3GPP TSG-RAN WG2 Meeting #127 R2-2407701

Maastricht, Netherlands, Aug 19th – 23rd, 2024

**Agenda item: 7.20**

**Source: Ericsson**

**Title: Summary**

# Introduction

**[AT127][201][MIMOevo] Proposals for RRC changes (Ericsson)**

Intended outcome: Review the proposed RRC changes from the company contributions, taking into account the agreements so far. Summary/proposals in R2-2407701 for discussion in the CB session.

Deadline: before Thursday CB session

# 2 Contact Points

Respondents to the email discussion are kindly asked to fill in the following table.

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| --- | --- | --- |
| Company | Name | Email Address |
| Ericsson | Helka-Liina Määttänen | Helka-liina.maattanen@ericsson.com |
| CATT | Da Wang | wangda@catt.cn |
| Nokia | Subin Narayanan | Subin.narayanan@nokia.com |
| Samsung | Shiyang Leng | Shiyang.leng@samsung.com |
| Huawei, HiSilicon | David Lecompte | david.lecompte@huawei.com |
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# 3 Discussion

R2-2406488 Correction to MIMO Evolution Samsung draftCR Rel-18 38.331 18.2.0 NR\_MIMO\_evo\_DL\_UL-Core

1. For mappingPattern-r17 in IE ConfiguredGrantConfig and IE PUSCH-Config, change the presence condition SRSsets to optional presence when two SRS sets are configured.

2. In the field description of n-TimingAdvanceOffset2 clarify that N\_TA-Offset2 is applied only for inter-cell multi-DCI multi-TRP operation with two TA, i.e, for PDCCH order CFRA towards the additional PCI and for all UL transmission associated to tag2.

Discussion

P1

* CATT think change 1 has Rel-17 impact so perhaps we should focus on R18 change. HW, QC agree with this view.
* It is clarified in the spec that for Rel-18 mappingPattern-r17 in IE ConfiguredGrantConfig and IE PUSCH-Config is absent, no changes to Rel-17 is needed. Detailed changes to the RRC spec can be checked further.

**Q1. Please provide your view if you agree with the below further suggestion(provided by Samsung) for Change 1?**

|  |  |
| --- | --- |
| *SRSsets* | This field is mandatory present when UE is configured with two SRS sets in either *srs-ResourceSetToAddModList* or *srs-ResourceSetToAddModListDCI-0-2* with usage codebook or non-codebook and none of *multipanelSchemeSDM* or *multipanelSchemeSFN* or *sTx-2Panel* is configured. It is absent otherwise. |

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| Company | Agree with revised suggestion | Comments/other wordings |
| CATT | Agree | I think there are two field descriptions of *SRSsets* which should be updated. One is in rrc-ConfiguredUplinkGrant, and the other is in PUSCH-Config. |
| Nokia | Yes | Two SRS sets with *usage* for *codebook* or *noncodebook can be configured for multipanelSchemeSDM or multipanelSchemeSFN or sTx-2Panel is configured.* So above corrections is needed in the condition SRSsets |
| Samsung | agree |  |
| Huawei, HiSilicon | Agree |  |
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[CB] P2

**Q2. Please provide your view if you agree with the below further suggestion(provided by Samsung) for Change 2?**

***n-TimingAdvanceOffset2***

The *N\_TA-Offset2* to be applied for PDCCH order CFRA towards the active *additionalPCI* as specified in TS 38.133 [14] clause 7.1.2 and for all uplink transmissions on this serving cell associated to *tag2* as specified in TS 38.213 [13] clause 4.2. This field is only present if more than one value for the field *coresetPoolIndex* is configured in *controlResourceSet* for the same DL BWP and *SSB-MTC-AdditionalPCI* is configured. It is absent otherwise. If absent, the *N\_TA-Offset* is applied for all uplink transmissions on this serving cell associated to *tag2*.

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| Company | Agree with revised suggestion | Comments/other wordings |
| CATT | See comments | Suggest removing the change of “This field is only present if more than one value for the field coresetPoolIndex is configured in controlResourceSet for the same DL BWP and SSB-MTC-AdditionalPCI is configured.”, which is redundant with the field description of *tag2* and addtionalPCI is already mentioned in the first sentence. |
| Nokia | Yes | Aligns with RAN1 agreement |
| Samsung | agree | The point is “only present” in this case and absent in other cases. So prefer to keep it. |
| Huawei, HiSilicon | See comments | Agree with CATT for the coresetPoolIndex, but the additional PCI should be kept. |
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R2-2406574 Correction on simultaneousU-TCI-UpdateListx CATT draftCR Rel-18 38.331 18.2.0 NR\_MIMO\_evo\_DL\_UL-Core

Discussion

* Ericsson think the intention is OK but exact changes need further checking.

[CB]

In RAN2#124 meeting, RAN2 received the reply LS from RAN1 (R2-23113910), for the issue (Question 2b as below) about simultaneous unified TCI state update, RAN1 gived the answer as following.

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| Question 2b:  Is there any restrictions in configuring the serving cells of one list for sDCI mTRP, mDCI mTRP or sTRP operation?  Answer 2b:  It has been agreed in RAN1 that cells operated as sDCI mTRP, mDCI mTRP and sTRP should not be configured in the same list, i.e., they should be configured with separate lists for simultaneous unified TCI state(s) update. Other than this, there is no further/other restriction(s). |

**Q3. Please provide your view on how to enhance the field description to guide network to only include such serving cells in same list that are configured with one of mTRP mDCI, mTRP sDCI and single cell(sTRP)? Note that we already have sentence to separate mTRP mDCI from mTRP sDCI and sTRP.**

* **Option 1 as in R2-2406574**

***simultaneousU-TCI-UpdateList1, simultaneousU-TCI-UpdateList2, simultaneousU-TCI-UpdateList3, simultaneousU-TCI-UpdateList4***

List of serving cells for which the Unified TCI States Activation/Deactivation MAC CE applies simultaneously, as specified in TS 38.321 [3] clause 6.1.3.47. The different lists shall not contain same serving cells. Network only configures in these lists serving cells that are configured with *unifiedTCI-StateType*. Network should not configure serving cells that are configured with a BWP with different number of *coresetPoolIndexes* in the same list. Network should not configure serving cells that are configured with a BWP with different number of SRS resource sets with *usage* for *codebook* or *noncodebook* in the same list.

* **Option 2 use applyIndicatedTCI-State (of any IE)**

***simultaneousU-TCI-UpdateList1, simultaneousU-TCI-UpdateList2, simultaneousU-TCI-UpdateList3, simultaneousU-TCI-UpdateList4***

List of serving cells for which the Unified TCI States Activation/Deactivation MAC CE applies simultaneously, as specified in TS 38.321 [3] clause 6.1.3.47. The different lists shall not contain same serving cells. Network only configures in these lists serving cells that are configured with *unifiedTCI-StateType*. Network should not configure serving cells that are configured with a BWP with different number of *coresetPoolIndexes* in the same list. Network should not configure serving cells that are configured with a BWP with applyIndicatedTCI-State in the same list.

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| Company | O1 | O2 | Comments/other suggestions |
| CATT | Agree |  | We think Option2 is incorrect, since the last sentence in Option 2 means all of the serving cell with mTRP cannot be configured in the same list, which is against RAN1 agreement. Because *applyIndicatedTCI-State* is configured in many IEs, including *PDCCH-ConfigCommon, ConfiguredGrantConfig* and *ControlResourceSet.* |
| Nokia |  |  | prefer option 2, because with applyIndicatedTCI-State IE, the case of sDCI mTRP and sTRP can be excluded. |
| Samsung |  |  | O2 seems okay  Not sure about O1, do we use “different number of SRS resource sets with *usage* for *codebook* or *noncodebook*” to define mDCI mTRP? |
| Huawei, HiSilicon | Agree |  | Option 2 is unclear and may cause confusion because applyIndicatedTCI-State exists many IEs, e.g., in ConfiguredGrantConfig, ControlResourceSet, CSI-AssociatedReportConfigInfo and several other places, while some are in UL BWP and some are in DL BWP.  For Option 1, we can add two SRS sets in either *srs-ResourceSetToAddModList* or *srs-ResourceSetToAddModListDCI-0-2* with usage codebook or non-codebook to align with descriptions in other places. |
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# 4 Conclusion

**Proposal 1 For mappingPattern-r17 in IE ConfiguredGrantConfig and IE PUSCH-Config:**

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| *SRSsets* | This field is mandatory present when UE is configured with two SRS sets in either *srs-ResourceSetToAddModList* or *srs-ResourceSetToAddModListDCI-0-2* with usage codebook or non-codebook and none of *multipanelSchemeSDM* or *multipanelSchemeSFN* or *sTx-2Panel* is configured. It is absent otherwise. |

**Proposal 2**

***n-TimingAdvanceOffset2***

The *N\_TA-Offset2* to be applied for PDCCH order CFRA towards the active *additionalPCI* as specified in TS 38.133 [14] clause 7.1.2 and for all uplink transmissions on this serving cell associated to *tag2* as specified in TS 38.213 [13] clause 4.2. This field is always present if *SSB-MTC-AdditionalPCI* is configured. It is absent otherwise. If absent, the *N\_TA-Offset* is applied for all uplink transmissions on this serving cell associated to *tag2*.

Note: Since the tag2 has the restriction of second coresetpoolindex it is removed here but additional PCI is not mentioned in first sentence as restriction it is kept.

**Proposal 3 Postpone the change for *simultaneousU-TCI-UpdateList1, simultaneousU-TCI-UpdateList2, simultaneousU-TCI-UpdateList3, simultaneousU-TCI-UpdateList4***

There seems to be no consensus between Option1 and Option 2. Further, from MAC/network perspective it should be obvious that only one kind of serving cells can be configured in the list, this change does not feel urgent.