3GPP TSG-RAN WG2 #130 R2-250XXXX

Valetta, Malta, May 19th – 23rd, 2025

Agenda: x.x.x

Source: Ericsson

Title: Comments on MIMO Running CR for TS 38.331

Document for: Discussion, Decision

# 1 Introduction

This document collects comments for the following e-mail discussion:

**[Post129bis][214][ MIMO\_Ph5] Running CR for 38.331 (Ericsson)**

**Intended outcome:**

1. **Updated running CR based on new agreements for endorsement**
2. **open issue list**

**Deadline: Long**

Companies are invited to provide contact details on the table below.

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# Discussion

The running CR implements the latest agreements from RAN2#129-bis. Note that the running CR may be further updated once a new version of L1 parameters is available. The additions compared to the previous version are with user “RAN2#130”.

Please do not make changes/comments directly on the running CR – companies are invited to provide suggested changes/comments on the table below. To make it easier to track and reply to the comments, please label each comment i.e. [Issue 1], [Issue 2], and so on.

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| Company | Comments | Rapporteur response |
| [Issue 1], OPPO | *pathlossOffsetPRACH-DCI-1-0* is configured per BWP. TCI state is also configured per BWP. However, DCI format 1\_0 is used for all serving cells of the same cell group, for PDCCH-ordered RACH. The field description is now saying that “This field can be configured when at least one TCI state is configured with *pathlossOffset*“. We think that if any TCI state of the same cell group is configured with pathlossOffset, the “1-bit DCI field in DCI format 1\_0 for indicating the pathloss offset for PDCCH-order PRACH transmission“ can be enabled. The suggested change for the field description of *pathlossOffsetPRACH-DCI-1-0* is as follows:Enables the presence of 1-bit DCI field in DCI format 1\_0 for indicating the pathloss offset for PDCCH-order PRACH transmission. This field can be configured when at least one TCI state of the same cell group is configured with *pathlossOffset*. |  |
| SamsungIssue-1 | ***reportTransmissionMode***Indicates the transmission mode for UCI based beam report procedure.It would be good to also capture the high-level description for easy understanding as RAN1 excel sheet indicated: modeA indicates UCI in a dynamically scheduled uplink grant, modeB indicates UCI in a pre-configured type-1 configured uplink grant. |  |
| SamsungIssue-2 | csi-ReportUE-IBM-r19 CSI-ReportUE-IBM-r19 OPTIONAL, -- Need RcurrentBeamReport-r19 ENUMERATED {enable} OPTIONAL -- Need RcurrentBeamReport-r19 can be included in csi-ReportUE-IBM-r19 to group together all UEI report related parameters. |  |
| SamsungIssue-3 | The agreement is not captured.* Reuse resourcesForChannelMeasurement in CSI-ReportConfig. Clarify in the field description that for UEI BM, the new beam to be measured is either CSI-RS (nzp-CSI-RS-ResourceSetList) or SSB (csi-SSB-ResourceSetList).

Can add in FD: either NZP-CSI-RS resources or SSB resources can be configured for UEI report. |  |
| SamsungIssue-4 | ***nrofReportedRS***The number of reported RS in the UE-initated beam report.Value n1 corresponds to 1, and so on. |  |
| Samsung Issue-5 | In RAN1 RRC list, for UEI BR the field name **resourceForSecondChannelOfModeB-r19** has been changed to **configuredPUSCHResourceOfModeB-r19**, suggest to update correspondingly in both ASN.1 and FD since “first/second channel” should be avoided which was used only for discussion purpose. |  |
| SamsungIssue-6 | In RAN1 RRC list, for UEI BR the field name **firstPUCCHResourceConfig-r19** has been changed to **PUCCHResource-r19**, suggest to update correspondingly in both ASN.1 and FD since “first/second channel” should be avoided which was used only for discussion purpose.Also suggest to capture the description below which is indicated in RAN1 RRC list to easy understanding of the parameter: This parameter is used to configure the periodic PUCCH resource for first PUCCH- to request dynamically scheduled PUSCH to carry UE-initated/event-driven beam report for mode-A- to notify Type-1 CG PUSCH to carry UE-initated/event-driven beam report for mode-B. |  |
| SamsungIssue-7 | n1-n2-r19 ENUMERATED {eight-three, six-four, sixteen-two, eight-four, sixteen-four, eight-eight}, typeII-codebookSubsetRestriction-r19 TypeII-X1-X2-CBSR-r19 OPTIONAL -- Need Rn1-n2 and typeII-CBSR are missing for codebook etypeII-r19 according to RAN1 RRC list.

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| CSI-ReportConfig(eTypeII-r19, typeII-Doppler-r19) | n1-n2-typeII-r19 |
| CSI-ReportConfig(eTypeII-r19, typeII-Doppler-r19) | typeII-CBSR-r19 |
| CSI-ReportConfig(eTypeII-r19, typeII-Doppler-r19) | valueOfX1-typeII-CBSR-r19 |
| CSI-ReportConfig(eTypeII-r19, typeII-Doppler-r19) | valueOfX2-typeII-CBSR-r19 |

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| SamsungIssue-8 | cri-TypeI-SinglePanel-ri-Restriction-r19cri-TypeI-SinglePanelN1-N2-CBSR-r19 cri-TypeII-ri-Restriction-r19cri-TypeII-N1-N2-CBSR-r19these are RI restriction and CBSR **per resource** according to RAN1 RRC list, and there are total Ks (up to 8) resourcesneed 4 lists respectively including elements of these 4.  |  |
| SamsungIssue-9 | ***tag2***This field is used to indicate the second TAG information for the serving cell. This field can only be configured in a serving cell if the serving cell is configured with more than one value for the *coresetPoolIndex* or if the serving cell is configured with asymmetric DL sTRP/UL mTRP.It is not clear how to determine “asymmetric DL sTRP/UL mTRP” is configure, as pathloss offset cannot be used as the indicator. According to latest RAN1 agreement, Rel-19 2TA for asymmetric DL sTRP/UL mTRP can be configured when pathlossOffset-r19 is and can also be configured when pathlossOffset-r19 is not configured.I think Rel-19 2TA is for the case sDCI mTRP, i.e., for the case coresetPoolIndex is not configured or only configured with one value, no need to mention asymmetric DL sTRP/UL mTRP.Then I wonder if the sentence “This field can only be configured in a serving cell if the serving cell is configured with more than one value for the *coresetPoolIndex* or if the serving cell is configured with asymmetric DL sTRP/UL mTRP.” Can be directly removed without causing ambiguity of Rel-18 2TA for mDCI mTRP and Rel-19 2TA for sDCI mTRP.If the removal cause ambiguity, we may need further discussion on how to specify the configuration of tag2 to support Rel-19 2TA for sDCI mTRP. Maybe an editor’s note can be captured and no change on the legacy FD for now. |  |
| SamsungIssue-10 | ***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 7.1.1 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*. This field is not configured for asymmetric DL sTRP/UL mTRP.It is not clear how to determine “asymmetric DL sTRP/UL mTRP” is configured as pathloss offset cannot be used as the indicator.According to latest RAN1 agreement, Rel-19 2TA for asymmetric DL sTRP/UL mTRP can be configured when pathlossOffset-r19 is and can also be configured when pathlossOffset-r19 is not configured.We have agreed when pathloss offset is configured, this field is not configured. But it is not clear for Rel-19 2TA for sDCI mTRP whether this field should be configured or not when pathloss offset is not configured, which may need more discussion or ask RAN1. Suggest to add an editor’s note for now regarding whether/how to configure ***n-TimingAdvanceOffset2*** to support Rel-19 2TA for sDCI mTRP. |  |
| SamsungIssue-11 | ***prachAssociationDCI-1-0***Configuration of 1-bit DCI field “PRACH association indicator” in DCI format 1\_0, which is present in DCI format 1\_0 when this RRC parameter and *SSB-MTC-AdditionalPCI* are configured and the UE is not configured with multi-DCI based multi-TRP (see TS 38.214 [19], clause x.y).This field **can** be present when SSB-MTC-AdditionalPCI is configured and the UE is not configured with multi-DCI based multi-TRP. Suggest to rephrase the FD similar to the FD of *pathlossOffsetPRACH-DCI-1-0* |  |
| SamsungIssue-12  | paramCombination-r19 INTEGER (1..7),paramCombination-r19 value is 1..8 according to RAN1 RRC list

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| CSI-ReportConfig(eTypeII-r19, typeII-FePortSelection-r19) | paramCombination-r19 | 1,2,…,8 |

The RAN1 agreement below**Agreement**For the Rel-19 Type-II codebook refinement for 48, 64, and 128 CSI-RS ports, except for Parameter Combination 8 from Rel-17 FeType-II PS, all legacy Parameter Combinations from Rel-16 eType-II (regular), Rel-18 Type-II Doppler (regular), and Rel-17 FeType-II PS are supported.Indicates the exceptional case that for FeType-II PS Parameter Combination 8 is not used, but value 8 is still needed for eType-II |  |
| SamsungIssue-13 | ***pathlossOffset***Indicates the pathloss offset applied to the UL only TCI or joint TCI state. Value dB-12 corresponds to -2 dB, dB-8 corresponds to -8 dB and so on.Typo |  |
| SamsungIssue-14 | ***srsClosedLoopIndexIndicatorInDCI-1-1***Enables the presence of 1-bit SRS closed loop index indicator in DCI format 1\_1 (see TS 38.214 [19], clause x.y). This field is only present if *srs-TwoSeparatePowerControlAdjustmentStates* is configured.Should be “**can** be present”? |  |
| SamsungIssue-15 | subbandSizeCJTC-19The field name in FD is wrong. |  |
| SamsungIssue-16 |

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| ***valueOfMD***Uniform-range quantization for the range of delay offset as specified in TS 38.214 [19], clause x.y. |
| ***valueOfMFO***Uniform-range quantization for the range of frequency offset as specified in TS 38.214 [19], clause x.y. |
| ***valueOfMPhi***Uniform-range quantization for the range of phase offset as specified in TS 38.214 [19], clause x.y. |

Suggest to update the FD respectively for each field for easy understanding, e.g. “Indicate the value of MD/MFO/Mphi for uniform quantization for the range of delay/frequency/phase offset, as specified in …” |  |
| SamsungIssue-17 | additionalOneSlotOffsetDoppler ENUMERATED{enabled} OPTIONAL -- Need RAccording to RAN1 list “For Rel-19 Type-II based on Rel-18 Type-II Doppler: 1-slot offset (per NZP-CSI-RS-Resource Group) relative to the slot offset configured by aperiodicTriggeringOffset in NZP-CSI-RS-ResourceSet ”, I understand **this enbaling should be per resource group.** So we need a list of enabling, one per group, NW can configure enabing only for a subset of the all groups. |  |
| NokiaIssue-1 | TypeI-X1-X2-CBSR-r19 ::= CHOICE {one-one-r19 CHOICE {twentyfour BIT STRING (SIZE (384)), thirtytwo BIT STRING (SIZE (192)), sixtyfour BIT STRING (SIZE (1024))},two-one-r19 CHOICE {twentyfour BIT STRING (SIZE (192)), thirtytwo BIT STRING (SIZE (256)), sixtyfour BIT STRING (SIZE (512))},two-two-r19 CHOICE {twentyfour BIT STRING (SIZE (96)), thirtytwo BIT STRING (SIZE (128)), sixtyfour BIT STRING (SIZE (256))},four-one-r19 CHOICE {twentyfour BIT STRING (SIZE (96)), thirtytwo BIT STRING (SIZE (128)), sixtyfour BIT STRING (SIZE (256))},four-two-r19 CHOICE {twentyfour BIT STRING (SIZE (48)), thirtytwo BIT STRING (SIZE (64)), sixtyfour BIT STRING (SIZE (128))},four-four-r19 CHOICE {twentyfour BIT STRING (SIZE (24)), thirtytwo BIT STRING (SIZE (32)), sixtyfour BIT STRING (SIZE (64))}}The highlighted bit string should have a size of 512 bits.[(N1,N2)= (16,2) or (8,4), (O1,O2) = (4,4), and (X1,X2) = (1,1), CBSR size = (N1O1N2O2)/(X1X2)] |  |
| NokiaIssue-2 | TypeI-X1-X2-SoftScalingRank-r19 ::= CHOICE {two-one-r19 CHOICE {twentyfour BIT STRING (SIZE (576)), thirtytwo BIT STRING (SIZE (768)), sixtyfour BIT STRING (SIZE (1536))},two-two-r19 CHOICE {twentyfour BIT STRING (SIZE (288)), thirtytwo BIT STRING (SIZE (384)), sixtyfour BIT STRING (SIZE (768))},four-one-r19 CHOICE {twentyfour BIT STRING (SIZE (288)), thirtytwo BIT STRING (SIZE (384)), sixtyfour BIT STRING (SIZE (768))},four-two-r19 CHOICE {twentyfour BIT STRING (SIZE (144)), thirtytwo BIT STRING (SIZE (192)), sixtyfour BIT STRING (SIZE (384))},four-four-r19 CHOICE {twentyfour BIT STRING (SIZE (72)), thirtytwo BIT STRING (SIZE (96)), sixtyfour BIT STRING (SIZE (192))}, eight-one-r19 CHOICE {twentyfour BIT STRING (SIZE (144)), thirtytwo BIT STRING (SIZE (384)), sixtyfour BIT STRING (SIZE (384))}}The highlighted bit string should have a size of 192 bits.[(N1,N2)= (16,2) or (8,4), (O1,O2) = (4,4), and (X1,X2) = (8,1), power scaling factor size = 3\*(N1O1N2O2)/(X1X2)] |  |
| NokiaIssue-3 | TypeII-X1-X2-CBSR-r19 ::= CHOICE {one-one-r19 CHOICE {twentyfour BIT STRING (SIZE (24)), thirtytwo BIT STRING (SIZE (32)), sixtyfour BIT STRING (SIZE (64))},two-one-r19 CHOICE {twentyfour BIT STRING (SIZE (12)), thirtytwo BIT STRING (SIZE (16)), sixtyfour BIT STRING (SIZE (32))},two-two-r19 CHOICE {twentyfour BIT STRING (SIZE (6)), thirtytwo BIT STRING (SIZE (8)), sixtyfour BIT STRING (SIZE (16))},four-one-r19 CHOICE {twentyfour BIT STRING (SIZE (6)), thirtytwo BIT STRING (SIZE (8)), sixtyfour BIT STRING (SIZE (16))},four-two-r19 CHOICE {twentyfour BIT STRING (SIZE (4)), sixtyfour BIT STRING (SIZE (8))}}The highlighted value should be ‘thirtytwo’. According to the description of *valueOfX1-typeII-CBSR-r19* and *valueOfX2-typeII-CBSR-r19* in the RAN1 parameter list, (X1,X2) = (4,2) only applies for (N1,N2) = (16,2), (8,4), (16,4), or (8,8), i.e. N1xN2 = 32 or 64. Besides, for TypeII codebook, N1xN2 = 32 and (X1,X2) = (4,2) corresponds to the CBSR with bit string size 4. |  |
| Vivo Issue1 | In IE *CSI-ReportUE-IBM-r19*, the RRC signaling design is not clear enough. According to RAN1 agreement, three events have been agreed, and Event-2 and Event-7 have some dedicated parameters respectively, such as Q for Event-7, time window related configuration for Event-2, and threshold value. In addition, either UE-initiated beam reporting or legacy reporting (e.g., periodic, semi-persistent, aperiodic) can be configured for a CSI report configuration. However, the above contents are not reflected in the running CR. Therefore, we prefer to introduce a parameter, i.e., *event-triggeredReport* in *reportConfigType.* And event-1, event-2, event-7 are listed as choices. Event-dedicated parameters can be listed below. It is similar to the event-triggered report configuration for LTM. As for the parameter of *csi-ReportUE-IBM-r19*,common parameters for UE-initiated beam reporting can be included in it, such as reportTransmissionMode-r19, enabledCurrentBeamReport-r19, nrofReportedRS-UEIBR-r19, resourceForSecondChannelOfModeB-r19, and so on. With this, the whole signalling design of CSI reporting will be clearer. |  |
| Vivo Issue2 | The IEs, *cri-TypeI-SinglePanel-ri-Restriction-r19, cri-TypeI-SinglePanelN1-N2-CBSR-r19, cri-TypeII-ri-Restriction-r19, and cri-TypeII-N1-N2-CBSR-r19*, in current RRC CR seem to be resource-common (in CodebookConfig in CSI-ReportConfig), which is not aligned with the following agreement made in RAN1 #118.Suggest to change it as resource specific, e.g. define a list in the CodebookConfig. **【118】Agreement**For the Rel-19 CRI-based CSI refinement for up to 128 CSI-RS ports, regarding CBSR and RI restriction, support resource-specific specific CBSR* FFS (by RAN1#118): Whether RI restriction is resource-common or resource-specific

**【118】Agreement**For the Rel-19 CRI-based CSI refinement for up to 128 CSI-RS ports, support resource-specific RI restriction |  |
| Vivo issue3 | The component *linkedCJTCReport-r19* of IE *CSI-ReportCJTC-r19* in current running CR should be child IE of *CSI-ReportConfig* as it works when UE performs PMI calculation for the Rel-18 eType-II CJT CSI report, but not when UE calculates CJTC report. That is, when UE receives a CSI-ReportConfig for CJT CSI calculation, if linkedCJTCReport-r19 exists at the CSI-ReportConfig, UE shall do CSI-RS pre-compensation using the UE-reported delay offset in the linked CJTC report.The corrsponding RAN1 conclusion is below:**【118】Agreement**For the Rel-19 aperiodic standalone CJT calibration (CJTC) reporting, to facilitate UE-specific delay offset pre-compensation on PDSCH by the NW, support configuring a UE (via RRC signaling) to perform PMI calculation for the Rel-18 eType-II CJT CSI report assuming pre-compensation using the UE-reported delay offset (when ReportQuantity is ‘cjtc-Dd’) |  |