**3GPP TSG- RAN WG1 Meeting #100b R1-2xxxxxx**

**e-Meeting, April 20th – 30th, 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.212** | **CR** | **DRAFT** | **rev** | **-** | **Current version:** | **15.8.0** |  |
|  | | | | | | | | |
| *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 | **X** | Core Network |  |

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| ***Title:*** | Draft CR on L1-RSRP report on PUSCH | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Apple Inc | | | | | | | | | |
| ***Source to TSG:*** | R1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_newRAT-Core | | | | |  | ***Date:*** | | | 2020-04-10 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-15 |
|  | *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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In Current spec, the detail reporting format for L1-RSRP by PUCCH is clearly defined in Table 6.3.1.1.2-8. However, the detail reporting format for L1-RSRP by PUSCH is not defined, but only a general format is defined in Table 6.3.2.1.2-3, where the association between each reported SSBRI/CRI and RSRP/differential RSRP is not defined. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Define the detail format for L1-RSRP reproted on PUSCH, which is the same as that reported on PUCCH. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The detail association between each reported SSBRI/CRI and the RSRP/differential RSRP is unclear, when reported by PUSCH. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.3.2.1.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | Impac analysis:  This is based on common understanding. So no impact on legacy gNB and UE. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

##### **6.3.2.1.2 CSI**

< Unchanged parts are omitted >

For CSI on PUSCH, two UCI bit sequences are generated,  and . The CSI fields of all CSI reports, in the order from upper part to lower part in Table 6.3.2.1.2-6, are mapped to the UCI bit sequence  starting with . The CSI fields of all CSI reports, in the order from upper part to lower part in Table 6.3.2.1.2-7, are mapped to the UCI bit sequence  starting with .

The mapping order of CSI fields of one report for CRI/RSRP or SSBRI/RSRP reporting is provided in Table 6.3.1.1.2-8. The procedure in section 6.3.2 described for CSI part 1 is also applicable for one report for CRI/RSRP or SSBRI/RSRP reporting.

Table 6.3.2.1.2-3: Mapping order of CSI fields of one CSI report, CSI part 1

|  |  |
| --- | --- |
| CSI report number | CSI fields |
| CSI report #n  CSI part 1 | CRI as in Tables 6.3.1.1.2-3/4/6, if reported |
| Rank Indicator as in Tables 6.3.1.1.2-3/4/5, if reported |
| Wideband CQI for the first TB as in Tables 6.3.1.1.2-3/4/5, if reported |
| Subband differential CQI for the first TB with increasing order of subband number as in Tables 6.3.1.1.2-3/4/5, if reported |
| Indicator of the number of non-zero wideband amplitude coefficients for layer 0 as in Table 6.3.1.1.2-5, if reported |
| Indicator of the number of non-zero wideband amplitude coefficients for layer 1 as in Table 6.3.1.1.2-5 (if the rank according to the reported RI is equal to one, this field is set to all zeros), if 2-layer PMI reporting is allowed according to the rank restriction in Subclauses 5.2.2.2.3 and 5.2.2.2.4 [6, TS 38.214] and if reported |
|  |
|  |
| Note: Subbands for given CSI report *n* indicated by the higher layer parameter *csi-ReportingBand* are numbered continuously in the increasing order with the lowest subband of *csi-ReportingBand* as subband 0. | |

< Unchanged parts are omitted >

Table 6.3.2.1.2-6: Mapping order of CSI reports to UCI bit sequence ,   
with two-part CSI report(s)

|  |  |
| --- | --- |
| UCI bit sequence | CSI report number |
|  | CSI part 1 of CSI report #1 as in Table 6.3.2.1.2-3 or Table 6.3.1.1.2-8 |
| CSI part 1 of CSI report #2 as in Table 6.3.2.1.2-3 or Table 6.3.1.1.2-8 |
| … |
| CSI part 1 of CSI report #n as in Table 6.3.2.1.2-3 or Table 6.3.1.1.2-8 |