3GPP TSG-RAN WG2 #131 R2-250XXXX

Bengalore, India, August 25 – 29, 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:

* [Post131][218][MIMO\_Ph5] CR for TS 38.331 (Ericsson)

Intended outcome: Agree the CR for TS 38.331

Deadline: Short

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#131, L1 parameters and editorial updates. The additions compared to the previous version are with user “RAN2#131\_v2”.

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 |
| Samsung Issue-1 | The *CSI-ReportUE-IBR* can be configured on cell#1 while the indicated *pucch-Resource* can be configured on cell#2 indicated by *pucch-Cell*. Based on this meeting’s agreement, UE releases pucch according to cell#2, where the resource is actually configured. But it is not clear in the current change.  5.3.12  Upon receiving a PUCCH release request from lower layers, for all bandwidth parts of an indicated serving cell the UE shall:  …  2> release *pucch-Resource* configured in *CSI-ReportUE-IBR*;  Can be changed to below or any other better way.  …  1> if the indicated serving cell is referred to by *pucch-Cell* included in *CSI-ReportUE-IBR* of an associated *CSI-ReportConfig*;  2> release *pucch-Resource* indicated in the associated *CSI-ReportUE-IBR*; |  |
| Samsung Issue-2 | ***singleDCI-MultiTRP-2TA***  Enables two TA for single DCI multi-TRP for both inter-cell and intra-cell (including asymmetric TRP and symmetric TRP).  sDCI mTRP is only used for intra-cell operation, not for inter-cell operation. Inter-cell operation can either be mDCI mTRP or ICBM. So the parameter name should be updated to avoid misleading and the FD should be updated to be precise and also align with the wording in RAN1 UE feature list:  twoTA-Without-MultiDCI-MultiTRP  Enables two TA for intra-cell without multi-DCI multi-TRP operation or inter-cell without multi-DCI multi-TRP operation. |  |
| Samsung Issue-3 | ***prachAssociationDCI-1-0***  Enables the presence of 1-bit DCI field "PRACH association indicator" in DCI format 1\_0 (see TS 38.212 [17], clause 7.3.1). This field can only be configured if *singleDCI-MultiTRP-2TA* is configured.  *singleDCI-MultiTRP-2TA* should be updated to the new name. |  |
| Samsung Issue-4 | mr-SelectedResources-r19 SEQUENCE {  firstSelectedResource-r19 INTEGER (1..8),  secondSelectedResource-r19 INTEGER (1..8) OPTIONAL -- Need R  }  According to RAN1 list, the configuration restriction should be capture in FD or by presence condition: mr-SelectedResources-r19 is configured only for codebookType set to typeI-SinglePanel-r19 or etypeII-r19. secondSelectedResource-r19 can be present only for codebookType set to typeI-SinglePanel-r19. |  |
| Samsung Issue-5 | – *CSI-ReportConfig* The IE *CSI-ReportConfig* is used to configure a periodic or semi-persistent report sent on PUCCH on the cell in which the *CSI-ReportConfig* is included, or to configure a semi-persistent or aperiodic report sent on PUSCH triggered by DCI received on the cell in which the *CSI-ReportConfig* is included (in this case, the cell on which the report is sent is determined by the received DCI). The IE *CSI-ReportConfig* is also used to configure UE initiated beam reporting. See TS 38.214 [19], clause 5.2.1.  The term used in RAN1 is UE-initiated CSI reporting, should be aligned at least in the normal text. |  |
| Samsung Issue-6 | eventTypeUE-IBR-r19 can be merged to csi-ReportUE-IBR-r19.  And the presence condition for csi-ReportUE-IBR-r19 can be removed, it can be simply optional with need R.  The FDs can be updated.  ***csi-ReportUE-IBR***  Configures parameters used for the UE initiated ~~beam~~ CSI reporting. When this field is configured, the UE ignores *reportConfigType*.  ***eventTypeUE-IBR***  Indicates the event type for UE initiated beam reporting and associated fields as specified in clause 5.2.1.5.4 of TS 38.214 [19]. ~~When this field is configured, the UE ignores~~ *~~reportConfigType~~*~~.~~ When this field is set to *event1*, *eventThreshold* can only be configured with values from 14 to 113. The event type associated parameters are specified in clause 5.2.1.5.4.1c of TS 38.214 [19]. |  |
| Samsung Issue-7 | ***minimumPucch-PuschOffset***  Indicates the time offset in number of symbols for determining available transmission occasion of ~~second~~ PUSCH in Mode-B from the ~~first~~ PUCCH. Value *symb0* corresponds to 0, value *symb1* corresponds to 1 and so on.  “Second” and “first” should be removed to avoid misleading. |  |
| Samsung Issue-8 | ***tci-ServCellIndex***  Indicates the serving cell on which the indicated TCI state ~~is~~ used to determine the current beam RS is applied (see TS 38.214 [19], clause 5.2.1.5.4).  “is” should be removed. |  |
| Samsung Issue-9 | ***tag2***  This field is used to indicate the second TAG information for the serving cell, it is optionally configured in a serving cell if *coresetPoolIndex* for a BWP is configured with more than one valueor if *singleDCI-MultiTRP-2TA* is configured for a BWP.  *singleDCI-MultiTRP-2TA* should be updated to the new name. |  |
| Samsung Issue-10 | startingBitOfFormat2-3-v19xy INTEGER (31..45)  should start from 32? |  |
| Nokia  [Issue 1] | The intention of the newly added last sentence of the field description of eventTypeUE-IBR is unclear. Clause 5.2.1.5.4.1c describes event 7 specifically, while events 2 and 1 are described in 5.2.1.5.4.1a and 1b respectively. If the intention is to point to the relevant clause describing the parameters for UE-IBM, then the first sentence of the field description already seems sufficient.  ***eventTypeUE-IBR***  Indicates the event type for UE initiated beam reporting and associated fields as specified in clause 5.2.1.5.4 of TS 38.214 [19]. When this field is configured, the UE ignores *reportConfigType*. When this field is set to *event1*, *eventThreshold* can only be configured with values from 14 to 113. The event type associated parameters are specified in clause 5.2.1.5.4.1c of TS 38.214 [19]. |  |
| Nokia  [Issue 2] | The field srs-ResourceID-r19 of associatedSRS-ResourceSet-r19 should refer to an SRS-ResourceID, but right now it is referring to an SRS-Resource**Set**ID  associatedSRS-ResourceSet-r19 SEQUENCE {  srs-ResourceSetId-r19 SRS-ResourceSetId,  srs-ResourceId-r19 SRS-ResourceSetId  } |  |
| Nokia  [Issue 3] | In our understanding of clause 5.2.1.4.2 of TS 38.214, *associatedSRS-ResourceSet* and *referenceAntennaPort* must be used jointly to inform the UE of the reference port and SRS resource to be used for phase offset measurement.  If the UE is configured with a *CSI-ReportConfig* with the higher layer parameter *reportQuantity* set to 'cjtc-P',   * <other text omitted> * The UE can be configured by the higher layer parameter *associatedSRSResourceSet* indicating the SRS resource and corresponding SRS resource set associated with phase offset measurement, from all the y/x SRS resources and all the configured SRS resource set(s) with the higher layer parameter *usage* set to 'antennaSwitching' and configuration xTyR, and by the higher layer parameter *referenceAntennaPort* indicating which SRS port in the indicated SRS resource is associated with phase offset measurement, such that the UE antenna port used for receiving the CSI-RS resources configured for phase offset measurement is the same as the UE antenna port used for transmitting the reference SRS port in the associated SRS resource set for antenna switching. The configured associated SRS resource can be aperiodic, semi-persistent or periodic. If the configured associated SRS resource is semi-persistent or periodic, the SRS transmission occasion for determining the reference UE antenna port corresponds to the latest SRS transmission occasion before the transmission occasions of the CSI-RS resources used for measuring the CJTC-P report.   Hence, they could be grouped together as below (or at least a clarification could be made in the respective field descriptions that the parameters cannot be configured without each other).  Furthermore, since these fields are **only applicable for *reportQuantity* set to 'cjtc-P’**, this could be captured in the field description.  associatedSRS-ResourceSet-r19 SEQUENCE {  srs-ResourceSetId-r19 SRS-ResourceSetId,  srs-ResourceId-r19 SRS-ResourceId,  referenceAntennaPort-r19 INTEGER (1..8)  } |  |
| Nokia  [Issue 4] | (Similar to Samsung [Issue 6])  Currently, the UE-IBR events are configured separately from the remaining part of the UE-IBR config, i.e. *eventTypeUE-IBR* and *csi-ReportUE-IBR* are separate optional fields, where *csi-ReportUE-IBR* is conditional on *eventTypeUE-IBR* being configured.  However, in our understanding, there will always be an interdependency between these fields and one of the fields cannot be configured without the other one (since they both use need code “R” it is not possible to modify a *CSI-ReportConfig* to update one of the fields without the other one, otherwise the field not being updated would get released if it is not included in the *CSI-ReportConfig*).  We also understand that no further UE-IBR events will be supported in Rel-19 or -20, so there is no reason to accommodate “future events” in the configuration either.  Hence, it makes sense to consolidate the configurations, e.g. by moving *eventTypeUE-IBR* under *csi-ReportUE-IBR*. |  |
| Nokia  [Issue 5] | The legacy *CSI-ReportConfig* parameter *groupBasedBeamReporting* is mandatory and already includes the option to configure *nrofReportedRS* when group-based beam reporting is set to ‘disabled’.  Because of that, we wonder if the new parameter *nrofReportedRS-UE-IBR* is redundant, and whether *nrofReportedRS* within *groupBasedBeamReporting* could be re-used instead. Maybe this is something that could be checked with RAN1.  (Another thing to point out regarding the “reference signals” that are related to *nrofReportedRS-UE-IBR* parameter: TS 38.214 refers to these as the “reference signals provided by the *newBeamResourceSet*”; but RAN2 already agreed that we would reuse *resourcesForChannelMeasurement* instead of introducing the parameter *newBeamResourceSet*. So this is another reason why it seems redundant to introduce *nrofReportedRS-UE-IBR*.)  groupBasedBeamReporting CHOICE {  enabled NULL,  disabled SEQUENCE {  nrofReportedRS ENUMERATED {n1, n2, n3, n4} OPTIONAL -- Need S  }  },  ...  csi-ReportUE-IBR-r19 CSI-ReportUE-IBR-r19 OPTIONAL, -- Cond UE-IBR  CSI-ReportUE-IBR-r19 ::= SEQUENCE {  ...  nrofReportedRS-UE-IBR-r19 ENUMERATED {n1, n2, n3, n4},  ... |  |
| Nokia  [Issue 6] | Currently the fields *cri-TypeI-SinglePanelRI-Restriction* and *cri-TypeI-SinglePanelN1-N2-CBSR* are defined using sequences of up to four 8-bit bitstrings, where each bitstring corresponds to a RI/CBSR restriction on a CSI-RS resource.  cri-TypeI-SinglePanelRI-Restriction-r19 SEQUENCE (SIZE (1..4)) OF BIT STRING (SIZE (8)) OPTIONAL -- Need R  CRI-TypeI-SinglePanelN1-N2-CBSR-List-r19 ::= CHOICE {  two-one-r19 CHOICE {no-cbsr-r19 NULL, cbsr-list-r19 SEQUENCE (SIZE (1..4)) OF BIT STRING (SIZE (8))},  ...  However, in our understanding of clause 5.2.1.4.2 of TS 38.214, for TypeI-SinglePanel codebooks, there can be up to Ks = 8 CSI-RS resources, and hence *cri-TypeI-SinglePanelRI-Restriction* and *cri-TypeI-SinglePanelN1-N2-CBSR* should be able to configure up to eight different restrictions (one for each CSI-RS resource).  Hence, for the TypeI-SinglePanel codebooks, ‘SIZE (1..4)’ should be **changed to ‘SIZE (1..8)’** within cri-TypeI-SinglePanelRI-Restriction and cri-TypeI-SinglePanelN1-N2-CBSR.  If the UE is configured with a CSI-ReportConfig with higher layer parameter valueOfM, with reportQuantity set to 'cri-RI-PMI-CQI' or 'cri-RI-LI-PMI-CQI' and codebookType set to 'typeI-SinglePanel', or reportQuantity set to 'cri-RI-PMI-CQI' and codebookType set to 'typeII-r16', and CSI-RS resources are configured in the corresponding NZP-CSI-RS-ResourceSet for channel measurement,  - if , each CSI-RS resource shall contain at most 32 CSI-RS ports. If , each CSI-RS resource shall contain at most 16 CSI-RS ports.  - The CSI report contains CSIs, where the sets of CSI parameters other than CRI, RI/LI (if applicable)/PMI/CQI, are independently calculated and indicated for each of the selected CSI-RS resources. Subject to UE capability, a UE can be configured with and , if *codebookType* is set to 'typeI-SinglePanel', and with and , if *codebookType* is set to 'typeII-r16'.  <other text omitted>  - A *CSI-ReportConfig* can be configured with separate RI restrictions for each of the CSI-RS resources, by higher layer parameter *cri-typeI-SinglePanel-ri-restriction-r19* or *cri-typeII-ri-restriction-r19*, for *codebookType* set to 'typeI-SinglePanel' or 'typeII-r16', respectively.  - A *CSI-ReportConfig* can be configured with separate Codebook Subset Restrictions for each of the CSI-RS resources, by higher layer parameter *cri-typeI-SinglePanel-CBSR-r19* or *cri-typeII-CBSR-r19*, for *codebookType* set to 'typeI-SinglePanel' or 'typeII-r16', respectively. For *codebookType* set to 'typeII-r16', *cri-typeII-CBSR-r19* is configured as described in Clause 5.2.2.2.5, where only the bit values '00' or '11' of Table 5.2.2.2.5-6 are configurable. |  |
| Nokia  [Issue 7] | The RAN1 parameter list includes the parameter *triggeringScheme*, which has not yet been added to the RRC CR. Our understanding is that this parameter is being used in 38.214 clause 5.2.1.4.2 (although implicitly).  Based on this, we think that *triggeringScheme* can be added to the RRC CR and the field description could capture that it is only configured when *reportQuantity* is set to *cjtc-Dd*.  RAN2 can also ask RAN1 to ensure that the parameter is referred to in TS 38.214.  If the UE is configured with a *CSI-ReportConfig* with the higher layer parameter *reportQuantity* set to 'cjtc-Dd',  <other text omitted>  - Subject to UE capability, the *CSI-ReportConfig* with *reportQuantity* set to 'cjtc-Dd' can be linked, by the higher layer parameter *linkedCJTCReport*, to an aperiodic *CSI-ReportConfig* with *reportQuantity* set to 'cri-RI-PMI-CQI' and *codebookType* set to 'typeII-CJT-r18' and with the corresponding CSI-RS resources for channel measurement that are aperiodic and not QCLed with the same reference signal with respect to {average delay}. The CSI-RS resource sets associated with the CJTC-Dd report are linked to the CSI-RS resources associated with the 'typeII-CJT-r18' report by a fixed correspondence between the resource set IDs and resource IDs, respectively, in sequential order of configuration in their respective Resource Setting. The UE expects that the number of CSI-RS resource sets configured in the Resource Setting for the CJTC-Dd report is the same as the number of CSI-RS resources in the Resource Setting associated with the linked 'typeII-CJT-r18' report.  - When the two CSI reports are jointly triggered, the UE is expected to compensate for the delay offset values corresponding to the CSI-RS resources measured for 'typeII-CJT-r18' calculation and reported in the CJTC-Dd report in the same reporting instance.  - When the two CSI reports are separately triggered, the higher layer parameter *delayOffsetCompensation* indicates whether the UE is expected to compensate for the delay offset values corresponding to the CSI-RS resources measured for 'typeII-CJT-r18' calculation and reported in the latest CJTC-Dd report whose reporting instance’s last symbol is before the first symbol of the DCI triggering the 'typeII-CJT-r18' report. If multiple 'typeII-CJT-r18' reports linked to CJTC-Dd report(s) are triggered in the same aperiodic trigger state and *delayOffsetCompensation* is configured, the UE is expected to apply delay offset compensation for all the linked 'typeII-CJT-r18' reports. |  |
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