**3GPP TSG RAN WG1 #100b-e R1-20xxxxx**

**April 20th – April 30th, 2020**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v11.2* | | | | | | | | |
| **DRAFT CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **TS38.214** | **CR** | **draft** | **rev** | **-** | **Current version:** | **15.9.0** |  |
|  | | | | | | | | |
| *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 | **X** | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | CR to 38.214 clarification on resource and port occupation of duplicate CSI-RS resources | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Qualcomm Incorporated | | | | | | | | | |
| ***Source to TSG:*** | R1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_newRAT-Core | | | | |  | | ***Date:*** | | 2020-04-20 |
|  |  | | | |  | | |  | |  |
| ***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 38.214 spec, if a CSI-RS resource is referred by N report settings, it is counted N times. However, it is unclear of resource and port occupation if a CSI-RS resource is referred by N times in one report setting.  A typical scenario for this configuration is that the network may ask the UE to measure CSI under different interference hypothes, e.g., {CMR0, CMR0} associated with {IMR0, IMR1}. In this case, there would be two CSI measurement so the memory cost is doubled compared to the CMR0 is configured once. Hence, CMR0 and the ports within CMR0 shall be counted twice.  Without the clarification, if a UE report CPU capability of 8 and report Type I capability of supporting 1 resource of 32 ports. The network may trigger a Type I CSI report by replicating a 32-port resource for 8 times, which exceeds the actual UE capability. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Clarify that if a CSI-RS resource is referred by N times in one or more than one report settings, the CSI-RS resource and the ports within the resource are counted N times. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Ambiguous resource and port counting if a CSI-RS resource is referred by N times in one or more CSI report setting. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.2.1.6 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | * There is no bacward compatibility impact, it is an alignment of UE and BS behavior based on common understanding. | | | | | | | | |

### 5.2.1.6 CSI processing criteria

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> unchanged text omitted <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

In any slot, the UE is not expected to have more active CSI-RS ports or active CSI-RS resources than reported as capability. NZP CSI-RS resource is active in a duration of time defined as follows. For aperiodic CSI-RS, starting from the end of the PDCCH containing the request and ending at the end of the PUSCH containing the report associated with this aperiodic CSI-RS. For semi-persistent CSI-RS, starting from the end of when the activation command is applied, and ending at the end of when the deactivation command is applied. For periodic CSI-RS, starting when the periodic CSI-RS is configured by higher layer signalling, and ending when the periodic CSI-RS configuration is released. If a CSI-RS resource is referred *N* times by one or more CSI Reporting Settings, the CSI-RS resource and the CSI-RS ports within the CSI-RS resource are counted *N* times.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> unchanged text omitted <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<