**3GPP TSG-RAN WG1 Meeting # 110 R1-220xxx**

**Toulouse,France, August 22nd – 26th, 2022**

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| *CR-Form-v12.2* | | | | | | | | |
| **DRAFT CHANGE REQUEST** | | | | | | | | |
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|  |  | **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 | **X** | Core Network |  |

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| ***Title:*** | CR on the CSI periodic reporting for Dormant SCell state in Rel16 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Moderator (Samsung), | | | | | | | | | |
| ***Source to TSG:*** | RAN1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | LTE\_euCA-Core | | | | |  | ***Date:*** | | | 2022-08-25 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In TS 36.213, RRC parameter *cqi-pmi-ConfigIndex2Dormant* and *ri-ConfigIndex2Dormant* are configured when multiple CSI subframe sets are configured for the UE. The issue is that the RRC configuration for pattern of second CSI subframe set is configured but there is no RRC parameter to determine the periodicity and offset for CSI reporting which is related to the second CSI subframe set, i.e., cqi-pmi-ConfigIndex2Dormant and ri-ConfigIndex2Dormant are not configured as follow in TS 36.331. Therefore, UE behavior of periodic CSI reporting for dormant SCell is unclear. To remove the ambiguity without ASN.1 impact, those missing RRC parameters can be removed in Rel-16. | | | | | | | | |
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| ***Summary of change:*** | | Therere is RRC parameter misalignment (*cqi-pmi-ConfigIndex2Dormant* and *ri-ConfigIndex2Dormant*) between TS 36.213 and TS 36.331. Considering current stage, those missing parameters are removed in TS 36.213 in Rel-16. | | | | | | | | |
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| ***Consequences if not approved:*** | | Misalignment between TS 36.213 and TS 36.331 exists and UE behavior is unclear for periodic CSI reporting for dormant SCell. | | | | | | | | |
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| ***Clauses affected:*** | | 7.2.2 | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **N** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **N** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **N** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

### 7.2.2 Periodic CSI Reporting using PUCCH

**< Unchanged parts are omitted >**

For a UE configured in transmission mode 1-9 and for each serving cell, or for a UE configured in transmission mode 10 and for each CSI process in each serving cell, the periodicity  (in subframes) and offset  (in subframes) for CQI/PMI reporting are determined based on the parameter *cqi-pmi-ConfigIndex* () for the activated serving cells, given in Table 7.2.2-1A for FDD or for FDD-TDD with primary cell frame structure 1 and Table 7.2.2-1C for TDD or for FDD-TDD and primary cell frame structure type 2. For the dormant serving cells,  is given by the parameter *cqi-pmi-ConfigIndexDormant.* The periodicity  and relative offset  for RI reporting are determined based on the parameter *ri-ConfigIndex* () for the activated serving cells, given in Table 7.2.2-1B. For the serving cells in the dormant state,  is given by the parameter *ri-ConfigIndexDormant.* For a UE configured in transmission mode 9 and for each serving cell, or for a UE configured in transmission mode 10 and for each CSI process in each serving cell, if the UE is configured with parameter *eMIMO-Type* by higher layers, except with higher layer parameter *csi-RS-NZP-mode* configured, and *eMIMO-Type* is set to 'CLASS B', and the number of configured CSI-RS resources is more than one, or the UE is configured with higher layer parameter *eMIMO-Type* set to 'CLASS B' and higher layer parameter *csi-RS-NZP-mode* set to 'multiShot', and the number of activated CSI-RS resources is more than one, when RI reporting is configured, the periodicity  for CRI reporting is determined based on the parameter *cri-ConfigIndex* () given in Table 7.2.2-1J. When the number of antenna ports in each configured CSI-RS resource is one, the periodicity  and relative offset for CRI reporting are determined based on the parameter *cri-ConfigIndex* () given in Table 7.2.2-1K. If a UE is configured with parameter *eMIMO-Type* and *eMIMO-Type2*, the parameters *cqi-pmi-ConfigIndex*, *ri-ConfigIndex* are for *eMIMO-Type2*. If a UE is configured with higher layer parameter *eMIMO-Type* and *eMIMO-Type2*, and *eMIMO-Type* is set to 'CLASS B' with more than one CSI-RS resource configured, and *eMIMO-Type2* is set to 'CLASS B' with one CSI-RS resource configured, the parameter c*ri-ConfigIndex* is for *eMIMO-Type*.If a UE is configured with parameter *eMIMO-Type* and *eMIMO-Type2*, and *eMIMO-Type* is set to 'CLASS A', and *eMIMO-Type2* is set to 'CLASS B' with one CSI-RS resource configured, the periodicity  and relative offset  for wideband first PMI/RI reporting for *eMIMO-Type* are determined based on the parameter *periodicityOffsetIndex* () given in Table 7.2.2-1L. The parameters *cqi-pmi-ConfigIndex*, *cqi-pmi-ConfigIndexDormant,* *ri-ConfigIndex, ri-ConfigIndexDormant,* *periodicityOffsetIndex,* and *cri-ConfigIndex* are configured by higher layer signalling. The relative reporting offset for RI  takes values from the set . If a UE is configured to report for more than one CSI subframe set then parameter *cqi-pmi-ConfigIndex*, *ri-ConfigIndex*, *periodicityOffsetIndex,* and *cri-ConfigIndex* respectively correspond to the CQI/PMI, RI, PMI/RI, and CRI periodicity and relative reporting offset for subframe set 1 and *cqi-pmi-ConfigIndex2*, *,* *ri-ConfigIndex*2,*, periodicityOffsetIndex2,* and *cri-ConfigIndex*2 respectively correspond to the CQI/PMI, RI, PMI/RI, and CRI periodicity and relative reporting offset for subframe set 2. For a UE configured with transmission mode 10, the parameters *cqi-pmi-ConfigIndex* , *ri-ConfigIndex*, *periodicityOffsetIndex, cri-ConfigIndex*, *cqi-pmi-ConfigIndex2*, *ri-ConfigIndex*2, *periodicityOffsetIndex2,* and *cri-ConfigIndex*2 can be configured for each CSI process. A BL/CE UE is not expected to be configured with the parameter *ri-ConfigIndex*.

**< Unchanged parts are omitted >**