**3GPP TSG-RAN WG2 Meeting #110-e *R2-200xxxx***

**Electronic meeting, 1 – 12 June 2020**

**Agenda item: 6.0.1**

**Source: Intel Corporation (rapporteur)**

**Title: Summary of [AT110-e][066][NR16] NR ASN1 2 (Intel)**

**Document for: Discussion and Decision**

# Introduction

The scope of the discussion:

Scope (with some additional clarifications beyond the chair’s notes):

**List extension single element list**

[S654, S655], R2-2005258 [38.331][H230] Extension of a single Need M item to a list of this item,

**Extending List not ToAddMod**

[S655] [H005], [R2-2005259](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005259.zip) [38.331][H231] Extending the number of entries of a list not using ToAddMod list,

**“Otherwise the field is absent" in Condition: Sub-issue 1: Field cannot be released**

H246, R2-2005263 [38.331][H246] Usage of presence conditions for SetupRelease structures

**Otherwise the field is absent" in Condition: Sub-issue 2: Missing Need node for absence:**

R2-2005264 [38.331][H247] Missing need codes for absence in presence

**Mechanism to release Rel-16 field**

I633, I805, I803, I840, H248, I806, I804, I815, I807, I808, I820, I809, I810, I811, I812, I816, I813, I814, I818, S496, R2-2005265 [38.331][H248] Fields that cannot be released,

# Discussion

## List extension single element list

[S654, S655], R2-2005258 [38.331][H230] Extension of a single Need M item to a list of this item,

The original problem here was that a single element field in Rel-15 was extended to a list in Rel-16 and the relationship between them was not clear. This has subsequently been updated. The updated draft version of the spec says:

SRS-ResourceSet ::= SEQUENCE {

[..]

 pathlossReferenceRS PathlossReferenceRS-Config OPTIONAL, -- Need M

[..]

 ...,

 [[

 pathlossReferenceRSToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSRS-PathlossReferenceRSs-r16)) OF PathlossReferenceRS-r16 OPTIONAL, -- Need N

 pathlossReferenceRSToReleaseList-r16 SEQUENCE (SIZE (1..maxNrofSRS-PathlossReferenceRSs-r16)) OF SRS-PathlossReferenceRS-Id-r16 OPTIONAL -- Need N

 ]]

}

|  |
| --- |
| ***pathlossReferenceRS***A reference signal (e.g. a CSI-RS config or a SS block) to be used for SRS path loss estimation (see TS 38.213 [13], clause 7.3). |
| ***pathlossReferenceRSToAddModList***Multiple candidate pathloss reference RS(s) for SRS power control, where one candidate RS can be mapped to SRS Resource Set via MAC CE (Section xxx in TS 38.321). The network can only include this field if pathlossReferenceRS is not configured in the same SRS-ResourceSet. |

Since the SRS-ResourceSet itself is an IE to an addMod list, there is no real reason to reconfigure the SRS-ResourceSet from the original field pathlossReferenceRS to the athlossReferenceRS-r16 field for the same SRS-ResourceSet element – network can simply configure another entry of SRS-ResourceSet and release the original one. Hence the current text is sufficient and no further clarification on the relationship between the original and r16 list is needed.

**Conclusion#1: No further change is necessary.**

**Q1: Companies are invited to indicate if they have any concerns with the above conclusion.**

|  |  |
| --- | --- |
| **Company** | **Any concerns with the above conclusion** |
| **Huawei, HiSilicon** | It works but isn't ToAddModList complete overkill for a list of a single 9-bits field (1 bit for CHOICE and 6 or 8 bits)?We could just have a simple list, that compliments the existing item, like in Q2. |

## Extending List not ToAddMod

[S655]: [S655] [H005], [R2-2005259](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005259.zip) [38.331][H231] Extending the number of entries of a list not using ToAddMod list

There are two topics related to the following list discussed in next subsections:

BeamFailureRecoveryConfig ::= SEQUENCE {

 --

candidateBeamRSList SEQUENCE (SIZE(1..maxA)) OF PRACH-ResourceDedicatedBFR OPTIONAL, -- Need M

 ...,

 [[

candidateBeamRSListExt-r16 SEQUENCE (SIZE(0..maxB)) OF PRACH-ResourceDedicatedBFR OPTIONAL -- Need M

 ]]

}

### Is the new list is a critical extension or a non-critical extension?

In the above, an non-addMod list is extended in terms of number of entries (both lists use the same IE element). There are two options for this looking at the functionality:

**Option A: the new field (**candidateBeamRSListExt-r16**) is a non-critical extension to provide more entries to the list (i.e., ext is only signalled along with the original field and only when the number of entries is larger than maxA). If so use field name to candidateBeamRSListExt-vxy.**

**Option B: the new field (**candidateBeamRSListExt-r16**) is a critical extension and a replacement of the original list (i.e., only one of these can be signalled). If so, use field name candidateBeamRSList-r16**

In both options, since the element IE is the same and as this is a non-ToAddMod list, there is no index in the IE to extend. The UE only has one list and it doesn’t store which field was used to configure the list.

**Conclusion#2: Based on the meeting discussion and agreement to use non-critical extension by default, option A should be used.**

The TP for this change is also provided in [R2-2005259](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005259.zip).

|  |
| --- |
| ***candidateBeamRSList, candidateBeamRSListExt-vxy***The list of reference signals (CSI-RS and/or SSB) identifying the candidate beams for recovery and the associated RA parameters. The UE shall consider this list to include all elements of *candidateBeamRSList* (without suffix) and all elements of *candidateBeamRSListExt-r16*. The network configures these reference signals to be within the linked DL BWP (i.e., within the DL BWP with the same *bwp-Id*) of the UL BWP in which the *BeamFailureRecoveryConfig* is provided.  |

**Q2a: Companies are invited to indicate if they have any concerns with the above conclusion of choosing option A (non-critical extension option) for this specific list.**

|  |  |
| --- | --- |
| **Company** | **Any concerns with using option A, the TP or the suggested field name** |
| **Huawei, HiSilicon** | **Ok** |
|  |  |

### Can a list size 0 be used to release a non-AddMod list?

Another issue discussed in R2-2005258 is about using size 0 for the list. A list size 0 could be used to indicate release of an non-ToAddMode list. Another option is to use the SetupRelease structure if it is required to release the list.

**Q2b: Companies are invited to comment on whether to allow, as a general rule, use of size 0 for non-ToAddMod list to release of the list.**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Comments**  |
| **Huawei, HiSilicon** | **Yes** | **This seems rather straightforward.** |
|  |  |  |

## “Otherwise the field is absent" in Condition:

There are two issues related to this to discuss.

### Sub-issue 1: Field cannot be releasedConditional presence with SetupRelease fields

[I801, I802] [R2-2004732](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2004732.zip) and R2-2005263 [38.331][H246] Usage of presence conditions for SetupRelease structures

As discussed in these documents, with conditional presence for SetupRelease fields, the original intention for the absence condition seems to be that the field is not configured. However, it can prevent the release of the field when the condition for absence is met, which was not the original intention. The following options are proposed to address this issue.

As discussed in the meeting, it was agreed to use:

**Remove conditional presence for SetupRelease fields (use Need M) and move the intended network behaviour on when the field should be configured to field description (for example, “Network configures this field only when ....”.**

A full TP for this is provided in Annex A.

**Q3a: Companies are invited to comment on the text proposal in Annex A (split per WI)**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| **Huawei, HiSilicon** | ***lte-CRS-PatternList1*** *lte-CRS-ToMatchAround* is a *SetupRelease* field. Is it clear enough that in "Network configures this field only if the field *lte-CRS-ToMatchAround* is not configured.", "is not configured" includes the case where it is included and set to *release* in the same message? Or should we add "or set to *release*"?***lte-CRS-PatternList2*** " Network configures this field only if the field *lte-CRS-ToMatchAround* is not configured and CORESETPoolIndex configured with 1."Same remark but also: this field is in ServingCellConfig while coresetPoolIndex (this is the correct name) is in ControlResourceSet, of which there can be multiple instances in the PDCCH-Config of each DL BWP. If we really need a statement, it would be "there is at least one ControlResourceSet in one DL BWP of this serving cell with coresetPoolIndex set to 1". But do we really need that?***defaultDownlinkBWP-Id***The initial bandwidth part is referred to by BWP-Id = 0. ID of the downlink bandwidth part to be used upon expiry of the BWP inactivity timer. This field is UE specific. When the field is absent the UE uses the initial BWP as default BWP. (see TS 38.213 [13], clause 12 and TS 38.321 [3], clause 5.15). Network configures this field only for a (non-PUCCH) SCell when the SCell is configured with a dormant BWP.***firstWithinActiveTimeBWP-Id***tihs -> this, witha -> with a***t316***Prefers keeping a condition for the MCG as this is already done elsewhere. For the wording better to use "in the masterCellGroup" (as "for the MCG" could be understood in other ways).  |
|  |  |

### Sub-issue 2: Missing Need node for absence:

[I632] and R2-2005264 [38.331][H247] Missing need codes for absence in presence

RAN2 had previously agreed that Need codes should be used for the absence condition in Conditional presence if there is any risk of inter-operability issues. This was also captured in the RRC spec. Need codes for these are missing in some places.

A TP to correct this was provided in R2-2005264.

**Q3b: Companies are invited to comment on the TP provided in Annex B (split per WI) to add Need code for absence (extracted from R2-2005264). Please also indicate any additional missing Need codes for absence**

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| --- | --- |
| **Company** | **Comments/suggestions** |
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|  |  |
|  |  |

## Mechanism to release Rel-16 fields

I633, I805, I803, I840, H248, I806, I804, I815, I807, I808, I820, I809, I810, I811, I812, I816, I813, I814, I818, S496, R2-2005265 [38.331][H248] Fields that cannot be released,

A text proposal to allow releasing these fields that originally used Need M, separated per WI (to allow easier WI specific checking/potential merging), is provided in Annex C. Though use of Need R is not optimal in extension groups, it is suggested in some cases for example, where there are other fields are already using Need S or R in the extension group or the other fields are not likely to change often.

**Q4: Companies are invited to provide comments on the TP in Annex C (split per WI) or provide alternative suggestions to support releasing these configurations. Please also include any additional ones identified.**

|  |  |
| --- | --- |
| **Company** | **Comments/suggestions** |
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|  |  |
|  |  |

# Annex

## Annex A (TP related to “Otherwise the field is absent" in Condition)

### WI: eMIMO

#### – ServingCellConfig

 lte-CRS-PatternList1-r16 SetupRelease {LTE-CRS-PatternList-r16} OPTIONAL, -- Need M

 lte-CRS-PatternList2-r16 SetupRelease {LTE-CRS-PatternList-r16} OPTIONAL -- Need M

|  |
| --- |
| ***lte-CRS-PatternList1*** A list of LTE CRS patterns around which the UE shall do rate matching for PDSCH. The LTE CRS patterns in this list shall be non-overlapping in frequency. Network configures this field only if the field lte-CRS-ToMatchAround is not configured. |
| ***lte-CRS-PatternList2***A list of LTE CRS patterns around which the UE shall do rate matching for PDSCH scheduled with a DCI detected on a CORESET with CORESETPoolIndex configured with 1. This list is configured only if CORESETPoolIndex configured with 1. The first LTE CRS pattern in this list shall be fully overlapping in frequency with the first LTE CRS pattern in lte-CRS-PatternList, The second LTE CRS pattern in this list shall be fully overlapping in frequency with the second LTE CRS pattern in lte-CRS-PatternList, and so on. Network configures this field only if the field *lte-CRS-ToMatchAround* is not configured and CORESETPoolIndex configured with 1. |

|  |  |
| --- | --- |
|  |  |
|  |  |

### WI DCCA

#### – ServingCellConfig

 dormantDownlinkBWP-Id-r16 SetupRelease{BWP-Id} OPTIONAL, -- Need M

 firstWithinActiveTimeBWP-Id-r16 SetupRelease{BWP-Id} OPTIONAL, -- Need M

 firstOutsideActiveTimeBWP-Id-r16 SetupRelease{BWP-Id} OPTIONAL, -- Need M

|  |
| --- |
| *ServingCellConfig* field descriptions |
| ***defaultDownlinkBWP-Id***The initial bandwidth part is referred to by BWP-Id = 0. ID of the downlink bandwidth part to be used upon expiry of the BWP inactivity timer. This field is UE specific. When the field is absent the UE uses the initial BWP as default BWP. (see TS 38.213 [13], clause 12 and TS 38.321 [3], clause 5.15). Network configures this field only for a (non-PUCCH) SCell when the UE is configured with a dormant BWP. |
| ***firstOutsideActiveTimeBWP-Id*** This field contains the ID of the downlink bandwidth part to be activated when receiving a DCI indication for SCell dormancy outside active time, as specified in TS 38.213 [13]. Network configures this field only when the SCell is configured with WUS and a dormant BWP. |
| ***firstWithinActiveTimeBWP-Id*** This field contains the ID of the downlink bandwidth part to be activated when receiving a DCI indication for SCell dormancy within active time, as specified in TS 38.213 [13]. Network configures tihs field only when the SCell is configured witha dormant BWP. |

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |

### WI MobEnh

– *RRCReconfiguration*

RRCReconfiguration-v16xy-IEs ::= SEQUENCE {

 t316-r16 SetupRelease {T316-r16 } OPTIONAL, -- Need M

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

|  |
| --- |
| ***t316***Indicates the value for timer T316 as described in clause 7.1. Value *ms50* corresponds to 50 ms, value *ms100* corresponds to 100 ms and so on. The network configures only this field for the NR MCG, if the UE is configured with split SRB1 or SRB3. |

|  |  |
| --- | --- |
|  |  |

## Annex B: TP related to Missing Need node for absence:

The following text suggestion is From [R2-2005264](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005264.zip) (copying only relevant text – please refer to original document for more context)

#### – PDCP-Config

|  |  |
| --- | --- |
| *SplitBearer2* | The field is mandatory present, in case of a split bearer. Otherwise the field is absent, Need R. |

#### – PhysicalCellGroupConfig

|  |  |
| --- | --- |
| *twoPUCCHgroup* | This field is optionally present, Need R, if secondary PUCCH group is configured. It is absent otherwise, Need R.  |

#### – PUSCH-Config

|  |  |
| --- | --- |
| *RepTypeB* | The field is optionally present, Need S, if *pusch-RepTypeIndicatorForDCI-Format0-1* is set to pusch-RepTypeB. It is absent otherwise, Need R. |

#### – RACH-ConfigCommonTwoStepRA

|  |  |
| --- | --- |
| *2StepSUL* | The field is mandatory present in *initialUplinkBWP* in *supplementaryUplink* when both 2-step and 4-step RA type is configured; otherwise, the field is absent, Need R. |
| *2Step4Step* | The field is mandatory present if both 2-step random access type and 4-step random access type are configured in the BWP, otherwise the field is not present, Need R.  |
| *GroupBConfigured* | The field is mandatory present if msgA-PUSCH-ResourceGroupB is configured, otherwise the field is absent, Need R. |

#### – ServingCellConfig

|  |  |
| --- | --- |
| *CORESETPool* | This field is optionally present, Need M, if the field *lte-CRS-ToMatchAround* is not configured and CORESETPoolIndex configured with 1. It is absent, Need R, otherwise. |
| *DormantBWP* | The field is optionally present, Need M, for a (non-PUCCH) SCell when the UE is configured with a dormant BWP. It is absent, Need R, otherwise.  |
| *LTE-CRS* | This field is optionally present, Need M, if the field *lte-CRS-ToMatchAround* is not configured. It is absent, Need R, otherwise. |
| *MultipleNonDormantBWP* | The field is optionally present, Need M, when the SCell is configured witha dormant bandwidth part. It is absent, Need R, otherwise. |
| *MultipleNonDormantBWP-WUS* | The field is optionally present, Need M, when the SCell is configured with WUS and a dormant bandwidth part. It is absent, Need R, otherwise. |

#### – SRS-Config

|  |  |
| --- | --- |
| *NonNeighSSBorPRS* | This field is optionally present, Need S, if ssb-IndexServing, or csi-RS-IndexServing, or srs-SpatialRelation is configured. This field is absent, Need R, if SSB or PRS from the neighbouring cell is configured |

## Annex C: TP related to Mechanism to release Rel-16 fields

### WI: URLLC

– CSI-MeasConfig

CSI-MeasConfig ::= SEQUENCE {

[..]

 ...,

 [[

 reportTriggerSizeForDCI-Format0-2-r16 INTEGER (0..6) OPTIONAL -- Need R

 ]]

}

– *PDCP-Config*

PDCP-Config ::= SEQUENCE {

[..]

 [[

 discardTimerExt-r16 SetupRelease {ENUMERATED {ms0dot5, ms1, ms2, ms4, ms6, ms8, spare3, spare2, spare1}} OPTIONAL, -- Cond DRB2

[..]

 ]]

}

– *PDSCH-Config*

PDSCH-Config ::= SEQUENCE {

[..]

 prb-BundlingTypeForDCI-Format1-2-r16 CHOICE {

 staticBundling-r16 SEQUENCE {

 bundleSize-r16 ENUMERATED { n4, wideband } OPTIONAL -- Need S

 },

 dynamicBundling-r16 SEQUENCE {

 bundleSizeSet1-r16 ENUMERATED { n4, wideband, n2-wideband, n4-wideband } OPTIONAL, -- Need S

 bundleSizeSet2-r16 ENUMERATED { n4, wideband } OPTIONAL -- Need S

 }

 } OPTIONAL, -- Need R

[..]

 configurableFieldForDCI-Format1-2 SEQUENCE {

 harq-ProcessNumberSizeForDCI-Format1-2-r16 INTEGER (0..4) \*\* URLLC OPTIONAL, -- Need R

 dmrs-SequenceInitializationForDCI-Format1-2-r16 ENUMERATED {enabled} OPTIONAL, -- Need S

 numberOfBitsForRV-ForDCI-Format1-2-r16 INTEGER (0..2) OPTIONAL, -- Need R

 antennaPortsFieldPresenceForDCI-Format1-2-r16 ENUMERATED {enabled} OPTIONAL, -- Need S

 ...

 },

[..]

}

#### – PUCCH-Config

PUCCH-Config ::= SEQUENCE {

[..]

 subslotLengthForPUCCH-r16 ENUMERATED {n2,n7} OPTIONAL, -- Need R

 dl-DataToUL-ACK-ForDCI-Format1-2-r16 SetupRelease {SEQUENCE (SIZE (1..8)) OF INTEGER (0..15)} OPTIONAL, -- Need M

 numberOfBitsForPUCCH-ResourceIndicatorForDCI-Format1-2-r16 INTEGER (0..3) OPTIONAL, -- Need R

[..]

 ]]

}

#### – PUSCH-Config

PUSCH-Config ::= SEQUENCE {

[..]

 pusch-RepTypeIndicator SEQUENCE {

 pusch-RepTypeIndicatorForDCI-Format0-2-r16 ENUMERATED { pusch-RepTypeA, pusch-RepTypeB} OPTIONAL, -- Need R

 pusch-RepTypeIndicatorForDCI-Format0-1-r16 ENUMERATED { pusch-RepTypeA, pusch-RepTypeB} OPTIONAL -- Need R

 },

 configurableFieldForDCI-Format0-2 SEQUENCE {

 harq-ProcessNumberSizeForDCI-Format0-2-r16 INTEGER (0..4) OPTIONAL, -- Need R

 dmrs-SequenceInitializationForDCI-Format0-2-r16 ENUMERATED {enabled} OPTIONAL, -- Need S

 numberOfBitsForRV-ForDCI-Format0-2-r16 INTEGER (0..2) OPTIONAL, -- Need R

 antennaPortsFieldPresenceForDCI-Format0-2-r16 ENUMERATED {enabled} OPTIONAL, -- Need S

 ...

 },

[..]

 frequencyHoppingOffsetListsForDCI-Format0-2-r16 SetupRelease {SEQUENCE (SIZE (1..4)) OF INTEGER (1.. maxNrofPhysicalResourceBlocks-1)}

 OPTIONAL, -- Need M

[..]

 uci-OnPUSCH-ListForDCI-Format0-2-r16 SetupRelease {SEQUENCE (SIZE (1..2)) OF UCI-OnPUSCH-ForDCI-Format0-2-r16} OPTIONAL, -- Need M

 uci-OnPUSCH-ListForDCI-Format0-1-r16 SetupRelease {SEQUENCE (SIZE (1..2)) OF UCI-OnPUSCH } OPTIONAL, -- Need M

[..]

 resourceAllocationForDCI-Format0-2-r16 ENUMERATED { resourceAllocationType0, resourceAllocationType1, dynamicSwitch} OPTIONAL, -- Need R

[..]

}

####

#### – PUSCH-PowerControl

PUSCH-PowerControl-v16xy ::= SEQUENCE {

[..]

 olpc-ParameterSet SEQUENCE {

 olpc-ParameterSetForDCI-Format0-1-r16 INTEGER (1..2) OPTIONAL, -- Need R

 olpc-ParameterSetForDCI-Format0-2-r16 INTEGER (1..2) OPTIONAL -- Need R

 } OPTIONAL, -- Need M

 ...

}

####

#### – PUSCH-ServingCellConfig

PUSCH-ServingCellConfig ::= SEQUENCE {

 [..]

 [[

 maxMIMO-LayersForDCI-Format0-2-r16 SetupRelease {INTEGER (1..4)} OPTIONAL -- Need M

 ]]

}

### WI: eMIMO

– *DMRS-UplinkConfig*

MRS-UplinkConfig ::= SEQUENCE {

[..]

 [[

 dmrs-UplinkTransformPrecoding-r16 SetupRelease {DMRS-UplinkTransformPrecoding-r16} OPTIONAL -- Need M

 ]]

 } OPTIONAL, -- Need R

 ...

}

DMRS-UplinkTransformPrecoding-r16 ::= SEQUENCE {

 pi2BPSK-ScramblingID0 INTEGER(0..65535) OPTIONAL, -- Need S

 pi2BPSK-ScramblingID1 INTEGER(0..65535) OPTIONAL -- Need S

}

-- TAG-DMRS-UPLINKCONFIG-STOP

-- ASN1STOP

|  |
| --- |
| ***dmrs-UplinkTransformPrecoding***This field indicates whether low PAPR DMRS is used for PUSCH with pi/2 BPSK modulation, as specified in TS38.211 [16], clause 6.4.1.1.1.2. The network configures this field only if *tp-pi2BPSK* is configured in *PUSCH-Config*. |

|  |  |
| --- | --- |
|  |  |
|  |  |

#### – PUCCH-PowerControl

PUCCH-PowerControl ::= SEQUENCE {

[..]

 ...,

 [[

 pathlossReferenceRSs-r16 SetupRelease {SEQUENCE (SIZE (1..maxNrofPUCCH-PathlossReferenceRSs-r16)) OF PUCCH-PathlossReferenceRS-r16}

 OPTIONAL -- Need M

 ]]

}

#### – PUSCH-Config

PUSCH-Config ::= SEQUENCE {

[..]

 pusch-PowerControl-v16xy SetupRelease {PUSCH-PowerControl-v16xy} OPTIONAL, -- Need M

[..]

 ]]

}

### WI: SRVCC

####

#### – QuantityConfig

The IE *QuantityConfig* specifies the measurement quantities and layer 3 filtering coefficients for NR and inter-RAT measurements.

QuantityConfig information element

-- ASN1START

-- TAG-QUANTITYCONFIG-START

QuantityConfig ::= SEQUENCE {

 quantityConfigNR-List SEQUENCE (SIZE (1..maxNrofQuantityConfig)) OF QuantityConfigNR OPTIONAL, -- Need M

 ...,

 [[

 quantityConfigEUTRA FilterConfig OPTIONAL -- Need M

 ]],

 [[

 quantityConfigUTRA-FDD-r16 QuantityConfigUTRA-FDD-r16 OPTIONAL, -- Need R

 quantityConfigCLI-r16 FilterConfigCLI-r16 OPTIONAL -- Need M

 ]]

}

### WI: CLI\_RIM

#### – QuantityConfig

QuantityConfig ::= SEQUENCE {

 quantityConfigNR-List SEQUENCE (SIZE (1..maxNrofQuantityConfig)) OF QuantityConfigNR OPTIONAL, -- Need M

 ...,

 [[

 quantityConfigEUTRA FilterConfig OPTIONAL -- Need M

 ]],

 [[

 quantityConfigUTRA-FDD-r16 QuantityConfigUTRA-FDD-r16 OPTIONAL, -- Need M

 quantityConfigCLI-r16 FilterConfigCLI-r16 OPTIONAL -- Need R

 ]]

}

### WI: IIOT

####

#### – ConfiguredGrantConfig

-- ASN1START

-- TAG-CONFIGUREDGRANTCONFIG-START

ConfiguredGrantConfig ::= SEQUENCE {

[..]

 rrc-ConfiguredUplinkGrant SEQUENCE {

 [..]

 [[

 pusch-RepTypeIndicator-r16 ENUMERATED {pusch-RepTypeA,pusch-RepTypeB} OPTIONAL, -- Need R

 [..]

 ]]

[..]

 configuredGrantConfigIndex-r16 ConfiguredGrantConfigIndex-r16 OPTIONAL, -- Need R

 configuredGrantConfigIndexMAC-r16 ConfiguredGrantConfigIndexMAC-r16 OPTIONAL, -- Need R

 periodicityExt-r16 INTEGER (1..5120) OPTIONAL, -- Need R

 startingFromRV0-r16 ENUMERATED {on, off} OPTIONAL, -- Need R

 phy-PriorityIndex-r16 ENUMERATED {p0, p1} OPTIONAL, -- Need R

[..]

 ]]

}

####

#### – SPS-Config

SPS-Config ::= SEQUENCE {

[..]

 ...,

 [[

 sps-ConfigIndex-r16 SPS-ConfigIndex-r16 OPTIONAL, -- Need RN

 harq-ProcID-Offset-r16 INTEGER (0..15) OPTIONAL, -- Need RM

 periodicityExt-r16 INTEGER (1..5120) OPTIONAL, -- Need RM

 harq-CodebookID-r16 INTEGER (1..2) OPTIONAL, -- Need R

 pdsch-AggregationFactor-r16 ENUMERATED {n1, n2, n4, n8 } OPTIONAL -- Need S

 ]]

}

*Additional ones with Need M for which it is not felt necessary to make changes (with reasons in comments)*

*BWP-DownlinkDedicated (no change needed)*

BWP-DownlinkDedicated ::= SEQUENCE {

[..]

 ...,

 [[

 sps-ConfigMulti-r16 SPS-ConfigMulti-r16 OPTIONAL, -- Need M

[..]

]]

}

#### – BWP-UplinkDedicated (no change needed)

BWP-UplinkDedicated ::= SEQUENCE {

[..]

 configuredGrantConfigListconfigureGrantConfigMulti-r16 OPTIONAL -- Need M

 ]]

}

### WI: IAB

CellGroupConfig ::= SEQUENCE {

 [..]

 [[

 bap-Address-r16 SetupRelease {BIT STRING (SIZE (10))} OPTIONAL, -- Need M

[..]

}

### WI: Many

RRCReconfiguration-v16xy-IEs ::= SEQUENCE {

 otherConfig-v16xy OtherConfig-v16xy OPTIONAL, -- Need M

### WI: NR-U

All the NR-U related fields have already been included into the NR-U WI discussion.