**3GPP TSG RAN WG1 #110bis-e R1-220xxxx**

**e-Meeting, October 10th – 19th, 2022**

**Agenda item:** 8.1

**Source:** Moderator (Qualcomm)

**Title:** Summary of [110bis-e-R17-MIMO-03] Email discussion on miscellaneous corrections on DL mTRP for alignment CRs

**Document for:** Discussion and Decision

1. Issue 1

Regarding Huawei’s CR, the clarification makes the spec clearer, and I did not see any concern so far (in the previous round of discussions). Regarding vivo’s CR, the following is suggested which is based on both vivo’s CR as well as SS’s suggestion (more conservative approach to ensure nothing remains ambiguous).

**Proposal 1: The following changes in red are endorsed for alignment CR (38.213, Section 10.1).**

**Note: Changing semicolon before “if any” to comma as well as starting a new sub-bullet for the text from “where” are also part of the changes.**

If a UE

- …

- is provided *two-QCLTypeDforPDCCHRepetition*

the UE monitors PDCCHs only in a first CORESET with *qcl-Type* set to first 'typeD' properties and, if any, in a second CORESET with *qcl-Type* set to second 'typeD' properties that are different than the first 'typeD' properties, and in any other CORESET from the multiple CORESETs with corresponding *qcl-Type* set to either the first 'typeD' properties ~~and/~~or to the second 'typeD' properties

- …

- excluding CSS sets and USS sets associated with CORESETs with *qcl-Type* set to first 'typeD' properties, the second CORESET corresponds to the CSS set with the lowest index in the cell with the lowest index containing CSS sets, if any~~;~~, otherwise, to the USS set with the lowest index in the cell with lowest index,

- where the CSS set or the USS set includes *searchSpaceLinkingId* with same value as any CSS set or any USS set associated with CORESETs with *qcl-Type* set to first 'typeD' properties

- the lowest USS set index is determined over all USS sets with at least one PDCCH candidate in overlapping PDCCH monitoring occasions

If a UE

- …

- one or more CORESETs have two activated TCI states, and

- reports *twoTypeDcapabilityname*

the UE monitors PDCCHs only in a CORESET with a first *qcl-Type* set to first 'typeD' properties and, if any, a second *qcl-Type* set to second 'typeD' properties that are different than the first 'typeD' properties, and in any other CORESET from the multiple CORESETs with corresponding *qcl-Type* set to the first 'typeD' properties and/or to the second 'typeD' properties

- …

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| **Company** | **Company inputs (if any)** |
| Apple | In general, we are fine. Some extra alignment  two-QCLTypeDforPDCCHRepetition -> twoQCLTypeDforPDCCHRepetition-r17  twoTypeDcapabilityname -> sfn-QCL-TypeD-Collision-twoTCI-r17 |
| Samsung | For the 1st change (add “either” and delete “and/”), we are fine.  For the 2nd change (change “;” to “,” and make subbullet after “where…”), it is unclear what the difference between before and after. We mentioned in the previous round that we are supportive to discuss from vivo’s initial TP. Hence, we don’t support on this change.  For the 3rd change (add “and/”), since “A or B” already includes “A and B”, we don’t support on this change.  In addition, we are supportive on Apple’s extra alignment on RRC parameter and UE capability names. |
| vivo | Support the proposal, and fine with Apple’s revision.  Some companies have given different understanding about the meaning of ‘A or B’ whether includes ‘A and B’. We are afraid that different understanding about the spec would lead to different UE behaviors. Therefore, to align the understanding, ‘and/or’ is a better way without any confusion for all people.  By the way, we have mentioned there have been a lot of ‘and/or’ in the current spec. For example, ‘and/or’ appears 70 times in TS 38.213 v17.3. We believe ‘and/or’ is a more secure approach. |
| Google | Support this proposal and Apple’s extra alignment changes. On the last change in this proposal, we stand similar position as vivo. We believe using “and/or” is safer and inclusive. |
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1. Issue 2

Based on the inputs in the previous round, the original TP by Huawei seems to be acceptable to all companies.

**Proposal 2: The text proposal in R1-2208475 is endorsed for alignment CR (38.213, Section 9.2.3).**

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| **Company** | **Company inputs (if any)** |
| Apple | We are fine with the CR |
| Samsung | We are fine with the alignment CR. |
| Google | We support it. |
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