**3GPP TSG-RAN WG2 Meeting #112 electronic R2-2010772**

**Electronic Meeting, Nov 2-13, 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
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|  | **38.321** | **CR** | **0994** | **rev** | **1** | **Current version:** | **16.2.1** |  |
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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 | **x** | Core Network |  |

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| ***Title:***  | Correction for CC list operation for TCI state update MAC CE |
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| ***Source to WG:*** | Ericsson, Samsung |
| ***Source to TSG:*** | R2 |
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| ***Work item code:*** | NR\_newRAT-Core, NR\_eMIMO-Core |  | ***Date:*** | 2020-08-01 |
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| ***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 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:*** | With the current text in TS 38.331 it is not precluded to enable single DCI based multi-TRP/panel operation in one or more CC(s)/BWP(s) included in simultaneousTCI-UpdateList1 or simultaneousTCI-UpdateList2 by using Enhanced TCI States Activation/Deactivation for UE-specific PDSCH MAC CE. However, the current form of the Enhanced TCI States Activation/Deactivation for UE-specific PDSCH MAC CE does not support this operation. |
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| ***Summary of change:*** | In order to support the functionality across CCs, the yellow sentence should be added to the field description of Serving Cell ID in the Enhanced TCI States Activation/Deactivation for UE-specific PDSCH MAC- Serving Cell ID: This field indicates the identity of the Serving Cell for which the MAC CE applies. The length of the field is 5 bits. If the UE has indicated to support the feature and if the indicated Serving Cell is configured as part of a *simultaneousTCI-UpdateList1* or *simultaneousTCI-UpdateList2* as specified in TS 38.331 [5], this MAC CE applies to all the Serving Cells configured in the set *simultaneousTCI-UpdateList1* or *simultaneousTCI-UpdateList2*, respectively;**Impact analysis**.Impacted 5G architecture options:NR SA, NR-DC, NE-DC, EN-DCImpacted functionality:MIMOInter-operability:1. If the network is implemented according to the CR and the UE is not, the network assumes UE has updated the TCI state across CCs but UE has not.
2. If the UE is implemented according to the CR and the network is not, the network assumes UE does not update the TCI state across CCs but UE does update the TCI state across CCs.
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| ***Consequences if not approved:*** | Functionality to enable single DCI based multi-TRP/panel operation in one or more CC(s)/BWP(s) included in simultaneousTCI-UpdateList1 or simultaneousTCI-UpdateList2 by using Enhanced TCI States Activation/Deactivation for UE-specific PDSCH MAC CE is not supported. |
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| ***Clauses affected:*** | 6.1.2.24 |
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|  | **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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |   |

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| The first of change |

#### 6.1.3.24 Enhanced TCI States Activation/Deactivation for UE-specific PDSCH MAC CE

The Enhanced TCI States Activation/Deactivation for UE-specific PDSCH MAC CE is identified by a MAC PDU subheader with eLCID as specified in Table 6.2.1-1b. It has a variable size consisting of following fields:

- Serving Cell ID: This field indicates the identity of the Serving Cell for which the MAC CE applies. The length of the field is 5 bits. If the UE has indicated to support the feature and if the indicated Serving Cell is configured as part of a *simultaneousTCI-UpdateList1* or *simultaneousTCI-UpdateList2* as specified in TS 38.331 [5], this MAC CE applies to all the Serving Cells configured in the set *simultaneousTCI-UpdateList1* or *simultaneousTCI-UpdateList2*, respectively;

- BWP ID: This field indicates a DL BWP for which the MAC CE applies as the codepoint of the DCI *bandwidth part indicator* field as specified in TS 38.212 [9]. The length of the BWP ID field is 2 bits;

- Ci: This field indicates whether the octet containing TCI state IDi,2 is present. If this field is set to "1", the octet containing TCI state IDi,2 is present. If this field is set to "0", the octet containing TCI state IDi,2 is not present;

- TCI state IDi,j: This field indicates the TCI state identified by *TCI-StateId* as specified in TS 38.331 [5], where i is the index of the codepoint of the DCI *Transmission configuration indication* field as specified in TS 38.212 [9] and TCI state IDi,j denotes the jth TCI state indicated for the ith codepoint in the DCI *Transmission Configuration Indication* field. The TCI codepoint to which the TCI States are mapped is determined by its ordinal position among all the TCI codepoints with sets of TCI state IDi,j fields, i.e. the first TCI codepoint with TCI state ID0,1 and TCI state ID0,2 shall be mapped to the codepoint value 0, the second TCI codepoint with TCI state ID1,1 and TCI state ID1,2 shall be mapped to the codepoint value 1 and so on. The TCI state IDi,2 is optional based on the indication of the Ci field. The maximum number of activated TCI codepoint is 8 and the maximum number of TCI states mapped to a TCI codepoint is 2.

- R: Reserved bit, set to "0".



Figure 6.1.3.24-1: Enhanced TCI States Activation/Deactivation for UE-specific PDSCH MAC CE

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| The end of change |