**3GPP TSG- Meeting #R1-240nnnn**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** | **---** | **rev** |  | **Current version:** | **18.2.0** |  |
|  | | | | | | | | |
| *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:*** | Correction on beam application timing for mDCI mTRP for Rel-18 unified TCI framework | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Moderator (MediaTek. Inc), NTT DOCOMO. Inc, Ericsson, Samsung, ASUSTeK | | | | | | | | | |
| ***Source to TSG:*** | --- | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_MIMO\_evo\_DL\_UL-Core | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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:*** | | R1-2310669 was agreed as shadow CR of Rel.17 CR in RAN1#114bis, which describes that one indicated TCI state in the latest DCI in time will be applied if there is more than one indicated TCI states applied in the same beam application timing. This description has a problem for mDCI mTRP operation. If multiple HARQ-ACK bits are transmitted on a PUCCH/PUSCH, the indicated TCI state associated with the latest DCI with positive HARQ-ACK value is applied regardless of *coresetPoolIndex* value. However, for joint HARQ-ACK feedback for mDCI mTRP, one PUCCH/PUSCH contains multiple HARQ-ACK bits associated with two different coresetPoolIndex values. Hence, the current Rel.18 specification results in cross-TRP TCI indication in case of joint HARQ-ACK feedback for mDCI mTRP, which is not aligned with the previous RAN1 agreement. | | | | | | | | |
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| ***Summary of change:*** | | Clarify “the latest DCI with positive HARQ-ACK value” to determine the BAT is associated with each *coresetPoolIndex* value for mDCI mTRP when *coresetPoolIndex* value is applicable. | | | | | | | | |
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| ***Consequences if not approved:*** | | The specification is not aligned with previous RAN1 agreement. | | | | | | | | |
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| ***Clauses affected:*** | | 5.4 | | | | | | | | |
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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:*** | |  | | | | | | | | |

5.1.5       Antenna ports quasi co-location

-------------------------------------------Unchanged parts are omitted------------------------------------------

When a UE configured with *dl-OrJointTCI-StateList* would transmit a PUCCH with positive HARQ-ACK or a PUSCH with positive HARQ-ACK corresponding to the DCI carrying the TCI State indication and without DL assignment, or corresponding to the PDSCH scheduled by the DCI carrying the TCI State indication, and if the indicated TCI State(s) is/are different from the previously indicated one(s), the indicatedTCI-State(s) and/or *TCI-UL-State*(s)should be applied starting from the first slot that is at least symbols after the last symbol of the PUCCH or the PUSCH, and if the UE receives more than one indicated TCI state for a CC/BWP to be applied starting from the first slot that is at least symbols after the last symbol of the PUCCH or the PUSCH, the indicated TCI state carried in the latest DCI, for the corresponding *coresetPoolIndex* value when applicable, in time corresponding to positive HARQ-ACK value is applied. The first slot and the symbols are both determined on the active BWP with the smallest SCS among the BWP(s) from the CCs applying the indicated *TCI-State*(s) or *TCI-UL-State*(s) that are active at the end of the PUCCH or the PUSCH carrying the positive HARQ-ACK.



-------------------------------------------Unchanged parts are omitted----------------------------------