3GPP TSG-RAN WG4 Meeting #96-e R4-####

Electronic Meeting, 17-28, Aug., 2020

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **38.133** | **CR** | **0939** | **rev** | **-** | **Current version:** | **16.4.0** |  |
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| *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:***  | CR on uplink spatial relation switch delay (section 8.12) |
|  |  |
| ***Source to WG:*** | Intel |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | NR\_RRM\_enh-Core |  | ***Date:*** | 2020-08-06 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***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 canbe 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)* |
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| ***Reason for change:*** | Uplink spatial relation switch delay section is in-complete. |
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| ***Summary of change:*** | if DL-RS is known but not in active TCI state, MAC-CE and RRC based UL spatial info switch requirement are still needed where no time tracking is applied. |
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| ***Consequences if not approved:*** | The specification is not correct. |
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| ***Clauses affected:*** | 8.x |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** | **X** |  |  Test specifications | TS 38.533 |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

Start of Change

### 8.12.3 MAC-CE based spatial relation switch delay

If the target spatial relation associated to DL RS is known, upon receiving PDSCH carrying MAC-CE activation command in slot n, for UL spatial relation switch for PUCCH or semi-persistent SRS transmission of serving cell with a target UL spatial relation, the UE shall be able to transmit PUCCH or semi-persistent SRS with the target UL spatial relation in the slot n+ THARQ + $3N\_{slot}^{subframe,µ}$+ 1 when *beamCorrespondenceWithoutUL-BeamSweeping* sets to 1 where THARQ is the timing between DL data transmission and acknowledgement as specified in TS 38.213 [3].

### 8.12.4 DCI based spatial relation switch delay

If the target spatial relation associated to DL RS is known, when a UE receives the DCI triggering aperiodic SRS at slot n with the higher layer parameter *spatialRelationInfo*, UE shall be able to transmit aperiodic SRS with target spatial relation of the serving cell on which spatial relation switch occurs in the slot+1, where, *k* is configured via higher layer parameter *slotOffset*[2]for each triggered SRS resources set and is based on the subcarrier spacing of the triggered SRS transmission, *µSRS* and *µPDCCH* are the subcarrier spacing configurations for triggered SRS and PDCCH carrying the triggering command respectively in TS 38.214 [26].

The known condition for spatial relation associated to DL RS defined in clause 8.12.2 is applied.

### 8.12.5 RRC based spatial relation switch delay

If the target spatial relation associated to DL RS is known, upon receiving PDSCH carrying RRC activation command at slot n, UE shall be able to transmit target periodic SRS with spatial relation of the serving cell on which periodic SRS with spatial relation reconfigured in the slot n+ TRRC\_processing+1 when *beamCorrespondenceWithoutUL-BeamSweeping* sets to 1 where TRRC\_processing is the RRC processing delay defined in TS38.331 [2].

End of Change