**3GPP TSG RAN WG2#112-e R2-2010799**

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

**Title: DRAFT Reply** LS on multi-CC simultaneous TCI activation with multi-TRP/panel transmission

**Release:** Release 16

**Work Item:** NR\_eMIMO-Core

**Source:** Ericsson (to be RAN WG2)

**To:** RAN WG1

**Contact Person:**

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**Attachments:** None

# Overall Description:

RAN2 has discussed the LS from RAN1 about whether/how to support the feature of multi-CC simultaneous TCI activation for PDSCH with the two features specified for multi-TRP/panel transmission.

Question from RAN1:

**Question:** Is the following understanding is correct?

* By current RAN2 specification, 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.

**Response:**

RAN2 made the following conclusion in RAN2 #109e agreements,

1. If the CC indicated in the MAC CE is configured as part of a CC-list, this MAC CE applies to all the CCs in the CC list; otherwise, the MAC CE applies to single CC.
2. Multiple TRP case is not considered for MAC CEs regarding multiple CCs/BWPs, i.e. TCI States Activation/Deactivation for UE-specific PDSCH MAC CE and TCI State Indication for UE-specific PDCCH MAC CE.

However, it was not discussed in detail if this applies to mTRP sPDCCH as well as mTRP mPDCCH. RAN2 acknowledges the conclusion from RAN1 that at least mTRP mPDCCH is not supported.

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| **Conclusion (RAN1#102-e)**  - By RRC configuration, each CC list cannot include a CC/BWP in which two CORESET pools are configured. |

In RAN2#111-e RAN2 also revised the field descriptions of the multi CC lists in R2-2008564 as follows:

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| ***simultaneousTCI-UpdateList1, simultaneousTCI-UpdateList2***  List of serving cells which can be updated simultaneously for TCI relation with a MAC CE. The *simultaneousTCI-UpdateList1* and *simultaneousTCI-UpdateList2* shall not contain same serving cells. Network should not configure serving cells that are configured with a BWP with two different values for the *coresetPoolIndex* in these lists. |
| ***simultaneousSpatial-UpdatedList1, simultaneousSpatial-UpdatedList2***  List of serving cells which can be updated simultaneously for spatial relation with a MAC CE. The *simultaneousSpatial-UpdatedList1* and *simultaneousSpatial-UpdatedList2* shall not contain same serving cells. Network should not configure serving cells that are configured with a BWP with two different values for the *coresetPoolIndex* in these lists. |

In RAN2#112-e the following agreement was made regarding the use of the Enhanced TCI States Activation/Deactivation for UE-specific PDSCH MAC and the CC lists:

3. If the indicated Serving Cell is configured as part of a simultaneousTCI-UpdateList1 or simultaneousTCI-UpdateList2, this MAC CE applies to all the Serving Cells configured in the set simultaneousTCI-UpdateList1 or simultaneousTCI-UpdateList2, respectively.

Further, RAN2 agreed to introduce a new capability bit “*twoTCI-Act-servingCellInCC-List-r16*” for the agreed operation, as copied below.

***twoTCI-Act-servingCellInCC-List-r16***

Indicates whether the UE supports receiving the Enhanced TCI States Activation/Deactivation for UE-specific PDSCH MAC CE (as specified in TS 38.321 [8] clause 6.1.3.24) indicating a serving cell configured as part of simultaneousTCI-UpdateList1 or simultaneousTCI-UpdateList2 as specified in TS 38.331 [9].

If the UE indicates support of this for a FR, the UE shall indicate support of simultaneousTCI-ActMultipleCC-r16 for this FR and indicate support of at least one of singleDCI-SDM-scheme-r16, supportFDM-SchemeA-r16, supportFDM-SchemeB-r16, supportTDM-SchemeA-r16 or supportInter-slotTDM-r16 for at least one band or component carrier of this FR."

With the above change, the response to the question from RAN1 is that the understanding is correct: 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.

# Actions to RAN WG2

RAN2 respectfully ask RAN1 to take the above response into account.

# Date of next TSG-RAN WG2 meetings:

TSG-RAN WG2 Meeting#113 Q1 2021