3GPP TSG-RAN WG2 #109-e R2-200xxxx

Electronic meeting, 24 February – 6 March 2020

Agenda Item: 7.1.10

Source: Ericsson

**Title: TPs for RSS**

Document for: Discussion, Decision

# 1 Text Proposal

## 6.3 RRC information elements

### 6.3.1 System information blocks

#### – *SystemInformationBlockPos*

 ----------- unmodified definitions skipped ------------

#### – *SystemInformationBlockType4*

The IE *SystemInformationBlockType4* contains neighbouring cell related information relevant only for intra-frequency cell re-selection. The IE includes cells with specific re-selection parameters as well as blacklisted cells.

*SystemInformationBlockType4* information element

-- ASN1START

SystemInformationBlockType4 ::= SEQUENCE {

 intraFreqNeighCellList IntraFreqNeighCellList OPTIONAL, -- Need OR

 intraFreqBlackCellList IntraFreqBlackCellList OPTIONAL, -- Need OR

 csg-PhysCellIdRange PhysCellIdRange OPTIONAL, -- Cond CSG

 ...,

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 [[ intraFreqNeighHSDN-CellList-r15 IntraFreqNeighHSDN-CellList-r15 OPTIONAL -- Need OR

 ]],

 [[

 rss-ConfigCarrierInfo-r16 RSS-ConfigCarrierInfo-r16 OPTIONAL -- Need OR

 ]]

}

IntraFreqNeighCellList ::= SEQUENCE (SIZE (1..maxCellIntra)) OF IntraFreqNeighCellInfo

IntraFreqNeighHSDN-CellList-r15 ::= SEQUENCE (SIZE (1..maxCellIntra)) OF PhysCellIdRange

IntraFreqNeighCellInfo ::= SEQUENCE {

 physCellId PhysCellId,

 q-OffsetCell Q-OffsetRange,

 ...,

 [[

 rss-MeasPowerBias-r16 ENUMERATED {dB-6, dB-3, dB0, dB3, dB6, dB9, dB12, rssNotUsed} OPTIONAL -- Cond RSS

 ]]

}

IntraFreqBlackCellList ::= SEQUENCE (SIZE (1..maxCellBlack)) OF PhysCellIdRange

-- ASN1STOP

| *SystemInformationBlockType4* field descriptions |
| --- |
| ***csg-PhysCellIdRange***Set of physical cell identities reserved for CSG cells on the frequency on which this field was received. The received *csg-PhysCellIdRange* applies if less than 24 hours has elapsed since it was received and the UE is camped on a cell of the same primary PLMN where this field was received. The 3 hour validity restriction (clause 5.2.1.3) does not apply to this field. The UE shall not apply any stored *csg-PhysCellIdRange* when it is in *any cell selection* state defined in TS 36.304 [4]. |
| ***intraFreqBlackCellList***List of blacklisted intra-frequency neighbouring cells. |
| ***intraFreqNeighbCellList***List of intra-frequency neighbouring cells with specific cell re-selection parameters. |
| ***intraFreqNeighHSDN-CellList***List of intra-frequency neighbouring HSDN cells as specified in TS 36.304 [4]. |
| ***q-OffsetCell***Parameter "Qoffsets,n" in TS 36.304 [4]. |
| ***rss-ConfigCarrierInfo*** RSS-Configurations for intra frequency cell. If the field is present, the RSS is not collocated (in frequency and time) in the cells. Otherwise, RSS is collocated in the cells. |
| ***rss-MeasPowerBias*** Power bias in dB relative to CRS's q\_offset of cells in the neighbor cell list. Value dB-6 corresponds to -6 dB, value dB-3 corresponds to -3 dB and so on. Value *rssNotUsed* indicates measurement based on RSS is not applicable for the corresponding neighbor cell. |

| Conditional presence | Explanation |
| --- | --- |
| *CSG* | This field is optional, need OP, for non-CSG cells, and mandatory for CSG cells. |
| *RSS* | This field is optional, need ON, if *rss-MeasConfig* is included in *SIB2*. |

#### – *SystemInformationBlockType5*

The IE *SystemInformationBlockType5* contains information relevant only for inter-frequency cell re-selection i.e. information about other E‑UTRA frequencies and inter-frequency neighbouring cells relevant for cell re-selection. The IE includes cell re-selection parameters common for a frequency as well as cell specific re-selection parameters.

*SystemInformationBlockType5* information element

-- ASN1START

SystemInformationBlockType5 ::= SEQUENCE {

 interFreqCarrierFreqList InterFreqCarrierFreqList,

 ...,

 lateNonCriticalExtension OCTET STRING (CONTAINING SystemInformationBlockType5-v8h0-IEs) OPTIONAL,

 [[ interFreqCarrierFreqList-v1250 InterFreqCarrierFreqList-v1250 OPTIONAL, -- Need OR

 interFreqCarrierFreqListExt-r12 InterFreqCarrierFreqListExt-r12 OPTIONAL -- Need OR

 ]],

 [[ interFreqCarrierFreqListExt-v1280 InterFreqCarrierFreqListExt-v1280 OPTIONAL -- Need OR

 ]],

 [[ interFreqCarrierFreqList-v1310 InterFreqCarrierFreqList-v1310 OPTIONAL, -- Need OR

 interFreqCarrierFreqListExt-v1310 InterFreqCarrierFreqListExt-v1310 OPTIONAL -- Need OR

 ]],

 [[ interFreqCarrierFreqList-v1350 InterFreqCarrierFreqList-v1350 OPTIONAL, -- Need OR

 interFreqCarrierFreqListExt-v1350 InterFreqCarrierFreqListExt-v1350 OPTIONAL -- Need OR

 ]],

 [[ interFreqCarrierFreqListExt-v1360 InterFreqCarrierFreqListExt-v1360 OPTIONAL -- Need OR

 ]],

 [[ scptm-FreqOffset-r14 INTEGER (1..8) OPTIONAL -- Need OP

 ]],

 [[ interFreqCarrierFreqList-v1530 InterFreqCarrierFreqList-v1530 OPTIONAL, -- Need OR

 interFreqCarrierFreqListExt-v1530 InterFreqCarrierFreqListExt-v1530 OPTIONAL, -- Need OR

 measIdleConfigSIB-r15 MeasIdleConfigSIB-r15 OPTIONAL -- Need OR

 ]] ,

 [[ interFreqCarrierFreqList-v16xy InterFreqCarrierFreqList-v16xy OPTIONAL, -- Need OR

 interFreqCarrierFreqListExt-v16xy InterFreqCarrierFreqListExt-v16xy OPTIONAL -- Need OR

 ]],

}

-- Late non critical extensions

SystemInformationBlockType5-v8h0-IEs ::= SEQUENCE {

 interFreqCarrierFreqList-v8h0 SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo-v8h0 OPTIONAL, -- Need OP

 nonCriticalExtension SystemInformationBlockType5-v9e0-IEs OPTIONAL

}

SystemInformationBlockType5-v9e0-IEs ::= SEQUENCE {

 interFreqCarrierFreqList-v9e0 SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo-v9e0 OPTIONAL, -- Need OR

 nonCriticalExtension SystemInformationBlockType5-v10j0-IEs OPTIONAL

}

SystemInformationBlockType5-v10j0-IEs ::= SEQUENCE {

 interFreqCarrierFreqList-v10j0 SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo-v10j0 OPTIONAL, -- Need OR

 nonCriticalExtension SystemInformationBlockType5-v10l0-IEs OPTIONAL

}

SystemInformationBlockType5-v10l0-IEs ::= SEQUENCE {

 interFreqCarrierFreqList-v10l0 SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo-v10l0 OPTIONAL, -- Need OR

 nonCriticalExtension SystemInformationBlockType5-v13a0-IEs OPTIONAL

}

SystemInformationBlockType5-v13a0-IEs ::= SEQUENCE {

 -- Late non critical extensions from REL-10 upto REL-12

 lateNonCriticalExtension OCTET STRING OPTIONAL, -- Need OR

 interFreqCarrierFreqList-v13a0 InterFreqCarrierFreqList-v13a0 OPTIONAL, -- Need OR

 -- Late non critical extensions from REL-13

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

InterFreqCarrierFreqList ::= SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo

InterFreqCarrierFreqList-v1250 ::= SEQUENCE (SIZE (1.. maxFreq)) OF InterFreqCarrierFreqInfo-v1250

InterFreqCarrierFreqList-v1310 ::= SEQUENCE (SIZE (1.. maxFreq)) OF InterFreqCarrierFreqInfo-v1310

InterFreqCarrierFreqList-v1350 ::= SEQUENCE (SIZE (1.. maxFreq)) OF InterFreqCarrierFreqInfo-v1350

InterFreqCarrierFreqList-v13a0 ::= SEQUENCE (SIZE (1.. maxFreq)) OF InterFreqCarrierFreqInfo-v1360

InterFreqCarrierFreqList-v1530 ::= SEQUENCE (SIZE (1.. maxFreq)) OF InterFreqCarrierFreqInfo-v1530

InterFreqCarrierFreqList-v16xy ::= SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo-v16xy

InterFreqCarrierFreqListExt-r12 ::= SEQUENCE (SIZE (1.. maxFreq)) OF InterFreqCarrierFreqInfo-r12

InterFreqCarrierFreqListExt-v1280 ::= SEQUENCE (SIZE (1.. maxFreq)) OF InterFreqCarrierFreqInfo-v10j0

InterFreqCarrierFreqListExt-v1310 ::= SEQUENCE (SIZE (1.. maxFreq)) OF InterFreqCarrierFreqInfo-v1310

InterFreqCarrierFreqListExt-v1350 ::= SEQUENCE (SIZE (1.. maxFreq)) OF InterFreqCarrierFreqInfo-v1350

InterFreqCarrierFreqListExt-v1360 ::= SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo-v1360

InterFreqCarrierFreqListExt-v1530 ::= SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo-v1530

InterFreqCarrierFreqListExt-v16xy ::= SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo-v16xy

InterFreqCarrierFreqInfo ::= SEQUENCE {

 dl-CarrierFreq ARFCN-ValueEUTRA,

 q-RxLevMin Q-RxLevMin,

 p-Max P-Max OPTIONAL, -- Need OP

 t-ReselectionEUTRA T-Reselection,

 t-ReselectionEUTRA-SF SpeedStateScaleFactors OPTIONAL, -- Need OP

 threshX-High ReselectionThreshold,

 threshX-Low ReselectionThreshold,

 allowedMeasBandwidth AllowedMeasBandwidth,

 presenceAntennaPort1 PresenceAntennaPort1,

 cellReselectionPriority CellReselectionPriority OPTIONAL, -- Need OP

 neighCellConfig NeighCellConfig,

 q-OffsetFreq Q-OffsetRange DEFAULT dB0,

 interFreqNeighCellList InterFreqNeighCellList OPTIONAL, -- Need OR

 interFreqBlackCellList InterFreqBlackCellList OPTIONAL, -- Need OR

 ...,

 [[ q-QualMin-r9 Q-QualMin-r9 OPTIONAL, -- Need OP

 threshX-Q-r9 SEQUENCE {

 threshX-HighQ-r9 ReselectionThresholdQ-r9,

 threshX-LowQ-r9 ReselectionThresholdQ-r9

 } OPTIONAL -- Cond RSRQ

 ]],

 [[ q-QualMinWB-r11 Q-QualMin-r9 OPTIONAL -- Cond WB-RSRQ

 ]]

}

InterFreqCarrierFreqInfo-v8h0 ::= SEQUENCE {

 multiBandInfoList MultiBandInfoList OPTIONAL -- Need OR

}

InterFreqCarrierFreqInfo-v9e0 ::= SEQUENCE {

 dl-CarrierFreq-v9e0 ARFCN-ValueEUTRA-v9e0 OPTIONAL, -- Cond dl-FreqMax

 multiBandInfoList-v9e0 MultiBandInfoList-v9e0 OPTIONAL -- Need OR

}

InterFreqCarrierFreqInfo-v10j0 ::= SEQUENCE {

 freqBandInfo-r10 NS-PmaxList-r10 OPTIONAL, -- Need OR

 multiBandInfoList-v10j0 MultiBandInfoList-v10j0 OPTIONAL -- Need OR

}

InterFreqCarrierFreqInfo-v10l0 ::= SEQUENCE {

 freqBandInfo-v10l0 NS-PmaxList-v10l0 OPTIONAL, -- Need OR

 multiBandInfoList-v10l0 MultiBandInfoList-v10l0 OPTIONAL -- Need OR

}

InterFreqCarrierFreqInfo-v1250 ::= SEQUENCE {

 reducedMeasPerformance-r12 ENUMERATED {true} OPTIONAL, -- Need OP

 q-QualMinRSRQ-OnAllSymbols-r12 Q-QualMin-r9 OPTIONAL -- Cond RSRQ2

}

InterFreqCarrierFreqInfo-r12 ::= SEQUENCE {

 dl-CarrierFreq-r12 ARFCN-ValueEUTRA-r9,

 q-RxLevMin-r12 Q-RxLevMin,

 p-Max-r12 P-Max OPTIONAL, -- Need OP

 t-ReselectionEUTRA-r12 T-Reselection,

 t-ReselectionEUTRA-SF-r12 SpeedStateScaleFactors OPTIONAL, -- Need OP

 threshX-High-r12 ReselectionThreshold,

 threshX-Low-r12 ReselectionThreshold,

 allowedMeasBandwidth-r12 AllowedMeasBandwidth,

 presenceAntennaPort1-r12 PresenceAntennaPort1,

 cellReselectionPriority-r12 CellReselectionPriority OPTIONAL, -- Need OP

 neighCellConfig-r12 NeighCellConfig,

 q-OffsetFreq-r12 Q-OffsetRange DEFAULT dB0,

 interFreqNeighCellList-r12 InterFreqNeighCellList OPTIONAL, -- Need OR

 interFreqBlackCellList-r12 InterFreqBlackCellList OPTIONAL, -- Need OR

 q-QualMin-r12 Q-QualMin-r9 OPTIONAL, -- Need OP

 threshX-Q-r12 SEQUENCE {

 threshX-HighQ-r12 ReselectionThresholdQ-r9,

 threshX-LowQ-r12 ReselectionThresholdQ-r9

 } OPTIONAL, -- Cond RSRQ

 q-QualMinWB-r12 Q-QualMin-r9 OPTIONAL, -- Cond WB-RSRQ

 multiBandInfoList-r12 MultiBandInfoList-r11 OPTIONAL, -- Need OR

 reducedMeasPerformance-r12 ENUMERATED {true} OPTIONAL, -- Need OP

 q-QualMinRSRQ-OnAllSymbols-r12 Q-QualMin-r9 OPTIONAL, -- Cond RSRQ2

...

}

InterFreqCarrierFreqInfo-v1310 ::= SEQUENCE {

 cellReselectionSubPriority-r13 CellReselectionSubPriority-r13 OPTIONAL, -- Need OP

 redistributionInterFreqInfo-r13 RedistributionInterFreqInfo-r13 OPTIONAL, --Need OP

 cellSelectionInfoCE-r13 CellSelectionInfoCE-r13 OPTIONAL, -- Need OP

 t-ReselectionEUTRA-CE-r13 T-ReselectionEUTRA-CE-r13 OPTIONAL -- Need OP

}

InterFreqCarrierFreqInfo-v1350 ::= SEQUENCE {

 cellSelectionInfoCE1-r13 CellSelectionInfoCE1-r13 OPTIONAL -- Need OP

}

InterFreqCarrierFreqInfo-v1360 ::= SEQUENCE {

 cellSelectionInfoCE1-v1360 CellSelectionInfoCE1-v1360 OPTIONAL -- Cond QrxlevminCE1

}

InterFreqCarrierFreqInfo-v1530 ::= SEQUENCE {

 hsdn-Indication-r15 BOOLEAN,

 interFreqNeighHSDN-CellList-r15 InterFreqNeighHSDN-CellList-r15 OPTIONAL, -- Need OR

 cellSelectionInfoCE-v1530 CellSelectionInfoCE-v1530 OPTIONAL -- Need OP

}

InterFreqCarrierFreqInfo-v16xy ::= SEQUENCE {

 rss-ConfigCarrierInfo-r16 RSS-ConfigCarrierInfo-r16 OPTIONAL -- Need OR

 rss-AssistanceInfoList-r16 SEQUENCE (SIZE (1.. maxCellInter)) OF RSS-AssistanceInfo-r16 OPTIONAL -- Cond RSS-Info

}

RSS-AssistanceInfo-r16 ::= SEQUENCE {

 rss-MeasPowerBias-r16 ENUMERATED {dB-6, dB-3, dB0, dB3, dB6, dB9, dB12, rssNotUsed}

}

InterFreqNeighCellList ::= SEQUENCE (SIZE (1..maxCellInter)) OF InterFreqNeighCellInfo

InterFreqNeighHSDN-CellList-r15 ::= SEQUENCE (SIZE (1..maxCellInter)) OF PhysCellIdRange

InterFreqNeighCellInfo ::= SEQUENCE {

 physCellId PhysCellId,

 q-OffsetCell Q-OffsetRange

}

InterFreqBlackCellList ::= SEQUENCE (SIZE (1..maxCellBlack)) OF PhysCellIdRange

RedistributionInterFreqInfo-r13 ::= SEQUENCE {

 redistributionFactorFreq-r13 RedistributionFactor-r13 OPTIONAL, --Need OP

 redistributionNeighCellList-r13 RedistributionNeighCellList-r13 OPTIONAL --Need OP

}

RedistributionNeighCellList-r13 ::= SEQUENCE (SIZE (1..maxCellInter)) OF RedistributionNeighCell-r13

RedistributionNeighCell-r13 ::= SEQUENCE {

 physCellId-r13 PhysCellId,

 redistributionFactorCell-r13 RedistributionFactor-r13

}

RedistributionFactor-r13 ::= INTEGER(1..10)

-- ASN1STOP

| *SystemInformationBlockType5* field descriptions |
| --- |
| ***cellSelectionInfoCE***Parameters included in coverage enhancement S criteria for BL UEs and UEs in CE, applicable for inter-frequency neighbour cells. If absent, coverage enhancement S criteria is not applicable. |
| ***cellSelectionInfoCE1***Parameters included in coverage enhancement S criteria for BL UEs and UEs in CE supporting CE Mode B. E-UTRAN includes this IE only in an entry of *InterFreqCarrierFreqList-v1350* or *InterFreqCarrierFreqListExt-v1350* if *cellSelectionInfoCE* is present in the corresponding entry of *InterFreqCarrierFreqList-v1310* or *InterFreqCarrierFreqListExt-v1310* is present. |
| ***freqBandInfo***A list of *additionalPmax* and *additionalSpectrumEmission* values, as defined in TS 36.101 [42], table 6.2.4-1, for UEs neither in CE nor BL UEs and TS 36.101 [42], table 6.2.4E-1, for UEs in CE or BL UEs, for the frequency band represented by *dl-CarrierFreq* for which cell reselection parameters are common. If E-UTRAN includes *freqBandInfo-v10l0* it includes the same number of entries, and listed in the same order, as in *freqBandInfo-r10*. |
| ***hsdn-Indication***Indicates whether there are deployed HSDN cells or not on the the DL carrier frequency indicated by *dl-CarrierFreq-r12*.  |
| ***interFreqBlackCellList***List of blacklisted inter-frequency neighbouring cells. |
| ***interFreqCarrierFreqList***List of neighbouring inter-frequencies. E-UTRAN does not configure more than one entry for the same physical frequency regardless of the E-ARFCN used to indicate this. If E-UTRAN includes *interFreqCarrierFreqList-v8h0*, *interFreqCarrierFreqList-v9e0*, *InterFreqCarrierFreqList-v1250, InterFreqCarrierFreqList-v1310, InterFreqCarrierFreqList-v1350,* *InterFreqCarrierFreqList-v13a0* and/or *InterFreqCarrierFreqList-v1530*, it includes the same number of entries, and listed in the same order, as in *interFreqCarrierFreqList* (i.e. without suffix). See Annex D for more descriptions. |
| ***interFreqCarrierFreqListExt***List of additional neighbouring inter-frequencies, i.e. extending the size of the inter-frequency carrier list using the general principles specified in 5.1.2. E-UTRAN does not configure more than one entry for the same physical frequency regardless of the E-ARFCN used to indicate this. EUTRAN may include *interFreqCarrierFreqListExt* even if *interFreqCarrierFreqList* (i.e without suffix) does not include *maxFreq* entries. If E-UTRAN includes *InterFreqCarrierFreqListExt-v1310, InterFreqCarrierFreqListExt-v1350,* *InterFreqCarrierFreqListExt-v1360* and/or *InterFreqCarrierFreqListExt-v1530,* it includes the same number of entries, and listed in the same order, as in *interFreqCarrierFreqListExt-r12.* |
| ***interFreqNeighCellList***List of inter-frequency neighbouring cells with specific cell re-selection parameters. |
| ***interFreqNeighHSDN-CellList***List of inter-frequency neighbouring HSDN cells as specified in TS 36.304 [4]. |
| ***multiBandInfoList***Indicates the list of frequency bands in addition to the band represented by dl-CarrierFreq for which cell reselection parameters are common. E-UTRAN indicates at most *maxMultiBands* frequency bands (i.e. the total number of entries across both *multiBandInfoList* and *multiBandInfoList-v9e0* is below this limit). |
| ***multiBandInfoList-v10j0***A list of *additionalPmax* and *additionalSpectrumEmission* values, as defined in TS 36.101 [42], table 6.2.4-1, for UEs neither in CE nor BL UEs and TS 36.101 [42], table 6.2.4E-1, for UEs in CE or BL UEs, for the frequency bands in *multiBandInfoList* (i.e. without suffix) and *multiBandInfoList-v9e0*. If E-UTRAN includes *multiBandInfoList-v10j0*, it includes the same number of entries, and listed in the same order, as in *multiBandInfoList* (i.e. without suffix). If E-UTRAN includes *multiBandInfoList-v10l0* it includes the same number of entries, and listed in the same order, as in *multiBandInfoList-v10j0.* |
| ***p-Max***Value applicable for the neighbouring E-UTRA cells on this carrier frequency. If absent the UE applies the maximum power according to its capability as specified in TS 36.101 [42], clause 6.2.2. |
| ***q-OffsetCell***Parameter "Qoffsets,n" in TS 36.304 [4]. |
| ***q-OffsetFreq***Parameter "Qoffsetfrequency" in TS 36.304 [4]. |
| ***q-QualMin***Parameter "Qqualmin" in TS 36.304 [4]. If the field is not present, the UE applies the (default) value of negative infinity for Qqualmin. NOTE 1. |
| ***q-QualMinRSRQ-OnAllSymbols***If this field is present and supported by the UE, the UE shall, when performing RSRQ measurements, perform RSRQ measurement on all OFDM symbols in accordance with TS 36.214 [48]. NOTE 1. |
| ***q-QualMinWB***If this field is present and supported by the UE, the UE shall, when performing RSRQ measurements, use a wider bandwidth in accordance with TS 36.133 [16]. NOTE 1. |
| ***redistributionFactorFreq***Parameter *redistributionFactorFreq* in TS 36.304 [4]. |
| ***redistributionFactorCell***Parameter *redistributionFactorCell* in TS 36.304 [4]. |
| ***reducedMeasPerformance***Value *TRUE* indicates that the neighbouring inter-frequency is configured for reduced measurement performance, see TS 36.133 [16]. If the field is not included, the neighbouring inter-frequency is configured for normal measurement performance, see TS 36.133 [16].  |
| ***rss-AssistanceInfoList***This field configures the list of RSS assistance info which is used for the *physCellId* in I*nterFreqNeighCellList*. If E-UTRAN includes *rss-AssistanceInfoList*, it includes the same number of entries, and listed in the same order, as in *InterFreqNeighCellList.* |
| ***rssConfigCarrierInfo***RSS-Configurations for inter frequency cells. If the field is present, the RSS is not collocated (in frequency and time) in the cells. Otherwise, RSS is collocated in the cells. |
| ***rss-MeasPowerBias*** Power bias in dB relative to CRS's q\_offset of cells in the neighbor cell list. Value dB-6 corresponds to -6 dB, value dB-3 corresponds to -3 dB and so on. Value *rssNotUsed* indicates measurement based on RSS is not applicable for the corresponding neighbor cell. |
| ***scptm-FreqOffset***Parameter QoffsetSCPTM in TS 36.304 [4]. Actual value QoffsetSCPTM = field value \* 2 [dB]. If the field is not present, the UE uses infinite dBs for the SC-PTM frequency offset with cell ranking as specified in TS 36.304 [4]. |
| ***threshX-High***Parameter "ThreshX, HighP" in TS 36.304 [4]. |
| ***threshX-HighQ***Parameter "ThreshX, HighQ" in TS 36.304 [4]. |
| ***threshX-Low***Parameter "ThreshX, LowP" in TS 36.304 [4]. |
| ***threshX-LowQ***Parameter "ThreshX, LowQ" in TS 36.304 [4]. |
| ***t-ReselectionEUTRA***Parameter "TreselectionEUTRA" in TS 36.304 [4]. |
| ***t-ReselectionEUTRA-SF***Parameter "Speed dependent ScalingFactor for TreselectionEUTRA" in TS 36.304 [4]. If the field is not present, the UE behaviour is specified in TS 36.304 [4]. |

NOTE 1: The value the UE applies for parameter "Qqualmin" in TS 36.304 [4] depends on the *q-QualMin* fields signalled by E-UTRAN and supported by the UE. In case multiple candidate options are available, the UE shall select the highest priority candidate option according to the priority order indicated by the following table (top row is highest priority).

|  |  |  |
| --- | --- | --- |
| q-QualMinRSRQ-OnAllSymbols | q-QualMinWB | Value of parameter "Qqualmin" in TS 36.304 [4] |
| Included | Included | *q-QualMinRSRQ-OnAllSymbols* – (*q-QualMin* – *q-QualMinWB*) |
| Included | Not included | *q-QualMinRSRQ-OnAllSymbols* |
| Not included | Included | *q-QualMinWB* |
| Not included | Not included | *q-QualMin* |

| Conditional presence | Explanation |
| --- | --- |
| *dl-FreqMax* | The field is mandatory present if, for the corresponding entry in *InterFreqCarrierFreqList* (i.e. without suffix), *dl-CarrierFreq* (i.e. without suffix) is set to *maxEARFCN*. Otherwise the field is not present. |
| *QrxlevminCE1* | The field is optionally present, Need OR, if *q-RxLevMinCE1-r13* is set below -140 dBm. Otherwise the field is not present. |
| *RSRQ* | The field is mandatory present if *threshServingLowQ* is present in *systemInformationBlockType3*; otherwise it is not present. |
| *RSRQ2* | The field is mandatory present for all EUTRA carriers listed in SIB5 if *q-QualMinRSRQ-OnAllSymbols* is present in SIB3; otherwise it is not present and the UE shall delete any existing value for this field. |
| *WB-RSRQ* | The field is optionally present, need OP if the measurement bandwidth indicated by *allowedMeasBandwidth* is 50 resource blocks or larger; otherwise it is not present. |
| *RSS-Info* | This field is optionally present, need ON, if *InterFreqNeighCellList* is configured and if *rss-MeasConfig* is included in *SIB2*. Otherwise, this field is not present. |

### 6.3.2 Radio resource control information elements

#### – *AntennaInfo*

----------- unmodified definitions skipped ------------

#### *RadioResourceConfigCommon*

The IE *RadioResourceConfigCommonSIB* and IE *RadioResourceConfigCommon* are used to specify common radio resource configurations in the system information and in the mobility control information, respectively, e.g., the random access parameters and the static physical layer parameters.

*RadioResourceConfigCommon* information element

-- ASN1START

RadioResourceConfigCommonSIB ::= SEQUENCE {

 rach-ConfigCommon RACH-ConfigCommon,

 bcch-Config BCCH-Config,

 pcch-Config PCCH-Config,

 prach-Config PRACH-ConfigSIB,

 pdsch-ConfigCommon PDSCH-ConfigCommon,

 pusch-ConfigCommon PUSCH-ConfigCommon,

 pucch-ConfigCommon PUCCH-ConfigCommon,

 soundingRS-UL-ConfigCommon SoundingRS-UL-ConfigCommon,

 uplinkPowerControlCommon UplinkPowerControlCommon,

 ul-CyclicPrefixLength UL-CyclicPrefixLength,

 ...,

 [[ uplinkPowerControlCommon-v1020 UplinkPowerControlCommon-v1020 OPTIONAL -- Need OR

 ]],

 [[ rach-ConfigCommon-v1250 RACH-ConfigCommon-v1250 OPTIONAL -- Need OR

 ]],

 [[ pusch-ConfigCommon-v1270 PUSCH-ConfigCommon-v1270 OPTIONAL -- Need OR

 ]],

 [[ bcch-Config-v1310 BCCH-Config-v1310 OPTIONAL, -- Need OR

 pcch-Config-v1310 PCCH-Config-v1310 OPTIONAL, -- Need OR

 freqHoppingParameters-r13 FreqHoppingParameters-r13 OPTIONAL, -- Need OR

 pdsch-ConfigCommon-v1310 PDSCH-ConfigCommon-v1310 OPTIONAL, -- Need OR

 pusch-ConfigCommon-v1310 PUSCH-ConfigCommon-v1310 OPTIONAL, -- Need OR

 prach-ConfigCommon-v1310 PRACH-ConfigSIB-v1310 OPTIONAL, -- Need OR

 pucch-ConfigCommon-v1310 PUCCH-ConfigCommon-v1310 OPTIONAL -- Need OR

 ]],

 [[ highSpeedConfig-r14 HighSpeedConfig-r14 OPTIONAL, -- Need OR

 prach-Config-v1430 PRACH-Config-v1430 OPTIONAL, -- Need OR

 pucch-ConfigCommon-v1430 PUCCH-ConfigCommon-v1430 OPTIONAL -- Need OR

 ]],

 [[ prach-Config-v1530 PRACH-ConfigSIB-v1530 OPTIONAL, -- Cond EDT

 ce-RSS-Config-r15 RSS-Config-r15 OPTIONAL, -- Need OR

 wus-Config-r15 WUS-Config-r15 OPTIONAL, -- Need OR

 highSpeedConfig-v1530 HighSpeedConfig-v1530 OPTIONAL -- Need OR

 ]],

 [[ uplinkPowerControlCommon-v1540 UplinkPowerControlCommon-v1530 OPTIONAL -- Need OR

 ]],

 [[ wus-Config-v1560 WUS-Config-v1560 OPTIONAL -- Need OR

 ]],

 [[

 rss-MeasConfig-r16 ENUMERATED {enabled} OPTIONAL, -- Need OR

 rss-MeasNonNCL-r16 ENUMERATED {enabled} OPTIONAL -- Need OR

 ]]

}

RadioResourceConfigCommon ::= SEQUENCE {

 rach-ConfigCommon RACH-ConfigCommon OPTIONAL, -- Need ON

 prach-Config PRACH-Config,

 pdsch-ConfigCommon PDSCH-ConfigCommon OPTIONAL, -- Need ON

 pusch-ConfigCommon PUSCH-ConfigCommon,

 phich-Config PHICH-Config OPTIONAL, -- Need ON

 pucch-ConfigCommon PUCCH-ConfigCommon OPTIONAL, -- Need ON

 soundingRS-UL-ConfigCommon SoundingRS-UL-ConfigCommon OPTIONAL, -- Need ON

 uplinkPowerControlCommon UplinkPowerControlCommon OPTIONAL, -- Need ON

 antennaInfoCommon AntennaInfoCommon OPTIONAL, -- Need ON

 p-Max P-Max OPTIONAL, -- Need OP

 tdd-Config TDD-Config OPTIONAL, -- Cond TDD

 ul-CyclicPrefixLength UL-CyclicPrefixLength,

 ...,

 [[ uplinkPowerControlCommon-v1020 UplinkPowerControlCommon-v1020 OPTIONAL -- Need ON

 ]],

 [[ tdd-Config-v1130 TDD-Config-v1130 OPTIONAL -- Cond TDD3

 ]],

 [[ pusch-ConfigCommon-v1270 PUSCH-ConfigCommon-v1270 OPTIONAL -- Need OR

 ]],

 [[

 prach-Config-v1310 PRACH-Config-v1310 OPTIONAL, -- Need ON

 freqHoppingParameters-r13 FreqHoppingParameters-r13 OPTIONAL, -- Need ON

 pdsch-ConfigCommon-v1310 PDSCH-ConfigCommon-v1310 OPTIONAL, -- Need ON

 pucch-ConfigCommon-v1310 PUCCH-ConfigCommon-v1310 OPTIONAL, -- Need ON

 pusch-ConfigCommon-v1310 PUSCH-ConfigCommon-v1310 OPTIONAL, -- Need ON

 uplinkPowerControlCommon-v1310 UplinkPowerControlCommon-v1310 OPTIONAL -- Need ON

 ]],

 [[ highSpeedConfig-r14 HighSpeedConfig-r14 OPTIONAL, -- Need OR

 prach-Config-v1430 PRACH-Config-v1430 OPTIONAL, -- Need OR

 pucch-ConfigCommon-v1430 PUCCH-ConfigCommon-v1430 OPTIONAL, -- Need OR

 tdd-Config-v1430 TDD-Config-v1430 OPTIONAL -- Cond TDD3

 ]],

 [[

 tdd-Config-v1450 TDD-Config-v1450 OPTIONAL -- Cond TDD3

 ]],

 [[ uplinkPowerControlCommon-v1530 UplinkPowerControlCommon-v1530 OPTIONAL, -- Need ON

 highSpeedConfig-v1530 HighSpeedConfig-v1530 OPTIONAL -- Need OR

 ]]

}

RadioResourceConfigCommonPSCell-r12 ::= SEQUENCE {

 basicFields-r12 RadioResourceConfigCommonSCell-r10,

 pucch-ConfigCommon-r12 PUCCH-ConfigCommon,

 rach-ConfigCommon-r12 RACH-ConfigCommon,

 uplinkPowerControlCommonPSCell-r12 UplinkPowerControlCommonPSCell-r12,

 ...,

 [[ uplinkPowerControlCommonPSCell-v1310

 UplinkPowerControlCommon-v1310 OPTIONAL -- Need ON

 ]],

 [[ uplinkPowerControlCommonPSCell-v1530

 UplinkPowerControlCommon-v1530 OPTIONAL -- Need ON

 ]]

}

RadioResourceConfigCommonPSCell-v12f0 ::= SEQUENCE {

 basicFields-v12f0 RadioResourceConfigCommonSCell-v10l0

}

RadioResourceConfigCommonPSCell-v1440 ::= SEQUENCE {

 basicFields-v1440 RadioResourceConfigCommonSCell-v1440

}

RadioResourceConfigCommonSCell-r10 ::= SEQUENCE {

 -- DL configuration as well as configuration applicable for DL and UL

 nonUL-Configuration-r10 SEQUENCE {

 -- 1: Cell characteristics

 dl-Bandwidth-r10 ENUMERATED {n6, n15, n25, n50, n75, n100},

 -- 2: Physical configuration, general

 antennaInfoCommon-r10 AntennaInfoCommon,

 mbsfn-SubframeConfigList-r10 MBSFN-SubframeConfigList OPTIONAL, -- Need OR

 -- 3: Physical configuration, control

 phich-Config-r10 PHICH-Config,

 -- 4: Physical configuration, physical channels

 pdsch-ConfigCommon-r10 PDSCH-ConfigCommon,

 tdd-Config-r10 TDD-Config OPTIONAL -- Cond TDDSCell

 },

 -- UL configuration

 ul-Configuration-r10 SEQUENCE {

 ul-FreqInfo-r10 SEQUENCE {

 ul-CarrierFreq-r10 ARFCN-ValueEUTRA OPTIONAL, -- Need OP

 ul-Bandwidth-r10 ENUMERATED {n6, n15,

 n25, n50, n75, n100} OPTIONAL, -- Need OP

 additionalSpectrumEmissionSCell-r10 AdditionalSpectrumEmission

 },

 p-Max-r10 P-Max OPTIONAL, -- Need OP

 uplinkPowerControlCommonSCell-r10 UplinkPowerControlCommonSCell-r10,

 -- A special version of IE UplinkPowerControlCommon may be introduced

 -- 3: Physical configuration, control

 soundingRS-UL-ConfigCommon-r10 SoundingRS-UL-ConfigCommon,

 ul-CyclicPrefixLength-r10 UL-CyclicPrefixLength,

 -- 4: Physical configuration, physical channels

 prach-ConfigSCell-r10 PRACH-ConfigSCell-r10 OPTIONAL, -- Cond TDD-OR-NoR11

 pusch-ConfigCommon-r10 PUSCH-ConfigCommon

 } OPTIONAL, -- Need OR

 ...,

 [[ ul-CarrierFreq-v1090 ARFCN-ValueEUTRA-v9e0 OPTIONAL -- Need OP

 ]],

 [[ rach-ConfigCommonSCell-r11 RACH-ConfigCommonSCell-r11 OPTIONAL, -- Cond ULSCell

 prach-ConfigSCell-r11 PRACH-Config OPTIONAL, -- Cond UL

 tdd-Config-v1130 TDD-Config-v1130 OPTIONAL, -- Cond TDD2

 uplinkPowerControlCommonSCell-v1130

 UplinkPowerControlCommonSCell-v1130 OPTIONAL -- Cond UL

 ]],

 [[ pusch-ConfigCommon-v1270 PUSCH-ConfigCommon-v1270 OPTIONAL -- Need OR

 ]],

 [[ pucch-ConfigCommon-r13 PUCCH-ConfigCommon OPTIONAL, -- Cond UL

 uplinkPowerControlCommonSCell-v1310

 UplinkPowerControlCommonSCell-v1310 OPTIONAL -- Cond UL

 ]],

 [[ highSpeedConfigSCell-r14 HighSpeedConfigSCell-r14 OPTIONAL, -- Need OR

 prach-Config-v1430 PRACH-Config-v1430 OPTIONAL, -- Cond UL

 ul-Configuration-r14 SEQUENCE {

 ul-FreqInfo-r14 SEQUENCE {

 ul-CarrierFreq-r14 ARFCN-ValueEUTRA-r9 OPTIONAL, -- Need OP

 ul-Bandwidth-r14 ENUMERATED {n6, n15,

 n25, n50, n75, n100} OPTIONAL, -- Need OP

 additionalSpectrumEmissionSCell-r14 AdditionalSpectrumEmission

 },

 p-Max-r14 P-Max OPTIONAL, -- Need OP

 soundingRS-UL-ConfigCommon-r14 SoundingRS-UL-ConfigCommon,

 ul-CyclicPrefixLength-r14 UL-CyclicPrefixLength,

 prach-ConfigSCell-r14 PRACH-ConfigSCell-r10 OPTIONAL, -- Cond TDD-OR-NoR11

 uplinkPowerControlCommonPUSCH-LessCell-v1430

 UplinkPowerControlCommonPUSCH-LessCell-v1430 OPTIONAL -- Need OR

} OPTIONAL, -- Cond ULSRS

 harq-ReferenceConfig-r14 ENUMERATED {sa2,sa4,sa5} OPTIONAL, -- Need OR

 soundingRS-FlexibleTiming-r14 ENUMERATED {true} OPTIONAL -- Need OR

 ]],

 [[ mbsfn-SubframeConfigList-v1430 MBSFN-SubframeConfigList-v1430 OPTIONAL -- Need ON

 ]],

 [[ uplinkPowerControlCommonSCell-v1530 UplinkPowerControlCommon-v1530 OPTIONAL -- Need ON

 ]]

}

RadioResourceConfigCommonSCell-v10l0 ::= SEQUENCE {

 -- UL configuration

 ul-Configuration-v10l0 SEQUENCE {

 additionalSpectrumEmissionSCell-v10l0 AdditionalSpectrumEmission-v10l0

 }

}

RadioResourceConfigCommonSCell-v1440 ::= SEQUENCE {

 ul-Configuration-v1440 SEQUENCE {

 ul-FreqInfo-v1440 SEQUENCE {

 additionalSpectrumEmissionSCell-v1440 AdditionalSpectrumEmission-v10l0

 }

 }

}

BCCH-Config ::= SEQUENCE {

 modificationPeriodCoeff ENUMERATED {n2, n4, n8, n16}

}

BCCH-Config-v1310 ::= SEQUENCE {

 modificationPeriodCoeff-v1310 ENUMERATED {n64}

}

FreqHoppingParameters-r13 ::= SEQUENCE {

 dummy ENUMERATED {nb2, nb4} OPTIONAL,

 dummy2 CHOICE {

 interval-FDD-r13 ENUMERATED {int1, int2, int4, int8},

 interval-TDD-r13 ENUMERATED {int1, int5, int10, int20}

 } OPTIONAL,

 dummy3 CHOICE {

 interval-FDD-r13 ENUMERATED {int2, int4, int8, int16},

 interval-TDD-r13 ENUMERATED { int5, int10, int20, int40}

 } OPTIONAL,

 interval-ULHoppingConfigCommonModeA-r13 CHOICE {

 interval-FDD-r13 ENUMERATED {int1, int2, int4, int8},

 interval-TDD-r13 ENUMERATED {int1, int5, int10, int20}

 } OPTIONAL, -- Cond MP-A

 interval-ULHoppingConfigCommonModeB-r13 CHOICE {

 interval-FDD-r13 ENUMERATED {int2, int4, int8, int16},

 interval-TDD-r13 ENUMERATED { int5, int10, int20, int40}

 } OPTIONAL, -- Cond MP-B

 dummy4 INTEGER (1..maxAvailNarrowBands-r13) OPTIONAL

}

PCCH-Config ::= SEQUENCE {

 defaultPagingCycle ENUMERATED {

 rf32, rf64, rf128, rf256},

 nB ENUMERATED {

 fourT, twoT, oneT, halfT, quarterT, oneEighthT,

 oneSixteenthT, oneThirtySecondT}

}

PCCH-Config-v1310 ::= SEQUENCE {

 paging-narrowBands-r13 INTEGER (1..maxAvailNarrowBands-r13),

 mpdcch-NumRepetition-Paging-r13 ENUMERATED {r1, r2, r4, r8, r16, r32, r64, r128, r256},

 nB-v1310 ENUMERATED {one64thT, one128thT, one256thT}

 OPTIONAL -- Need OR

}

UL-CyclicPrefixLength ::= ENUMERATED {len1, len2}

HighSpeedConfig-r14 ::= SEQUENCE {

 highSpeedEnhancedMeasFlag-r14 ENUMERATED {true} OPTIONAL, -- Need OR

 highSpeedEnhancedDemodulationFlag-r14 ENUMERATED {true} OPTIONAL -- Need OR

}

HighSpeedConfig-v1530 ::= SEQUENCE {

 highSpeedMeasGapCE-ModeA-r15 ENUMERATED {true}

}

HighSpeedConfigSCell-r14 ::= SEQUENCE {

 highSpeedEnhancedDemodulationFlag-r14 ENUMERATED {true} OPTIONAL -- Need OR

}

-- ASN1STOP

| *RadioResourceConfigCommon* field descriptions |
| --- |
| ***additionalSpectrumEmissionSCell***The UE requirements related to *additionalSpectrumEmissionSCell* are defined in TS 36.101 [42]. E-UTRAN configures the same value in *additionalSpectrumEmissionSCell* for all SCell(s) of the same band with UL configured. The *additionalSpectrumEmissionSCell* is applicable for all serving cells (including PCell) of the same band with UL configured. |
| ***defaultPagingCycle***Default paging cycle, used to derive 'T' in TS 36.304 [4]. Value rf32 corresponds to 32 radio frames, rf64 corresponds to 64 radio frames and so on. |
| ***dummy***This field is not used in the specification. If received it shall be ignored by the UE. |
| ***harq-ReferenceConfig***Indicates UL/ DL configuration used as the DL HARQ reference configuration for this serving cell. Value sa2 corresponds to Configuration2, sa4 to Configuration4 etc, as specified in TS 36.211 [21], table 4.2-2. E-UTRAN configures the same value for all serving cells residing on same frequency band. |
| ***highSpeedEnhancedMeasFlag***If the field is present, the UE shall apply the high speed measurement enhancements as specified in TS 36.133 [16]. |
| ***highSpeedEnhancedDemodulationFlag***If the field is present, the UE shall apply the advanced receiver in SFN scenario as specified in TS 36.101 [6]. |
| ***highSpeedMeasGapCE-ModeA***If the field is present, the UE in CE mode A shall apply the measurement gap sharing table associated with high-velocity scenario for measurements, as specified in TS 36.133 [16]. |
| ***interval-DLHoppingConfigCommonModeX***Number of consecutive absolute subframes over which MPDCCH or PDSCH for CE mode X stays at the same narrowband before hopping to another narrowband. For interval-FDD, int1 corresponds to 1 subframe, int2 corresponds to 2 subframes, and so on. For interval-TDD, int1 corresponds to 1 subframe, int5 corresponds to 5 subframes, and so on. |
| ***interval-ULHoppingConfigCommonModeX***Number of consecutive absolute subframes over which PUCCH or PUSCH for CE mode X stays at the same narrowband before hopping to another narrowband. For interval-FDD, int1 corresponds to 1 subframe, int2 corresponds to 2 subframes, and so on. For interval-TDD, int1 corresponds to 1 subframe, int5 corresponds to 5 subframes, and so on. |
| ***modificationPeriodCoeff***Actual modification period, expressed in number of radio frames= *modificationPeriodCoeff* \* *defaultPagingCycle*. n2 corresponds to value 2, n4 corresponds to value 4, n8 corresponds to value 8, n16 corresponds to value 16, and n64 corresponds to value 64. |
| ***mpdcch-NumRepetition-Paging***Maximum number of repetitions for MPDCCH common search space (CSS) for paging, see TS 36.211 [21]. |
| ***mpdcch-pdsch-HoppingOffset***Parameter: cid:image020.png@01D1F4C1.16D3F4B0, see TS 36.211 [21], clause 6.4.1. |
| ***mpdcch-pdsch-HoppingNB***The number of narrowbands for MPDCCH/PDSCH frequency hopping. Value nb2 corresponds to 2 narrowbands and value nb4 corresponds to 4 narrowbands. |
| ***nB***Parameter: nB is used as one of parameters to derive the Paging Frame and Paging Occasion according to TS 36.304 [4]. Value in multiples of 'T' as defined in TS 36.304 [4]. A value of fourT corresponds to 4 \* T, a value of twoT corresponds to 2 \* T and so on. In case *nB-v1310* is signalled, the UE shall ignore *nB* (i.e. without suffix). EUTRAN configures *nB-v1310* only in the BR version of SI message. |
| ***paging-narrowBands***Number of narrowbands used for paging, see TS 36.304 [4], TS 36.212 [22] and TS 36.213 [23]. |
| ***p-Max***Pmax to be used in the target cell. If absent, for the band used in the target cell, the UE applies the maximum power according to its capability as specified in 36.101 [42], clause 6.2.2. In case the UE is configured with uplink intra-band contiguous CA and the UE indicates *ue-CA-PowerClass-N* in that band combination, then the *p-Max* in *RadioResourceConfigCommonSCell* for that SCell, if present, also applies for that band combination whenever that SCell is activated. |
| ***prach-ConfigSCell***Indicates a PRACH configuration for an SCell. The field is not applicable for an LAA SCell in this release. |
| ***rach-ConfigCommonSCell***Indicates a RACH configuration for an SCell. The field is not applicable for an LAA SCell in this release. |
| ***rss-MeasConfig***Indicates whether RSS-based measurement is enabled or disabled. |
| ***rss-MeasNonNCL***Indicates whether RSS of neighbour cells that are not provided in the Neighbour Cell List (*interFreqNeighCellList, intraFreqNeighCellList, CRS-AssistanceInfoList*) can be used for measurements. |
| ***soundingRS-FlexibleTiming***Indicates the SRS flexible timing (if configured) for aperiodic SRS triggered by DL grant. If the SRS transmission is collided with ACK/NACK, postpone once to the next configured SRS transmission opportunity. |
| ***ul-Bandwidth***Parameter: transmission bandwidth configuration, NRB, in uplink, see TS 36.101 [42], table 5.6-1. Value n6 corresponds to 6 resource blocks, n15 to 15 resource blocks and so on. If for FDD this parameter is absent, the uplink bandwidth is equal to the downlink bandwidth. For TDD this parameter is absent and it is equal to the downlink bandwidth. |
| ***ul-CarrierFreq***For FDD: If absent, the (default) value determined from the default TX-RX frequency separation defined in TS 36.101 [42], table 5.7.3-1, applies.For TDD: This parameter is absent and it is equal to the downlink frequency. |
| ***ul-CyclicPrefixLength***Parameter: Uplink cyclic prefix length see TS 36.211 [21], clause 5.2.1, where len1 corresponds to normal cyclic prefix and len2 corresponds to extended cyclic prefix. |

| **Conditional presence** | **Explanation** |
| --- | --- |
| *EDT* | The field is optionally present, Need OR, if *edt-Parameters* is present; otherwise the field is not present and the UE shall delete any existing value for this field. |
| *MP-A* | The field is mandatory present for CE mode A. Otherwise the field is optional, Need OR. |
| *MP-B* | The field is mandatory present for CE mode B. Otherwise the field is optional, Need OR. |
| *TDD* | The field is optional for TDD, Need ON; it is not present for FDD and the UE shall delete any existing value for this field. |
| *TDD2* | If *tdd-Config-r10* is present, the field is optional, Need OR. Otherwise the field is not present and the UE shall delete any existing value for this field. |
| *TDD3* | If *tdd-Config* is present, the field is optional, Need OR. Otherwise the field is not present and the UE shall delete any existing value for this field. |
| *TDD-OR-NoR11* | If *prach-ConfigSCell-r11* is absent, the field is optional for TDD, Need OR. Otherwise the field is not present and the UE shall delete any existing value for this field. |
| *TDDSCell* | This field is mandatory present for TDD; it is not present for FDD and LAA SCell, and the UE shall delete any existing value for this field. |
| *UL* | If the SCell is part of the STAG or concerns the PSCell or PUCCH SCell and if *ul-Configuration* is included, the field is optional, Need OR. Otherwise the field is not present and the UE shall delete any existing value for this field. |
| *ULSCell* | For the PSCell (IE is included in *RadioResourceConfigCommonPSCell*) the field is absent. Otherwise, if the SCell is part of the STAG and if *ul-Configuration* is included, the field is optional, Need OR. Otherwise the field is not present and the UE shall delete any existing value for this field. |
| *ULSRS* | If *ul-Configuration-r10* is absent, the field is optional, Need OR. Otherwise the field is not present and the UE shall delete any existing value for this field. |

#### *RadioResourceConfigDedicated*

The IE *RadioResourceConfigDedicated* is used to setup/modify/release RBs, to modify the MAC main configuration, to modify the SPS configuration and to modify dedicated physical configuration.

*RadioResourceConfigDedicated* information element

-- ASN1START

RadioResourceConfigDedicated ::= SEQUENCE {

 srb-ToAddModList SRB-ToAddModList OPTIONAL, -- Cond HO-Conn

 drb-ToAddModList DRB-ToAddModList OPTIONAL, -- Cond HO-toEUTRA

 drb-ToReleaseList DRB-ToReleaseList OPTIONAL, -- Need ON

 mac-MainConfig CHOICE {

 explicitValue MAC-MainConfig,

 defaultValue NULL

 } OPTIONAL, -- Cond HO-toEUTRA2

 sps-Config SPS-Config OPTIONAL, -- Need ON

 physicalConfigDedicated PhysicalConfigDedicated OPTIONAL, -- Need ON

 ...,

 [[ rlf-TimersAndConstants-r9 RLF-TimersAndConstants-r9 OPTIONAL -- Need ON

 ]],

 [[ measSubframePatternPCell-r10 MeasSubframePatternPCell-r10 OPTIONAL -- Need ON

 ]],

 [[ neighCellsCRS-Info-r11 NeighCellsCRS-Info-r11 OPTIONAL -- Need ON

 ]],

 [[ naics-Info-r12 NAICS-AssistanceInfo-r12 OPTIONAL -- Need ON

 ]],

 [[ neighCellsCRS-Info-r13 NeighCellsCRS-Info-r13 OPTIONAL, -- Cond CRSIM

 rlf-TimersAndConstants-r13 RLF-TimersAndConstants-r13 OPTIONAL -- Need ON

 ]],

 [[ sps-Config-v1430 SPS-Config-v1430 OPTIONAL -- Cond SPS

 ]],

 [[ srb-ToAddModListExt-r15 SRB-ToAddModListExt-r15 OPTIONAL, -- Need ON

 srb-ToReleaseListExt-r15 INTEGER (4) OPTIONAL, -- Need ON

 sps-Config-v1530 SPS-Config-v1530 OPTIONAL, -- Need ON

 crs-IntfMitigConfig-r15 CHOICE {

 release NULL,

 setup CHOICE { crs-IntfMitigEnabled-15 NULL,

 crs-IntfMitigNumPRBs-r15 ENUMERATED {n6, n24}

 }

 } OPTIONAL, -- Need ON

 neighCellsCRS-Info-r15 NeighCellsCRS-Info-r15 OPTIONAL, -- Need ON

 drb-ToAddModList-r15 DRB-ToAddModList-r15 OPTIONAL, -- Need ON

 drb-ToReleaseList-r15 DRB-ToReleaseList-r15 OPTIONAL, -- Need ON

 dummy SEQUENCE (SIZE (1..2)) OF INTEGER (1..2) OPTIONAL -- Need ON

 ]],

 [[ sps-Config-v1540 SPS-Config-v1540 OPTIONAL -- Need ON

 ]],

 [[

 rss-ConfigCarrierInfo-r16 RSS-ConfigCarrierInfo-r16 OPTIONAL -- Need OP

 rss-AssistanceInfoList-r16 RSS-AssistanceInfoList-r16 OPTIONAL –- Cond CRS-Info

 ]]

}

RadioResourceConfigDedicated-v1370 ::= SEQUENCE {

 physicalConfigDedicated-v1370 PhysicalConfigDedicated-v1370 OPTIONAL -- Need ON

}

RadioResourceConfigDedicated-v13c0 ::= SEQUENCE {

 physicalConfigDedicated-v13c0 PhysicalConfigDedicated-v13c0

}

RadioResourceConfigDedicatedPSCell-r12 ::= SEQUENCE {

 -- UE specific configuration extensions applicable for an PSCell

 physicalConfigDedicatedPSCell-r12 PhysicalConfigDedicated OPTIONAL, -- Need ON

 sps-Config-r12 SPS-Config OPTIONAL, -- Need ON

 naics-Info-r12 NAICS-AssistanceInfo-r12 OPTIONAL, -- Need ON

 ...,

 [[ neighCellsCRS-InfoPSCell-r13 NeighCellsCRS-Info-r13 OPTIONAL -- Need ON

 ]],

 [[ sps-Config-v1430 SPS-Config-v1430 OPTIONAL -- Cond SPS2

 ]],

 [[ sps-Config-v1530 SPS-Config-v1530 OPTIONAL, -- Need ON

 crs-IntfMitigEnabled-r15 BOOLEAN OPTIONAL, -- Need ON

 neighCellsCRS-Info-r15 NeighCellsCRS-Info-r15 OPTIONAL -- Need ON

 ]],

 [[ sps-Config-v1540 SPS-Config-v1540 OPTIONAL -- Need ON

 ]]

}

RadioResourceConfigDedicatedPSCell-v1370 ::= SEQUENCE {

 physicalConfigDedicatedPSCell-v1370 PhysicalConfigDedicated-v1370 OPTIONAL -- Need ON

}

RadioResourceConfigDedicatedPSCell-v13c0 ::= SEQUENCE {

 physicalConfigDedicatedPSCell-v13c0 PhysicalConfigDedicated-v13c0

}

RadioResourceConfigDedicatedSCG-r12 ::= SEQUENCE {

 drb-ToAddModListSCG-r12 DRB-ToAddModListSCG-r12 OPTIONAL, -- Need ON

 mac-MainConfigSCG-r12 MAC-MainConfig OPTIONAL, -- Need ON

 rlf-TimersAndConstantsSCG-r12 RLF-TimersAndConstantsSCG-r12 OPTIONAL, -- Need ON

 ...,

 [[ drb-ToAddModListSCG-r15 DRB-ToAddModListSCG-r15 OPTIONAL -- Need ON

 ]],

 [[ srb-ToAddModListSCG-r15 SRB-ToAddModList OPTIONAL, -- Need ON

 srb-ToReleaseListSCG-r15 SRB-ToReleaseList-r15 OPTIONAL -- Need ON

 ]],

 [[ -- NE-DC additions for release of RLC bearer config for DRBs

 drb-ToReleaseListSCG-r15 DRB-ToReleaseList-r15 OPTIONAL -- Need ON

 ]]

}

RadioResourceConfigDedicatedSCell-r10 ::= SEQUENCE {

 -- UE specific configuration extensions applicable for an SCell

 physicalConfigDedicatedSCell-r10 PhysicalConfigDedicatedSCell-r10 OPTIONAL, -- Need ON

 ...,

 [[ mac-MainConfigSCell-r11 MAC-MainConfigSCell-r11 OPTIONAL -- Cond SCellAdd

 ]],

 [[ naics-Info-r12 NAICS-AssistanceInfo-r12 OPTIONAL -- Need ON

 ]],

 [[ neighCellsCRS-InfoSCell-r13 NeighCellsCRS-Info-r13 OPTIONAL -- Need ON

 ]],

 [[ physicalConfigDedicatedSCell-v1370 PhysicalConfigDedicatedSCell-v1370 OPTIONAL -- Need ON

 ]],

 [[ crs-IntfMitigEnabled-r15 BOOLEAN OPTIONAL, -- Need ON

 neighCellsCRS-Info-r15 NeighCellsCRS-Info-r15 OPTIONAL, -- Need ON

 sps-Config-v1530 SPS-Config-v1530 OPTIONAL -- Need ON

 ]]

}

RadioResourceConfigDedicatedSCell-v13c0 ::= SEQUENCE {

 physicalConfigDedicatedSCell-v13c0 PhysicalConfigDedicatedSCell-v13c0

}

SRB-ToAddModList ::= SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod

SRB-ToAddModListExt-r15 ::= SEQUENCE (SIZE (1)) OF SRB-ToAddMod

SRB-ToAddMod ::= SEQUENCE {

 srb-Identity INTEGER (1..2),

 rlc-Config CHOICE {

 explicitValue RLC-Config,

 defaultValue NULL

 } OPTIONAL, -- Cond Setup

 logicalChannelConfig CHOICE {

 explicitValue LogicalChannelConfig,

 defaultValue NULL

 } OPTIONAL, -- Cond Setup

 ...,

 [[ pdcp-verChange-r15 ENUMERATED {true} OPTIONAL, -- Cond NR-PDCP

 rlc-Config-v1530 RLC-Config-v1530 OPTIONAL, -- Need ON

 rlc-BearerConfigSecondary-r15 RLC-BearerConfig-r15 OPTIONAL, -- Need ON

 srb-Identity-v1530 INTEGER (4) OPTIONAL -- Need ON

 ]],

 [[ rlc-Config-v1560 RLC-Config-v1510 OPTIONAL -- Need ON

 ]]

}

DRB-ToAddModList ::= SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod

DRB-ToAddModList-r15 ::= SEQUENCE (SIZE (1..maxDRB-r15)) OF DRB-ToAddMod

DRB-ToAddModListSCG-r12 ::= SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddModSCG-r12

DRB-ToAddModListSCG-r15 ::= SEQUENCE (SIZE (1..maxDRB-r15)) OF DRB-ToAddModSCG-r12

DRB-ToAddMod ::= SEQUENCE {

 eps-BearerIdentity INTEGER (0..15) OPTIONAL, -- Cond DRB-Setup

 drb-Identity DRB-Identity,

 pdcp-Config PDCP-Config OPTIONAL, -- Cond PDCP

 rlc-Config RLC-Config OPTIONAL, -- Cond SetupM

 logicalChannelIdentity INTEGER (3..10) OPTIONAL, -- Cond DRB-SetupM

 logicalChannelConfig LogicalChannelConfig OPTIONAL, -- Cond SetupM

 ...,

 [[ drb-TypeChange-r12 ENUMERATED {toMCG} OPTIONAL, -- Need OP

 rlc-Config-v1250 RLC-Config-v1250 OPTIONAL -- Need ON

 ]],

 [[ rlc-Config-v1310 RLC-Config-v1310 OPTIONAL, -- Need ON

 drb-TypeLWA-r13 BOOLEAN OPTIONAL, -- Need ON

 drb-TypeLWIP-r13 ENUMERATED {lwip, lwip-DL-only,

 lwip-UL-only, eutran} OPTIONAL -- Need ON

 ]],

 [[ rlc-Config-v1430 RLC-Config-v1430 OPTIONAL, -- Need ON

 lwip-UL-Aggregation-r14 BOOLEAN OPTIONAL, -- Cond LWIP

 lwip-DL-Aggregation-r14 BOOLEAN OPTIONAL, -- Cond LWIP

 lwa-WLAN-AC-r14 ENUMERATED {ac-bk, ac-be, ac-vi, ac-vo} OPTIONAL -- Cond UL-LWA

 ]],

 [[ rlc-Config-v1510 RLC-Config-v1510 OPTIONAL -- Need ON

 ]],

 [[ rlc-Config-v1530 RLC-Config-v1530 OPTIONAL, -- Need ON

 rlc-BearerConfigSecondary-r15 RLC-BearerConfig-r15 OPTIONAL, -- Need ON

 logicalChannelIdentity-r15 INTEGER (32..38) OPTIONAL -- Need ON

 ]]

}

DRB-ToAddModSCG-r12 ::= SEQUENCE {

 drb-Identity-r12 DRB-Identity,

 drb-Type-r12 CHOICE {

 split-r12 NULL,

 scg-r12 SEQUENCE {

 eps-BearerIdentity-r12 INTEGER (0..15) OPTIONAL, -- Cond DRB-Setup

 pdcp-Config-r12 PDCP-Config OPTIONAL -- Cond PDCP-S

 }

 } OPTIONAL, -- Cond SetupS2

 rlc-ConfigSCG-r12 RLC-Config OPTIONAL, -- Cond SetupS

 rlc-Config-v1250 RLC-Config-v1250 OPTIONAL, -- Need ON

 logicalChannelIdentitySCG-r12 INTEGER (3..10) OPTIONAL, -- Cond DRB-SetupS

 logicalChannelConfigSCG-r12 LogicalChannelConfig OPTIONAL, -- Cond SetupS

 ...,

 [[ rlc-Config-v1430 RLC-Config-v1430 OPTIONAL -- Need ON

 ]],

 [[ logicalChannelIdentitySCG-r15 INTEGER (32..38) OPTIONAL, -- Need ON

 rlc-Config-v1530 RLC-Config-v1530 OPTIONAL, -- Need ON

 rlc-BearerConfigSecondary-r15 RLC-BearerConfig-r15 OPTIONAL -- Need ON

 ]],

 [[ rlc-Config-v1560 RLC-Config-v1510 OPTIONAL -- Need ON

 ]]

}

DRB-ToReleaseList ::= SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity

DRB-ToReleaseList-r15 ::= SEQUENCE (SIZE (1..maxDRB-r15)) OF DRB-Identity

SRB-ToReleaseList-r15 ::= SEQUENCE (SIZE (1..2)) OF INTEGER (1..2)

MeasSubframePatternPCell-r10 ::= CHOICE {

 release NULL,

 setup MeasSubframePattern-r10

}

NeighCellsCRS-Info-r11 ::= CHOICE {

 release NULL,

 setup CRS-AssistanceInfoList-r11

}

CRS-AssistanceInfoList-r11 ::= SEQUENCE (SIZE (1..maxCellReport)) OF CRS-AssistanceInfo-r11

CRS-AssistanceInfo-r11 ::= SEQUENCE {

 physCellId-r11 PhysCellId,

 antennaPortsCount-r11 ENUMERATED {an1, an2, an4, spare1},

 mbsfn-SubframeConfigList-r11 MBSFN-SubframeConfigList,

 ...,

 [[ mbsfn-SubframeConfigList-v1430 MBSFN-SubframeConfigList-v1430 OPTIONAL -- Need ON

 ]]

}

NeighCellsCRS-Info-r13 ::= CHOICE {

 release NULL,

 setup CRS-AssistanceInfoList-r13

}

CRS-AssistanceInfoList-r13 ::= SEQUENCE (SIZE (1..maxCellReport)) OF CRS-AssistanceInfo-r13

CRS-AssistanceInfo-r13 ::= SEQUENCE {

 physCellId-r13 PhysCellId,

 antennaPortsCount-r13 ENUMERATED {an1, an2, an4, spare1},

 mbsfn-SubframeConfigList-r13 MBSFN-SubframeConfigList OPTIONAL, -- Need ON

 ...,

 [[ mbsfn-SubframeConfigList-v1430 MBSFN-SubframeConfigList-v1430 OPTIONAL -- Need ON

 ]]

}

NeighCellsCRS-Info-r15 ::= CHOICE {

 release NULL,

 setup CRS-AssistanceInfoList-r15

}

CRS-AssistanceInfoList-r15 ::= SEQUENCE (SIZE (1..maxCellReport)) OF CRS-AssistanceInfo-r15

CRS-AssistanceInfo-r15 ::= SEQUENCE {

 physCellId-r15 PhysCellId,

 crs-IntfMitigEnabled-15 ENUMERATED {enabled} OPTIONAL -- Need ON

}

RSS-AssistanceInfoList-r16 ::= SEQUENCE (SIZE (1..maxCellReport)) OF RSS-AssistanceInfo-r16

RSS-AssistanceInfo-r16 ::= SEQUENCE {

 rss-MeasPowerBias-r16 ENUMERATED {dB-6, dB-3, dB0, dB3, dB6, dB9, dB12, rssNotUsed} OPTIONAL --Need ON

}

NAICS-AssistanceInfo-r12 ::= CHOICE {

 release NULL,

 setup SEQUENCE {

 neighCellsToReleaseList-r12 NeighCellsToReleaseList-r12 OPTIONAL , -- Need ON

 neighCellsToAddModList-r12 NeighCellsToAddModList-r12 OPTIONAL, -- Need ON

 servCellp-a-r12 P-a OPTIONAL -- Need ON

 }

}

NeighCellsToReleaseList-r12 ::= SEQUENCE (SIZE (1..maxNeighCell-r12)) OF PhysCellId

NeighCellsToAddModList-r12 ::= SEQUENCE (SIZE (1..maxNeighCell-r12)) OF NeighCellsInfo-r12

NeighCellsInfo-r12 ::= SEQUENCE {

 physCellId-r12 PhysCellId,

 p-b-r12 INTEGER (0..3),

 crs-PortsCount-r12 ENUMERATED {n1, n2, n4, spare},

 mbsfn-SubframeConfig-r12 MBSFN-SubframeConfigList OPTIONAL, -- Need ON

 p-aList-r12 SEQUENCE (SIZE (1..maxP-a-PerNeighCell-r12)) OF P-a,

 transmissionModeList-r12 BIT STRING (SIZE(8)),

 resAllocGranularity-r12 INTEGER (1..4),

 ...

}

P-a ::= ENUMERATED { dB-6, dB-4dot77, dB-3, dB-1dot77,

 dB0, dB1, dB2, dB3}

RLC-BearerConfig-r15 ::= CHOICE {

 release NULL,

 setup SEQUENCE {

 rlc-Config-r15 RLC-Config-r15 OPTIONAL, -- Need ON

 logicalChannelIdentityConfig-r15 CHOICE {

 logicalChannelIdentity-r15 INTEGER (1..10),

 logicalChannelIdentityExt-r15 INTEGER (32..38)

 },

 logicalChannelConfig-r15 LogicalChannelConfig OPTIONAL -- Need ON

 }

}

-- ASN1STOP

| *RadioResourceConfigDedicated* field descriptions |
| --- |
| ***crs-IntfMitigConfig****crs-IntfMitigEnabled-r15* indicates CRS interference mitigation is enabled for the cell, as specified in TS 36.133 [16], clause 3.6.1.1. For BL UEs or UEs in CE supporting *ce-CRS-IntfMitig,* presence of this field indicates CRS interference mitigation is enabled in the cell, as specified in TS 36.133 [16], clauses 3.6.1.2 and 3.6.1.3, and the value *crs-IntfMitigNumPRBs* indicatesnumber of PRBs, i.e. 6 or 24 PRBs, for CRS transmission in the central cell BW when CRS interference mitigation is enabled. For UEs not supporting this feature, the behaviour is undefined if this field is configured and the field *cellBarred* in *SystemInformationBlockType1* (*SystemInformationBlockType1-BR* for BL UEs or UEs in CE) is set to *notbarred*. |
| ***crs-PortsCount***Parameter represents the number of antenna ports for cell-specific reference signal used by the signaled neighboring cell where n1 corresponds to 1 antenna port, n2 to 2 antenna ports etc. see TS 36.211 [21], clause 6.10.1. |
| ***drb-Identity***In case of DC, the DRB identity is unique within the scope of the UE i.e. an SCG DRB can not use the same value as used for an MCG or split DRB. For a split DRB the same identity is used for the MCG- and SCG parts of the configuration. |
| ***drb-ToAddModList***When *drb-ToAddModList-r15* is configured, UE shall ignore the *drb-ToAddModList* (without suffix). |
| ***drb-ToAddModListSCG***When an SCG is configured, E-UTRAN configures at least one SCG or split DRB. *When drb-ToAddModListSCG-r15* is configured, UE shall ignore the *drb-ToAddModListSCG* (without suffix). When NE-DC is configured, this field indicates the SCG RLC bearers to be (re-)configured. |
| ***drb-ToReleaseList***When *drb-ToReleaseList-r15* is configured, UE shall ignore the *drb-ToReleaseList* (without suffix). |
| ***drb-ToReleaseListSCG***When NE-DC is configured, this field indicates the SCG RLC bearers to be released. |
| ***drb-Type***This field indicates whether the DRB is split or SCG DRB. E-UTRAN does not configure split and SCG DRBs simultaneously for the UE. |
| ***drb-TypeChange***Indicates that a split/SCG DRB is reconfigured to an MCG DRB (i.e. E-UTRAN only signals the field in case the DRB type changes). |
| ***drb-TypeLWA***Indicates whether a DRB is (re)configured as an LWA DRB or an LWA DRB is reconfigured not to use WLAN resources. NOTE 1 |
| ***drb-TypeLWIP***Indicates whether a DRB is (re)configured to use LWIP Tunnel in UL and DL (value *lwip*), DL only (value *lwip-DL-only*), UL only (value *lwip-UL-only*) or not to use LWIP Tunnel (value *eutran*). |
| ***dummy***This field is not used in the specification. If received it shall be ignored by the UE. |
| ***logicalChannelConfig***For SRBs a choice is used to indicate whether the logical channel configuration is signalled explicitly or set to the default logical channel configuration for SRB1 as specified in 9.2.1.1 or for SRB2 as specified in 9.2.1.2. |
| ***logicalChannelIdentity, LogicalChannelIdentityExt***The logical channel identity for both UL and DL. Value 4 is not configured for DRBs if SRB4 is configured. When *logicalChannelIdentity-r15* is signalled, UE shall ignore contents of *logicalChannelIdentity* (without suffix). |
| ***logicalChannelIdentitySCG***The logical channel identity for both UL and DL. When *logicalChannelIdentitySCG-r15* is signalled, UE shall ignore contents of *logicalChannelIdentitySCG* (without suffix). |
| ***lwa-WLAN-AC***For LWA bearers, indicates the corresponding WLAN access category for uplink. AC-BK (value *ac-bk*) corresponds to Background access category, AC-BE (value *ac-be*) corresponds to Best Effort access category, AC-VI (value *ac-vi*) corresponds to Video access category and AC-VO (value *ac-vo*) corresponds to Voice access category as defined by IEEE 802.11-2012 [67]. If *lwa-WLAN-AC* is not configured, it is left up to UE to decide which IEEE 802.11 AC value to use when performing transmissions of packets for this DRB over WLAN in the uplink. |
| ***lwip-DL-Aggregation, lwip-UL-Aggregation***Indicates whether LWIP is configured to utilize LWIP aggregation in DL or UL. |
| ***mac-MainConfig***Although the ASN.1 includes a choice that is used to indicate whether the mac-MainConfig is signalled explicitly or set to the default MAC main configuration as specified in 9.2.2, EUTRAN does not apply "*defaultValue*". |
| ***mbsfn-SubframeConfig***Defines the MBSFN subframe configuration used by the signaled neighboring cell. If absent, UE assumes no MBSFN configuration for the neighboring cell. |
| ***measSubframePatternPCell***Time domain measurement resource restriction pattern for the PCell measurements (RSRP, RSRQ and the radio link monitoring). |
| ***neighCellsCRS-Info, neighCellsCRS-InfoSCell, neighCellsCRS-InfoPSCell***This field contains assistance information used by the UE to mitigate interference from CRS while performing RRM/RLM/CSI measurement or data demodulation or DL control channel demodulation. When the received CRS assistance information is for a cell with CRS non-colliding with that of the CRS of the cell to measure, the UE may use the CRS assistance information to mitigate CRS interference. When the received CRS assistance information is for a cell with CRS colliding with that of the CRS of the cell to measure, the UE may use the CRS assistance information to mitigate CRS interference RRM/RLM (as specified in TS 36.133 [16]) and for CSI (as specified in TS 36.101 [42]) on the subframes indicated by *measSubframePatternPCell*, *measSubframePatternConfigNeigh*, *csi-MeasSubframeSet1* ifconfigured, and the CSI subframe set 1 if *csi-MeasSubframeSets-r12* is configured. The UE may use CRS assistance information to mitigate CRS interference from the cells in the *CRS-AssistanceInfoList* for the demodulation purpose or DL control channel demodulation as specified in TS 36.101 [42]. EUTRAN does not configure *neighCellsCRS-Info-r11* or *neighCellsCRS-Info-r13* if *eimta-MainConfigPCell-r12* is configured. |
| ***neighCellsCRS-Info, neighCellsCRS-InfoSCell, neighCellsCRS-InfoPSCell***This field contains assistance information used by the UE to mitigate interference from CRS while performing RRM/RLM/CSI measurement or data demodulation or DL control channel demodulation. When the received CRS assistance information is for a cell with CRS non-colliding with that of the CRS of the cell to measure, the UE may use the CRS assistance information to mitigate CRS interference. When the received CRS assistance information is for a cell with CRS colliding with that of the CRS of the cell to measure, the UE may use the CRS assistance information to mitigate CRS interference RRM/RLM (as specified in TS 36.133 [16]) and for CSI (as specified in TS 36.101 [42]) on the subframes indicated by *measSubframePatternPCell*, *measSubframePatternConfigNeigh*, *csi-MeasSubframeSet1* ifconfigured, and the CSI subframe set 1 if *csi-MeasSubframeSets-r12* is configured. The UE may use CRS assistance information to mitigate CRS interference from the cells in the *CRS-AssistanceInfoList* for the demodulation purpose or DL control channel demodulation as specified in TS 36.101 [42]. EUTRAN does not configure *neighCellsCRS-Info-r11* or *neighCellsCRS-Info-r13* if *eimta-MainConfigPCell-r12* is configured. |
| ***neighCellsToAddModList***This field contains assistance information used by the UE to cancel and suppress interference of a neighbouring cell. If this field is present for a neighbouring cell, the UE assumes that the transmission parameters listed in the sub-fields are used by the neighbouring cell. If this field is present for a neighbouring cell, the UE assumes the neighbour cell is subframe and SFN synchronized to the serving cell, has the same system bandwidth, UL/DL and special subframe configuration, and cyclic prefix length as the serving cell. |
| ***p-aList***Indicates the restricted subset of power offset for QPSK, 16QAM, and 64QAM PDSCH transmissions for the neighbouring cell by using the parameter, see TS 36.213 [23], clause 5.2. Value dB-6 corresponds to -6 dB, dB-4dot77 corresponds to -4.77 dB etc. |
| ***p-b***Parameter: , indicates the cell-specific ratio used by the signaled neighboring cell, see TS 36.213 [23], Table 5.2-1. |
| ***pdcp-verChange***Indicates that the PDCP version of the SRB is changed from NR PDCP to E-UTRA PDCP. Network only configures this version change for during handover, resume and first reconfiguration after re-establishment. E-UTRAN does not include this field when *SRB-ToAddMod* is included in *srb-ToAddModListSCG*. |
| ***physicalConfigDedicated***The default dedicated physical configuration is specified in 9.2.4. |
| ***resAllocGranularity***Indicates the resource allocation and precoding granularity in PRB pair level of the signaled neighboring cell, see TS 36.213 [23], clause 7.1.6. |
| ***rlc-BearerConfigSecondary***The configuration of a secondary RLC bearer within the same Cell Group as may e.g. be used in case of PDCP duplication using CA. The configuration comprises a (secondary) RLC entity, a logical channel identity and a logical channel configuration. E-UTRAN may configure this for SRB1, SRB2 and DRBs. For SRBs, E-UTRAN only configures the field for MCG (i.e. if included in *radioResourceConfigDedicated*. E-UTRAN configures the same RLC mode (AM/ UM) as used for the original RLC entity. The primary RLC entity is configured by *RLC-Config*. |
| ***rlc-Config***For SRBs a choice is used to indicate whether the RLC configuration is signalled explicitly or set to the values defined in the default RLC configuration for SRB1 in 9.2.1.1 or for SRB2 in 9.2.1.2. RLC AM is the only applicable RLC mode for SRB1 and SRB2. E-UTRAN does not reconfigure the RLC mode of DRBs except when a full configuration option is used, and may reconfigure the RLC SN field size and the AM RLC LI field size only upon handover within E-UTRA or upon the first reconfiguration after RRC connection re-establishment or upon SCG Change for SCG and split DRBs. |
| ***rss-AssistanceInfoList***This field configures the list of RSS assistance info which is used for the *physCellId* in *CRS-AssistanceInfoList*. If E-UTRAN includes *rss-AssistanceInfoList*, it includes the same number of entries, and listed in the same order, as in *CRS-AssistanceInfoList.* |
| ***rss-ConfigCarrierInfo*** This field provides the RSS Configurations information. |
| ***rss-MeasPowerBias*** Power bias in dB relative to CRS's q\_offset of cells in the neighbor cell list. Value dB-6 corresponds to -6 dB, value dB-3 corresponds to -3 dB and so on. Value *rssNotUsed* indicates measurement based on RSS is not applicable for the corresponding neighbor cell. |
| ***servCellp-a***Indicates the power offset for QPSK C-RNTI based PDSCH transmissions used by the serving cell, see TS 36.213 [23], clause 5.2. Value dB-6 corresponds to -6 dB, dB-4dot77 corresponds to -4.77 dB etc. |
| ***sps-Config***The default SPS configuration is specified in 9.2.3. Except for handover or releasing SPS for MCG, E-UTRAN does not reconfigure *sps-Config* for MCG when there is a configured downlink assignment or a configured uplink grant for MCG (see TS 36.321 [6]). Except for SCG change or releasing SPS for SCG, E-UTRAN does not reconfigure *sps-Config* for SCG when there is a configured downlink assignment or a configured uplink grant for SCG (see TS 36.321 [6]). In one serving cell, *sps-Config-v1530* is not present simultaneously with either *sps-Config* (without suffix) or *sps-Config-r12*. |
| ***srb-Identity***Value 1 is applicable for SRB1 only. Value 2 is applicable for SRB2 only. Value 4 is applicable for SRB4 only, if configured. For a split SRB the same identity is used for the MCG and NR SCG RLC bearer configurations. If *srb-Identity-v1530* is received, the UE shall ignore *srb-Identity* (i.e. without suffix). |
| ***srb-Identity-v1530***E-UTRAN does not include this field when *SRB-ToAddMod* is included in *srb-ToAddModListSCG*. |
| ***srb-ToAddModListExt***The field is to configure SRB4. |
| ***srb-ToAddModList***E-UTRAN configures the same RAT type (i.e. EUTRA or NR) for PDCP configuration of SRB1 and SRB2. |
| ***transmissionModeList***Indicates a subset of transmission mode 1, 2, 3, 4, 6, 8, 9, 10, for the signaled neighboring cell for which *NeighCellsInfo* applies. When TM10 is signaled, other signaled transmission parameters in *NeighCellsInfo* are not applicable to up to 8 layer transmission scheme of TM10. E-UTRAN may indicate TM9 when TM10 with QCL type A and DMRS scrambling with  in TS 36.211 [21], clause 6.10.3.1, is used in the signalled neighbour cell and TM9 or TM10 with QCL type A and DMRS scrambling with  in TS 36.211 [21], clause 6.10.3.1, is used in the serving cell. UE behaviour with NAICS when TM10 is used is only defined when QCL type A and DMRS scrambling with  in TS 36.211 [21], clause 6.10.3.1, is used for the serving cell and all signalled neighbour cells. The first/ leftmost bit is for transmission mode 1, the second bit is for transmission mode 2, and so on. |

NOTE 1: It is up to eNB to ensure that the field indicating LWA bearer type is set to FALSE when LWA bearer is no longer used (e.g. during handover or re-establishment where LWA configuration is released).

| Conditional presence | Explanation |
| --- | --- |
| *UL-LWA* | The field is optionally present, need ON if *ul-LWA-Config-r14* is present. Otherwise the field is not present. |
| CRSIM | The field is optionally present, need ON, if *neighCellsCRS-Info-r11* is not present; otherwise it is not present. |
| *DRB-Setup* | The field is mandatory present if the corresponding DRB is being set up and the UE is connected to EPC; otherwise it is not present. |
| *DRB-SetupM* | The field is:- mandatory present upon setup of MCG or split DRB;- optionally present, Need ON:- upon change from SCG to MCG DRB;- for EN-DC:- upon change of *keyToUse* for a DRB configured with an MCG RLC bearer;- when configured with MCG RLC bearer, upon change of S-KgNB without handover;- not present otherwise. |
| *DRB-SetupS* | The field is:- mandatory present:- upon setup of SCG or split DRB;- upon change from MCG to split DRB;- optionally present, Need ON:- upon change from MCG to SCG DRB;- for NE-DC, upon change of *keyToUse* for a DRB configured with an SCG RLC bearer;- not present otherwise. |
| *HO-Conn* | The field is mandatory present in case of handover to E-UTRA or when the *fullConfig* is included in the *RRCConnectionReconfiguration* message or in case of RRC connection establishment (excluding *RRConnectionResume*); otherwise the field is optionally present, need ON. Upon connection establishment/ re-establishment only SRB1 is applicable (excluding *RRConnectionResume*). |
| *HO-toEUTRA* | The field is mandatory present- in case of handover to E-UTRA or- when the *fullConfig* is included in the *RRCConnectionReconfiguration* message with the configuration for at least one MCG bearer or split data bearer;In case of RRC connection establishment (excluding *RRConnectionResume*); and RRC connection re-establishment the field is not present; otherwise the field is optionally present, need ON. |
| *HO-toEUTRA2* | The field is mandatory present in case of handover to E-UTRA or when the *fullConfig* is included in the *RRCConnectionReconfiguration* message; otherwise the field is optionally present, need ON. |
| *LWIP* | The field is optionally present, Need ON, if *drbTypeLWIP-r13* is not set to eutran; otherwise it is not present and the UE shall delete any existing value for this field. |
| *NR-PDCP* | The field is optional present, Need ON, when the SRB is configured with NR-PDCP prior to reception of this reconfiguration message. Otherwise it is not present. |
| *PDCP* | For the bearers configured with E-UTRA PDCP, the field is mandatory present if the corresponding DRB is being setup; the field is optionally present, need ON, upon reconfiguration of the corresponding split DRB or LWA DRB, upon the corresponding DRB type change from split to MCG bearer, upon the corresponding DRB type change from MCG to split bearer or LWA bearer, upon the corresponding DRB type change from LWA to LTE only bearer, upon handover within E-UTRA and upon the first reconfiguration after re-establishment but in all these cases only when *fullConfig* is not included in the *RRCConnectionReconfiguration* message; otherwise it is not present. |
| *PDCP-S* | The field is mandatory present if the corresponding DRB is being setup; the field is optionally present, need ON, upon SCG change; otherwise it is not present. |
| *RLC-Setup* | This field is optionally present if the corresponding DRB is being setup, need ON; otherwise it is not present. |
| *SCellAdd* | The field is optionally present, need ON, upon SCell addition; otherwise it is not present. |
| *Setup* | The field is mandatory present if the corresponding SRB/DRB is being setup; otherwise the field is optionally present, need ON. |
| *SetupM* | The field is mandatory present upon setup of an MCG or split DRB, or upon setup of MCG RLC bearer; otherwise the field is optionally present, need ON. |
| *SetupS* | The field is mandatory present upon setup of an SCG or split DRB, as well as upon change from MCG to split DRB; otherwise the field is optionally present, need ON. |
| *SetupS2* | The field is mandatory present upon setup of an SCG or split DRB, as well as upon change from MCG to split or SCG DRB. For an SCG DRB the field is optionally present, need ON. Otherwise the field is not present. |
| *SPS* | The field is optionally present, need ON, if sps-Config (without suffix) is not configured; otherwise it is not present. |
| *SPS2* | The field is optionally present, need ON, if sps-Config-r12 is not configured; otherwise it is not present. |
| *CRS-Info* | This field is optionally present, need ON, if *CRS-AssistanceInfo* is configured and if *rss-MeasConfig* is included in *SIB2*. |

### 6.3.4 Mobility control information elements

----------- unmodified definitions skipped ------------

#### – *ReselectionThresholdQ*

The IE *ReselectionThresholdQ* is used to indicate a quality level threshold for cell reselection. Actual value of threshold = field value [dB].

*ReselectionThresholdQ* information element

-- ASN1START

ReselectionThresholdQ-r9 ::= INTEGER (0..31)

-- ASN1STOP

#### – *RSS-ConfigCarrierInfo*

The IE *RSS-ConfigCarrier* contains RSS-Configurations for a carrier.

*RSS-ConfigCellList* information element

-- ASN1START

RSS-ConfigCarrierInfo-r16::= SEQUENCE

{

 narrowbandIndex-r16 BIT STRING (SIZE (1.. maxAvailNarrowBands-r13-1)),

 timeOffsetGranularity-r16 ENUMERATED {g1, g2, g4, g8, g16, g32, g64, g128}

}

-- ASN1STOP

| *RSS-ConfigCellList* field descriptions |
| --- |
|  |
| ***narrowbandIndex***Bitmap containing narrowbands used for RSS. Narrowbands including central 6 PRBs are excluded from the bitmap.  |
| ***timeOffsetGranularity***Parameter RSS Time Offset granularity (GRSS), where the values of GRSS depend on the RSS periodicity PRSS as follows: Value *g1* corresponds to 1 frame, value *g2* corresponds to 2 frames, and so on.GRSS = {1, 2, 4, 8, 16} frames for PRSS = 160 msGRSS = {1, 2, 4, 8, 16, 32} frames for PRSS = 320 msGRSS = {2, 4, 8, 16, 32, 64} frames for PRSS = 640 msGRSS = {4, 8, 16, 32, 64, 128} frames for PRSS = 1280 ms |

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

#### – *SCellIndex*

The IE *SCellIndex* concerns a short identity, used to identify an SCell.

*SCellIndex* information element

-- ASN1START

SCellIndex-r10 ::= INTEGER (1..7)

SCellIndex-r13 ::= INTEGER (1..31)

-- ASN1STOP