on inter-cell interference mitigation receiver.

For the parameters specified in Table 6.2.4.1.2.1-1, and using the downlink physical channels specified in Annex C.3.1, the minimum requirements are specified by the following,

a) the ratio of the throughput obtained when transmitting the transport format indicated by each reported wideband CQI index subject to an interference source with specified INR and that obtained when transmitting the transport format indicated by each reported wideband CQI index subject to a white Gaussian noise source shall be ≥ **where **is specified in Table 6.2.4.1.2.1-2.

b) when transmitting the transport format indicated by each reported wideband CQI index subject to an interference source with specified INR, the average BLER for the indicated transport formats shall be greater than or equal to 0.02.

**Table 6.2.4.1.2.1-1 Wideband CQI reporting test with inter-cell interference**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | | | **Unit** | **Test1** | |
| **Cell 1** | **Cell 2** |
| Bandwidth | | | MHz | 10 | 10 |
| Duplex Mode | | |  | FDD | FDD |
| Subcarrier spacing | | | kHz | 15 | 15 |
| SINR | | | dB | -2 | - |
| Beamforming Model | | |  | As specified in Annex B.4.1 | |
| Interference Model | | |  |  | As specified in B.6.2 |
| ZP CSI-RS configuration | CSI-RS resource Type | |  | Periodic | Periodic |
| Number of CSI-RS ports (*X*) | |  | 4 | 4 |
| CDM Type | |  | FD-CDM2 | FD-CDM2 |
| Density (ρ) | |  | 1 | 1 |
| First subcarrier index in the PRB used for CSI-RS (k0) | |  | Row 5,4 | Row 5,6 |
| First OFDM symbol in the PRB used for CSI-RS (l0) | |  | 9 | 9 |
| CSI-RS  periodicity and offset | | slot | 5/1 | Same as serving cell |
| NZP CSI-RS for CSI acquisition | CSI-RS resource Type | |  | Periodic | Periodic |
| Number of CSI-RS ports (*X*) | |  | 2 | 1 |
| CDM Type | |  | FD-CDM2 | noCDM |
| Density (ρ) | |  | 1 | 1 |
| First subcarrier index in the PRB used for CSI-RS (k0, k1 ) | |  | Row 3(6, -) | Row 2(6, -) |
| First OFDM symbol in the PRB used for CSI-RS (l0) | |  | 13 | 13 |
| NZP CSI-RS-timeConfig  periodicity and offset | | slot | 5/1 | Same as serving cell |
| CSI-IM configuration | CSI-IM resource Type | |  | Periodic | Periodic |
| CSI-IM RE pattern | |  | 0 | 0 |
| CSI-IM Resource Mapping  (kCSI-IM,lCSI-IM) | |  | (4, 9) | (6, 9) |
| CSI-IM timeConfig  periodicity and offset | | slot | 5/1 | Same as serving cell |
| ReportConfigType | | |  | Periodic | Not configured |
| CQI-table | | |  | Table 2 | Table 2 |
| reportQuantity | | |  | cri-RI-PMI-CQI | Not configured |
| timeRestrictionForChannelMeasurements | | |  | Not configured | Not configured |
| timeRestrictionForInterferenceMeasurements | | |  | Not configured | Not configured |
| cqi-FormatIndicator | | |  | Wideband | Wideband |
| pmi-FormatIndicator | | |  | Wideband | Wideband |
| Sub-band Size | | | RB | 8 | - |
| Csi-ReportingBand | | |  | 1111111 | Not configured |
| CSI-Report periodicity and offset | | | slot | 5/0 | Not configured |
| aperiodicTriggeringOffset | | |  | Not configured | Not configured |
| Codebook configuration | | Codebook Type |  | typeI-SinglePanel | typeI-SinglePanel |
| Codebook Mode |  | 1 | 1 |
| (CodebookConfig-N1,CodebookConfig-N2) |  | Not configured | Not configured |
| CodebookSubsetRestriction |  | Rank 1: 000001  Rank 2: 010000 | Not configured |
| RI Restriction |  | N/A | Not configured |
| Physical channel for CSI report | | |  | PUCCH | Not configured |
| CQI/RI/PMI delay | | | ms | 8 | Not configured |
| Maximum number of HARQ transmission | | |  | 1 | Not configured |
| Measurement channel | | |  | As specified in Table A.4-2, TBS.2-1 | - |
| INR (Note 6) | | | dB | N/A | 10.04 |
| Propagation condition | | |  | TDLA30-5 | AWGN |
| Antenna configuration | | |  | 2×8 | 1×8 |
| Correlation configuration | | |  | ULA Low | N/A |
| Note 1: The respective received power spectral density of each interfering cell relative to  is defined by its associated INR value as specified in clause B.6.1.  Note 2: Two cells are considered in which Cell 1 is the serving cell and Cell 2 is the interfering cell. Interfering cell is fully loaded.  Note 3: Both cells are time synchronous.  Note 4: Static channel is used for the interference model. In case for white Gaussian noise model Cell 2 is not present.  Note 5: SINR corresponds to  of Cell 1 as defined in clause 4.4.5.  Note 6: INR is defined in clause B.6.1. | | | | | |

**Table 6.2.4.1.2.1-2: Minimum requirements**

|  |  |
| --- | --- |
| **Parameters** | **Test 1** |
| ** | 2 |

**<End of change1>**