**3GPP TSG-RAN WG2 Meeting #130 *R2-2504974***

**St. Julian’s, Malta, 19 - 23 May, 2025**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **38.331** | **CR** | **5392** | **rev** | **1** | **Current version:** | **16.19.0** |  |
|  |
| *For* [***HELP***](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)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

|  |
| --- |
|  |
| ***Title:***  | Correction on *servingCellMO* configuration for SSB-less SCell |
|  |  |
| ***Source to WG:*** | Huawei, HiSilicon, Apple, Samsung, Qualcomm Incorporated, MediaTek Inc, ZTE Corporation, Sanechips, Ericsson, Nokia |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | NR\_newRAT-Core |  | ***Date:*** | 2025-05-30 |
|  |  |  |  |  |
| ***Category:*** | **A** |  | ***Release:*** | Rel-16 |
|  | *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 canbe 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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | RAN2 concluded in RAN2#130 to introduce UE capability to indicate whether UE supports the configuration of servingCellMO for a SSB-less SCell and a UE supporting this feature shall also support NR intra-frequency measurements on neighbor cells based on servingCellMO associated with SCell that does not transmit SS/PBCH block. And network would only configure servingCellMO for SSB-less SCell if UE indicate such capability.Besides, it needs to be clarified in the procedure text that SSB-based serving cell measurements are skipped for the SSB-less SCell. And the field description of *servingCellMO* should be updated so that *ssbFrequency* value is same as *absoluteFrequencySSB* only when *absoluteFrequencySSB* is configured.**Impact analysis**Impacted 5G architecture options:NR SA, (NG)EN-DC, NE-DC, NR-DCImpacted functionality:RRM measurementsInter-operability:If the network is implemented according to the CR and the UE is not, there is no inter-operability issue as the network will not configure *servingCellMO* for SSB-less SCell when not receiving the new UE capability.If the UE is implemented according to the CR and the network is not, the network will receive an empty entry for serving cell measurement results but there is no interoperability issue since SSB is not transmitted by the SSB-less SCell anyway. |
|  |  |
| ***Summary of change:*** | Clarify that *servingCellMO* is not configured for intra-band SSB-less SCell unless the new UE capability is reported. Clarify that SSB-based serving cell measurements are skipped for the SSB-less SCell. Clarify that *ssbFrequency* value is same as *absoluteFrequencySSB* only when *absoluteFrequencySSB* is configured. |
|  |  |
| ***Consequences if not approved:*** | *servingCellMO* for SSB-less SCell may be configured to the UE, and UE is forced perform SSB based measurements or CSI-RS based measurements on the SSB-less SCell, while there is no SSB to be measured and no SSB timing for CSI-RS measurements. |
|  |  |
| ***Clauses affected:*** | 5.5.3.1, 6.3.2, 6.3.3 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS/TR 38.306 CR 1316TS/TR 38.300 CR 0996 |
| ***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 Changes

5.5.3.1 General

An RRC\_CONNECTED UE shall derive cell measurement results by measuring one or multiple beams associated per cell as configured by the network, as described in 5.5.3.3. For all cell measurement results, except for RSSI, and CLI measurement results in RRC\_CONNECTED, the UE applies the layer 3 filtering as specified in 5.5.3.2, before using the measured results for evaluation of reporting criteria, measurement reporting or the criteria to trigger conditional reconfiguration execution. For cell measurements, the network can configure RSRP, RSRQ, SINR, RSCP or EcN0 as trigger quantity. For CLI measurements, the network can configure SRS-RSRP or CLI-RSSI as trigger quantity. For cell and beam measurements, reporting quantities can be any combination of quantities (i.e. only RSRP; only RSRQ; only SINR; RSRP and RSRQ; RSRP and SINR; RSRQ and SINR; RSRP, RSRQ and SINR; only RSCP; only EcN0; RSCP and EcN0), irrespective of the trigger quantity, and for CLI measurements, reporting quantities can be either SRS-RSRP or CLI-RSSI. For conditional reconfiguration execution, the network can configure up to 2 quantities, both using same RS type. The UE does not apply the layer 3 filtering as specified in 5.5.3.2 to derive the CBR measurements.

The network may also configure the UE to report measurement information per beam (which can either be measurement results per beam with respective beam identifier(s) or only beam identifier(s)), derived as described in 5.5.3.3a. If beam measurement information is configured to be included in measurement reports, the UE applies the layer 3 beam filtering as specified in 5.5.3.2. On the other hand, the exact L1 filtering of beam measurements used to derive cell measurement results is implementation dependent.

The UE shall:

1> whenever the UE has a *measConfig*, perform RSRP and RSRQ measurements for each serving cell for which *servingCellMO* is configured as follows:

2> if the *reportConfig* associated with at least one *measId* included in the *measIdList* within *VarMeasConfig* contains an *rsType* set to *ssb* and *ssb-ConfigMobility* is configured in the *measObject* indicated by the *servingCellMO*, and *absoluteFrequencySSB* is configured in *ServingCellConfigCommon*:

3> if the *reportConfig* contains a *reportQuantityRS-Indexes* and *maxNrofRS-IndexesToReport*:

4> derive layer 3 filtered RSRP and RSRQ per beam for the serving cell based on SS/PBCH block, as described in 5.5.3.3a;

3> derive serving cell measurement results based on SS/PBCH block, as described in 5.5.3.3;

2> if the *reportConfig* associated with at least one *measId* included in the *measIdList* within *VarMeasConfig* contains an *rsType* set to *csi-rs* and *CSI-RS-ResourceConfigMobility* is configured in the *measObject* indicated by the *servingCellMO*:

3> if the *reportConfig* contains a *reportQuantityRS-Indexes* and *maxNrofRS-IndexesToReport*:

4> derive layer 3 filtered RSRP and RSRQ per beam for the serving cell based on CSI-RS, as described in 5.5.3.3a;

3> derive serving cell measurement results based on CSI-RS, as described in 5.5.3.3;

1> for each serving cell for which *servingCellMO* is configured, if the *reportConfig* associated with at least one *measId* included in the *measIdList* within *VarMeasConfig* contains SINR as trigger quantity and/or reporting quantity:

2> if the *reportConfig* contains *rsType* set to *ssb* and *ssb-ConfigMobility* is configured in the *servingCellMO*, and *absoluteFrequencySSB* is configured in *ServingCellConfigCommon*:

3> if the *reportConfig*contains a *reportQuantityRS-Indexes* and *maxNrofRS-IndexesToReport*:

4> derive layer 3 filtered SINR per beam for the serving cell based on SS/PBCH block, as described in 5.5.3.3a;

3> derive serving cell SINR based on SS/PBCH block, as described in 5.5.3.3;

2> if the *reportConfig* contains *rsType* set to *csi-rs* and *CSI-RS-ResourceConfigMobility* is configured in the *servingCellMO*:

3> if the *reportConfig*contains a *reportQuantityRS-Indexes* and *maxNrofRS-IndexesToReport*:

4> derive layer 3 filtered SINR per beam for the serving cell based on CSI-RS, as described in 5.5.3.3a;

3> derive serving cell SINR based on CSI-RS, as described in 5.5.3.3;

1> for each *measId* included in the *measIdList* within *VarMeasConfig*:

2> if the *reportType* for the associated *reportConfig* is set to *reportCGI* and timer T321 is running:

3> if *useAutonomousGaps* is configured for the associated *reportConfig*:

4> perform the corresponding measurements on the frequency and RAT indicated in the associated *measObject* using autonomous gaps as necessary;

3> else:

4> perform the corresponding measurements on the frequency and RAT indicated in the associated *measObject* using available idle periods;

3> if the cell indicated by *reportCGI* field for the associated *measObject* is an NR cell and that indicated cell is broadcasting *SIB1* (see TS 38.213 [13], clause 13):

4> try to acquire *SIB1* in the concerned cell;

3> if the cell indicated by *reportCGI* field is an E-UTRA cell:

4> try to acquire *SystemInformationBlockType1* in the concerned cell;

2> if the *ul-DelayValueConfig* is configured for the associated *reportConfig*:

3> ignore the *measObject;*

3> for each of the configured DRBs*,* configure the PDCP layer to perform corresponding average UL PDCP packet delay measurement per DRB;

2> if the *reportType* for the associated *reportConfig* is *periodical*, *eventTriggered* or *condTriggerConfig*:

3> if a measurement gap configuration is setup, or

3> if the UE does not require measurement gaps to perform the concerned measurements:

4> if *s-MeasureConfig* is not configured, or

4> if *s-MeasureConfig* is set to *ssb-RSRP* and the NR SpCell RSRP based on SS/PBCH block, after layer 3 filtering, is lower than *ssb-RSRP,* or

4> if *s-MeasureConfig* is set to *csi-RSRP* and the NR SpCell RSRP based on CSI-RS, after layer 3 filtering, is lower than *csi-RSRP*:

5> if the *measObject* is associated to NR and the *rsType* is set to *csi-rs*:

6> if reportQuantityRS-Indexes and maxNrofRS-IndexesToReport for the associated reportConfig are configured:

7> derive layer 3 filtered beam measurements only based on CSI-RS for each measurement quantity indicated in *reportQuantityRS-Indexes*, as described in 5.5.3.3a;

6> derive cell measurement results based on CSI-RS for the trigger quantity and each measurement quantity indicated in *reportQuantityCell* using parameters from the associated *measObject*, as described in 5.5.3.3;

5> if the *measObject* is associated to NR and the *rsType* is set to *ssb*:

6> if reportQuantityRS-Indexes and maxNrofRS-IndexesToReport for the associated reportConfig are configured:

7> derive layer 3 beam measurements only based on SS/PBCH block for each measurement quantity indicated in *reportQuantityRS-Indexes*, as described in 5.5.3.3a;

6> derive cell measurement results based on SS/PBCH block for the trigger quantity and each measurement quantity indicated in *reportQuantityCell* using parameters from the associated *measObject*, as described in 5.5.3.3;

5> if the *measObject* is associated to E-UTRA:

6> perform the corresponding measurements associated to neighbouring cells on the frequencies indicated in the concerned *measObject*, as described in 5.5.3.2;

5> if the measObject is associated to UTRA-FDD:

6> perform the corresponding measurements associated to neighbouring cells on the frequencies indicated in the concerned *measObject*, as described in 5.5.3.2;

4> if the *measRSSI-ReportConfig* is configured in the associated *reportConfig*:

5> perform the RSSI and channel occupancy measurements on the frequency configured by *rmtc-Frequency* in the associated *measObject*;

2> if the *reportType* for the associated *reportConfig* is set to *reportSFTD* and the *numberOfReportsSent* as defined within the *VarMeasReportList* for this *measId* is less than one:

3> if the *reportSFTD-Meas* is set to *true:*

4> if the *measObject* is associated to E-UTRA:

5> perform SFTD measurements between the PCell and the E-UTRA PSCell;

5> if the *reportRSRP* is set to *true*;

6> perform RSRP measurements for the E-UTRA PSCell;

4> else if the *measObject* is associated to NR:

5> perform SFTD measurements between the PCell and the NR PSCell;

5> if the *reportRSRP* is set to *true*;

6> perform RSRP measurements for the NR PSCell based on SSB;

3> else if the *reportSFTD-NeighMeas* is included*:*

4> if the *measObject* is associated to NR:

5> if the *drx-SFTD-NeighMeas* is included:

6> perform SFTD measurements between the PCell and the NR neighbouring cell(s) detected based on parameters in the associated *measObject* using available idle periods;

5> else:

6> perform SFTD measurements between the PCell and the NR neighbouring cell(s) detected based on parameters in the associated *measObject*;

5> if the *reportRSRP* is set to *true*:

6> perform RSRP measurements based on SSB for the NR neighbouring cell(s) detected based on parameters in the associated *measObject*;

2> if the *reportType* for the associated *reportConfig* is *cli-Periodical* or *cli-EventTriggered*:

3> perform the corresponding measurements associated to CLI measurement resources indicated in the concerned *measObjectCLI*;

2> perform the evaluation of reporting criteria as specified in 5.5.4, except if *reportConfig* is *condTriggerConfig*.

NOTE 1: The evaluation of conditional reconfiguration execution criteria is specified in 5.3.5.13.

Next Change

*– MeasObjectNR*

The IE *MeasObjectNR* specifies information applicable for SS/PBCH block(s) intra/inter-frequency measurements and/or CSI-RS intra/inter-frequency measurements.

***MeasObjectNR* information element**

-- ASN1START

-- TAG-MEASOBJECTNR-START

MeasObjectNR ::= SEQUENCE {

 ssbFrequency ARFCN-ValueNR OPTIONAL, -- Cond SSBorAssociatedSSB2

 ssbSubcarrierSpacing SubcarrierSpacing OPTIONAL, -- Cond SSBorAssociatedSSB

 smtc1 SSB-MTC OPTIONAL, -- Cond SSBorAssociatedSSB

 smtc2 SSB-MTC2 OPTIONAL, -- Cond IntraFreqConnected

 refFreqCSI-RS ARFCN-ValueNR OPTIONAL, -- Cond CSI-RS

 referenceSignalConfig ReferenceSignalConfig,

 absThreshSS-BlocksConsolidation ThresholdNR OPTIONAL, -- Need R

 absThreshCSI-RS-Consolidation ThresholdNR OPTIONAL, -- Need R

 nrofSS-BlocksToAverage INTEGER (2..maxNrofSS-BlocksToAverage) OPTIONAL, -- Need R

 nrofCSI-RS-ResourcesToAverage INTEGER (2..maxNrofCSI-RS-ResourcesToAverage) OPTIONAL, -- Need R

 quantityConfigIndex INTEGER (1..maxNrofQuantityConfig),

 offsetMO Q-OffsetRangeList,

 cellsToRemoveList PCI-List OPTIONAL, -- Need N

 cellsToAddModList CellsToAddModList OPTIONAL, -- Need N

 blackCellsToRemoveList PCI-RangeIndexList OPTIONAL, -- Need N

 blackCellsToAddModList SEQUENCE (SIZE (1..maxNrofPCI-Ranges)) OF PCI-RangeElement OPTIONAL, -- Need N

 whiteCellsToRemoveList PCI-RangeIndexList OPTIONAL, -- Need N

 whiteCellsToAddModList SEQUENCE (SIZE (1..maxNrofPCI-Ranges)) OF PCI-RangeElement OPTIONAL, -- Need N

 ...,

 [[

 freqBandIndicatorNR FreqBandIndicatorNR OPTIONAL, -- Need R

 measCycleSCell ENUMERATED {sf160, sf256, sf320, sf512, sf640, sf1024, sf1280} OPTIONAL -- Need R

 ]],

 [[

 smtc3list-r16 SSB-MTC3List-r16 OPTIONAL, -- Need R

 rmtc-Config-r16 SetupRelease {RMTC-Config-r16} OPTIONAL, -- Need M

 t312-r16 SetupRelease { T312-r16 } OPTIONAL -- Need M

 ]]

}

SSB-MTC3List-r16::= SEQUENCE (SIZE(1..4)) OF SSB-MTC3-r16

T312-r16 ::= ENUMERATED { ms0, ms50, ms100, ms200, ms300, ms400, ms500, ms1000}

ReferenceSignalConfig::= SEQUENCE {

 ssb-ConfigMobility SSB-ConfigMobility OPTIONAL, -- Need M

 csi-rs-ResourceConfigMobility SetupRelease { CSI-RS-ResourceConfigMobility } OPTIONAL -- Need M

}

SSB-ConfigMobility::= SEQUENCE {

 ssb-ToMeasure SetupRelease { SSB-ToMeasure } OPTIONAL, -- Need M

 deriveSSB-IndexFromCell BOOLEAN,

 ss-RSSI-Measurement SS-RSSI-Measurement OPTIONAL, -- Need M

 ...,

 [[

 ssb-PositionQCL-Common-r16 SSB-PositionQCL-Relation-r16 OPTIONAL, -- Cond SharedSpectrum

 ssb-PositionQCL-CellsToAddModList-r16 SSB-PositionQCL-CellsToAddModList-r16 OPTIONAL, -- Need N

 ssb-PositionQCL-CellsToRemoveList-r16 PCI-List OPTIONAL -- Need N

 ]]

}

Q-OffsetRangeList ::= SEQUENCE {

 rsrpOffsetSSB Q-OffsetRange DEFAULT dB0,

 rsrqOffsetSSB Q-OffsetRange DEFAULT dB0,

 sinrOffsetSSB Q-OffsetRange DEFAULT dB0,

 rsrpOffsetCSI-RS Q-OffsetRange DEFAULT dB0,

 rsrqOffsetCSI-RS Q-OffsetRange DEFAULT dB0,

 sinrOffsetCSI-RS Q-OffsetRange DEFAULT dB0

}

ThresholdNR ::= SEQUENCE{

 thresholdRSRP RSRP-Range OPTIONAL, -- Need R

 thresholdRSRQ RSRQ-Range OPTIONAL, -- Need R

 thresholdSINR SINR-Range OPTIONAL -- Need R

}

CellsToAddModList ::= SEQUENCE (SIZE (1..maxNrofCellMeas)) OF CellsToAddMod

CellsToAddMod ::= SEQUENCE {

 physCellId PhysCellId,

 cellIndividualOffset Q-OffsetRangeList

}

RMTC-Config-r16 ::= SEQUENCE {

 rmtc-Periodicity-r16 ENUMERATED {ms40, ms80, ms160, ms320, ms640},

 rmtc-SubframeOffset-r16 INTEGER(0..639) OPTIONAL, -- Need M

 measDurationSymbols-r16 ENUMERATED {sym1, sym14or12, sym28or24, sym42or36, sym70or60},

 rmtc-Frequency-r16 ARFCN-ValueNR,

 ref-SCS-CP-r16 ENUMERATED {kHz15, kHz30, kHz60-NCP, kHz60-ECP},

 ...

}

SSB-PositionQCL-CellsToAddModList-r16 ::= SEQUENCE (SIZE (1..maxNrofCellMeas)) OF SSB-PositionQCL-CellsToAddMod-r16

SSB-PositionQCL-CellsToAddMod-r16 ::= SEQUENCE {

 physCellId-r16 PhysCellId,

 ssb-PositionQCL-r16 SSB-PositionQCL-Relation-r16

}

-- TAG-MEASOBJECTNR-STOP

-- ASN1STOP

|  |
| --- |
| *CellsToAddMod* field descriptions |
| ***cellIndividualOffset***Cell individual offsets applicable to a specific cell. |
| ***physCellId***Physical cell identity of a cell in the cell list. |

|  |
| --- |
| *MeasObjectNR* field descriptions |
| ***absThreshCSI-RS-Consolidation***Absolute threshold for the consolidation of measurement results per CSI-RS resource(s) from L1 filter(s). The field is used for the derivation of cell measurement results as described in 5.5.3.3 and the reporting of beam measurement information per CSI-RS resource as described in 5.5.5.2. |
| ***absThreshSS-BlocksConsolidation***Absolute threshold for the consolidation of measurement results per SS/PBCH block(s) from L1 filter(s). The field is used for the derivation of cell measurement results as described in 5.5.3.3 and the reporting of beam measurement information per SS/PBCH block index as described in 5.5.5.2. |
| ***blackCellsToAddModList***List of cells to add/modify in the black list of cells. It applies only to SSB resources. |
| ***blackCellsToRemoveList***List of cells to remove from the black list of cells. |
| ***cellsToAddModList***List of cells to add/modify in the cell list. |
| ***cellsToRemoveList***List of cells to remove from the cell list.  |
| ***freqBandIndicatorNR***The frequency band in which the SSB and/or CSI-RS indicated in this *MeasObjectNR* are located and according to which the UE shall perform the RRM measurements. This field is always provided when the network configures measurements with this *MeasObjectNR*. |
| ***measCycleSCell***The parameter is used only when an SCell is configured on the frequency indicated by the measObjectNR and is in deactivated state, see TS 38.133 [14]. gNB configures the parameter whenever an SCell is configured on the frequency indicated by the *measObjectNR*, but the field may also be signalled when an SCell is not configured. Value *sf160* corresponds to 160 sub-frames, value *sf256* corresponds to 256 sub-frames and so on. |
| ***nrofCSI-RS-ResourcesToAverage***Indicates the maximum number of measurement results per beam based on CSI-RS resources to be averaged. The same value applies for each detected cell associated with this *MeasObjectNR*. |
| ***nrofSS-BlocksToAverage***Indicates the maximum number of measurement results per beam based on SS/PBCH blocks to be averaged. The same value applies for each detected cell associated with this *MeasObject*. |
| ***offsetMO***Offset values applicable to all measured cells with reference signal(s) indicated in this *MeasObjectNR*. |
| ***quantityConfigIndex***Indicates the n-*th* element of *quantityConfigNR-List* provided in *MeasConfig*. |
| ***referenceSignalConfig***RS configuration for SS/PBCH block and CSI-RS. |
| ***refFreqCSI-RS***Point A which is used for mapping of CSI-RS to physical resources according to TS 38.211 [16] clause 7.4.1.5.3. |
| ***smtc1***Primary measurement timing configuration. (see clause 5.5.2.10). |
| ***smtc2***Secondary measurement timing configuration for SS corresponding to this *MeasObjectNR* with PCI listed in *pci-List*. For these SS, the periodicity is indicated by *periodicity* in *smtc2* and the timing offset is equal to the offset indicated in *periodicityAndOffset* modulo *periodicity*. *periodicity* in smtc2 can only be set to a value strictly shorter than the periodicity indicated by *periodicityAndOffset* in *smtc1* (e.g. if *periodicityAndOffset* indicates *sf10*, *periodicity* can only be set of *sf5*, if *periodicityAndOffset* indicates *sf5*, *smtc2* cannot be configured). |
| ***smtc3list***Measurement timing configuration list for SS corresponding to IAB-MT. This is used for the IAB-node's discovery of other IAB-nodes and the IAB-Donor-DUs. |
| ***ssbFrequency***Indicates the frequency of the SS associated to this *MeasObjectNR*. For operation with shared spectrum channel access, this field is a k\*30 kHz shift from the sync raster where k = 0,1,2, and so on if the *reportType* within the corresponding *ReportConfigNR* is set to reportCGI (see TS 38.211 [16], clause 7.4.3.1). Frequencies are considered to be on the sync raster if they are also identifiable with a GSCN value (see TS 38.101-1 [15]). |
| ***ssb-PositionQCL-Common***Indicates the QCL relationship between SS/PBCH blocks for all measured cells as specified in TS 38.213 [13], clause 4.1. |
| ***ssbSubcarrierSpacing***Subcarrier spacing of SSB. Only the values 15 kHz or 30 kHz (FR1), and 120 kHz or 240 kHz (FR2) are applicable. |
| ***t312***The value of timer T312. Value ms0 represents 0 ms, ms50 represents 50 ms and so on. |
| ***whiteCellsToAddModList***List of cells to add/modify in the white list of cells. It applies only to SSB resources. |
| ***whiteCellsToRemoveList***List of cells to remove from the white list of cells. |

|  |
| --- |
| *RMTC-Config* field descriptions |
| ***measDurationSymbols***Number of consecutive symbols for which the Physical Layer reports samples of RSSI (see TS 38.215 [9], clause 5.1.21). Value *sym1* corresponds to one symbol, *sym14or12* corresponds to 14 symbols of the reference numerology for NCP and 12 symbols for ECP, and so on. |
| ***ref-SCS-CP***Indicates a reference subcarrier spacing and cyclic prefix to be used for RSSI measurements (see TS 38.215 [9]). Value kHz15 corresponds to 15kHz, kHz30 corresponds to 30 kHz, value kHz60-NCP corresponds to 60 kHz using normal cyclic prefix (NCP), and kHz60-ECP corresponds to 60 kHz using extended cyclic prefix (ECP). |
| ***rmtc-Frequency***Indicates the center frequency of the measured bandwidth for a frequency which operates with shared spectrum channel access (see TS 38. 215 [9], clause 5.1.21). |
| ***rmtc-Periodicity***Indicates the RSSI measurement timing configuration (RMTC) periodicity (see TS 38.215 [9], clause 5.1.21). |
| ***rmtc-SubframeOffset***Indicates the RSSI measurement timing configuration (RMTC) subframe offset for this frequency (see TS 38.215 [9], clause 5.1.21). For inter-frequency measurements, this field is optional present and if it is not configured, the UE chooses a random value as *rmtc-SubframeOffset* for *measDurationSymbols* which shall be selected to be between 0 and the configured *rmtc-Periodicity* with equal probability. |

|  |
| --- |
| *ReferenceSignalConfig* field descriptions |
| ***csi-rs-ResourceConfigMobility***CSI-RS resources to be used for CSI-RS based RRM measurements. |
| ***ssb-ConfigMobility***SSB configuration for mobility (nominal SSBs, timing configuration). |

|  |
| --- |
| *SSB-ConfigMobility* field descriptions |
| ***deriveSSB-IndexFromCell***If this field is set to *true*, UE assumes SFN and frame boundary alignment across cells on the same frequency carrier as specified in TS 38.133 [14]. Hence, if the UE is configured with a serving cell for which (*absoluteFrequencySSB*, *subcarrierSpacing*) in *ServingCellConfigCommon* is equal to (*ssbFrequency*, *ssbSubcarrierSpacing*) in this *MeasObjectNR*, this field indicates whether the UE can utilize the timing of this serving cell to derive the index of SS block transmitted by neighbour cell. Otherwise, this field indicates whether the UE may use the timing of any detected cell on that target frequency to derive the SSB index of all neighbour cells on that frequency. |
| ***ssb-ToMeasure***The set of SS blocks to be measured within the SMTC measurement duration. The first/leftmost bit corresponds to SS/PBCH block index 0, the second bit corresponds to SS/PBCH block index 1, and so on. Value 0 in the bitmap indicates that the corresponding SS/PBCH block is not to be measured while value 1 indicates that the corresponding SS/PBCH block is to be measured (see TS 38.215 [9]). When the field is not configured the UE measures on all SS blocks. Regardless of the value of this field, SS/PBCH blocks outside of the applicable *smtc* are not to be measured. See TS 38.215 [9] clause 5.1.1. |

|  |
| --- |
| *SSB-PositionQCL-CellsToAddMod* field descriptions |
| ***physCellId***Physical cell identity of a cell in the cell list. |
| ***ssb-PositionQCL***Indicates the QCL relation between SS/PBCH blocks for a specific cell as specified in TS 38.213 [13], clause 4.1. If provided, the cell specific value overwrites the value signalled by *ssb-PositionQCL-Common*. |

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *CSI-RS* | This field is mandatory present if *csi-rs-ResourceConfigMobility* is configured, otherwise, it is absent. |
| *SSBorAssociatedSSB* | This field is mandatory present if *ssb-ConfigMobility* is configured or *associatedSSB* is configured in at least one cell. Otherwise, it is absent, Need R. |
| *SSBorAssociatedSSB2* | If the *measObject* is associated to an SSB-less SCell, this field is optionally present if *ssb-ConfigMobility* is configured or *associatedSSB* is configured in at least one cell, otherwise, this field is mandatory present if *ssb-ConfigMobility* is configured or *associatedSSB* is configured in at least one cell. If *ssb-ConfigMobility* is not configured and *associatedSSB* is not configured for any cell, the field is absent, Need R. |
| *IntraFreqConnected* | This field is optionally present, Need R if the UE is configured with a serving cell for which (absoluteFrequencySSB, subcarrierSpacing) in ServingCellConfigCommon is equal to (*ssbFrequency*, *ssbSubcarrierSpacing*) in this *MeasObjectNR*, otherwise, it is absent. |
| *SharedSpectrum* | This field is mandatory present if this *MeasObject* is for a frequency which operates with shared spectrum channel access. Otherwise, it is absent, Need R. |

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

 ...,

 [[

 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

 ]],

 [[

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

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

 ]]

}

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

 ...,

 [[

 powerBoostPi2BPSK BOOLEAN OPTIONAL, -- Need M

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

 ]],

 [[

 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

|  |
| --- |
| ***ServingCellConfig* field descriptions** |
| ***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). |
| ***crossCarrierSchedulingConfig***Indicates whether this serving cell is cross-carrier scheduled by another serving cell or whether it cross-carrier schedules another serving cell. |
| ***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. 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 |
| ***firstActiveDownlinkBWP-Id***If configured for an SpCell, this field contains the ID of the DL 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 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. |
| ***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. |
| ***servingCellMO****measObjectId* of the *MeasObjectNR* in *MeasConfig* which is associated to the serving cell. If the serving cell is associated with SSB, the following relationship applies between the corresponding MeasObjectNR and *frequencyInfoDL* in *ServingCellConfigCommon/ServingCellConfigCommonSIB* 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*.If the serving cell is not associated with SSB (i.e. SSB-less SCell), the carrier frequency indicated by *ssbFrequnecy* of the corresponding *MeasObjectNR*, if configured, is within the frequency range indicated by any 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. |
| ***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*. |
| ***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). |

|  |
| --- |
| *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 |
| ***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 inter-band UL CA or SUL, network configures this field to TRUE for one of the uplink carriers involved in dynamic UL TX switching and configures this field in the other carrier to FALSE. 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). |
| ***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 inter-band UL CA or SUL, network configures one of the two uplink carriers involved in dynamic UL TX switching as carrier1 and the other as carrier2. In case of (NG)EN-DC, network always configures the NR carrier as carrier 2. |

|  |
| --- |
| *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 for 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 for 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].  |

|  |
| --- |
| *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.

|  |  |
| --- | --- |
| 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.For SSB-less SCell(s), this field is not present if *intraF-NeighMeasForSCellWithoutSSB* is not supported by the UE, otherwise this field is optionally present, Need M |
| *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. |
| *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

– *MeasAndMobParameters*

The IE *MeasAndMobParameters* is used to convey UE capabilities related to measurements for radio resource management (RRM), radio link monitoring (RLM) and mobility (e.g. handover).

***MeasAndMobParameters* information element**

-- ASN1START

-- TAG-MEASANDMOBPARAMETERS-START

MeasAndMobParameters ::= SEQUENCE {

 measAndMobParametersCommon MeasAndMobParametersCommon OPTIONAL,

 measAndMobParametersXDD-Diff MeasAndMobParametersXDD-Diff OPTIONAL,

 measAndMobParametersFRX-Diff MeasAndMobParametersFRX-Diff OPTIONAL

}

MeasAndMobParameters-v15xy ::= SEQUENCE {

 measAndMobParametersCommon-v15xy MeasAndMobParametersCommon-v15xy OPTIONAL

}

MeasAndMobParametersCommon ::= SEQUENCE {

 supportedGapPattern BIT STRING (SIZE (22)) OPTIONAL,

 ssb-RLM ENUMERATED {supported} OPTIONAL,

 ssb-AndCSI-RS-RLM ENUMERATED {supported} OPTIONAL,

 ...,

 [[

 eventB-MeasAndReport ENUMERATED {supported} OPTIONAL,

 handoverFDD-TDD ENUMERATED {supported} OPTIONAL,

 eutra-CGI-Reporting ENUMERATED {supported} OPTIONAL,

 nr-CGI-Reporting ENUMERATED {supported} OPTIONAL

 ]],

 [[

 independentGapConfig ENUMERATED {supported} OPTIONAL,

 periodicEUTRA-MeasAndReport ENUMERATED {supported} OPTIONAL,

 handoverFR1-FR2 ENUMERATED {supported} OPTIONAL,

 maxNumberCSI-RS-RRM-RS-SINR ENUMERATED {n4, n8, n16, n32, n64, n96} OPTIONAL

 ]],

 [[

 nr-CGI-Reporting-ENDC ENUMERATED {supported} OPTIONAL

 ]],

 [[

 eutra-CGI-Reporting-NEDC ENUMERATED {supported} OPTIONAL,

 eutra-CGI-Reporting-NRDC ENUMERATED {supported} OPTIONAL,

 nr-CGI-Reporting-NEDC ENUMERATED {supported} OPTIONAL,

 nr-CGI-Reporting-NRDC ENUMERATED {supported} OPTIONAL

 ]],

 [[

 reportAddNeighMeasForPeriodic-r16 ENUMERATED {supported} OPTIONAL,

 condHandoverParametersCommon-r16 SEQUENCE {

 condHandoverFDD-TDD-r16 ENUMERATED {supported} OPTIONAL,

 condHandoverFR1-FR2-r16 ENUMERATED {supported} OPTIONAL

 } OPTIONAL,

 nr-NeedForGap-Reporting-r16 ENUMERATED {supported} OPTIONAL,

 supportedGapPattern-NRonly-r16 BIT STRING (SIZE (10)) OPTIONAL,

 supportedGapPattern-NRonly-NEDC-r16 ENUMERATED {supported} OPTIONAL,

 maxNumberCLI-RSSI-r16 ENUMERATED {n8, n16, n32, n64} OPTIONAL,

 maxNumberCLI-SRS-RSRP-r16 ENUMERATED {n4, n8, n16, n32} OPTIONAL,

 maxNumberPerSlotCLI-SRS-RSRP-r16 ENUMERATED {n2, n4, n8} OPTIONAL,

 mfbi-IAB-r16 ENUMERATED {supported} OPTIONAL,

 dummy ENUMERATED {supported} OPTIONAL,

 nr-CGI-Reporting-NPN-r16 ENUMERATED {supported} OPTIONAL,

 idleInactiveEUTRA-MeasReport-r16 ENUMERATED {supported} OPTIONAL,

 idleInactive-ValidityArea-r16 ENUMERATED {supported} OPTIONAL,

 eutra-AutonomousGaps-r16 ENUMERATED {supported} OPTIONAL,

 eutra-AutonomousGaps-NEDC-r16 ENUMERATED {supported} OPTIONAL,

 eutra-AutonomousGaps-NRDC-r16 ENUMERATED {supported} OPTIONAL,

 pcellT312-r16 ENUMERATED {supported} OPTIONAL,

 supportedGapPattern-r16 BIT STRING (SIZE (2)) OPTIONAL

 ]]

}

MeasAndMobParametersCommon-v15xy ::= SEQUENCE {

 intraF-NeighMeasForSCellWithoutSSB ENUMERATED{supported} OPTIONAL

}

MeasAndMobParametersXDD-Diff ::= SEQUENCE {

 intraAndInterF-MeasAndReport ENUMERATED {supported} OPTIONAL,

 eventA-MeasAndReport ENUMERATED {supported} OPTIONAL,

 ...,

 [[

 handoverInterF ENUMERATED {supported} OPTIONAL,

 handoverLTE-EPC ENUMERATED {supported} OPTIONAL,

 handoverLTE-5GC ENUMERATED {supported} OPTIONAL

 ]],

 [[

 sftd-MeasNR-Neigh ENUMERATED {supported} OPTIONAL,

 sftd-MeasNR-Neigh-DRX ENUMERATED {supported} OPTIONAL

 ]],

 [[

 dummy ENUMERATED {supported} OPTIONAL

 ]]

}

MeasAndMobParametersFRX-Diff ::= SEQUENCE {

 ss-SINR-Meas ENUMERATED {supported} OPTIONAL,

 csi-RSRP-AndRSRQ-MeasWithSSB ENUMERATED {supported} OPTIONAL,

 csi-RSRP-AndRSRQ-MeasWithoutSSB ENUMERATED {supported} OPTIONAL,

 csi-SINR-Meas ENUMERATED {supported} OPTIONAL,

 csi-RS-RLM ENUMERATED {supported} OPTIONAL,

 ...,

 [[

 handoverInterF ENUMERATED {supported} OPTIONAL,

 handoverLTE-EPC ENUMERATED {supported} OPTIONAL,

 handoverLTE-5GC ENUMERATED {supported} OPTIONAL

 ]],

 [[

 maxNumberResource-CSI-RS-RLM ENUMERATED {n2, n4, n6, n8} OPTIONAL

 ]],

 [[

 simultaneousRxDataSSB-DiffNumerology ENUMERATED {supported} OPTIONAL

 ]],

 [[

 nr-AutonomousGaps-r16 ENUMERATED {supported} OPTIONAL,

 nr-AutonomousGaps-ENDC-r16 ENUMERATED {supported} OPTIONAL,

 nr-AutonomousGaps-NEDC-r16 ENUMERATED {supported} OPTIONAL,

 nr-AutonomousGaps-NRDC-r16 ENUMERATED {supported} OPTIONAL,

 dummy ENUMERATED {supported} OPTIONAL,

 cli-RSSI-Meas-r16 ENUMERATED {supported} OPTIONAL,

 cli-SRS-RSRP-Meas-r16 ENUMERATED {supported} OPTIONAL,

 interFrequencyMeas-NoGap-r16 ENUMERATED {supported} OPTIONAL,

 simultaneousRxDataSSB-DiffNumerology-Inter-r16 ENUMERATED {supported} OPTIONAL,

 idleInactiveNR-MeasReport-r16 ENUMERATED {supported} OPTIONAL,

 -- R4 6-2: Support of beam level Early Measurement Reporting

 idleInactiveNR-MeasBeamReport-r16 ENUMERATED {supported} OPTIONAL

 ]],

 [[

 increasedNumberofCSIRSPerMO-r16 ENUMERATED {supported} OPTIONAL

 ]]

}

-- TAG-MEASANDMOBPARAMETERS-STOP

-- ASN1STOP

Next Change

– *UE-NR-Capability*

The IE *UE-NR-Capability* is used to convey the NR UE Radio Access Capability Parameters, see TS 38.306 [26].

***UE-NR-Capability* information element**

-- ASN1START

-- TAG-UE-NR-CAPABILITY-START

UE-NR-Capability ::= SEQUENCE {

 accessStratumRelease AccessStratumRelease,

 pdcp-Parameters PDCP-Parameters,

 rlc-Parameters RLC-Parameters OPTIONAL,

 mac-Parameters MAC-Parameters OPTIONAL,

 phy-Parameters Phy-Parameters,

 rf-Parameters RF-Parameters,

 measAndMobParameters MeasAndMobParameters OPTIONAL,

 fdd-Add-UE-NR-Capabilities UE-NR-CapabilityAddXDD-Mode OPTIONAL,

 tdd-Add-UE-NR-Capabilities UE-NR-CapabilityAddXDD-Mode OPTIONAL,

 fr1-Add-UE-NR-Capabilities UE-NR-CapabilityAddFRX-Mode OPTIONAL,

 fr2-Add-UE-NR-Capabilities UE-NR-CapabilityAddFRX-Mode OPTIONAL,

 featureSets FeatureSets OPTIONAL,

 featureSetCombinations SEQUENCE (SIZE (1..maxFeatureSetCombinations)) OF FeatureSetCombination OPTIONAL,

 lateNonCriticalExtension OCTET STRING (CONTAINING UE-NR-Capability-v15c0) OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1530 OPTIONAL

}

-- Regular non-critical Rel-15 extensions:

UE-NR-Capability-v1530 ::= SEQUENCE {

 fdd-Add-UE-NR-Capabilities-v1530 UE-NR-CapabilityAddXDD-Mode-v1530 OPTIONAL,

 tdd-Add-UE-NR-Capabilities-v1530 UE-NR-CapabilityAddXDD-Mode-v1530 OPTIONAL,

 dummy ENUMERATED {supported} OPTIONAL,

 interRAT-Parameters InterRAT-Parameters OPTIONAL,

 inactiveState ENUMERATED {supported} OPTIONAL,

 delayBudgetReporting ENUMERATED {supported} OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1540 OPTIONAL

}

UE-NR-Capability-v1540 ::= SEQUENCE {

 sdap-Parameters SDAP-Parameters OPTIONAL,

 overheatingInd ENUMERATED {supported} OPTIONAL,

 ims-Parameters IMS-Parameters OPTIONAL,

 fr1-Add-UE-NR-Capabilities-v1540 UE-NR-CapabilityAddFRX-Mode-v1540 OPTIONAL,

 fr2-Add-UE-NR-Capabilities-v1540 UE-NR-CapabilityAddFRX-Mode-v1540 OPTIONAL,

 fr1-fr2-Add-UE-NR-Capabilities UE-NR-CapabilityAddFRX-Mode OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1550 OPTIONAL

}

UE-NR-Capability-v1550 ::= SEQUENCE {

 reducedCP-Latency ENUMERATED {supported} OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1560 OPTIONAL

}

UE-NR-Capability-v1560 ::= SEQUENCE {

 nrdc-Parameters NRDC-Parameters OPTIONAL,

 receivedFilters OCTET STRING (CONTAINING UECapabilityEnquiry-v1560-IEs) OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1570 OPTIONAL

}

UE-NR-Capability-v1570 ::= SEQUENCE {

 nrdc-Parameters-v1570 NRDC-Parameters-v1570 OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1610 OPTIONAL

}

-- Late non-critical Rel-15 extensions:

UE-NR-Capability-v15c0 ::= SEQUENCE {

 nrdc-Parameters-v15c0 NRDC-Parameters-v15c0 OPTIONAL,

 partialFR2-FallbackRX-Req ENUMERATED {true} OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v15g0 OPTIONAL

}

UE-NR-Capability-v15g0 ::= SEQUENCE {

 rf-Parameters-v15g0 RF-Parameters-v15g0 OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v15j0 OPTIONAL

}

UE-NR-Capability-v15j0 ::= SEQUENCE {

 -- Following field is only for REL-15 late non-critical extensions

 lateNonCriticalExtension OCTET STRING (CONTAINING UE-NR-Capability-v15xy) OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v16a0 OPTIONAL

}

UE-NR-Capability-v15xy ::= SEQUENCE {

 measAndMobParameters-v15xy MeasAndMobParameters-v15xy OPTIONAL,

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- Regular non-critical Rel-16 extensions:

UE-NR-Capability-v1610 ::= SEQUENCE {

 inDeviceCoexInd-r16 ENUMERATED {supported} OPTIONAL,

 dl-DedicatedMessageSegmentation-r16 ENUMERATED {supported} OPTIONAL,

 nrdc-Parameters-v1610 NRDC-Parameters-v1610 OPTIONAL,

 powSav-Parameters-r16 PowSav-Parameters-r16 OPTIONAL,

 fr1-Add-UE-NR-Capabilities-v1610 UE-NR-CapabilityAddFRX-Mode-v1610 OPTIONAL,

 fr2-Add-UE-NR-Capabilities-v1610 UE-NR-CapabilityAddFRX-Mode-v1610 OPTIONAL,

 bh-RLF-Indication-r16 ENUMERATED {supported} OPTIONAL,

 directSN-AdditionFirstRRC-IAB-r16 ENUMERATED {supported} OPTIONAL,

 bap-Parameters-r16 BAP-Parameters-r16 OPTIONAL,

 referenceTimeProvision-r16 ENUMERATED {supported} OPTIONAL,

 sidelinkParameters-r16 SidelinkParameters-r16 OPTIONAL,

 highSpeedParameters-r16 HighSpeedParameters-r16 OPTIONAL,

 mac-Parameters-v1610 MAC-Parameters-v1610 OPTIONAL,

 mcgRLF-RecoveryViaSCG-r16 ENUMERATED {supported} OPTIONAL,

 resumeWithStoredMCG-SCells-r16 ENUMERATED {supported} OPTIONAL,

 resumeWithStoredSCG-r16 ENUMERATED {supported} OPTIONAL,

 resumeWithSCG-Config-r16 ENUMERATED {supported} OPTIONAL,

 ue-BasedPerfMeas-Parameters-r16 UE-BasedPerfMeas-Parameters-r16 OPTIONAL,

 son-Parameters-r16 SON-Parameters-r16 OPTIONAL,

 onDemandSIB-Connected-r16 ENUMERATED {supported} OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1640 OPTIONAL

}

UE-NR-Capability-v1640 ::= SEQUENCE {

 redirectAtResumeByNAS-r16 ENUMERATED {supported} OPTIONAL,

 phy-ParametersSharedSpectrumChAccess-r16 Phy-ParametersSharedSpectrumChAccess-r16 OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1650 OPTIONAL

}

UE-NR-Capability-v1650 ::= SEQUENCE {

 mpsPriorityIndication-r16 ENUMERATED {supported} OPTIONAL,

 highSpeedParameters-v1650 HighSpeedParameters-v1650 OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v1690 OPTIONAL

}

UE-NR-Capability-v1690 ::= SEQUENCE {

 ul-RRC-Segmentation-r16 ENUMERATED {supported} OPTIONAL,

 nonCriticalExtension SEQUENCE{} OPTIONAL

}

-- Late non-critical Rel-16 extensions:

UE-NR-Capability-v16a0 ::= SEQUENCE {

 phy-Parameters-v16a0 Phy-Parameters-v16a0 OPTIONAL,

 rf-Parameters-v16a0 RF-Parameters-v16a0 OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v16c0 OPTIONAL

}

UE-NR-Capability-v16c0 ::= SEQUENCE {

 rf-Parameters-v16c0 RF-Parameters-v16c0 OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v16d0 OPTIONAL

}

UE-NR-Capability-v16d0 ::= SEQUENCE {

 featureSets-v16d0 FeatureSets-v16d0 OPTIONAL,

 nonCriticalExtension UE-NR-Capability-v16j0 OPTIONAL

}

UE-NR-Capability-v16j0 ::= SEQUENCE {

 rf-Parameters-v16j0 RF-Parameters-v16j0 OPTIONAL,

 -- Following field is only for REL-16 late non-critical extensions

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

UE-NR-CapabilityAddXDD-Mode ::= SEQUENCE {

 phy-ParametersXDD-Diff Phy-ParametersXDD-Diff OPTIONAL,

 mac-ParametersXDD-Diff MAC-ParametersXDD-Diff OPTIONAL,

 measAndMobParametersXDD-Diff MeasAndMobParametersXDD-Diff OPTIONAL

}

UE-NR-CapabilityAddXDD-Mode-v1530 ::= SEQUENCE {

 eutra-ParametersXDD-Diff EUTRA-ParametersXDD-Diff

}

UE-NR-CapabilityAddFRX-Mode ::= SEQUENCE {

 phy-ParametersFRX-Diff Phy-ParametersFRX-Diff OPTIONAL,

 measAndMobParametersFRX-Diff MeasAndMobParametersFRX-Diff OPTIONAL

}

UE-NR-CapabilityAddFRX-Mode-v1540 ::= SEQUENCE {

 ims-ParametersFRX-Diff IMS-ParametersFRX-Diff OPTIONAL

}

UE-NR-CapabilityAddFRX-Mode-v1610 ::= SEQUENCE {

 powSav-ParametersFRX-Diff-r16 PowSav-ParametersFRX-Diff-r16 OPTIONAL,

 mac-ParametersFRX-Diff-r16 MAC-ParametersFRX-Diff-r16 OPTIONAL

}

BAP-Parameters-r16 ::= SEQUENCE {

 flowControlBH-RLC-ChannelBased-r16 ENUMERATED {supported} OPTIONAL,

 flowControlRouting-ID-Based-r16 ENUMERATED {supported} OPTIONAL

}

-- TAG-UE-NR-CAPABILITY-STOP

-- ASN1STOP

End of Changes