**3GPP TSG-RAN2 WG2 Meeting #118 electronic *R2-220xxxx***

**Online, May 9 – 20, 2022**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.331** | **CR** | **3021** | **rev** | **-** | **Current version:** | **17.0.0** |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network | **x** | Core Network |  |

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| ***Title:*** | CR to TS 38.331 on Network assistant signalling for Rel-17 CRS interference mitigation | | | | | | | | | |
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| ***Source to WG:*** | China Telecom, Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_demod\_enh2-Core | | | | |  | ***Date:*** | | | 2022-04-22 |
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| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)*  *Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In RAN4#102-e meeting, RAN4 discussed UE capability and network assistant signalling for CRS interference mitigation (CRS-IM) in scenarios with overlapping spectrum for LTE and NR. Based on that, RAN4 sent an LS (R2-2204489\_R4-2207238) and asked RAN2 to take the related agreements into account and design the corresponding UE capability and network assistance signalling.  The design of new RRC based network assistant signalling for CRS-IM in Rel-17 is needed to assist UE to perform CRS-IM according to RAN4 agreements.  In RAN4#103-e meeting, the following agreements are reached by RAN4:   |  | | --- | | * From the RAN4 perspective, the following new NR UE capabilities are agreed to be defined for CRS-IM: * Capability #4: NR UE capable of performing CRS-IM in scenario 2 with 30kHz SCS without Rel-17 new network assistant signalling on LTE channel bandwidth. * Capability #5: NR UE capable of performing CRS-IM in scenario 2 with 30kHz SCS with Rel-17 new network assistant signalling on LTE channel bandwidth. * The granularity of the above capabilities is Per Feature Set per CC. * The above capabilities are applicable for FR1 only without FDD/TDD difference. * The above capabilities are optional for UE to report. * With the default network configuration assumptions in LS R4-2207238 which was approved in RAN4#102-e meeting, RAN4 has agreed that for UE supporting Capability #4, the UE can perform CRS-IM without Rel-17 new RRC network assistant signalling in scenario 2 with 30 kHz SCS when *MeasObjectEUTRA IE* is configured and the configured measurement gaps overlap with neighbour LTE cell PBCH position. * Meanwhile, new RRC based network assistant signalling is agreed to be introduced to assist CRS-IM in Rel-17 for Scenario 2 with serving cell 30kHz SCS, and the Rel-17 new RRC signalling are optionally to be indicated to UE supporting Capability #4. * Regarding the content of the Rel-17 new RRC network assistant signalling, for each neighbour LTE cell, RAN4 reach following agreements for Scenario 2 with serving cell 30kHz SCS: * Channel bandwidth   + For scenario 2 with 30kHz SCS, the LTE channel bandwidth can be optionally signalled to UE supporting Capability #4, and should be signalled to UE supporting Capability #5 but not supporting Capability #4. * For the other contents including downlink centre frequency, CRS port number, Cell ID, v-shift, CRS-muting, and MBSFN configuration. RAN4 agreed to reuse the same agreements for Scenario 2 with serving cell 15kHz SCS captured in last meeting LS R4-2207238. * The above information is signalled under each serving cell with flexibility to support per UE level configuration with up to 8 interference cell information. | | | | | | | | | |
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| ***Summary of change:*** | | * Add *lte-NeighCellsCRS-AssistInfoList-r17* in *ServingCellConfig* to indicate neighbour cells configuration information used by the UE to perform CRS interference mitigation (CRS-IM) in scenarios with overlapping spectrum for LTE and NR. * A new IE *LTE-NeighCellsCRS-AssistInfoList* is introduced to provide configuration information of neighbour LTE cells to assist the UE to perform CRS interference mitigation (CRS-IM). * Add maxNrofCRS-IM-InterfCell-r17 in Multiplicity and type constraint definitions to indicate that maximum number of LTE interference cells for CRS-IM per UE is 8. | | | | | | | | |
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| ***Consequences if not approved:*** | | R17 CRS interference mitigation (CRS-IM) in scenarios with overlapping spectrum for LTE and NR is not supported by the standard. | | | | | | | | |
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| ***Clauses affected:*** | | 6.3.2 Radio resource control information elements, 6.4 RRC multiplicity and type constraint values | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **x** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **x** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

*START OF CHANGE*

6.3.2 Radio resource control information elements

**< unchanged text omitted>**

– *LTE-NeighCellsCRS-AssistInfoList*

The IE *LTE-NeighCellsCRS-AssistInfoList-r17* is used to provide configuration information of neighbour LTE cells to assist the UE to perform CRS interference mitigation (CRS-IM) in scenarios with overlapping spectrum for LTE and NR. For the UE supporting the capability of *CRS-IM-DSS-15kHzSCS-r17*, the UE can perform CRS-IM without the assistant configuration information of neighbour LTE cells when *RateMatchPatternLTE-CRS* is configured for the serving cell. When *RateMatchPatternLTE-CRS* is not configured for the serving cell, for UE supporting the capabilities of *CRS-IM-nonDSS-15kHzSCS-r17* and/or *CRS-IM-nonDSS-30kHzSCS-r17*, the UE can perform CRS-IM without the assistant configuration information of neighbour LTE cells if *MeasObjectEUTRA* is configured and the configured measurement gaps overlap with neighbour LTE cell PBCH position.

***LTE-NeighCellsCRS-AssistInfoList* information element**

-- ASN1START

-- TAG-LTE-NEIGHCELLSCRS-ASSISTINFOLIST-START

LTE-NeighCellsCRS-AssistInfoList-r17 ::= SEQUENCE (SIZE (1..maxNrofCRS-IM-InterfCell-r17)) OF LTE-NeighCellsCRS-AssistInfo-r17

LTE-NeighCellsCRS-AssistInfo-r17 ::= SEQUENCE {

neighCarrierBandwidthDL-r17 ENUMERATED {n6, n15, n25, n50, n75, n100, spare2, spare1} OPTIONAL, -- Cond CRS-IM

neighCarrierFreqDL-r17 INTEGER (0..16383) OPTIONAL, -- Need S

neighCellId-17 EUTRA-PhysCellId OPTIONAL, -- Need M

neighCRS-muting-r17 ENUMERATED {enabled} OPTIONAL, -- Need R

neighMBSFN-SubframeConfigList-r17 EUTRA-MBSFN-SubframeConfigList OPTIONAL, -- Need S

neighNrofCRS-Ports–r17 ENUMERATED {n1, n2, n4} OPTIONAL, -- Need S

neighV-Shift-r17 ENUMERATED {n0, n1, n2, n3, n4, n5} OPTIONAL -- Cond NotCellID

}

-- TAG-LTE-NEIGHCELLSCRS-ASSISTINFOLIST-STOP

-- ASN1STOP

|  |
| --- |
| ***LTE-NeighCellsCRS-AssistInfoList* field descriptions** |
| ***neighCarrierBandwidthDL***  Indicates the channel bandwidth of the neighbour LTE cell in number of PRBs. If the field is absent, the UE applies the value of *carrierBandwidthDL* indicated in *RateMatchPatternLTE-CRS* for this serving cell, if configured. |
| ***neighCarrierFreqDL***  Indicates the downlink centre frequency of the neighbour LTE cell. If the field is absent, the UE applies the value of *carrierFreqDL* indicated in *RateMatchPatternLTE-CRS* for this serving cell, if configured. |
| ***neighCellId***  Indicates the physciall cell ID the neighbour LTE cell. |
| ***neighCRS-muting***  Indicates whether the CRS interference mitigation is enabled in the neighbour LTE cell, as specified in TS 36.133 [40], clause 3.6.1.1. |
| ***neighMBSFN-SubframeConfigList***  Indicates the MBSFN subframe configuration of the neighbour LTE cell. If *RateMatchPatternLTE-CRS* is configured for this serving cell and the field is absent, the UE applies the value of *mbsfn-SubframeConfigList* indicated in *RateMatchPatternLTE-CRS* for this serving cell if configured; otherwise, if the field is absent, the UE assumes MBSFN is not configured in the neighbour LTE cell. |
| ***neighNrofCRS-Ports***  Indicates the CRS antenna ports number of the neighbour LTE cell. If the field is absent, the UE applies the value of *nrofCRS-Ports* indicated in *RateMatchPatternLTE-CRS* for this serving cell, if configured. If *RateMatchPatternLTE-CRS* is not configured for this serving cell and the field is absent, the UE applies the default value n4. |
| ***neighV-Shift***  Indicates the shifting value v-shift of the neighbour LTE cell. |

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| Conditional Presence | Explanation |
| *CRS-IM* | For the serving cell with 15kHz SCS, this field is mandatory present for the UE supporting the capability of *CRS-IM-nonDSS-NWA-15kHzSCS-r17,* but not supporting *CRS-IM-nonDSS-15kHzSCS-r17*, if *RateMatchPatternLTE-CRS* is not configured for this serving cell. Otherwise it is optionally present, Need S if *RateMatchPatternLTE-CRS* is configured for this serving cell; Need M otherwise.  For the serving cell with 30kHz SCS, this field is mandatory present for the UE supporting the capability of *CRS-IM-nonDSS-NWA-30kHzSCS-r17,* but not supporting *CRS-IM-nonDSS-30kHzSCS-r17*, if *RateMatchPatternLTE-CRS* is not configured for this serving cell. Otherwise it is optionally present, Need S if *RateMatchPatternLTE-CRS* is configured for this serving cell; Need M otherwise. |
| *NotCellID* | If the field *neighCellId* is present, this field shall be absent; otherwise, it is optionally present, Need M. |

*NEXT CHANGE*

– *ServingCellConfig*

The IE *ServingCellConfig* is used to configure (add or modify) the UE with a serving cell, which may be the SpCell or an SCell of an MCG or SCG. The parameters herein are mostly UE specific but partly also cell specific (e.g. in additionally configured bandwidth parts). Reconfiguration between a PUCCH and PUCCHless SCell is only supported using an SCell release and add.

***ServingCellConfig* information element**

-- ASN1START

-- TAG-SERVINGCELLCONFIG-START

ServingCellConfig ::= SEQUENCE {

tdd-UL-DL-ConfigurationDedicated TDD-UL-DL-ConfigDedicated OPTIONAL, -- Cond TDD

initialDownlinkBWP BWP-DownlinkDedicated OPTIONAL, -- Need M

downlinkBWP-ToReleaseList SEQUENCE (SIZE (1..maxNrofBWPs)) OF BWP-Id OPTIONAL, -- Need N

downlinkBWP-ToAddModList SEQUENCE (SIZE (1..maxNrofBWPs)) OF BWP-Downlink OPTIONAL, -- Need N

firstActiveDownlinkBWP-Id BWP-Id OPTIONAL, -- Cond SyncAndCellAdd

bwp-InactivityTimer ENUMERATED {ms2, ms3, ms4, ms5, ms6, ms8, ms10, ms20, ms30,

ms40,ms50, ms60, ms80,ms100, ms200,ms300, ms500,

ms750, ms1280, ms1920, ms2560, spare10, spare9, spare8,

spare7, spare6, spare5, spare4, spare3, spare2, spare1 } OPTIONAL, --Need R

defaultDownlinkBWP-Id BWP-Id OPTIONAL, -- Need S

uplinkConfig UplinkConfig OPTIONAL, -- Need M

supplementaryUplink UplinkConfig OPTIONAL, -- Need M

pdcch-ServingCellConfig SetupRelease { PDCCH-ServingCellConfig } OPTIONAL, -- Need M

pdsch-ServingCellConfig SetupRelease { PDSCH-ServingCellConfig } OPTIONAL, -- Need M

csi-MeasConfig SetupRelease { CSI-MeasConfig } OPTIONAL, -- Need M

sCellDeactivationTimer ENUMERATED {ms20, ms40, ms80, ms160, ms200, ms240,

ms320, ms400, ms480, ms520, ms640, ms720,

ms840, ms1280, spare2,spare1} OPTIONAL, -- Cond ServingCellWithoutPUCCH

crossCarrierSchedulingConfig CrossCarrierSchedulingConfig OPTIONAL, -- Need M

tag-Id TAG-Id,

dummy1 ENUMERATED {enabled} OPTIONAL, -- Need R

pathlossReferenceLinking ENUMERATED {spCell, sCell} OPTIONAL, -- Cond SCellOnly

servingCellMO MeasObjectId OPTIONAL, -- Cond MeasObject

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[[

lte-CRS-ToMatchAround SetupRelease { RateMatchPatternLTE-CRS } OPTIONAL, -- Need M

rateMatchPatternToAddModList SEQUENCE (SIZE (1..maxNrofRateMatchPatterns)) OF RateMatchPattern OPTIONAL, -- Need N

rateMatchPatternToReleaseList SEQUENCE (SIZE (1..maxNrofRateMatchPatterns)) OF RateMatchPatternId OPTIONAL, -- Need N

downlinkChannelBW-PerSCS-List SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier OPTIONAL -- Need S

]],

[[

supplementaryUplinkRelease-r16 ENUMERATED {true} OPTIONAL, -- Need N

tdd-UL-DL-ConfigurationDedicated-IAB-MT-r16 TDD-UL-DL-ConfigDedicated-IAB-MT-r16 OPTIONAL, -- Cond TDD\_IAB

dormantBWP-Config-r16 SetupRelease { DormantBWP-Config-r16 } OPTIONAL, -- Need M

ca-SlotOffset-r16 CHOICE {

refSCS15kHz INTEGER (-2..2),

refSCS30KHz INTEGER (-5..5),

refSCS60KHz INTEGER (-10..10),

refSCS120KHz INTEGER (-20..20)

} OPTIONAL, -- Cond AsyncCA

dummy2 SetupRelease { DummyJ } OPTIONAL, -- Need M

intraCellGuardBandsDL-List-r16 SEQUENCE (SIZE (1..maxSCSs)) OF IntraCellGuardBandsPerSCS-r16 OPTIONAL, -- Need S

intraCellGuardBandsUL-List-r16 SEQUENCE (SIZE (1..maxSCSs)) OF IntraCellGuardBandsPerSCS-r16 OPTIONAL, -- Need S

csi-RS-ValidationWithDCI-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

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

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

crs-RateMatch-PerCORESETPoolIndex-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

enableTwoDefaultTCI-States-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

enableDefaultTCI-StatePerCoresetPoolIndex-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

enableBeamSwitchTiming-r16 ENUMERATED {true} OPTIONAL, -- Need R

cbg-TxDiffTBsProcessingType1-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

cbg-TxDiffTBsProcessingType2-r16 ENUMERATED {enabled} OPTIONAL -- Need R

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directionalCollisionHandling-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

channelAccessConfig-r16 SetupRelease { ChannelAccessConfig-r16 } OPTIONAL -- Need M

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nr-dl-PRS-PDC-Info-r17 SetupRelease {NR-DL-PRS-PDC-Info-r17} OPTIONAL, -- Need M

semiStaticChannelAccessConfigUE-r17 SetupRelease {SemiStaticChannelAccessConfigUE-r17} OPTIONAL, -- Need M

additionalPCIList-r17 SEQUENCE (SIZE(1..maxNrofAdditionalPCI-r17)) OF SSB-MTC-AdditionalPCI-r17 OPTIONAL, -- Need R

unifiedtci-StateType-r17 ENUMERATED {separateULDL, jointULDL} OPTIONAL, -- Need R

uplink-PowerControlToAddModList-r17 SEQUENCE (SIZE (1..maxULTCI-r17)) OF Uplink-powerControl-r17 OPTIONAL, -- Need R

uplink-PowerControlToReleaseList-r17 SEQUENCE (SIZE (1..maxULTCI-r17)) OF Uplink-powerControlId-r17 OPTIONAL, -- Need R

channelAccessMode2-r17 ENUMERATED {enabled} OPTIONAL, -- Need R

timeDomainHARQ-BundlingType1-r17 ENUMERATED {enabled} OPTIONAL, -- Need R

nrofHARQ-BundlingGroups-r17 ENUMERATED {n1, n2, n4} OPTIONAL, -- Need R

fdmed-ReceptionMulticast-r17 ENUMERATED {true} OPTIONAL, -- Need R

moreThanOneNackOnlyMode-r17 ENUMERATED {mode1,mode2} OPTIONAL, -- Need S

tci-Info-r17 TCI-Info OPTIONAL -- Cond TCI\_Info

]],

[[

lte-NeighCellsCRS-AssistInfoList-r17 SetupRelease { LTE-NeighCellsCRS-AssistInfoList-r17 } OPTIONAL, -- Need M

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}

UplinkConfig ::= SEQUENCE {

initialUplinkBWP BWP-UplinkDedicated OPTIONAL, -- Need M

uplinkBWP-ToReleaseList SEQUENCE (SIZE (1..maxNrofBWPs)) OF BWP-Id OPTIONAL, -- Need N

uplinkBWP-ToAddModList SEQUENCE (SIZE (1..maxNrofBWPs)) OF BWP-Uplink OPTIONAL, -- Need N

firstActiveUplinkBWP-Id BWP-Id OPTIONAL, -- Cond SyncAndCellAdd

pusch-ServingCellConfig SetupRelease { PUSCH-ServingCellConfig } OPTIONAL, -- Need M

carrierSwitching SetupRelease { SRS-CarrierSwitching } OPTIONAL, -- Need M

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powerBoostPi2BPSK BOOLEAN OPTIONAL, -- Need M

uplinkChannelBW-PerSCS-List SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier OPTIONAL -- Need S

]],

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enablePL-RS-UpdateForPUSCH-SRS-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

enableDefaultBeamPL-ForPUSCH0-0-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

enableDefaultBeamPL-ForPUCCH-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

enableDefaultBeamPL-ForSRS-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

uplinkTxSwitching-r16 SetupRelease { UplinkTxSwitching-r16 } OPTIONAL, -- Need M

mpr-PowerBoost-FR2-r16 ENUMERATED {true} OPTIONAL -- Need R

]]

}

DummyJ ::= SEQUENCE {

maxEnergyDetectionThreshold-r16 INTEGER(-85..-52),

energyDetectionThresholdOffset-r16 INTEGER (-20..-13),

ul-toDL-COT-SharingED-Threshold-r16 INTEGER (-85..-52) OPTIONAL, -- Need R

absenceOfAnyOtherTechnology-r16 ENUMERATED {true} OPTIONAL -- Need R

}

ChannelAccessConfig-r16 ::= SEQUENCE {

energyDetectionConfig-r16 CHOICE {

maxEnergyDetectionThreshold-r16 INTEGER (-85..-52),

energyDetectionThresholdOffset-r16 INTEGER (-13..20)

} OPTIONAL, -- Need R

ul-toDL-COT-SharingED-Threshold-r16 INTEGER (-85..-52) OPTIONAL, -- Need R

absenceOfAnyOtherTechnology-r16 ENUMERATED {true} OPTIONAL -- Need R

}

IntraCellGuardBandsPerSCS-r16 ::= SEQUENCE {

guardBandSCS-r16 SubcarrierSpacing,

intraCellGuardBands-r16 SEQUENCE (SIZE (1..4)) OF GuardBand-r16

}

GuardBand-r16 ::= SEQUENCE {

startCRB-r16 INTEGER (0..274),

nrofCRBs-r16 INTEGER (0..15)

}

DormancyGroupID-r16 ::= INTEGER (0..4)

DormantBWP-Config-r16::= SEQUENCE {

dormantBWP-Id-r16 BWP-Id OPTIONAL, -- Need M

withinActiveTimeConfig-r16 SetupRelease { WithinActiveTimeConfig-r16 } OPTIONAL, -- Need M

outsideActiveTimeConfig-r16 SetupRelease { OutsideActiveTimeConfig-r16 } OPTIONAL -- Need M

}

WithinActiveTimeConfig-r16 ::= SEQUENCE {

firstWithinActiveTimeBWP-Id-r16 BWP-Id OPTIONAL, -- Need M

dormancyGroupWithinActiveTime-r16 DormancyGroupID-r16 OPTIONAL -- Need R

}

OutsideActiveTimeConfig-r16 ::= SEQUENCE {

firstOutsideActiveTimeBWP-Id-r16 BWP-Id OPTIONAL, -- Need M

dormancyGroupOutsideActiveTime-r16 DormancyGroupID-r16 OPTIONAL -- Need R

}

UplinkTxSwitching-r16 ::= SEQUENCE {

uplinkTxSwitchingPeriodLocation-r16 BOOLEAN,

uplinkTxSwitchingCarrier-r16 ENUMERATED {carrier1, carrier2}

}

-- TAG-SERVINGCELLCONFIG-STOP

-- ASN1STOP

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| ***ChannelAccessConfig* field descriptions** |
| ***absenceOfAnyOtherTechnology***  Presence of this field indicates absence on a long term basis (e.g. by level of regulation) of any other technology sharing the carrier; absence of this field indicates the potential presence of any other technology sharing the carrier, as specified in TS 37.213 [48] clauses 4.2.1 and 4.2.3. |
| ***energyDetectionConfig***  Indicates whether to use the *maxEnergyDetectionThreshold* or the *energyDetectionThresholdOffset* (see TS 37.213 [48], clause 4.2.3)*.* |
| ***energyDetectionThresholdOffset***  Indicates the offset to the default maximum energy detection threshold value. Unit in dB. Value -13 corresponds to -13dB, value -12 corresponds to -12dB, and so on (i.e. in steps of 1dB) as specified in TS 37.213 [48], clause 4.2.3. |
| ***maxEnergyDetectionThreshold***  Indicates the absolute maximum energy detection threshold value. Unit in dBm. Value -85 corresponds to -85 dBm, value -84 corresponds to -84 dBm, and so on (i.e. in steps of 1dBm) as specified in TS 37.213 [48], clause 4.2.3. |
| ***ul-toDL-COT-SharingED-Threshold***  Maximum energy detection threshold that the UE should use to share channel occupancy with gNB for DL transmission as specified in TS 37.213 [48], clause 4.1.3 for downlink channel access and clause 4.2.3 for uplink channel access. This field is not applicable in semi-static channel access mode. |

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| ***ServingCellConfig* field descriptions** |
| ***additionalPCIList***  List of timing information for the additional SSB with different PCI than serving cell PCI. |
| ***bwp-InactivityTimer***  The duration in ms after which the UE falls back to the default Bandwidth Part (see TS 38.321 [3], clause 5.15). When the network releases the timer configuration, the UE stops the timer without switching to the default BWP. |
| ***ca-SlotOffset***  Slot offset between the primary cell (PCell/PSCell) and the SCell in unaligned frame boundary with slot alignment and partial SFN alignment inter-band CA. Based on this field, the UE determines the time offset of the SCell as specified in clause 4.5 of TS 38.211 [16]. The granularity of this field is determined by the reference SCS for the slot offset (i.e. the maximum of PCell/PSCell lowest SCS among all the configured SCSs in DL/UL *SCS-SpecificCarrierList* in *ServingCellConfigCommon* or *ServingCellConfigCommonSIB* and this serving cell's lowest SCS among all the configured SCSs in DL/UL *SCS-SpecificCarrierList* in *ServingCellConfigCommon* or *ServingCellConfigCommonSIB*).  The Network configures at most single non-zero offset duration in ms (independent on SCS) among CCs in the unaligned CA configuration. If the field is absent, the UE applies the value of 0. The slot offset value can only be changed with SCell release and add. |
| ***cbg-TxDiffTBsProcessingType1, cbg-TxDiffTBsProcessingType2***  Indicates whether processing types 1 and 2 based CBG based operation is enabled according to Rel-16 UE capabilities. |
| ***channelAccessConfig***  List of parameters used for access procedures of operation with shared spectrum channel access (see TS 37.213 [48). |
| ***channelAccessMode2***  If present, this field indicates that the UE shall apply channel access mode procedures for operation with shared spectrum channel access in accordance with TS 37.213 [48], clause 4.4 for FR2-2. If absent, the UE does not apply these channel access procedures.  Overwrites the corresponding field in *ServingCellConfigCommon* or *ServingCellConfigCommonSIB* for this serving cell. |
| ***crossCarrierSchedulingConfig***  Indicates whether this serving cell is cross-carrier scheduled by another serving cell or whether it cross-carrier schedules another serving cell. If the field *other* is configured for an SpCell (i.e., the SpCell is cross-carrier scheduled by another serving cell), the SpCell can be additionally scheduled by the PDCCH on the SpCell. |
| ***crs-RateMatch-PerCORESETPoolIndex***  Indicates how UE performs rate matching when both lte-CRS-PatternList1-r16 and lte-CRS-PatternList2-r16 are configured as specified in TS 38.214 [19], clause 5.1.4.2. |
| ***csi-RS-ValidationWithDCI***  Indicates how the UE performs periodic and semi-persistent CSI-RS reception in a slot. The presence of this field indicates that the UE uses DCI detection to validate whether to receive CSI-RS (see TS 38.213 [13], clause 11.1). |
| ***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). |
| ***directionalCollisionHandling***  Indicates that this serving cell is using directional collision handling between a reference and other cell(s) for half-duplex operation in TDD CA with same SCS as specified in TS 38.213 [13], clause 11.1. The half-duplex operation only applies within the same frequency range and cell group. For the IAB-MT, it also indicates that this serving cell is using directional collision handling between a reference and other cell(s) for half-duplex operation in TDD NR-DC with same SCS within same cell group or cross different cell groups. The network only configures this field for TDD serving cells that are using the same SCS. |
| ***dormantBWP-Config***  The dormant BWP configuration for an SCell. This field can be configured only for a (non-PUCCH) SCell. |
| ***downlinkBWP-ToAddModList***  List of additional downlink bandwidth parts to be added or modified. (see TS 38.213 [13], clause 12). |
| ***downlinkBWP-ToReleaseList***  List of additional downlink bandwidth parts to be released. (see TS 38.213 [13], clause 12). |
| ***downlinkChannelBW-PerSCS-List***  A set of UE specific channel bandwidth and location configurations for different subcarrier spacings (numerologies). Defined in relation to Point A. The UE uses the configuration provided in this field only for the purpose of channel bandwidth and location determination. If absent, UE uses the configuration indicated in *scs-SpecificCarrierList* in *DownlinkConfigCommon* / *DownlinkConfigCommonSIB*. Network only configures channel bandwidth that corresponds to the channel bandwidth values defined in TS 38.101-1 [15] and TS 38.101-2 [39]. |
| ***dummy1, dummy 2***  This field is not used in the specification. If received it shall be ignored by the UE. |
| ***enableBeamSwitchTiming***  Indicates the aperiodic CSI-RS triggering with beam switching triggering behaviour as defined in clause 5.2.1.5.1 of TS 38.214 [19]. |
| ***enableDefaultTCI-StatePerCoresetPoolIndex***  Presence of this field indicates the UE shall follow the release 16 behavior of default TCI state per CORESETPoolindex when the UE is configured by higher layer parameter PDCCH-Config that contains two different values of CORESETPoolIndex in ControlResourceSet is enabled. |
| ***enableTwoDefaultTCI-States***  Presence of this field indicates the UE shall follow the release 16 behavior of two default TCI states for PDSCH when at least one TCI codepoint is mapped to two TCI states is enabled |
| ***fdmed-ReceptionMulticast***  Indicates the Type-1 HARQ codebook generation as specified in TS 38.213 [13], clause 9.1.2.1. |
| ***firstActiveDownlinkBWP-Id***  If configured for an SpCell, this field contains the ID of the DL BWP to be activated or to be used for RLM, BFD and measurements if included in an *RRCReconfiguration* message contained in an NR or E-UTRA RRC message indicating that the SCG is deactivated, upon performing the RRC (re-)configuration. If the field is absent, the RRC (re-)configuration does not impose a BWP switch. If the field is absent for the PSCell at SCG deactivation, the UE considers the previously activated DL BWP as the BWP to be used for RLM, BFD and measurements. If the field is absent for the PSCell at SCG activation, the DL BWP to be activated is the DL BWP previously to be used for RLM, BFD and measurements.  If configured for an SCell, this field contains the ID of the downlink bandwidth part to be used upon activation of an SCell. The initial bandwidth part is referred to by BWP-Id = 0.  Upon reconfiguration with *reconfigurationWithSync*, the network sets the *firstActiveDownlinkBWP-Id* and *firstActiveUplinkBWP-Id* to the same value. |
| ***initialDownlinkBWP***  The dedicated (UE-specific) configuration for the initial downlink bandwidth-part (i.e. DL BWP#0). If any of the optional IEs are configured within this IE, the UE considers the BWP#0 to be an RRC configured BWP (from UE capability viewpoint). Otherwise, the UE does not consider the BWP#0 as an RRC configured BWP (from UE capability viewpoint). Network always configures the UE with a value for this field if no other BWPs are configured. NOTE1 |
| ***intraCellGuardBandsDL-List, intraCellGuardBandsUL-List***  List of intra-cell guard bands in a serving cell for operation with shared spectrum channel access. If not configured, the guard bands are defined according to 38.101-1 [15], see TS 38.214 [19], clause 7. For operation in licensed spectrum, this field is absent, and no UE action is required. |
| ***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. The network does not configure this field and *lte-CRS-ToMatchAround* simultaneously. |
| ***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-PatternList1, The second LTE CRS pattern in this list shall be fully overlapping in frequency with the second LTE CRS pattern in lte-CRS-PatternList1, and so on. Network configures this field only if the field *lte-CRS-ToMatchAround* is not configured and there is at least one ControlResourceSet in one DL BWP of this serving cell with *coresetPoolIndex* set to 1. |
| ***lte-CRS-ToMatchAround***  Parameters to determine an LTE CRS pattern that the UE shall rate match around. |
| ***lte-NeighCellsCRS-AssistInfoList***  A list of LTE neighbour cells configuration information which is used to assist the UE to perform CRS interference mitigation (CRS-IM) in scenarios with overlapping spectrum for LTE and NR (see TS 38.101-4 [59]). If the field is included, it replaces any previous list, i.e. all the entries of the list are replaced and each of the *LTE-NeighCellsCRS-AssistInfo* entries is considered to be newly created and the conditions and Need codes for setup of the entry apply. |
| ***nr-dl-PRS-PDC-Info***  Configures the DL PRS for propagation delay compensation. When configured, the UE measures the UE Rx-Tx time difference based on the reference signals configured in this field. |
| ***nrofHARQ-BundlingGroups***  Indicates the number of HARQ bundling groups for type2 HARQ-ACK codebook. |
| ***pathlossReferenceLinking***  Indicates whether UE shall apply as pathloss reference either the downlink of SpCell (PCell for MCG or PSCell for SCG) or of SCell that corresponds with this uplink (see TS 38.213 [13], clause 7). |
| ***pdsch-ServingCellConfig***  PDSCH related parameters that are not BWP-specific. |
| ***rateMatchPatternToAddModList***  Resources patterns which the UE should rate match PDSCH around. The UE rate matches around the union of all resources indicated in the rate match patterns. Rate match patterns defined here on cell level apply only to PDSCH of the same numerology. See TS 38.214 [19], clause 5.1.4.1. |
| ***sCellDeactivationTimer***  SCell deactivation timer in TS 38.321 [3]. If the field is absent, the UE applies the value infinity. |
| ***semiStaticChannelAccessConfigUE***  When this field is configured and when *channelAccessMode-r16* (see IE ServingCellConfigCommon and IE ServingCellConfigCommonSIB) is configured to *semiStatic*, the UE operates in semi-static channel access mode and can initiate a channel occupancy periodically (see TS 37.213 [48], Clause 4.3).  The period can be configured independently from period configured in *SemiStaticChannelAccessConfig-r16* if the UE indicates the corresponding capability. Otherwise, the periodicity configured by *periodUE-r17* is an integer multiple of or an integter factor of the periodicity indicated by *period* in *SemiStaticChannelAccessConfig-r16.* |
| ***servingCellMO***  *measObjectId* of the *MeasObjectNR* in *MeasConfig* which is associated to the serving cell. For this *MeasObjectNR*, the following relationship applies between this MeasObjectNR and *frequencyInfoDL* in *ServingCellConfigCommon* of the serving cell: if *ssbFrequency* is configured, its value is the same as the *absoluteFrequencySSB* and if *csi-rs-ResourceConfigMobility* is configured, the value of its *subcarrierSpacing* is present in one entry of the *scs-SpecificCarrierList*, *csi-RS-CellListMobility* includes an entry corresponding to the serving cell (with *cellId* equal to *physCellId* in *ServingCellConfigCommon*) and the frequency range indicated by the *csi-rs-MeasurementBW* of the entry in *csi-RS-CellListMobility* is included in the frequency range indicated by in the entry of the *scs-SpecificCarrierList*. |
| ***supplementaryUplink***  Network may configure this field only when *supplementaryUplinkConfig* is configured in *ServingCellConfigCommon* or *supplementaryUplink* is configured in *ServingCellConfigCommonSIB*. |
| ***supplementaryUplinkRelease***  If this field is included, the UE shall release the uplink configuration configured by *supplementaryUplink*. The network only includes either *supplementaryUplinkRelease* or *supplementaryUplink* at a time. |
| ***tag-Id***  Timing Advance Group ID, as specified in TS 38.321 [3], which this cell belongs to. |
| ***tci-Info***  If configured for an SCell, or if configured for the PSCell when the SCG is being activated upon the reception of the containing message, the UE shall consider the indicated TCI states as the activated TCI states for PDCCH/PDSCH reception on this serving cell.  If configured for the PSCell when the SCG is indicated as deactivated in the containing message:  - the UE shall consider the indicated TCI states as the TCI states to be activated for PDCCH/PDSCH reception upon a later SCG activation in which *tci-Info* is absent  - if bfd-and-RLM is configured and no RS is configured in *RadioLinkMonitoringConfig* for RLM, respectively for BFD, the UE shall use the indicated TCI states for PDCCH as RS for RLM, respectively for BFD.  When this field is absent for the PSCell and the SCG is being deactivated:  - the UE shall consider the previously activated TCI states as the TCI states to be activated for PDCCH/PDSCH reception upon a later SCG activation in which *tci-Info* is absent  - if *bfd-and-RLM* is configured and no RS is configured in *RadioLinkMonitoringConfig* for RLM, respectively for BFD, the UE shall use the previously activated TCI states for PDCCH as RS for RLM, respectively for BFD. |
| ***tdd-UL-DL-ConfigurationDedicated-IAB-MT***  Resource configuration per IAB-MT D/U/F overrides all symbols (with a limitation that effectively only flexible symbols can be overwritten in Rel-16) per slot over the number of slots as provided by *TDD-UL-DL ConfigurationCommon*. |
| ***unifiedtci-StateType***  Indicates the unified TCI state type the UE is configured for this serving cell. The value "SeparateULDL" means this serving cell is configured with DLorJoint-TCIState for DL TCI state and UL-TCIState for UL TCI state. The value "JointULDL" means this serving cell is configured with DLorJoint-TCIState for joint TCI state for UL and DL operation. |
| ***uplinkConfig***  Network may configure this field only when *uplinkConfigCommon* is configured in *ServingCellConfigCommon* or *ServingCellConfigCommonSIB*. Addition or release of this field can only be done upon SCell addition or release (respectively). |
| ***uplink-PowerControlToAddModList***  Configures UL power control parameters for PUSCH, PUCCH and SRS when field unifiedtci-StateType is configured. Network does not configure other uplink power control parameters configured in IEs PUCCH-PowerControl, PUSCH-PowerControl or SRS-Config for the UE when this is configured. |

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| ***UplinkConfig* field descriptions** |
| ***carrierSwitching***  Includes parameters for configuration of carrier based SRS switching (see TS 38.214 [19], clause 6.2.1.3. |
| ***enableDefaultBeamPL-ForPUSCH0-0, enableDefaultBeamPL-ForPUCCH, enableDefaultBeamPL-ForSRS***  When the parameter is present, UE derives the spatial relation and the corresponding pathloss reference Rs as specified in 38.213, clauses 7.1.1, 7.2.1, 7.3.1 and 9.2.2. The network only configures these parameters for FR2. |
| ***enablePL-RS-UpdateForPUSCH-SRS***  When this parameter is present, the Rel-16 feature of MAC CE based pathloss RS updates for PUSCH/SRS is enabled. Network only configures this parameter when the UE is configured with *sri-PUSCH-PowerControl*. If this field is not configured, network configures at most 4 pathloss RS resources for PUSCH/PUCCH/SRS transmissions per BWP, not including pathloss RS resources for SRS transmissions for positioning. (See TS 38.213 [13], clause 7). |
| ***firstActiveUplinkBWP-Id***  If configured for an SpCell, this field contains the ID of the UL BWP to be activated upon performing the RRC (re-)configuration. If the field is absent, the RRC (re-)configuration does not impose a BWP switch.  If configured for an SCell, this field contains the ID of the uplink bandwidth part to be used upon activation of an SCell. The initial bandwidth part is referred to by BandiwdthPartId = 0. |
| ***initialUplinkBWP***  The dedicated (UE-specific) configuration for the initial uplink bandwidth-part (i.e. UL BWP#0). If any of the optional IEs are configured within this IE as part of the IE *uplinkConfig*, the UE considers the BWP#0 to be an RRC configured BWP (from UE capability viewpoint). Otherwise, the UE does not consider the BWP#0 as an RRC configured BWP (from UE capability viewpoint). Network always configures the UE with a value for this field if no other BWPs are configured. NOTE1 |
| ***moreThanOneNackOnlyMode-r17***  Indicates the mode of supporting more than one NACK-only feedback in the same PUCCH transmission. Mode 1 is UE multiplexing the HARQ-ACK bits by transforming NACK-only into ACK/NACK HARQ bits. Mode 2 is UE transmitting a specific sequence or a PUCCH transmission corresponding the combination more than one NACK-only HARQ feedback. If absent, UE uses the mode2 for mulicast CFR if configured. |
| ***mpr-PowerBoost-FR2***  Indicates whether UE is allowed to boost uplink transmission power by suspending in-band emission (IBE) requirements as specified in TS 38.101-2 [39]. Network only configures this field for FR2 serving cells. |
| ***powerBoostPi2BPSK***  If this field is set to *true*, the UE determines the maximum output power for PUCCH/PUSCH transmissions that use pi/2 BPSK modulation according to TS 38.101-1 [15], clause 6.2.4. |
| ***pusch-ServingCellConfig***  PUSCH related parameters that are not BWP-specific. |
| ***uplinkBWP-ToAddModList***  The additional bandwidth parts for uplink to be added or modified. In case of TDD uplink- and downlink BWP with the same *bandwidthPartId* are considered as a BWP pair and must have the same center frequency. |
| ***uplinkBWP-ToReleaseList***  The additional bandwidth parts for uplink to be released. |
| ***uplinkChannelBW-PerSCS-List***  A set of UE specific channel bandwidth and location configurations for different subcarrier spacings (numerologies). Defined in relation to Point A. The UE uses the configuration provided in this field only for the purpose of channel bandwidth and location determination. If absent, UE uses the configuration indicated in *scs-SpecificCarrierList* in *UplinkConfigCommon* / *UplinkConfigCommonSIB*. Network only configures channel bandwidth that corresponds to the channel bandwidth values defined in TS 38.101-1 [15] and TS 38.101-2 [39]. |
| ***uplinkTxSwitchingPeriodLocation***  Indicates whether the location of UL Tx switching period is configured in this uplink carrier in case of inter-band UL CA, SUL, or (NG)EN-DC, as specified in TS 38.101-1 [15] and TS 38.101-3 [34].  In case of (NG)EN-DC, network always configures this field to TRUE for NR carrier (i.e. with (NG)EN-DC, the UL switching period always occurs on the NR carrier).  In case of inter-band UL CA or SUL, for dynamic uplink Tx switching between 2 bands with 2 uplink carriers or 3 uplink carriers as defined in TS 38.101-1 [15], network configures this field to TRUE for the uplink carrier(s) on one band and configures this field to FALSE for the uplink carrier(s) on the other band. This field is set to the same value for the carriers on the same band. |
| ***uplinkTxSwitchingCarrier***  Indicates that the configured carrier is carrier1 or carrier2 for dynamic uplink Tx switching, as defined in TS 38.101-1 [15] and TS 38.101-3 [34]. In case of (NG)EN-DC, network always configures the NR carrier as carrier 2.  In case of inter-band UL CA or SUL, for dynamic uplink Tx switching between 2 bands with 2 uplink carriers or 3 uplink carriers as defined in TS 38.101-1 [15], network configures the uplink carrier(s) on one band as carrier1 and the uplink carrier(s) on the other band as carrier2. This field is set to the same value for the carriers on the same band. |

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| ***DormantBWP-Config* field descriptions** |
| ***dormancyGroupWithinActiveTime***  This field contains the ID of an SCell group for Dormancy within active time, to which this SCell belongs. The use of the Dormancy within active time SCell groups is specified in TS 38.213 [13]. |
| ***dormancyGroupOutsideActiveTime***  This field contains the ID of an SCell group for Dormancy outside active time, to which this SCell belongs. The use of the Dormancy outside active time SCell groups is specified in TS 38.213 [13]. |
| ***dormantBWP-Id***  This field contains the ID of the downlink bandwidth part to be used as dormant BWP. If this field is configured, its value is different from *defaultDownlinkBWP-Id*, and at least one of the *withinActiveTimeConfig* and *outsideActiveTimeConfig* should be configured. |
| ***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. |
| ***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. |
| ***outsideActiveTimeConfig***  This field contains the configuration to be used for SCell dormancy outside active time, as specified in TS 38.213 [13]. The field can only be configured when the cell group the SCell belongs to is configured with *dcp-Config*. |
| ***withinActiveTimeConfig***  This field contains the configuration to be used for SCell dormancy within active time, as specified in TS 38.213 [13]. |

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| ***GuardBand* field descriptions** |
| ***startCRB***  Indicates the starting RB of the guard band. |
| ***nrofCRB***  Indicates the length of the guard band in RBs. When set to 0, zero-size guard band is used. |

NOTE 1: If the dedicated part of initial UL/DL BWP configuration is absent, the initial BWP can be used but with some limitations. For example, changing to another BWP requires *RRCReconfiguration* since DCI format 1\_0 doesn't support DCI-based switching.

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| **Conditional Presence** | **Explanation** |
| *AsyncCA* | This field is mandatory present for SCells whose slot offset between the SpCell is not 0. Otherwise it is absent, Need S. |
| *MeasObject* | This field is mandatory present for the SpCell if the UE has a *measConfig*, and it is optionally present, Need M, for SCells. |
| *SCellOnly* | This field is optionally present, Need R, for SCells. It is absent otherwise. |
| *ServingCellWithoutPUCCH* | This field is optionally present, Need S, for SCells except PUCCH SCells. It is absent otherwise. |
| *SyncAndCellAdd* | This field is mandatory present for a SpCell upon reconfiguration with *reconfigurationWithSync* and upon *RRCSetup*/*RRCResume*.  The field is optionally present for an SpCell, Need N, upon reconfiguration without *reconfigurationWithSync*.  The field is mandatory present for an SCell upon addition, and absent for SCell in other cases, Need M. |
| *TCI\_Info* | This field is optional Need N for SCells if *sCellState* is configured, otherwise it is absent.  This field is optional Need S for the PSCell when the SCG is indicated as deactivated or is being activated, otherwise it is absent.  This field is absent for the PCell. |
| *TDD* | This field is optionally present, Need R, for TDD cells. It is absent otherwise. |
| *TDD\_IAB* | For IAB-MT, this field is optionally present, Need R, for TDD cells. It is absent otherwise. |

*NEXT CHANGE*

6.4 RRC multiplicity and type constraint values

– Multiplicity and type constraint definitions

-- ASN1START

-- TAG-MULTIPLICITY-AND-TYPE-CONSTRAINT-DEFINITIONS-START

maxAdditionalRACH-r17 INTEGER ::= 999 -- Maximum number of additional RACH configurations is FFS, value 999 to

-- make ASN.1 compile

maxAI-DCI-PayloadSize-r16 INTEGER ::= 128 --Maximum size of the DCI payload scrambled with ai-RNTI

maxAI-DCI-PayloadSize-1-r16 INTEGER ::= 127 --Maximum size of the DCI payload scrambled with ai-RNTI minus 1

maxBandComb INTEGER ::= 65536 -- Maximum number of DL band combinations

maxBandsUTRA-FDD-r16 INTEGER ::= 64 -- Maximum number of bands listed in UTRA-FDD UE caps

maxBH-RLC-ChannelID-r16 INTEGER ::= 65536 -- Maximum value of BH RLC Channel ID

maxBT-IdReport-r16 INTEGER ::= 32 -- Maximum number of Bluetooth IDs to report

maxBT-Name-r16 INTEGER ::= 4 -- Maximum number of Bluetooth name

maxCAG-Cell-r16 INTEGER ::= 16 -- Maximum number of NR CAG cell ranges in SIB3, SIB4

maxTwoPUCCH-Grp-ConfigList-r16 INTEGER ::= 32 -- Maximum number of supported configuration(s) of {primary PUCCH group

-- config, secondary PUCCH group config}

maxCBR-Config-r16 INTEGER ::= 8 -- Maximum number of CBR range configurations for sidelink communication

-- congestion control

maxCBR-Config-1-r16 INTEGER ::= 7 -- Maximum number of CBR range configurations for sidelink communication

-- congestion control minus 1

maxCBR-Level-r16 INTEGER ::= 16 -- Maximum number of CBR levels

maxCBR-Level-1-r16 INTEGER ::= 15 -- Maximum number of CBR levels minus 1

maxCellExcluded INTEGER ::= 16 -- Maximum number of NR exclude-listed cell ranges in SIB3, SIB4

maxCellGroupings-r16 INTEGER ::= 32 -- Maximum number of cell groupings for NR-DC

maxCellHistory-r16 INTEGER ::= 16 -- Maximum number of visited PCells reported

maxPSCellHistory-r17 INTEGER ::= 16 -- Maximum number of visited PSCells reported

maxCellInter INTEGER ::= 16 -- Maximum number of inter-Freq cells listed in SIB4

maxCellIntra INTEGER ::= 16 -- Maximum number of intra-Freq cells listed in SIB3

maxCellMeasEUTRA INTEGER ::= 32 -- Maximum number of cells in E-UTRAN

maxCellMeasIdle-r16 INTEGER ::= 8 -- Maximum number of cells per carrier for idle/inactive measurements

maxCellMeasUTRA-FDD-r16 INTEGER ::= 32 -- Maximum number of cells in FDD UTRAN

maxCellAllowed INTEGER ::= 16 -- Maximum number of NR allow-listed cell ranges in SIB3, SIB4

maxEARFCN INTEGER ::= 262143 -- Maximum value of E-UTRA carrier frequency

maxEUTRA-CellExcluded INTEGER ::= 16 -- Maximum number of E-UTRA exclude-listed physical cell identity ranges

-- in SIB5

maxEUTRA-NS-Pmax INTEGER ::= 8 -- Maximum number of NS and P-Max values per band

maxFeatureCombPreambles-FFS-r17 INTEGER ::= 999 -- Maximum number of feature combination preambles FFS, value 999 to make

-- ASN.1 compile

maxLogMeasReport-r16 INTEGER ::= 520 -- Maximum number of entries for logged measurements

maxMultiBands INTEGER ::= 8 -- Maximum number of additional frequency bands that a cell belongs to

maxNARFCN INTEGER ::= 3279165 -- Maximum value of NR carrier frequency

maxNR-NS-Pmax INTEGER ::= 8 -- Maximum number of NS and P-Max values per band

maxFreqIdle-r16 INTEGER ::= 8 -- Maximum number of carrier frequencies for idle/inactive measurements

maxNrofServingCells INTEGER ::= 32 -- Max number of serving cells (SpCells + SCells)

maxNrofServingCells-1 INTEGER ::= 31 -- Max number of serving cells (SpCells + SCells) minus 1

maxNrofAggregatedCellsPerCellGroup INTEGER ::= 16

maxNrofAggregatedCellsPerCellGroupMinus4-r16 INTEGER ::= 12

maxNrofDUCells-r16 INTEGER ::= 512 -- Max number of cells configured on the collocated IAB-DU

maxNrofAppLayerMeas-r17 INTEGER ::= 16 -- Max number of simultaneous application layer measurements

maxNrofAppLayerMeas-1-r17 INTEGER ::= 15 -- Max number of simultaneous application layer measurements-1

maxNrofAvailabilityCombinationsPerSet-r16 INTEGER ::= 512 -- Max number of AvailabilityCombinationId used in the DCI format 2\_5

maxNrofAvailabilityCombinationsPerSet-1-r16 INTEGER ::= 511 -- Max number of AvailabilityCombinationId used in the DCI format 2\_5 minus 1

maxNrofSCellActRS-r17 INTEGER ::= 255 -- Max number of RS configurations per SCell for SCell activation

maxNrofSCells INTEGER ::= 31 -- Max number of secondary serving cells per cell group

maxNrofCellMeas INTEGER ::= 32 -- Maximum number of entries in each of the cell lists in a measurement object

maxNrofCRS-IM-InterfCell-r17 INTEGER ::= 8 -- Maximum number of LTE interference cells for CRS-IM per UE

maxNrofRelayToMeasure-r17 INTEGER ::= 32 -- Maximum number of L2 U2N Relay UEs to measure for each measurement object

-- on sidelink frequency

maxNrofCG-SL-r16 INTEGER ::= 8 -- Max number of sidelink configured grant

maxNrofCG-SL-1-r16 INTEGER ::= 7 -- Max number of sidelink configured grant minus 1

maxSL-GC-BC-DRX-QoS-r17 INTEGER ::= ffsUpperLimit -- FFS

maxNrofSL-Rx-InfoSet-r17 INTEGER ::= 4 -- Max number of sidelink DRX assistant information set [FFS]

maxNrofSS-BlocksToAverage INTEGER ::= 16 -- Max number for the (max) number of SS blocks to average to determine cell measurement

maxNrofCondCells-r16 INTEGER ::= 8 -- Max number of conditional candidate SpCells

maxNrofCSI-RS-ResourcesToAverage INTEGER ::= 16 -- Max number for the (max) number of CSI-RS to average to determine cell measurement

maxNrofDL-Allocations INTEGER ::= 16 -- Maximum number of PDSCH time domain resource allocations

maxNrofPDU-Sessions-r17 INTEGER ::= 256 -- Maximum number of PDU Sessions

maxNrofSR-ConfigPerCellGroup INTEGER ::= 8 -- Maximum number of SR configurations per cell group

maxLCG-ID INTEGER ::= 7 -- Maximum value of LCG ID

maxLCG-ID-IAB-r17 INTEGER ::= 255 -- Maximum value of LCG ID for IAB-MT

maxLC-ID INTEGER ::= 32 -- Maximum value of Logical Channel ID

maxLC-ID-Iab-r16 INTEGER ::= 65855 -- Maximum value of BH Logical Channel ID extension

maxLTE-CRS-Patterns-r16 INTEGER ::= 3 -- Maximum number of additional LTE CRS rate matching patterns

maxNrofTAGs INTEGER ::= 4 -- Maximum number of Timing Advance Groups

maxNrofTAGs-1 INTEGER ::= 3 -- Maximum number of Timing Advance Groups minus 1

maxNrofBWPs INTEGER ::= 4 -- Maximum number of BWPs per serving cell

maxNrofCombIDC INTEGER ::= 128 -- Maximum number of reported MR-DC combinations for IDC

maxNrofSymbols-1 INTEGER ::= 13 -- Maximum index identifying a symbol within a slot (14 symbols, indexed from 0..13)

maxNrofSlots INTEGER ::= 320 -- Maximum number of slots in a 10 ms period

maxNrofSlots-1 INTEGER ::= 319 -- Maximum number of slots in a 10 ms period minus 1

maxNrofPhysicalResourceBlocks INTEGER ::= 275 -- Maximum number of PRBs

maxNrofPhysicalResourceBlocks-1 INTEGER ::= 274 -- Maximum number of PRBs minus 1

maxNrofPhysicalResourceBlocksPlus1 INTEGER ::= 276 -- Maximum number of PRBs plus 1

maxNrofControlResourceSets INTEGER ::= 12 -- Max number of CoReSets configurable on a serving cell

maxNrofControlResourceSets-1 INTEGER ::= 11 -- Max number of CoReSets configurable on a serving cell minus 1

maxNrofControlResourceSets-1-r16 INTEGER ::= 15 -- Max number of CoReSets configurable on a serving cell extended in minus 1

maxNrofCoresetPools-r16 INTEGER ::= 2 -- Maximum number of CORESET pools

maxCoReSetDuration INTEGER ::= 3 -- Max number of OFDM symbols in a control resource set

maxNrofSearchSpaces-1 INTEGER ::= 39 -- Max number of Search Spaces minus 1

maxNrofSearchSpacesLinks-1-r17 INTEGER ::= ffsUpperLimit -- Max number of Search Space links minus 1 FFS on actual size

maxNrofBFDResourcePerSet-r17 INTEGER ::= ffsUpperLimit -- Size is FFS

max-DLorJointTCI-r17 INTEGER ::= ffsUpperLimit -- Size is FFS

maxNrofCandidateBeams-r17 INTEGER ::= ffsUpperLimit -- Size is FFS

maxSFI-DCI-PayloadSize INTEGER ::= 128 -- Max number payload of a DCI scrambled with SFI-RNTI

maxSFI-DCI-PayloadSize-1 INTEGER ::= 127 -- Max number payload of a DCI scrambled with SFI-RNTI minus 1

maxIAB-IP-Address-r16 INTEGER ::= 32 -- Max number of assigned IP addresses

maxINT-DCI-PayloadSize INTEGER ::= 126 -- Max number payload of a DCI scrambled with INT-RNTI

maxINT-DCI-PayloadSize-1 INTEGER ::= 125 -- Max number payload of a DCI scrambled with INT-RNTI minus 1

maxNrofRateMatchPatterns INTEGER ::= 4 -- Max number of rate matching patterns that may be configured

maxNrofRateMatchPatterns-1 INTEGER ::= 3 -- Max number of rate matching patterns that may be configured minus 1

maxNrofRateMatchPatternsPerGroup INTEGER ::= 8 -- Max number of rate matching patterns that may be configured in one group

maxNrofCSI-ReportConfigurations INTEGER ::= 48 -- Maximum number of report configurations

maxNrofCSI-ReportConfigurations-1 INTEGER ::= 47 -- Maximum number of report configurations minus 1

maxNrofCSI-ResourceConfigurations INTEGER ::= 112 -- Maximum number of resource configurations

maxNrofCSI-ResourceConfigurations-1 INTEGER ::= 111 -- Maximum number of resource configurations minus 1

maxNrofAP-CSI-RS-ResourcesPerSet INTEGER ::= 16

maxNrOfCSI-AperiodicTriggers INTEGER ::= 128 -- Maximum number of triggers for aperiodic CSI reporting

maxNrofReportConfigPerAperiodicTrigger INTEGER ::= 16 -- Maximum number of report configurations per trigger state for aperiodic reporting

maxNrofNZP-CSI-RS-Resources INTEGER ::= 192 -- Maximum number of Non-Zero-Power (NZP) CSI-RS resources

maxNrofNZP-CSI-RS-Resources-1 INTEGER ::= 191 -- Maximum number of Non-Zero-Power (NZP) CSI-RS resources minus 1

maxNrofNZP-CSI-RS-ResourcesPerSet INTEGER ::= 64 -- Maximum number of NZP CSI-RS resources per resource set

maxNrofNZP-CSI-RS-ResourceSets INTEGER ::= 64 -- Maximum number of NZP CSI-RS resource sets per cell

maxNrofNZP-CSI-RS-ResourceSets-1 INTEGER ::= 63 -- Maximum number of NZP CSI-RS resource sets per cell minus 1

maxNrofNZP-CSI-RS-ResourceSetsPerConfig INTEGER ::= 16 -- Maximum number of resource sets per resource configuration

maxNrofNZP-CSI-RS-ResourcesPerConfig INTEGER ::= 128 -- Maximum number of resources per resource configuration

maxNrofZP-CSI-RS-Resources INTEGER ::= 32 -- Maximum number of Zero-Power (ZP) CSI-RS resources

maxNrofZP-CSI-RS-Resources-1 INTEGER ::= 31 -- Maximum number of Zero-Power (ZP) CSI-RS resources minus 1

maxNrofZP-CSI-RS-ResourceSets-1 INTEGER ::= 15

maxNrofZP-CSI-RS-ResourcesPerSet INTEGER ::= 16

maxNrofZP-CSI-RS-ResourceSets INTEGER ::= 16

maxNrofCSI-IM-Resources INTEGER ::= 32 -- Maximum number of CSI-IM resources

maxNrofCSI-IM-Resources-1 INTEGER ::= 31 -- Maximum number of CSI-IM resources minus 1

maxNrofCSI-IM-ResourcesPerSet INTEGER ::= 8 -- Maximum number of CSI-IM resources per set

maxNrofCSI-IM-ResourceSets INTEGER ::= 64 -- Maximum number of NZP CSI-IM resource sets per cell

maxNrofCSI-IM-ResourceSets-1 INTEGER ::= 63 -- Maximum number of NZP CSI-IM resource sets per cell minus 1

maxNrofCSI-IM-ResourceSetsPerConfig INTEGER ::= 16 -- Maximum number of CSI IM resource sets per resource configuration

maxNrofCSI-SSB-ResourcePerSet INTEGER ::= 64 -- Maximum number of SSB resources in a resource set

maxNrofCSI-SSB-ResourceSets INTEGER ::= 64 -- Maximum number of CSI SSB resource sets per cell

maxNrofCSI-SSB-ResourceSets-1 INTEGER ::= 63 -- Maximum number of CSI SSB resource sets per cell minus 1

maxNrofCSI-SSB-ResourceSetsPerConfig INTEGER ::= 1 -- Maximum number of CSI SSB resource sets per resource configuration

maxNrofCSI-SSB-ResourceSetsPerConfigExt INTEGER ::= 2 -- Maximum number of CSI SSB resource sets per resource configuration

-- extended

maxNrofFailureDetectionResources INTEGER ::= 10 -- Maximum number of failure detection resources

maxNrofFailureDetectionResources-1 INTEGER ::= 9 -- Maximum number of failure detection resources minus 1

maxNrofFreqSL-r16 INTEGER ::= 8 -- Maximum number of carrier frequency for NR sidelink communication

maxNrofSL-BWPs-r16 INTEGER ::= 4 -- Maximum number of BWP for NR sidelink communication

maxFreqSL-EUTRA-r16 INTEGER ::= 8 -- Maximum number of EUTRA anchor carrier frequency for NR sidelink communication

maxNrofSL-MeasId-r16 INTEGER ::= 64 -- Maximum number of sidelink measurement identity (RSRP) per destination

maxNrofSL-ObjectId-r16 INTEGER ::= 64 -- Maximum number of sidelink measurement objects (RSRP) per destination

maxNrofSL-ReportConfigId-r16 INTEGER ::= 64 -- Maximum number of sidelink measurement reporting configuration(RSRP) per destination

maxNrofSL-PoolToMeasureNR-r16 INTEGER ::= 8 -- Maximum number of resource pool for NR sidelink measurement to measure for

-- each measurement object (for CBR)

maxFreqSL-NR-r16 INTEGER ::= 8 -- Maximum number of NR anchor carrier frequency for NR sidelink communication

maxNrofSL-QFIs-r16 INTEGER ::= 2048 -- Maximum number of QoS flow for NR sidelink communication per UE

maxNrofSL-QFIsPerDest-r16 INTEGER ::= 64 -- Maximum number of QoS flow per destination for NR sidelink communication

maxNrofObjectId INTEGER ::= 64 -- Maximum number of measurement objects

maxNrofPageRec INTEGER ::= 32 -- Maximum number of page records

maxNrofPCI-Ranges INTEGER ::= 8 -- Maximum number of PCI ranges

maxPLMN INTEGER ::= 12 -- Maximum number of PLMNs broadcast and reported by UE at establishment

maxTAC-r17 INTEGER ::= 12 -- Maximum number of Tracking Area Codes to which a cell belongs to

maxNrofCSI-RS-ResourcesRRM INTEGER ::= 96 -- Maximum number of CSI-RS resources per cell for an RRM measurement object

maxNrofCSI-RS-ResourcesRRM-1 INTEGER ::= 95 -- Maximum number of CSI-RS resources per cell for an RRM measurement object

-- minus 1.

maxNrofMeasId INTEGER ::= 64 -- Maximum number of configured measurements

maxNrofQuantityConfig INTEGER ::= 2 -- Maximum number of quantity configurations

maxNrofCSI-RS-CellsRRM INTEGER ::= 96 -- Maximum number of cells with CSI-RS resources for an RRM measurement object

maxNrofSL-Dest-r16 INTEGER ::= 32 -- Maximum number of destination for NR sidelink communication

maxNrofSL-Dest-1-r16 INTEGER ::= 31 -- Highest index of destination for NR sidelink communication

maxNrofSLRB-r16 INTEGER ::= 512 -- Maximum number of radio bearer for NR sidelink communication per UE

maxSL-LCID-r16 INTEGER ::= 512 -- Maximum number of RLC bearer for NR sidelink communication per UE

maxSL-SyncConfig-r16 INTEGER ::= 16 -- Maximum number of sidelink Sync configurations

maxNrofRXPool-r16 INTEGER ::= 16 -- Maximum number of Rx resource pool for NR sidelink communication

maxNrofTXPool-r16 INTEGER ::= 8 -- Maximum number of Tx resource pool for NR sidelink communication

maxNrofPoolID-r16 INTEGER ::= 16 -- Maximum index of resource pool for NR sidelink communication

maxNrofSRS-PathlossReferenceRS-r16 INTEGER ::= 64 -- Maximum number of RSs used as pathloss reference for SRS power control.

maxNrofSRS-PathlossReferenceRS-1-r16 INTEGER ::= 63 -- Maximum number of RSs used as pathloss reference for SRS power control

-- minus 1.

maxNrofSRS-ResourceSets INTEGER ::= 16 -- Maximum number of SRS resource sets in a BWP.

maxNrofSRS-ResourceSets-1 INTEGER ::= 15 -- Maximum number of SRS resource sets in a BWP minus 1.

maxNrofSRS-PosResourceSets-r16 INTEGER ::= 16 -- Maximum number of SRS Positioning resource sets in a BWP.

maxNrofSRS-PosResourceSets-1-r16 INTEGER ::= 15 -- Maximum number of SRS Positioning resource sets in a BWP minus 1.

maxNrofSRS-Resources INTEGER ::= 64 -- Maximum number of SRS resources.

maxNrofSRS-Resources-1 INTEGER ::= 63 -- Maximum number of SRS resources minus 1.

maxNrofSRS-PosResources-r16 INTEGER ::= 64 -- Maximum number of SRS Positioning resources.

maxNrofSRS-PosResources-1-r16 INTEGER ::= 63 -- Maximum number of SRS Positioning resources minus 1.

maxNrofSRS-ResourcesPerSet INTEGER ::= 16 -- Maximum number of SRS resources in an SRS resource set

maxNrofSRS-TriggerStates-1 INTEGER ::= 3 -- Maximum number of SRS trigger states minus 1, i.e., the largest code point.

maxNrofSRS-TriggerStates-2 INTEGER ::= 2 -- Maximum number of SRS trigger states minus 2.

maxRAT-CapabilityContainers INTEGER ::= 8 -- Maximum number of interworking RAT containers (incl NR and MRDC)

maxSimultaneousBands INTEGER ::= 32 -- Maximum number of simultaneously aggregated bands

maxULTxSwitchingBandPairs INTEGER ::= 32 -- Maximum number of band pairs supporting dynamic UL Tx switching in a band

-- combination.

maxNrofSlotFormatCombinationsPerSet INTEGER ::= 512 -- Maximum number of Slot Format Combinations in a SF-Set.

maxNrofSlotFormatCombinationsPerSet-1 INTEGER ::= 511 -- Maximum number of Slot Format Combinations in a SF-Set minus 1.

maxNrofTrafficPattern-r16 INTEGER ::= 8 -- Maximum number of Traffic Pattern for NR sidelink communication.

maxNrofPUCCH-Resources INTEGER ::= 128

maxNrofPUCCH-Resources-1 INTEGER ::= 127

maxNrofPUCCH-ResourceSets INTEGER ::= 4 -- Maximum number of PUCCH Resource Sets

maxNrofPUCCH-ResourceSets-1 INTEGER ::= 3 -- Maximum number of PUCCH Resource Sets minus 1.

maxNrofPUCCH-ResourcesPerSet INTEGER ::= 32 -- Maximum number of PUCCH Resources per PUCCH-ResourceSet

maxNrofPUCCH-P0-PerSet INTEGER ::= 8 -- Maximum number of P0-pucch present in a p0-pucch set

maxNrofPUCCH-PathlossReferenceRSs INTEGER ::= 4 -- Maximum number of RSs used as pathloss reference for PUCCH power control.

maxNrofPUCCH-PathlossReferenceRSs-1 INTEGER ::= 3 -- Maximum number of RSs used as pathloss reference for PUCCH power control

-- minus 1.

maxNrofPUCCH-PathlossReferenceRSs-r16 INTEGER ::= 64 -- Maximum number of RSs used as pathloss reference for PUCCH power control

-- extended.

maxNrofPUCCH-PathlossReferenceRSs-1-r16 INTEGER ::= 63 -- Maximum number of RSs used as pathloss reference for PUCCH power control

-- minus 1 extended.

maxNrofPUCCH-PathlossReferenceRSsDiff-r16 INTEGER ::= 60 -- Difference between the extended maximum and the non-extended maximum

maxNrofPUCCH-ResourceGroups-r16 INTEGER ::= 4 -- Maximum number of PUCCH resources groups.

maxNrofPUCCH-ResourcesPerGroup-r16 INTEGER ::= 128 -- Maximum number of PUCCH resources in a PUCCH group.

maxNrofPowerControlSetInfos-r17 INTEGER ::= 8 -- Maximum number of PUCCH power control set infos

maxNrofMultiplePUSCHs-r16 INTEGER ::= 8 -- Maximum number of multiple PUSCHs in PUSCH TDRA list

maxNrofP0-PUSCH-AlphaSets INTEGER ::= 30 -- Maximum number of P0-pusch-alpha-sets (see TS 38.213 [13], clause 7.1)

maxNrofP0-PUSCH-AlphaSets-1 INTEGER ::= 29 -- Maximum number of P0-pusch-alpha-sets minus 1 (see TS 38.213 [13], clause 7.1)

maxNrofPUSCH-PathlossReferenceRSs INTEGER ::= 4 -- Maximum number of RSs used as pathloss reference for PUSCH power control.

maxNrofPUSCH-PathlossReferenceRSs-1 INTEGER ::= 3 -- Maximum number of RSs used as pathloss reference for PUSCH power control

-- minus 1.

maxNrofPUSCH-PathlossReferenceRSs-r16 INTEGER ::= 64 -- Maximum number of RSs used as pathloss reference for PUSCH power control

-- extended

maxNrofPUSCH-PathlossReferenceRSs-1-r16 INTEGER ::= 63 -- Maximum number of RSs used as pathloss reference for PUSCH power control

-- extended minus 1

maxNrofPUSCH-PathlossReferenceRSsDiff-r16 INTEGER ::= 60 -- Difference between maxNrofPUSCH-PathlossReferenceRSs-r16 and

-- maxNrofPUSCH-PathlossReferenceRSs

maxNrofNAICS-Entries INTEGER ::= 8 -- Maximum number of supported NAICS capability set

maxBands INTEGER ::= 1024 -- Maximum number of supported bands in UE capability.

maxBandsMRDC INTEGER ::= 1280

maxBandsEUTRA INTEGER ::= 256

maxCellReport INTEGER ::= 8

maxDRB INTEGER ::= 29 -- Maximum number of DRBs (that can be added in DRB-ToAddModList).

maxFreq INTEGER ::= 8 -- Max number of frequencies.

maxFreqLayers INTEGER ::= 4 -- Max number of frequency layers.

maxFreqIDC-r16 INTEGER ::= 128 -- Max number of frequencies for IDC indication.

maxCombIDC-r16 INTEGER ::= 128 -- Max number of reported UL CA for IDC indication.

maxFreqIDC-MRDC INTEGER ::= 32 -- Maximum number of candidate NR frequencies for MR-DC IDC indication

maxNrofCandidateBeams INTEGER ::= 16 -- Max number of PRACH-ResourceDedicatedBFR in BFR config.

maxNrofCandidateBeams-r16 INTEGER ::= 64 -- Max number of candidate beam resources in BFR config.

maxNrofCandidateBeamsExt-r16 INTEGER ::= 48 -- Max number of PRACH-ResourceDedicatedBFR in the CandidateBeamRSListExt

maxNrofPCIsPerSMTC INTEGER ::= 64 -- Maximum number of PCIs per SMTC.

maxNrofQFIs INTEGER ::= 64

maxNrofResourceAvailabilityPerCombination-r16 INTEGER ::= 256

maxNrOfSemiPersistentPUSCH-Triggers INTEGER ::= 64 -- Maximum number of triggers for semi persistent reporting on PUSCH

maxNrofSR-Resources INTEGER ::= 8 -- Maximum number of SR resources per BWP in a cell.

maxNrofSlotFormatsPerCombination INTEGER ::= 256

maxNrofSpatialRelationInfos INTEGER ::= 8

maxNrofSpatialRelationInfos-plus-1 INTEGER ::= 9

maxNrofSpatialRelationInfos-r16 INTEGER ::= 64

maxNrofSpatialRelationInfosDiff-r16 INTEGER ::= 56 -- Difference between maxNrofSpatialRelationInfos-r16 and maxNrofSpatialRelationInfos

maxNrofIndexesToReport INTEGER ::= 32

maxNrofIndexesToReport2 INTEGER ::= 64

maxNrofSSBs-r16 INTEGER ::= 64 -- Maximum number of SSB resources in a resource set.

maxNrofSSBs-1 INTEGER ::= 63 -- Maximum number of SSB resources in a resource set minus 1.

maxNrofS-NSSAI INTEGER ::= 8 -- Maximum number of S-NSSAI.

maxNrofTCI-StatesPDCCH INTEGER ::= 64

maxNrofTCI-States INTEGER ::= 128 -- Maximum number of TCI states.

maxNrofTCI-States-1 INTEGER ::= 127 -- Maximum number of TCI states minus 1.

maxULTCI-r17 INTEGER ::= 64 -- Maximum number of TCI states.

maxULTCI-1-r17 INTEGER ::= 63 -- Maximum number of TCI states minus 1.

maxNrofAdditionalPCI-r17 INTEGER ::= 7 -- Maximum number of additional PCI

maxNrofAdditionalPCI-1-r17 INTEGER ::= 6 -- Maximum number of additional PCI minus 1.

maxMPE-Resources-r17 INTEGER ::= 64 -- Maximum number of pooled MPE resources

maxNrofUL-Allocations INTEGER ::= 16 -- Maximum number of PUSCH time domain resource allocations.

maxQFI INTEGER ::= 63

maxRA-CSIRS-Resources INTEGER ::= 96

maxRA-OccasionsPerCSIRS INTEGER ::= 64 -- Maximum number of RA occasions for one CSI-RS

maxRA-Occasions-1 INTEGER ::= 511 -- Maximum number of RA occasions in the system

maxRA-SSB-Resources INTEGER ::= 64

maxSCSs INTEGER ::= 5

maxSecondaryCellGroups INTEGER ::= 3

maxNrofServingCellsEUTRA INTEGER ::= 32

maxMBSFN-Allocations INTEGER ::= 8

maxNrofMultiBands INTEGER ::= 8

maxCellSFTD INTEGER ::= 3 -- Maximum number of cells for SFTD reporting

maxReportConfigId INTEGER ::= 64

maxNrofCodebooks INTEGER ::= 16 -- Maximum number of codebooks supported by the UE

maxNrofCSI-RS-ResourcesExt-r16 INTEGER ::= 16 -- Maximum number of codebook resources supported by the UE for eType2/Codebook combo

maxNrofCSI-RS-ResourcesExt-r17 INTEGER ::= 8 -- Maximum number of codebook resources for fetype2Rank1 and fetype2Rank2

maxNrofCSI-RS-Resources INTEGER ::= 7 -- Maximum number of codebook resources supported by the UE

maxNrofCSI-RS-ResourcesAlt-r16 INTEGER ::= 512 -- Maximum number of alternative codebook resources supported by the UE

maxNrofCSI-RS-ResourcesAlt-1-r16 INTEGER ::= 511 -- Maximum number of alternative codebook resources supported by the UE minus 1

maxNrofSRI-PUSCH-Mappings INTEGER ::= 16

maxNrofSRI-PUSCH-Mappings-1 INTEGER ::= 15

maxSIB INTEGER::= 32 -- Maximum number of SIBs

maxSI-Message INTEGER::= 32 -- Maximum number of SI messages

maxSI-MessagePlus1-r17 INTEGER::= 33 -- Maximum number of SI messages plus 1

maxPO-perPF INTEGER ::= 4 -- Maximum number of paging occasion per paging frame

maxPEI-perPF-r17 INTEGER ::= 4 -- Maximum number of PEI occasion per paging frame

maxAccessCat-1 INTEGER ::= 63 -- Maximum number of Access Categories minus 1

maxBarringInfoSet INTEGER ::= 8 -- Maximum number of access control parameter sets

maxCellEUTRA INTEGER ::= 8 -- Maximum number of E-UTRA cells in SIB list

maxEUTRA-Carrier INTEGER ::= 8 -- Maximum number of E-UTRA carriers in SIB list

maxPLMNIdentities INTEGER ::= 8 -- Maximum number of PLMN identities in RAN area configurations

maxDownlinkFeatureSets INTEGER ::= 1024 -- (for NR DL) Total number of FeatureSets (size of the pool)

maxUplinkFeatureSets INTEGER ::= 1024 -- (for NR UL) Total number of FeatureSets (size of the pool)

maxEUTRA-DL-FeatureSets INTEGER ::= 256 -- (for E-UTRA) Total number of FeatureSets (size of the pool)

maxEUTRA-UL-FeatureSets INTEGER ::= 256 -- (for E-UTRA) Total number of FeatureSets (size of the pool)

maxFeatureSetsPerBand INTEGER ::= 128 -- (for NR) The number of feature sets associated with one band.

maxPerCC-FeatureSets INTEGER ::= 1024 -- (for NR) Total number of CC-specific FeatureSets (size of the pool)

maxFeatureSetCombinations INTEGER ::= 1024 -- (for MR-DC/NR)Total number of Feature set combinations (size of the pool)

maxInterRAT-RSTD-Freq INTEGER ::= 3

maxGIN-r17 INTEGER ::= 24 -- Maximum number of broadcast GINs

maxHRNN-Len-r16 INTEGER ::= 48 -- Maximum length of HRNNs

maxNPN-r16 INTEGER ::= 12 -- Maximum number of NPNs broadcast and reported by UE at establishment

maxNrOfMinSchedulingOffsetValues-r16 INTEGER ::= 2 -- Maximum number of min. scheduling offset (K0/K2) configurations

maxK0-SchedulingOffset-r16 INTEGER ::= 16 -- Maximum number of slots configured as min. scheduling offset (K0)

maxK2-SchedulingOffset-r16 INTEGER ::= 16 -- Maximum number of slots configured as min. scheduling offset (K2)

maxK0-SchedulingOffset-r17 INTEGER ::= 64 -- Maximum number of slots configured as min. scheduling offset (K0)

maxK2-SchedulingOffset-r17 INTEGER ::= 64 -- Maximum number of slots configured as min. scheduling offset (K2)

maxDCI-2-6-Size-r16 INTEGER ::= 140 -- Maximum size of DCI format 2-6

maxDCI-2-7-Size-r17 INTEGER ::= 43 -- Maximum size of DCI format 2-7

maxDCI-2-6-Size-1-r16 INTEGER ::= 139 -- Maximum DCI format 2-6 size minus 1

maxNrofUL-Allocations-r16 INTEGER ::= 64 -- Maximum number of PUSCH time domain resource allocations

maxNrofP0-PUSCH-Set-r16 INTEGER ::= 2 -- Maximum number of P0 PUSCH set(s)

maxOnDemandSIB-r16 INTEGER ::= 8 -- Maximum number of SIB(s) that can be requested on-demand

maxOnDemandPosSIB-r16 INTEGER ::= 32 -- Maximum number of posSIB(s) that can be requested on-demand

maxCI-DCI-PayloadSize-r16 INTEGER ::= 126 -- Maximum number of the DCI size for CI

maxCI-DCI-PayloadSize-1-r16 INTEGER ::= 125 -- Maximum number of the DCI size for CI minus 1

maxUu-Relay-RLC-ChannelID-r17 INTEGER ::= 32 -- Maximum value of Uu Relay RLC channel ID

maxWLAN-Id-Report-r16 INTEGER ::= 32 -- Maximum number of WLAN IDs to report

maxWLAN-Name-r16 INTEGER ::= 4 -- Maximum number of WLAN name

maxRAReport-r16 INTEGER ::= 8 -- Maximum number of RA procedures information to be included in the RA report

maxTxConfig-r16 INTEGER ::= 64 -- Maximum number of sidelink transmission parameters configurations

maxTxConfig-1-r16 INTEGER ::= 63 -- Maximum number of sidelink transmission parameters configurations minus 1

maxPSSCH-TxConfig-r16 INTEGER ::= 16 -- Maximum number of PSSCH TX configurations

maxNrofCLI-RSSI-Resources-r16 INTEGER ::= 64 -- Maximum number of CLI-RSSI resources for UE

maxNrofCLI-RSSI-Resources-1-r16 INTEGER ::= 63 -- Maximum number of CLI-RSSI resources for UE minus 1

maxNrofCLI-SRS-Resources-r16 INTEGER ::= 32 -- Maximum number of SRS resources for CLI measurement for UE

maxCLI-Report-r16 INTEGER ::= 8

maxNrofConfiguredGrantConfig-r16 INTEGER ::= 12 -- Maximum number of configured grant configurations per BWP

maxNrofConfiguredGrantConfig-1-r16 INTEGER ::= 11 -- Maximum number of configured grant configurations per BWP minus 1

maxNrofCG-Type2DeactivationState INTEGER ::= 16 -- Maximum number of deactivation state for type 2 configured grants per BWP

maxNrofConfiguredGrantConfigMAC-1-r16 INTEGER ::= 31 -- Maximum number of configured grant configurations per MAC entity minus 1

maxNrofSPS-Config-r16 INTEGER ::= 8 -- Maximum number of SPS configurations per BWP

maxNrofSPS-Config-1-r16 INTEGER ::= 7 -- Maximum number of SPS configurations per BWP minus 1

maxNrofSPS-DeactivationState INTEGER ::= 16 -- Maximum number of deactivation state for SPS per BWP

maxNrofPPW-Config-r17 INTEGER ::= ffsUpperLimit -- Maximum number of Preconfigured PPW is FFS

maxUE-Tx-TEG-ID-r17 INTEGER ::= ffsUpperLimit -- Maximum number of UE Tx Timing Error Group ID is FFS

maxGapConfig-r17 INTEGER ::= ffsUpperLimit -- Maximum number of Preconfigured Gaps is FFS

maxNrofDormancyGroups INTEGER ::= 5 --

maxNrofPagingSubgroups-r17 INTEGER ::= 8 -- Maximum number of paging subgroups per paging occasion

maxNrofPUCCH-ResourceGroups-1-r16 INTEGER ::= 3 --

maxNrofServingCellsTCI-r16 INTEGER ::= 32 -- Maximum number of serving cells in simultaneousTCI-UpdateList

maxNrofTxDC-TwoCarrier-r16 INTEGER ::= 64 -- Maximum number of UL Tx DC locations reported by the UE for 2CC uplink CA

maxNrofRbSetGroups-r17 INTEGER ::= 8 -- Maximum number of RB set groups

maxNrofRbSets-r17 INTEGER ::= 8 -- Maximum number of RB sets

maxNrofEnhType3HARQ-ACK-r17 INTEGER ::= 8 -- Maximum number of enhanced type 3 HARQ-ACK codebook

maxNrofEnhType3HARQ-ACK-1-r17 INTEGER ::= 7 -- Maximum number of enhanced type 3 HARQ-ACK codebook minus 1

maxNrofPRS-ResourcesPerSet-r17 INTEGER ::= 64 -- Maximum number of PRS resources for one set

maxNrofPRS-ResourcesPerSet-1-r17 INTEGER ::= 63 -- Maximum number of PRS resources for one set minus 1

maxNrofPRS-ResourceOffsetValue-1-r17 INTEGER ::= 511

maxNrofGapId-r17 INTEGER ::= ffsUpperLimit -- Maximum number of measurement gap ID is FFS

maxNrofGapId-1-r17 INTEGER ::= ffsUpperLimit -- Maximum number of measurement gap ID minus 1 is FFS

maxNrOfGapPri-r17 INTEGER ::= ffsUpperLimit -- Maximum number of gap priority level is FFS

maxCEFReport-r17 INTEGER ::= 4 -- Maximum number of CEF reports by the UE

maxNrofMultiplePDSCHs-r17 INTEGER ::= 8 -- Maximum number of PDSCHs in PDSCH TDRA list

maxSliceInfo-r17 INTEGER ::= 8 -- Maximum number of slice groups. FFS on the exact value

maxCellSlice-r17 INTEGER ::= 16 -- Maximum number of cells supporting the slice group

maxNrofTRS-ResourceSets-r17 INTEGER ::= 64 -- Maximum number of TRS resource sets

maxNrofSearchSpaceGroups-1-r17 INTEGER ::= 2 -- Maximum number of search space groups minus 1

maxRemoteUE-r17 INTEGER ::= ffsUpperLimit -- FFS

maxDCI-4-2-Size-r17 INTEGER ::= 140 -- Maximum size of DCI format 4-2

maxFreqMBS-r17 INTEGER ::= 5 -- FFS: if a higher value, e.g. 8 or 16 is needed

maxNrofDRX-ConfigPTM-r17 INTEGER ::= 64 -- Max number of DRX configuration for PTM provided in MBS broadcast in a

-- cell

maxNrofDRX-ConfigPTM-1-r17 INTEGER ::= 63 -- Max number of DRX configuration for PTM provided in MBS broadcast in a

-- cell minus 1

maxNrofMBS-ServiceListPerUE-r17 INTEGER ::= 16 -- Maximum number of services which the UE can include in the MBS interest

-- indication

maxNrofMBS-Session-r17 INTEGER ::= 1024 -- Maximum number of MBS sessions provided in MBS broadcast in a cell

maxNrofMTCH-SSB-MappingWindow-r17 INTEGER ::= 16 -- FFS: Maximum number of MTCH to SSB beam mapping pattern

maxNrofMTCH-SSB-MappingWindow-1-r17 INTEGER ::= 15 -- FFS: Maximum number of MTCH to SSB beam mapping pattern minus 1

maxNrofMRB-Broadcast-r17 INTEGER ::= 4 -- Maximum number of broadcast MRBs configured for one MBS broadcast service

-- FFS: if a higher value, e.g. 8, is needed

maxNrofPageGroup-r17 INTEGER ::= 32 -- Maximum number of paging groups in a paging message

maxNrofPDSCH-ConfigPTM-r17 INTEGER ::= 16 -- Maximum number of PDSCH configuration groups for PTM

maxNrofPDSCH-ConfigPTM-1-r17 INTEGER ::= 15 -- Maximum number of PDSCH configuration groups for PTM minus 1

maxG-RNTI-r17 INTEGER ::= 16 -- Maximum number of G-RNTI that can be configured for a UE. FFS: if the

-- final value should be different based on the related RAN1 discussion on

-- UE capabilities

maxG-RNTI-1-r17 INTEGER ::= 15 -- Maximum number of G-RNTI that can be configured for a UE minus 1.

-- FFS: if the final value should be different based on the related RAN1

-- discussion on UE capabilities

maxG-CS-RNTI-r17 INTEGER ::= 8 -- Maximum number of G-CS-RNTI that can be configured for a UE.

-- FFS: the final value should be different based on the related RAN1

-- discussion on UE capabilities

maxG-CS-RNTI-1-r17 INTEGER ::= 7 -- FFS: Maximum number of G-CS-RNTI that can be configured for a UE minus 1.

maxMRB-r17 INTEGER ::= 32 -- Maximum number of multicast MRBs (that can be added in MRB-ToAddModLIst)

maxFSAI-MBS-r17 INTEGER ::= 64 -- Maximum number of MBS frequency selection area identities

maxNeighCell-MBS-r17 INTEGER ::= 8 -- Maximum number of MBS broadcast neighbour cells

-- TAG-MULTIPLICITY-AND-TYPE-CONSTRAINT-DEFINITIONS-STOP

-- ASN1STOP

Editor's note: *maxK0-SchedulingOffset* and *maxK0-SchedulingOffset* need confirmation by RAN1.

*END OF CHANGE*