MIMO Comments file

Template:

# Xnnn

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| Xnnn |  |  |  |  |  |  | vnnn | ToDo |

 **[Description]**:

**[Proposed Change]**:

**[Comments]**:

Instructions:

1. Copy the template RIL comments fields above (including the Heading Xnnn)
2. Paste the RIL comments fields at its position while **respecting the order of the RILs in the Review file (i.e. keep the order of the spec).**
3. Fill in the fields, see R19 ASN.1 Guideline.
4. Companies may comment whether they agree or disagree.
5. Can copy spec text and use Word “Track changes”, etc.
6. Do not delete text added by other companies.

# S001

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S001 | MIMO | 2 | Wrong place of cri-TypeI-SinglePanelRI-Restriction-r19 |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**: cri-TypeI-SinglePanelRI-Restriction-r19 is used for Rel-15 codebook type 'typeI-SinglePanel' as specified in TS 38.214 clause 5.2.1.4.2:

- 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.

However, currently cri-TypeI-SinglePanelRI-Restriction-r19 is placed under Rel-19 codebooktype typeI-SinglePanel-r19, which is wrong. According to RAN1, for CSI-CRI either Rel-15 single panel Type-I or Rel-16 Type-II codebook should be configured for all resources, in addition, the new resource-specific parameters are introduced, which are not intended for Rel-19 codebooktype typeI-SinglePanel-r19 or etypeII-r19, but applied with legacy Rel-15/16 codebook.

**[Proposed Change]**:

Move cri-TypeI-SinglePanelRI-Restriction-r19 to the block of Rel-15 codebooktype “typeI-SinglePanel” by adding an extention of the Rel-15 codebook block.

**[Comments]**:

[Nokia (Andrew)] We have the same understanding that the Rel-19 CRI reporting enhancements apply only to Rel-15 typeI-SinglePanel codebook and Rel-16 typeII-r16 codebook and do not apply to refined Rel-19 codebooks for 48/64/128 ports.

# S002

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S002 | MIMO | 2 | Wrong place of cri-TypeI-SinglePanelN1-N2-CBSR-r19 |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**: cri-TypeI-SinglePanelN1-N2-CBSR-r19 is used for Rel-15 codebook type 'typeI-SinglePanel' as specified in TS 38.214 clause 5.2.1.4.2:

- 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.

However, currently cri-TypeI-SinglePanelN1-N2-CBSR-r19 is placed under Rel-19 codebooktype typeI-SinglePanel-r19, which is wrong. According to RAN1, for CSI-CRI either Rel-15 single panel Type-I or Rel-16 Type-II codebook should be configured for all resources, in addition, the new resource-specific parameters are introduced, which are not intended for Rel-19 codebooktype typeI-SinglePanel-r19 or etypeII-r19, but applied with legacy Rel-15/16 codebook.

**[Proposed Change]**:

Move cri-TypeI-SinglePanelN1-N2-CBSR-r19 to the block of Rel-15 codebooktype “typeI-SinglePanel” by adding an extention of the Rel-15 codebook block.

**[Comments]**:

[Nokia (Andrew)] We have the same understanding that the Rel-19 CRI reporting enhancements apply only to Rel-15 typeI-SinglePanel codebook and Rel-16 typeII-r16 codebook and do not apply to refined Rel-19 codebooks for 48/64/128 ports.

# S003

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S003 | MIMO | 2 | Wrong place of cri-TypeII-RI-Restriction-r19 |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**: cri-TypeII-RI-Restriction-r19 is used for Rel-16 codebook type 'typeII-r16' as specified in TS 38.214 clause 5.2.1.4.2:

- 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.

However, currently cri-TypeII-RI-Restriction-r19 is placed under Rel-19 codebooktype etypeII-r19, which is wrong. According to RAN1, for CSI-CRI either Rel-15 single panel Type-I or Rel-16 Type-II codebook should be configured for all resources, in addition, the new resource-specific parameters are introduced, which are not intended for Rel-19 codebooktype typeI-SinglePanel-r19 or etypeII-r19, but applied with legacy Rel-15/16 codebook.

**[Proposed Change]**:

Move cri-TypeII-RI-Restriction-r19 to the block of Rel-16 codebooktype 'typeII-r16' by adding an extention of the Rel-16 codebook block.

**[Comments]**:

[Nokia (Andrew)] We have the same understanding that the Rel-19 CRI reporting enhancements apply only to Rel-15 typeI-SinglePanel codebook and Rel-16 typeII-r16 codebook and do not apply to refined Rel-19 codebooks for 48/64/128 ports.

# S004

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S004 | MIMO | 2 | Wrong place of cri-TypeII-N1-N2-CBSR-r19 |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**: cri-TypeII-N1-N2-CBSR-r19 is used for Rel-16 codebook type 'typeII-r16' as specified in TS 38.214 clause 5.2.1.4.2:

- 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.

However, currently cri-TypeII-N1-N2-CBSR-r19 is placed under Rel-19 codebooktype etypeII-r19, which is wrong. According to RAN1, for CSI-CRI either Rel-15 single panel Type-I or Rel-16 Type-II codebook should be configured for all resources, in addition, the new resource-specific parameters are introduced, which are not intended for Rel-19 codebooktype typeI-SinglePanel-r19 or etypeII-r19, but applied with legacy Rel-15/16 codebook.

**[Proposed Change]**:

Move cri-TypeII-N1-N2-CBSR-r19 to the block of Rel-16 codebooktype 'typeII-r16' by adding an extention of the Rel-16 codebook block.

**[Comments]**:

[Nokia (Andrew)] We have the same understanding that the Rel-19 CRI reporting enhancements apply only to Rel-15 typeI-SinglePanel codebook and Rel-16 typeII-r16 codebook and do not apply to refined Rel-19 codebooks for 48/64/128 ports.

# S005

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S005 | MIMO | 2 | Inconsistent value of paramCombination-r19 |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**: paramCombination-r19 is used for both codebook type etypeII-r19 and typeII-FePortSelection-r19, however the value range for etypeII-r19 is INTEGER (1..8), the value range for typeII-FePortSelection-r19 is INTEGER (1..7). For the same parameter, the value range should be consistent.

**[Proposed Change]**:

Change the value range of paramCombination-r19 for typeII-FePortSelection-r19 to INTEGER (1..8). This is aligned with RAN1 TS 38.214 clause 5.2.2.2.9a:

- The values , and are determined by the higher layer parameter *paramCombination-r19*, where the same mapping is used as in Table 5.2.2.2.7-1.

- The UE is not expected to be configured with *paramCombination-r19* equal to 8.

Note value 1..8 are listed in the legacy Table 5.2.2.2.7-1, and it has been specified by RAN1 clearly that 8 is not configured. So the RRC value range of paramCombination-r19 should be changed to INTEGER (1..8).

**[Comments]**:

# S006

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S006 | MIMO | 1 | Missing information in FD of ***cri-TypeI-SinglePanelN1-N2-CBSR*** |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**: FD of cri-TypeI-SinglePanelN1-N2-CBSR should be updated, to distinguish from FD of ***cri-TypeII-N1-N2-CBSR***, currently the two have exactly the same FD.

**[Proposed Change]**:

***cri-TypeI-SinglePanelN1-N2-CBSR***

Number of antenna ports in first (*n1*) and second (*n2*) dimension and resource-specific codebook subset restriction for *codebookType* set to *typeI-SinglePanel* (see TS 38.214 [19] clause 5.2.1.4.2). Value *no-cbsr* means no codebook subset restriction is configured for the n1-n2 pair.

If a codebook subset restriction is configured for the n1-n2 pair, the number of elements in *cbsr-list* is up to the number of elements of *nzp-CSI-RS-Resources* in *NZP-CSI-RS-ResourceSet(s)* indicated by *nzp-CSI-RS-ResourceSetList* in the *CSI-ResourceConfig* indicated by *resourcesForChannelMeasurement* in the *CSI-ReportConfig* in which the *CodebookConfig* is included. An element in the list corresponds to the element at the same position in *nzp-CSI-RS-Resources*.

**[Comments]**:

# S007

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S007 | MIMO | 1 | Missing information in FD of cri-TypeI-SinglePanelRI-Restriction |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**: FD of cri-TypeI-SinglePanelRI-Restriction should be updated, currently it does not read correctly.

**[Proposed Change]**:

***cri-TypeI-SinglePanelRI-Restriction***

Resource-specific RI restriction for *codebookType* set to *typeI-SinglePanel* (see TS 38.214 [19], clause 5.2.1.4.2).

**[Comments]**:

# S008

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S008 | MIMO | 1 | Missing information in FD of cri-TypeII-N1-N2-CBSR |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**: FD of cri-TypeII-N1-N2-CBSR should be updated, to distinguish from FD of cri-TypeI-SinglePanelN1-N2-CBSR, currently the two have exactly the same FD.

**[Proposed Change]**:

***cri-TypeII-N1-N2-CBSR***

Number of antenna ports in first (*n1*) and second (*n2*) dimension and resource-specific codebook subset restriction for *codebookType* set to *typeII-r16* (see TS 38.214 [19] clause 5.2.1.4.2). Value *no-cbsr* means no codebook subset restriction is configured for the n1-n2 pair.

If a codebook subset restriction is configured for the n1-n2 pair, the number of elements in *cbsr-list* is up to the number of elements of *nzp-CSI-RS-Resources* in *NZP-CSI-RS-ResourceSet(s)* indicated by *nzp-CSI-RS-ResourceSetList* in the *CSI-ResourceConfig* indicated by *resourcesForChannelMeasurement* in the *CSI-ReportConfig* in which the *CodebookConfig* is included. An element in the list corresponds to the element at the same position in *nzp-CSI-RS-Resources*.

**[Comments]**:

# S009

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S009 | MIMO | 1 | Missing information in FD of cri-TypeII-ri-Restriction |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**: FD of cri-TypeII-ri-Restriction should be updated, currently it does not read correctly.

**[Proposed Change]**:

***cri-TypeII-ri-Restriction***

Resource-specific RI restriction for *codebookType* set to *typeII-r16* (see TS 38.214 [19], clause 5.2.1.4.2).

**[Comments]**:

# S010

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S010 | MIMO | 1 | Wording in FD of delayOffsetCompensation |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**: Wording in FD of delayOffsetCompensation should be updated.

**[Proposed Change]**:

***delayOffsetCompensation***

Indicates whether the UE should perform delay offset compensation based on the latest linked report with *reportQuantity* set to 'cjtc-Dd' when codebook type is set to *typeII-CJT* as specified in TS 38.214 [19] clause 5.2.1.4.2.

**[Comments]**:

# S011

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S011 | MIMO | 1 | FD of mr-SelectedResources not correct |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**: FD of mr-SelectedResources is not correct. The parameter is applied for codebooktype Rel-15 'typeI-SinglePanel' and Rel-16 'typeII-r16', not for the Rel-19 codebook, according to TS 38.214 clause 5.2.1.4.2:

- 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'.

- If and *codebookType* is set to 'typeII-r16', each CSI-RS resource shall contain at most 16 ports and the higher layer parameter *numberOfPMI-SubbandsPerCQI-Subband* is set to '1'.

- the CSI report contains CRIs with the exception that, for aperiodic reporting and subject to UE capability, if *CSI-ReportConfig* is configured with higher layer parameter *mrSelectedResources* indicating CSI-RS resources to be selected for reporting, CRIs are reported. if *codebookType* is set to 'typeI-SinglePanel' and , if *codebookType* is set to 'typeII-r16'.

**[Proposed Change]**:

***mr-SelectedResources***

Indicates one or two resources to be selected among eight CSI-RS resources. This field is only configured for *codebookType* set to *typeI-SinglePanel* or *typeII-r16*. This field is used in clause 5.2.1.4.2 in TS 38.214 [19].

**[Comments]**:

# S012

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S012 | MIMO | 2 | Missing field for resourcesForChannelCJTC-r19  |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**: for resourcesForChannelCJTC-r19, qcl-info is needed for each resource set which is similar to legacy resourcesForChannel. According to TS 38.214 clause 5.2.1.4.1:

For aperiodic CSI, a UE configured with a *CSI-ReportConfig* with the higher layer parameter *reportQuantity* set to 'cjtc-Dd', 'cjtc-F', 'cjtc-Dd-F' or 'cjtc-P' is expected to be configured with one CSI Resource Setting (given by higher layer parameter *resourcesForChannelMeasurement*). For *reportQuantity* set to 'cjtc-Dd', 'cjtc-F' or 'cjtc-Dd-F', the CSI Resource Setting is periodic with CSI-RS Resource Sets configured with higher layer parameter *trs-Info*. For *reportQuantity* set to 'cjtc-P', the CSI Resource Setting is configured with single-port CSI-RS Resources. Each of CSI-RS Resources or Resource Sets are configured with a *TCI-state* by higher layer signalling. The UE expects that all the CSI-RS resources are configured with the same bandwidth. A UE is not expected to be configured with interference measurement on CSI-IM and/or NZP-CSI-RS.

resourcesForChannel CHOICE {

 nzp-CSI-RS SEQUENCE {

 resourceSet INTEGER (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig),

 qcl-info SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF TCI-StateId

 OPTIONAL -- Cond Aperiodic

 },

 csi-SSB-ResourceSet INTEGER (1..maxNrofCSI-SSB-ResourceSetsPerConfig)

 },

**[Proposed Change]**:

resourcesForChannelCJTC-r19 SEQUENCE {

 nzp-CSI-RS2-r19 SEQUENCE {

 resourceSet2CJTC-r19 INTEGER (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig),

 qcl-info2CJTC-r19 SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF TCI-StateId

 OPTIONAL -- Need R

 },

 nzp-CSI-RS3-r19 SEQUENCE {

 resourceSet3CJTC-r19 INTEGER (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig),

 qcl-info3CJTC-r19 SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF TCI-StateId

 OPTIONAL -- Need R

 } OPTIONAL, -- Need R

 nzp-CSI-RS4-r19 SEQUENCE {

 resourceSet4CJTC-r19 INTEGER (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig),

 qcl-info4CJTC-r19 SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF TCI-StateId

 OPTIONAL -- Need R

 } OPTIONAL -- Need R

 } OPTIONAL -- Cond CJTC

**[Comments]**:

# S013

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S013 | MIMO | 2 | linkedCJTC-Report-r19 can be merged to csi-ReportCJTC-r19 |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**: linkedCJTC-Report-r19 can be merged to csi-ReportCJTC-r19 since they are all for CJTC.

**[Proposed Change]**:

Move linkedCJTC-Report-r19 into csi-ReportCJTC-r19, and move the FD into the table for *CSI-ReportCJTC* field descriptions

**[Comments]**:

# S014

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S014 | MIMO | 2 | Rename eventThreshold-r19 for UEIR event1 |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**: eventThreshold-r19 for UEIR event1 should be renamed to distinguish from eventThreshold-r19 for event2 and event7. Update the FD that only value 16..131 can be configured according to the latest RRC parameter list.

**[Proposed Change]**:

eventTypeUE-IBR-r19 CHOICE {

 event1-r19 SEQUENCE {

 event1Threshold-r19 RSRP-Range

 },

 event2-r19 SEQUENCE {

 eventThreshold-r19 INTEGER (0..31)

 },

 event7-r19 SEQUENCE {

 eventThreshold-r19 INTEGER (0..31),

 valueOfQ-r19 INTEGER (1..8)

 }

 },

***csi-ReportUE-IBR***

Configures parameters used for the UE initiated CSI reporting. When this field is configured, the UE ignores *reportConfigType*. When this field is set to *event1*, *event1Threshold-r19* can only be configured with values from 16 to 113.

**[Comments]**:

# S015

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S015 | MIMO | 1 | FD of fourPortSRS-3Tx is in wrong place |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**: fourPortSRS-3Tx is under SRS-ResourceSet, so the FD should be moved to the table for FD of *SRS-ResourceSet*, currently it is in the table for FD of *SRS-Resource*

**[Proposed Change]**:

Move the FD of fourPortSRS-3Tx into the table for *SRS-ResourceSet* field descriptions

**[Comments]**:

# S016

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S016 | MIMO | 1 | startingBitOfFormat2-3-r19xy should be startingBitOfFormat2-3-r19 |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**: startingBitOfFormat2-3-r19xyshould be startingBitOfFormat2-3-r19

**[Proposed Change]**:

Remove “xy” in the suffix of startingBitOfFormat2-3-r19xy, also remove in the FD

***startingBitOfFormat2-3, startingBitOfFormat2-3-r19***

The starting bit position of a block within the group DCI with SRS request fields (optional) and TPC commands. The value 1 of the field corresponds to the first/left most bit of format2-3. The value 2 of the field corresponds to the second bit format2-3, and so on (see TS 38.212 [17], clause 7.3.1 and TS 38.213 [13], clause 11.4). The network does not configure both *startingBitOfFormat2-3* and *startingBitOfFormat2-3-r19* simultaneously.

**[Comments]**:

# S017

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| S017 | MIMO | 1 | Update description of *CSI-AperiodicTriggerStateList* to make it applicable to UEI-CSI |  | Samsung (Shiyang) |  | V002 | ToDo |

 **[Description]**:

For mode-A UEI-CSI reporting, CSI trigger state indication in DCI is used as similar to AP-CSI reporting. Based on RAN1 agreement, the existing CSI request field in DCI for AP-CSI reporting is reused for UEI-CSI reporting and the existing mechanism for CSI trigger state is applied, but the CSI trigger state for UEI reporting is dedicated for UEI-CSI report, not shared with AP-CSI report.

However, the currently *CSI-AperiodicTriggerStateList* is only applied for AP-CSI trigger state as specified in RRC. The description should be updated.

**[Proposed Change]**:

#### – *CSI-AperiodicTriggerStateList*

The *CSI-AperiodicTriggerStateList* IE is used to configure the UE with a list of CSI trigger states for aperiodic CSI and UE-initiated CSI reporting. Each codepoint of the DCI field "CSI request" is associated with one trigger state (see TS 38.321 [3], clause 6.1.3.13). Upon reception of the value associated with a trigger state, the UE will perform measurement of CSI-RS, CSI-IM and/or SSB (reference signals) and aperiodic/UE-initiated reporting on L1 according to all entries in the *associatedReportConfigInfoList* for that trigger state.

**[Comments]**:

# C250

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C250 | MIMO | 1 | Wrong place of field description of “When this field is set to *event1*, *eventThreshold* can only be configured with values from 14 to 113” |  | CATT (LeiWang) |  | V003 | ToDo |

 **[Description]**:

Besides eventTypeUE-IBR-r19, there are many other fields in IE CSI-ReportUE-IBR-r19. So the term “this field” in the “When this field is set to *event1*, *eventThreshold* can only be configured with values from 14 to 113” is a bit confusing and the corresponding description on the threshold limitation for event1 should be moved from the field description of csi-ReportUE-IBR to that of eventTypeUE-IBR-r19. And the start value should be 16 instead of 14 (mentioned in S014) according to the updated RAN1 parameter list.

**[Proposed Change]**:

***csi-ReportUE-IBR***

Configures parameters used for the UE initiated CSI reporting. When this field is configured, the UE ignores *reportConfigType*.

***eventTypeUE-IBR***

Indicates the event type for UE initiated CSI reporting and associated fields as specified in clause 5.2.1.5.4 of TS 38.214 [19]. When this field is set to *event1*, *eventThreshold* can only be configured with values from 16 to 113.

**[Comments]**:

# C251

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C251 | MIMO | 1 | Redundant field description in eventInstanceCount-r19 |  | CATT (LeiWang) |  | V003 | ToDo |

 **[Description]**:

The current field eventCountWindow-r19 includes two child fields, i.e., eventInstanceCount-r19 and eventDetectionTimeWindow-r19. And in the field description of eventInstanceCount-r19, we had captured the RAN1 intention that the eventInstanceCount-r19 is only configured if *eventDetectionTimeWindow* is configured. This sentence is similar funactionality as the conditional present condition. However, currently we capture this conditional present by the two mandatory present child fields in the eventCountWindow-r19. That means if the optional parent field eventCountWindow-r19 is configured, the two child fields are always present together. So it is redundant to further capture the sentence of “This field is only configured if *eventDetectionTimeWindow* is configured”

**[Proposed Change]**:

***eventInstanceCount***

Indicates the minimum number of event instances for one same new beam within a configured time window that the UE can initiate UEIBM report (see TS 38.214 [19], clause 5.2.1.5.4.1).

**[Comments]**:

# C252

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C252 | MIMO | 1 | Wrong field description of pathlossOffset-r19 in the IE TCI-State |  | CATT (LeiWang) |  | V003 | ToDo |

 **[Description]**:

In the unified TCI state framework, the IE TCI-State is only used to configure the TCI state in the joint mode.

**[Proposed Change]**:

***pathlossOffset***

Indicates the pathloss offset applied to the joint TCI state. Value dB-12 corresponds to -12 dB, dB-8 corresponds to -8 dB and so on.

**[Comments]**:

# C253

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C253 | MIMO | 1 | Wrong field description of pathlossOffset-r19 in the IE TCI-UL-State-r17 |  | CATT (LeiWang) |  | V003 | ToDo |

 **[Description]**:

In the unified TCI state framework, the IE TCI-UL-State-r17 is only used to configure the TCI state in the separate mode.

**[Proposed Change]**:

***pathlossOffset***

Indicates the pathloss offset applied to the UL TCI state. Value dB-12 corresponds to -12 dB, dB-8 corresponds to -8 dB and so on.

**[Comments]**:

# C254

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| C254 | MIMO | 2 | Re-structure of the conditionFulfillmentIndicator-r19 indication |  | CATT (LeiWang) |  | V003 | ToDo |

 **[Description]**:

According to the UE Initiated reporting in 5.2.1.5.4 of RAN1 spec 38.214, the conditionFulfillmentIndicator-r19 is only applied for the event 2 and event 7. That means this parameter is an event associated parameter, which is similar as the threshold associated the each event or the valueOfQ-r19 associated with event 7. So it is clearer to put it under the event configuration.

**[Proposed Change]**:

CSI-ReportUE-IBR-r19 ::= SEQUENCE {

 eventTypeUE-IBR-r19 CHOICE {

 event1-r19 SEQUENCE {

 eventThreshold-r19 RSRP-Range

 },

 event2-r19 SEQUENCE {

 eventThreshold-r19 INTEGER (0..31)

conditionFulfillmentIndicator-r19 ENUMERATED {enabled} OPTIONAL, -- Need R

 },

 event7-r19 SEQUENCE {

 eventThreshold-r19 INTEGER (0..31),

 valueOfQ-r19 INTEGER (1..8)

conditionFulfillmentIndicator-r19 ENUMERATED {enabled} OPTIONAL, -- Need R

 }

 },

 reportTransmissionMode-r19 CHOICE {

 modeA-r19 NULL,

 modeB-r19 SEQUENCE {

 pusch-ResourceOfModeB-r19 SEQUENCE {

 configuredGrantConfigIndex-r19 ConfiguredGrantConfigIndex-r16,

 ul-BWP-Id-r19 BWP-Id,

 servCellIndex-r19 ServCellIndex

 },

 minimumPucch-PuschOffset-r19 ENUMERATED { symb0, symb1, symb2, symb4, symb8, symb16, symb32, symb64, symb128, symb256, symb512}

--Editor’s note: minimumPucch-PuschOffset can be updated based on further RAN1 discussion.

 }

 },

 nrofReportedRS-UE-IBR-r19 ENUMERATED {n1, n2, n3, n4}, tci-ServCellIndex-r19 ServCellIndex OPTIONAL, -- Need R

 currentBeamReport-r19 ENUMERATED {enabled} OPTIONAL, -- Need R

**[Comments]**:

# N051

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| N051 | MIMO | 1 | Wrong reference in FD of *codebookMode* |  | Nokia (Andrew) |  | v004 | ToDo |

 **[Description]**: *codebookMode* is also applicable to *typeI-SinglePanel-r19* codebooks (TS 38.214 clause 5.2.2.2.1a), yet the reference in the field description refers to clause 5.2.2.2.8 and 5.2.2.9 for *typeII-CJT-r18* and *typeII-CJT-PortSelection-r18* respectively; meanwhile *codebookMode* is also applicable to various *typeI-SinglePanel* and *typeI-MultiPanel* codebooks. The reference should just be generalized to clause 5.2.2.2.

**[Proposed Change]**:

***codebookMode***

CodebookMode as specified in TS 38.214 [19], clause 5.2.2.2.

**[Comments]**:

# N052

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| N052 | MIMO | 1 | Wrong reference in FD of *n1-n2* |  | Nokia (Andrew) |  | v004 | ToDo |

 **[Description]**: *n1-n2* is also applicable to *typeI-SinglePanel-r19*, *etypeII-r19*, and *typeII-Doppler-r19* codebooks, yet the reference in the field description refers to clause 5.2.2.2.1, which is for Rel-15 *type-I-SinglePanel* codebooks only. The reference should just be generalized to clause 5.2.2.2.

**[Proposed Change]**:

***n1-n2***

Number of antenna ports in first (n1) and second (n2) dimension and codebook subset restriction (see TS 38.214 [19] clause 5.2.2.2).

**[Comments]**:

# N053

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| N053 | MIMO | 1 | Wrong reference in FD of *ng-n1-n2* |  | Nokia (Andrew) |  | v004 | ToDo |

 **[Description]**: *ng-n1-n2* is also applicable to *typeI-MultiPanel-r19* codebooks, yet the reference in the field description refers to clause 5.2.2.2.2, which is for Rel-15 *typeI-MultiPanel* codebooks only. The reference should just be generalized to clause 5.2.2.2.

**[Proposed Change]**:

***ng-n1-n2***

Codebook subset restriction for Type I Multi-panel codebook (see TS 38.214 [19], clause 5.2.2.2).

**[Comments]**:

# N054

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| N054 | MIMO | 1 | Wrong reference in FD of *numberOfPMI-SubbandsPerCQI-Subband* |  | Nokia (Andrew) |  | v004 | ToDo |

 **[Description]**: *numberOfPMI-SubbandsPerCQI-Subband* is also applicable to *etypeII-r19*, *typeII-FePortSelection-r19* and *typeII-Doppler-r19* codebooks, yet the reference in the field description only refers to clauses for *typeII-r16*, *typeII-CJT-r18*, and *typeII-CJT-PortSelection-r18*. The reference should just be generalized to clause 5.2.2.2.

**[Proposed Change]**:

***numberOfPMI-SubbandsPerCQI-Subband***

Field indicates how PMI subbands are defined per CQI subband according to TS 38.214 [19], clause 5.2.2.2).

**[Comments]**:

# N055

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| N055 | MIMO | 1 | Wrong reference in FD of *ri-Restriction* |  | Nokia (Andrew) |  | v004 | ToDo |

 **[Description]**: *ri-Restriction* is also applicable to *typeI-MultiPanel-r19* codebooks (TS 38.214 clause 5.2.2.2.2a), yet the reference in the field description refers to clause 5.2.2.2.2, which is for Rel-15 *typeI-MultiPanel* codebooks only. The reference should just be generalized to clause 5.2.2.2.

**[Proposed Change]**:

***ri-Restriction***

Restriction for RI for *TypeI-MultiPanel-RI-Restriction* (see TS 38.214 [19], clause 5.2.2.2).

**[Comments]**:

# N056

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| N056 | MIMO | 1 | Wrong reference in FD of *typeI-SinglePanel-ri-Restriction* |  | Nokia (Andrew) |  | v004 | ToDo |

 **[Description]**: *typeI-SinglePanel-ri-Restriction* is also applicable to *typeI-SinglePanel-r19* codebooks (TS 38.214 clause 5.2.2.2.1a), yet the reference in the field description refers to clause 5.2.2.2.1, which is for Rel-15 *typeI-SinglePanel* codebooks only. The reference should just be generalized to clause 5.2.2.2.

**[Proposed Change]**:

***typeI-SinglePanel-ri-Restriction***

Restriction for RI for *TypeI-SinglePanel-RI-Restriction* (see TS 38.214 [19], clause 5.2.2.2).

**[Comments]**:

# N057

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| N057 | MIMO | 1 | Wrong reference in FD of *valueOfN* |  | Nokia (Andrew) |  | v004 | ToDo |

 **[Description]**: *valueOfN* is also applicable to *typeII-FePortSelection-r19* codebooks (TS 38.214 clause 5.2.2.2.9a), yet the reference in the field description refers to clause 5.2.2.2.7, which is for Rel-17 *typeII-PortSelection* codebooks only. The reference should just be generalized to clause 5.2.2.2.

**[Proposed Change]**:

***valueOfN***

Field provides the value of parameter N as specified in TS 38.214 [19], clause 5.2.2.2. The field is present only when M=2 set by *paramCombination*, see TS 38.214 [19].

**[Comments]**:

# N058

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| N058 | MIMO | 2 | *minimumPucch-PuschOffset-r19* value definition inconsistency |  | Nokia (Andrew) |  | v004 | ToDo |

 **[Description]**: *minimumPucch-PuschOffset-r19* is defined in symbols and parameterized as ENUMERATED { symb0, …, symb512 }, but typically RRC configurations referring to ‘symbols’ use the notation “n0, n1, …” or “symb0, sym1, …”. *minimumPucch-PuschOffset-r19* should use the same for consistency.

**[Proposed Change]**: Change definition of *minimumPucch-PuschOffset-r19* to one of the following:

minimumPucch-PuschOffset-r19 ENUMERATED { sym0, sym1, sym2, sym4, sym8, sym16, sym32, sym64, sym128, sym256, sym512}

minimumPucch-PuschOffset-r19 ENUMERATED { n0, n1, n2, n4, n8, n16, n32, n64, n128, n256, n512}

**[Comments]**: Note that FD for *minimumPucch-PuschOffset-r19* will need to be updated accordingly.

# K101

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| K101 | MIMO | 1 | Field description update for nrofHARQ-Processes regarding mode-B CG |  | ASUSTeK (Xinra) |  | V005 | ToDo |

 **[Description]**: RAN2 has confirmed that the CG type-1 PUSCH carrying the beam report of Mode-B does not carry MAC PDU (i.e. UL-SCH), meaning that HARQ operation should not be used for transmitting the beam report. Therefore, configuring *nrofHARQ-Processes* for such CGis unnecessary. However, since this field is currently mandatory, it may cause confusion for the network regarding how to set the value. The best way for the UE is to ignore this field to avoid occupying HARQ processes in MAC layer.

**[Proposed Change]**:

|  |
| --- |
| ***nrofHARQ-Processes***The number of HARQ processes configured. It applies for both Type 1 and Type 2. See TS 38.321 [3], clause 5.4.1. If the UE is configured with *nrofHARQ-Processes-v1700, the* UE shall ignore *nrofHARQ-Processes (without suffix)*. The network sets the value of this field to 1 when *cg-LTM-Configuration* is configured. The UE shall ignore this field if it’s configured within ConfiguredGrantConfig for UE-initiated beam reporting in mode-B. |

**[Comments]**:

# K102

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| K102 | MIMO | 1 | Wrong parameter name pusch-ResourceOfModeB |  | ASUSTeK (Xinra) |  | V005 | ToDo |

 **[Description]**: Parameter name pusch-ResourceOfModeB is not aligned with PHY layer parameter name and should be changed.

38.214:

- on a type 1 CG-PUSCH configured by *configuredPUSCHResourceOfModeB* in the same CC as the corresponding *CSI-ReportConfig,* on the first available transmission occasion *numOfSymbols-ModeB* symbols after the end of the transmitted PUCCH if *reportTransmissionMode* is configured as ‘ModeB’, where the periodicity of the PUCCH resource and type 1 CG-PUSCH resource is the same, *numOfSymbols-ModeB* is based on the numerology of the PUCCH resource with UEIRI transmitted, and the CG-PUSCH does not carry UL-SCH.

**[Proposed Change]**:

CSI-ReportUE-IBR-r19 ::= SEQUENCE {

 eventTypeUE-IBR-r19 CHOICE {

 event1-r19 SEQUENCE {

 eventThreshold-r19[RIL]: S014, MIMO RSRP-Range

 },

 event2-r19 SEQUENCE {

 eventThreshold-r19 INTEGER (0..31)

 },

 event7-r19 SEQUENCE {

 eventThreshold-r19 INTEGER (0..31),

 valueOfQ-r19 INTEGER (1..8)

 }

 },

 reportTransmissionMode-r19 CHOICE {

 modeA-r19 NULL,

 modeB-r19 SEQUENCE {

 configuredPUSCHResourceOfModeB SEQUENCE {

 configuredGrantConfigIndex-r19 ConfiguredGrantConfigIndex-r16,

 ul-BWP-Id-r19 BWP-Id,

 servCellIndex-r19 ServCellIndex

 },

 minimumPucch-PuschOffset-r19[RIL]: N058, MIMO ENUMERATED { symb0, symb1, symb2, symb4, symb8, symb16, symb32, symb64, symb128, symb256, symb512}

--Editor’s note: minimumPucch-PuschOffset can be updated based on further RAN1 discussion.

 }

 },

|  |
| --- |
| ***configuredPUSCHResourceOfModeB***Indicates Type-1 CG PUSCH resource for the UE initiated CSI reporting in mode-B. |

**[Comments]**:

# K103

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| K103 | MIMO | 2 | Redundant information in mode B CG configuration |  | ASUSTeK (Xinra) |  | V005 | ToDo |

 **[Description]**: Since type Type 1 CG-PUSCH for UEI reporting mode-B is has been restricted to be on the same Serving Cell where the corresponding CSI-ReportConfig is configured by R1:

(38.214)

After transmitting UEIRI, the UE reports, as defined in Clause 6.3.2.1.2 of [5, TS 38.212], in a single reporting instance *nrofReportedRS-UEIBR* CRIs or SSBRIs corresponding to reference signals provided by the *newBeamResourceSet* […]. The UE sends the CSI report

- on a PUSCH indicated by the DCI format 0\_1/0\_2 in a PDCCH reception if *reportTransmissionMode* is configured as ‘ModeA’ and the CSI trigger state associated with the *CSI-ReportConfig* is indicated in the CSI request field in the DCI format 0\_1/0\_2, or

- on a type 1 CG-PUSCH configured by *configuredPUSCHResourceOfModeB* in the same CC as the corresponding *CSI-ReportConfig,* on the first available transmission occasion *numOfSymbols-ModeB* symbols after the end of the transmitted PUCCH if *reportTransmissionMode* is configured as ‘ModeB’, where the periodicity of the PUCCH resource and type 1 CG-PUSCH resource is the same, *numOfSymbols-ModeB* is based on the numerology of the PUCCH resource with UEIRI transmitted, and the CG-PUSCH does not carry UL-SCH.

(end of 38.214)

Introducing servCellIndex as a RRC parameter for the Type 1 CG resource is redundant and may cause unnecessary flexibility conflict from network’s point of view. Besides, ul-BWP-id is also redundant. From RAN2 perspecitve, instead of using three parameters, a single parameter ConfiguredGrantConfigIndexMAC is sufficient to indicate Type-1 CG PUSCH resource for the PUSCH transmission in mode-B UE-initiated beam reporting.

|  |
| --- |
| ***configuredGrantConfigIndexMAC***Indicates the index of the Configured Grant configurations within the MAC entity. |

**[Proposed Change]**:

CSI-ReportUE-IBR-r19 ::= SEQUENCE {

 eventTypeUE-IBR-r19 CHOICE {

 event1-r19 SEQUENCE {

 eventThreshold-r19[RIL]: S014, MIMO RSRP-Range

 },

 event2-r19 SEQUENCE {

 eventThreshold-r19 INTEGER (0..31)

 },

 event7-r19 SEQUENCE {

 eventThreshold-r19 INTEGER (0..31),

 valueOfQ-r19 INTEGER (1..8)

 }

 },

 reportTransmissionMode-r19 CHOICE {

 modeA-r19 NULL,

 modeB-r19 SEQUENCE {

 pusch-ResourceOfModeB-r19 SEQUENCE {

 configuredGrantConfigIndex-r19 ConfiguredGrantConfigIndexMAC-r16

 },

 minimumPucch-PuschOffset-r19[RIL]: N058, MIMO ENUMERATED { symb0, symb1, symb2, symb4, symb8, symb16, symb32, symb64, symb128, symb256, symb512}

--Editor’s note: minimumPucch-PuschOffset can be updated based on further RAN1 discussion.

 }

 },

**[Comments]**: [Huawei] We don't agree that BWP is redundant. Moreover, we think it should be possible to configure CG in multiple BWP, otherwise, the network will have to configure multiple instance of the same even for reporting in different BWP, as only the active BWP can be used.

For mode-A, it is unclear on which serving cell the CSI-ReportConfig is to be included, so we suggest instead to remove the pucch-Cell parameter (see H400). Of course, we should inform RAN1 about this.

# E031

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| E031 | MIMO | 1 | CJT definition is missing |  | Ericsson (Lian) |  | V006 | ToDo |

 **[Description]**: Abbreviation for CJT is missing and it is used in field descriptions e.g.:

***csi-ReportCJTC***

Configures parameters used for CJT calibration.

**[Proposed Change]**:

Add abbreviation of CJT (coherent joint transmission) in abbreviation clause.

**[Comments]**:

# E032

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| E032 | MIMO | 1 | Aligment of CSI-ReportUE-IBR-r19 |  | Ericsson (Lian) |  | V006 | ToDo |

 **[Description]**: RAN1 specifications refer to UE IBR as UE initiated CSI report. While this was already aligend in other parts of 38.331 it is missing for the ASN1 name of this IE and fields therein.

**[Proposed Change]**:

Change the IE name from csi-ReportUE-IBR-r19 to csi-ReportUE-Initiated-r19 and the following fields therein as well:

eventTypeUE-IBR to eventTypeUE-Initiated

nrofReportedRS-UE-IBR to nrofReportedRS-UE-Initated

**[Comments]**:

# E033

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| E033 | MIMO | 1 | Aligment of the term UE initiated CSI report in field description |  | Ericsson (Lian) |  | V006 | ToDo |

 **[Description]**: RAN1 specifications refer to UE IBR as UE initiated CSI report. While this was already aligend in other parts of 38.331 it is missing for the field description of pucch-Resource.There is also a typo in initiated wording in the field description.

**[Proposed Change]**:

Update the field description as follows:

***pucch-Resource***

Indicates the periodic PUCCH resource for the UE initiated CSI reporting indicator for both mode-A and mode-B UE initiated CSI reporting:

- to request dynamically scheduled PUSCH to carry UE initiatedCSI report for mode-A;

- to notify the network of a Type-1 CG PUSCH to carry UE initiatedCSI report for mode-B.

**[Comments]**: [Huawei] Agree. Similar change is needed for the field description of evenInstanceCount:

Indicates the minimum number of event instances for one same new beam within a configured time window that the UE can initiate CSI report (see TS 38.214 [19], clause 5.2.1.5.4.1). This field is only configured if *eventDetectionTimeWindow* is configured

# H400

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| H400 | MIMO | 2 | In which serving cell to include UE-initiated CSI reports is unclear |  | Huawei (David) |  | v007 | ToDo |

 **[Description]**: *CSI-MeasConfig* is per serving cell. Since Rel-15, a *CSI-ReportConfig* :

- is included in the *CSI-MeasConfig* of the serving cell on which the reports is to be sent on PUCCH or on PUSCH

- can indicate a *CSI-ResourceConfig* from any serving cell, using the *carrier* field.

For UE-initiated CSI report:

- the *carrier* field still indicates the location of the *CSI-ResourceConfig* used for channel measurements

- *pucch-Cell-r19* indicates on which cell the PUCCH indication is to be sent

- for mode-B, *servCellIndex-r19* indicates on which cell the CG for PUSCH transmission is defined.

Therefore, in the *CSI-MeasConfig* of which serving cell the UE-initiated CSI report is configured plays no role i.e., if the UE has 3 serving cells, it is possible to configure a UE-initiated CSI report in one serving cell, another in another one, or swap the two, and it makes no difference, which allows several ways to configure the same thing, for no reason.

**[Proposed Change]**: Remove the field *pucch-Cell-r19* and update the description of 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 CSI reporting with UE-initiated report indication sent on PUCCH on the cell in which the *CSI-ReportConfig* is included. See TS 38.214 [19], clause 5.2.1.**[Comments]**:

# H401

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| H401 | MIMO | 2 | *CSI-ReportUE-IBR-r19* has no extension markers |  | Huawei (David) |  | v007 | ToDo |

 **[Description]**: *CSI-ReportUE-IBR-r19* has no extension markers, so if RAN1 wants to define new events, new reporting methods, or add any missing parameter or value, late in Rel-19 or in a later release, it will be necessary to add a *CSI-ReportUE-IBR-vxy*, that may appear after other additional parameters/values unrelated for UE-initiated CSI reports. This was already done but makes the specification less readable. To avoid this, it is better to add extension markers at the end, for each event/reporting mode (for event-specific extensions) and to add events or reporting options.

**[Proposed Change]**:

CSI-ReportUE-IBR-r19 ::= SEQUENCE {

 eventTypeUE-IBR-r19 CHOICE {

 event1-r19 SEQUENCE {

 eventThreshold-r19 RSRP-Range,

 ...

 },

 event2-r19 SEQUENCE {

 eventThreshold-r19 INTEGER (0..31),

 ...

 },

 event7-r19 SEQUENCE {

 eventThreshold-r19 INTEGER (0..31),

 valueOfQ-r19 INTEGER (1..8),

 ...

 },

 ...

 },

 reportTransmissionMode-r19 CHOICE {

 modeA-r19 NULL,

 modeB-r19 SEQUENCE {

 pusch-ResourceOfModeB-r19 SEQUENCE {

 configuredGrantConfigIndex-r19 ConfiguredGrantConfigIndex-r16,

 ul-BWP-Id-r19 BWP-Id,

 servCellIndex-r19 ServCellIndex

 },

 minimumPucch-PuschOffset-r19 ENUMERATED {symb0, symb1, symb2, symb4, symb8, symb16, symb32, symb64, symb128, symb256,

 symb512},

 ...

--Editor’s note: minimumPucch-PuschOffset can be updated based on further RAN1 discussion.

 },

 ...

 },

 nrofReportedRS-UE-IBR-r19 ENUMERATED {n1, n2, n3, n4}, tci-ServCellIndex-r19 ServCellIndex OPTIONAL, -- Need R

 currentBeamReport-r19 ENUMERATED {enabled} OPTIONAL, -- Need R

 conditionFulfillmentIndicator-r19 ENUMERATED {enabled} OPTIONAL, -- Need R

 eventCountWindow-r19 SEQUENCE {

 eventInstanceCount-r19 INTEGER (2..16),

 eventDetectionTimeWindow-r19 ENUMERATED {ms4, ms5, ms8, ms10, ms16, ms20, ms40, ms80, ms160, ms320, ms640, ms1280}

 } OPTIONAL, -- Need R

 pucch-Resource-r19 SEQUENCE {

 periodicityAndOffset CHOICE {

 sym2 NULL,

 sym6or7 NULL,

 sl1 NULL, -- Recurs in every slot

 sl2 INTEGER (0..1),

 sl4 INTEGER (0..3),

 sl5 INTEGER (0..4),

 sl8 INTEGER (0..7),

 sl10 INTEGER (0..9),

 sl16 INTEGER (0..15),

 sl20 INTEGER (0..19),

 sl40 INTEGER (0..39),

 sl80 INTEGER (0..79),

 sl160 INTEGER (0..159),

 sl320 INTEGER (0..319),

 sl640 INTEGER (0..639)

 },

 resource PUCCH-ResourceId,

 ul-BWP-Id-r19 BWP-Id,

 pucch-Cell-r19 ENUMERATED {spCell, pucch-Scell}

 },

 ...

}

**[Comments]**:

# H402

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| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| H400 | MIMO | 2 | PUCCH/PUSCH resources can only be configured in one BWP |  | Huawei (David) |  | v007 | ToDo |

 **[Description]**: For legacy CSI reports (periodic and semi-persistent) on PUCCH, it is possible to configure a PUCCH resource for each BWP, but for UE-initiated CSI report, only a single BWP can be used. It is unclear why it is so. For UE-initiated CSI reports on PUSCH, the CG can only be on a single BWP. It is also unclear why there is such a restriction.

**[Proposed Change]**:

CSI-ReportUE-IBR-r19 ::= SEQUENCE {

 eventTypeUE-IBR-r19 CHOICE {

 event1-r19 SEQUENCE {

 eventThreshold-r19 RSRP-Range

 },

 event2-r19 SEQUENCE {

 eventThreshold-r19 INTEGER (0..31)

 },

 event7-r19 SEQUENCE {

 eventThreshold-r19 INTEGER (0..31),

 valueOfQ-r19 INTEGER (1..8)

 }

 },

 reportTransmissionMode-r19 CHOICE {

 modeA-r19 NULL,

 modeB-r19 SEQUENCE {

 pusch-ResourceOfModeB-r19 SEQUENCE {

 configuredGrantPerBWP-r19 SEQUENCE (SIZE (1..maxNrofBWPs)) OF PUSCH-CSI-CG-Resource,

 ul-BWP-Id-r19 BWP-Id,

 servCellIndex-r19 ServCellIndex

 },

 minimumPucch-PuschOffset-r19 ENUMERATED {symb0, symb1, symb2, symb4, symb8, symb16, symb32, symb64, symb128, symb256,

 symb512}

--Editor’s note: minimumPucch-PuschOffset can be updated based on further RAN1 discussion.

 },

 },

 nrofReportedRS-UE-IBR-r19 ENUMERATED {n1, n2, n3, n4},

 tci-ServCellIndex-r19 ServCellIndex OPTIONAL, -- Need R

 currentBeamReport-r19 ENUMERATED {enabled} OPTIONAL, -- Need R

 conditionFulfillmentIndicator-r19 ENUMERATED {enabled} OPTIONAL, -- Need R

 eventCountWindow-r19 SEQUENCE {

 eventInstanceCount-r19 INTEGER (2..16),

 eventDetectionTimeWindow-r19 ENUMERATED {ms4, ms5, ms8, ms10, ms16, ms20, ms40, ms80, ms160, ms320, ms640, ms1280}

 } OPTIONAL, -- Need R

 pucch-Resource-r19 SEQUENCE {

 periodicityAndOffset CHOICE {

 sym2 NULL,

 sym6or7 NULL,

 sl1 NULL, -- Recurs in every slot

 sl2 INTEGER (0..1),

 sl4 INTEGER (0..3),

 sl5 INTEGER (0..4),

 sl8 INTEGER (0..7),

 sl10 INTEGER (0..9),

 sl16 INTEGER (0..15),

 sl20 INTEGER (0..19),

 sl40 INTEGER (0..39),

 sl80 INTEGER (0..79),

 sl160 INTEGER (0..159),

 sl320 INTEGER (0..319),

 sl640 INTEGER (0..639)

 },

 resource SEQUENCE (SIZE (1..maxNrofBWPs)) OF PUCCH-CSI-Resource,

 pucch-Cell-r19 ENUMERATED {spCell, pucch-Scell}

 }

}

PUSCH-CSI-CG-Resource ::= SEQUENCE {

 uplinkBandwidthPartId BWP-Id,

 configuredGrantConfigIndex-r19 ConfiguredGrantConfigIndex-r16

}

**[Comments]**:

# H403

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RIL Id | WI | Class | Title | Tdoc | Delegate | Misc | File version | Status |
| H403 | MIMO | 2 | Support of LTM cell switch |  | Huawei (David) |  | v007 | ToDo |

 **[Description]**: At LTM cell switch, the UE applies the LTM candidate TCI state indicated in the LTM cell switch command until a TCI state is indicated in the target cell. An LTM candidate TCI state cannot indicate pathlossoffset, so it can only indicate the UL TRP that has associated DL, but not the other UL TRP. In some scenario, this may result in insufficient transmission power for cell switch, resulting in failure.

**[Proposed Change]**: Add *pathlossOffset* to *CandidateTCI-UL-State-r18*:

CandidateTCI-State-r18 ::= SEQUENCE {

 tci-StateId-r18 TCI-StateId,

 qcl-Type1-r18 LTM-QCL-Info-r18,

 qcl-Type2-r18 LTM-QCL-Info-r18 OPTIONAL, -- Need R

 pathlossReferenceRS-Id-r18 PathlossReferenceRS-Id-r17 OPTIONAL, -- Cond Joint

 tag-Id-ptr-r18 ENUMERATED {n0,n1} OPTIONAL, -- Cond 2TA

 ul-PowerControl-r18 Uplink-powerControlId-r17 OPTIONAL, -- Cond Joint2

 ...,

 [[

 pathlossOffset-r19 ENUMERATED {

 dB-12, dB-8, dB-4, dB0, dB4, dB8,

 dB12, dB16, dB20, dB24, dB28, dB32, dB36,

 dB40, dB44, dB48, dB52, dB56, dB60} OPTIONAL -- Need R

 ]]

}

CandidateTCI-UL-State-r18 ::= SEQUENCE {

 tci-UL-StateId-r18 TCI-UL-StateId-r17,

 referenceSignal-r18 CHOICE {

 ssb-Index SSB-Index,

 csi-RS-Index NZP-CSI-RS-ResourceId

 },

 pathlossReferenceRS-Id-r18 PathlossReferenceRS-Id-r17 OPTIONAL, -- Need R

 tag-Id-ptr-r18 ENUMERATED {n0,n1} OPTIONAL, -- Cond 2TA

 ul-PowerControl-r18 Uplink-powerControlId-r17 OPTIONAL, -- Cond separateTCI

 ...,

 [[

 pathlossOffset-r19 ENUMERATED {

 dB-12, dB-8, dB-4, dB0, dB4, dB8,

 dB12, dB16, dB20, dB24, dB28, dB32, dB36,

 dB40, dB44, dB48, dB52, dB56, dB60} OPTIONAL -- Need R

 ]]

}

Remove the field *pucch-Cell-r19* and update the description of CSI-ReportConfig:

**[Comments]**: