**3GPP TSG-RAN2 Meeting #R2-2406320**

**, Netherlands, -**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
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|  | **36.331** | **CR** |   | **rev** |   | **Current version:** | **18.2.0** |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

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| ***Title:***  | Introduction of LTE TN to NR NTN IDLE mode mobility (Option 2) |
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| ***Source to WG:*** | CATT |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** | 2024-08-19 |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** | Rel-19 |
|  | *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)* |
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| ***Reason for change:*** | Introduce Rel-19 LTE TN to NR NTN IDLE mode mobility feature into the Spec. |
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| ***Summary of change:*** | The changes are mainly made on the related procedure and siganlling to capture the following agreements made by RAN2 (based on siganlling option 2):

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| RAN2#125bis:Agreement:1. For idle mode mobility from LTE to NR NTN, at least normal LTE UE are in scope. Can come back in the next meeting to check if also eMTC UE and NB-IoT UEs could also be considered in scopeWorking Assumption:2. We don’t introduce multiple SMTCs in LTE |

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| RAN2#126:Agreements:1. For idle mode mobility from EUTRA TN to NR NTN, NB-IoT UEs are considered not in the scope.2. For idle mode mobility from EUTRA TN to NR NTN, we don’t consider specific optimizations for BL UEs and UEs in CE.3. SIB24 is reused to provide the NR NTN cell reselection related information (e.g. frequency information, SMTC config, etc.), introducing a satellite ID list in per frequency. The EUTRA cell provides the satellite assistance information for NR neighbor cell per satellite, as identified by the satellite ID. 4. To support the idle mode mobility from EUTRA TN to NR NTN, the satellite assistance information for NR NTN neighbor cells is needed and should include the following parameters: - Satellite ephemeris information - TA common information - k-Mac - epoch time - validity duration - ntn-PolarizationDL (FFS if mandatory or optional)5. The Ephemeris information/epoch time/k-mac/validity duration IEs defined in SIB33 specified in TS36.331 should be reused for NR satellite assistance information.6. The signalling format for ntn-PolarizationDL and TA common related configurations within NTN-Config specified in TS38.331 should be introduced in TS36.331 for NR satellite assistance information.7. RAN2 will decide in the next meeting which of the following options to adopt for the provision of the NR satellite assistance information (based on TPs provided by the WI RRC Rapporteur): Option 1: Introduce a new SIB to include the NR satellite assistance information. Option 2: Define new IE for NR satellite assistance information and define separate neighbour satellite information list to provide the NR satellite information in SIB33. Option 3: Extend the NeighSatelliteInfo defined for IoT NTN to include the parameters needed for NR satellite, and reuse the neighSatelliteInfoList defined in SIB33 to provide either NR or IoT NTN information.8. Introduce the clarification in the field description of measTimingConfig (configured via SIB24 in TS 36.331) that it is configured based on the assumption that the gNB-UE propagation delay equals to 0 ms, and UE can adjust the offset based on the actual propagation delay, when the corresponding frequency is associated with a satellite ID.Working Assumption: 1. NR NTN cell reselection evaluation is based on RRM measurements as legacy; no spec impact foreseen for EUTRA TN to NR NTN cell (can come back in the next meeting to see if the WA can be confirmed) |

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| Agreements:1. Define new IE for NR satellite assistance information and define separate neighbour satellite information list to provide the NR satellite information in SIB33.2. The ntn-PolarizationalDL is optional.3. Reuse the SatelliteId-r18 to identify either an NR satellite or an IoT NTN satellite4. Consider a solution that avoids repeating the ephemeris for a satellite which provides both IoT NTN and NR NTN cells 5. maxSat-r17 (4) is reused for the maximum number of NR satellites.6. RAN2 will not do further work to introduce multiple SMTCs in LTE7. NR NTN cell reselection evaluation is based on RRM measurements as legacy; no spec impact foreseen for EUTRA TN to NR NTN cell.8. RAN2 confirms that measurements of NR NTN cells for a UE in E-UTRAN TN RRC\_INACTIVE are supported, with the understanding that UE moves to RRC idle upon selecting the NR NTN cell 9. Introduce a new UE capability without signalling for LTE TN to NR NTN mobility. |

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| ***Consequences if not approved:*** | Rel-19 feature LTE TN to NR NTN IDLE mode mobility is not supported in the specifications. |
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| ***Clauses affected:*** | 5.2.1.3, 6.2.2, 6.3.1, 6.3.6, 6.4 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

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| Start of change |

#### 5.2.1.3 System information validity and notification of changes

Change of system information (other than for ETWS, CMAS, EAB, UAC, and satellite assistance information parameters except for discontinuous coverage scenarios and for NB-IoT, other than for AB parameters and satellite assistance information parameters except for discontinuous coverage scenarios) only occurs at specific radio frames, i.e. the concept of a modification period is used. System information may be transmitted a number of times with the same content within a modification period, as defined by its scheduling. The modification period boundaries are defined by SFN values for which SFN mod *m*= 0, where *m* is the number of radio frames comprising the modification period. The modification periodis configured by system information. If H-SFN is provided in *SystemInformationBlockType1-BR*, modification period boundaries for BL UEs and UEs in CE are defined by SFN values for which (H-SFN \* 1024 + SFN) mod *m*=0. For NB-IoT, H-SFN is always provided and the modification period boundaries are defined by SFN values for which (H-SFN \* 1024 + SFN) mod *m*=0.

To enable system information update notification for RRC\_IDLE UEs configured to use a DRX cycle longer than the modification period, an eDRX acquisition period is defined. The boundaries of the eDRX acquisition period are determined by H-SFN values for which H-SFN mod 256 =0. For NB-IoT, the boundaries of the eDRX acquisition period are determined by H-SFN values for which H-SFN mod 1024 =0.

NOTE 1: If the UE in RRC\_IDLE is configured to use extended DRX cycle, e.g., in the order of several minutes or longer, in case the eNB is reset the UE SFN may not be synchronized to the new eNB SFN. The UE is expected to recover, e.g., acquire MIB within a reasonable time, to avoid repeated paging failures.

NOTE 1a: For the UE in RRC\_INACTIVE, the idle mode extended DRX cycle, if configured, is used to compare with the modification period.

When the network changes (some of the) system information, it first notifies the UEs about this change, i.e. this may be done throughout a modification period. In the next modification period, the network transmits the updated system information. During a modification period where ETWS or CMAS transmission is started or stopped, the SI messages carrying the SIBs scheduled in *schedulingInfoListExt* and/or SI messages carrying the posSIBs scheduled in *posSchedulingInfoList* may change, so the UE might not be able to successfully receive those SIBs and/or posSIBs in the remainder of the current modification period and next modification period according to the scheduling information received prior to the change. These general principles are illustrated in figure 5.2.1.3-1, in which different colours indicate different system information. Upon receiving a change notification, the UE not configured to use a DRX cycle that is longer than the modification period acquires the new system information immediately from the start of the next modification period. Upon receiving a change notification applicable to eDRX, a UE in RRC\_IDLE configured to use a DRX cycle that is longer than the modification period acquires the updated system information immediately from the start of the next eDRX acquisition period. The UE applies the previously acquired system information until the UE acquires the new system information. The possible boundaries of modification for *SystemInformationBlockType1-BR* are defined by SFN values for which SFN mod 512 = 0 except for notification of ETWS/CMAS for which the eNB may change *SystemInformationBlockType1-BR* content at any time. For NB-IoT, the possible boundaries of modification for *SystemInformationBlockType1-NB* are defined by SFN values for which (H-SFN \* 1024 + SFN) mod 4096 = 0.



Figure 5.2.1.3-1: Change of system Information

The *Paging* message is used to inform UEs in RRC\_IDLE and UEs in RRC\_CONNECTED about a system information change. If the UE is in RRC\_CONNECTED or is not configured to use a DRX cycle longer than the modification period in RRC\_IDLE, and receives a *Paging* message including the *systemInfoModification*, it knows that the system information will change at the next modification period boundary. A UE in RRC\_IDLE that is configured to use a DRX cycle longer than the modification period, and receives in an eDRX acquisition period at least one *Paging* message including the *systemInfoModification-eDRX*, shall acquire the updated system information at the next eDRX acquisition period boundary. Although the UE may be informed about changes in system information, no further details are provided e.g. regarding which system information will change, except if *systemInfoValueTagSI* is received by BL UEs or UEs in CE.

In RRC\_CONNECTED, BL UEs or UEs inCEor NB-IoT UEs are not required to acquire system information except when T311 is running, or upon handover where the UE is only required to acquire the *MasterInformationBlock* in the target PCell, or for UEs in CE to receive ETWS/CMAS information, or upon expiry of T317 where the UE is only required to acquire the *SystemInformationBlockType31* (*SystemInformationBlockType31-NB* in NB-IoT). In RRC\_IDLE, E-UTRAN may notify BL UEs or UEs inCEorNB-IoT UEs about SI update, and except for NB-IoT, ETWS and CMAS notification, EAB modification and UAC modification, using Direct Indication information, as specified in 6.6 (or 6.7.5 in NB-IoT) and TS 36.212 [22].

NOTE 2: Upon system information change essential for BL UEs, UEs in CE, or NB-IoT UEs in RRC\_CONNECTED, E-UTRAN may initiate connection release.

NOTE 3: When acquiring SIB31(-NB) in RRC\_CONNECTED, UE may assume that the scheduling is unchanged.

*SystemInformationBlockType1* (or *MasterInformationBlock-NB/ MasterInformationBlock-TDD-NB* in NB-IoT) includes a value tag *systemInfoValueTag*, that indicates if a change has occurred in the SI messages. UEs may use *systemInfoValueTag*, e.g. upon return from out of coverage, to verify if the previously stored SI messages are still valid except *SystemInformationBlockType33*. *MasterInformationBlock* and RSS (if transmitted, see TS 36.211 [21]) may indicate using *systemInfoUnchanged-BR* that a change has not occurred in the SIB1-BR and SI messages of the current cell at least over the SI validity time, and the BL UEs or UEs in CE may use the *systemInfoUnchanged-BR*, e.g. upon return from out of coverage, to verify if the previously stored SIB1-BR and SI messages are still valid. Additionally, for other than BL UEs or UEs in CE or NB-IoT UEs, the UE considers stored system information to be invalid after 3 hours from the moment it was successfully confirmed as valid, unless specified otherwise. BL UE or UE in CE considers stored system information to be invalid after 24 hours from the moment it was successfully confirmed as valid, unless the UE is configured by parameter *si-ValidityTime* to consider stored system information to be invalid 3 hours after validity confirmation. NB-IoT UE considers stored system information to be invalid after 24 hours from the moment it was successfully confirmed as valid. If a BL UE, UE in CE or NB-IoT UE in RRC\_CONNECTED state considers the stored system information invalid, the UE shall continue using the stored system information while in RRC\_CONNECTED state in the serving cell.

For BL UEs or UEs in CE or NB-IoT UEs, the change of specific SI message can additionally be indicated by a SI message specific value tag *systemInfoValueTagSI.* If *systemInfoValueTag* included in the *SystemInformationBlockType1-BR* (or *MasterInformationBlock-NB/ MasterInformationBlock-TDD-NB* in NB-IoT) is different from the one of the stored system information and if *systemInfoValueTagSI* is included in the *SystemInformationBlockType1-BR* (or *SystemInformationBlockType1-NB* in NB-IoT)for a specific SI messageand is different from the stored one, the UE shall consider this specific SI message to be invalid. If only *systemInfoValueTag* is included and is different from the stored one, the BL UE or UE in CE should consider any stored system information except *SystemInformationBlockType10*, *SystemInformationBlockType11*, *SystemInformationBlockType12,* *SystemInformationBlockType14,* *SystemInformationBlockType25*, *SystemInformationBlockType31* and *SystemInformationBlockType33* to be invalid; the NB-IoT UE should consider any stored system information except *SystemInformationBlockType14-NB*, *SystemInformationBlockType31-NB* and *SystemInformationBlockType33-NB* to be invalid.

On MBMS-dedicated cell and on FeMBMS/Unicast-mixed cell, the change of system information and ETWS/CMAS notification is indicated by using Direct Indication FeMBMS defined in 6.6a. The modification periodicity follows MCCH modification periodicity as defined in 5.8.1.3.

E-UTRAN may not update *systemInfoValueTag* upon change of some system information e.g. ETWS information, CMAS information, RLOS indication (i.e., *rlos-Enabled*), regularly changing parameters like time information (*SystemInformationBlockType8*, *SystemInformationBlockType16,* *hyperSFN-MSB* in *SystemInformationBlockType1-NB*), EAB and AB parameters, UAC parameters, positioning system information blocks, or satellite assistance information. Similarly, E-UTRAN may not include the *systemInfoModification* within the *Paging* message upon change of some system information.

NOTE 4: UE connected to NTN is expected to re-acquire SIB32(-NB) based on its own decision regardless of *systemInfoValueTag* change.

The UE that is not configured to use a DRX cycle longer than the modification period verifies that stored system information remains valid by either checking *systemInfoValueTag* in *SystemInformationBlockType1* (or *MasterInformationBlock-NB/ MasterInformationBlock-TDD-NB* in NB-IoT) after the modification period boundary,or attempting to find the *systemInfoModification* indication at least *modificationPeriodCoeff* times during the modification period in case no paging is received, in every modification period*.* If no paging message is received by the UE during a modification period, the UE may assume that no change of system information will occur at the next modification period boundary. If UE in RRC\_CONNECTED, during a modification period, receives one paging message, it may deduce from the presence/ absence of *systemInfoModification* whether a change of system information other than ETWS information, CMAS information, EAB and UAC parameters will occur in the next modification period or not.

When the RRC\_IDLE UE is configured with a DRX cycle that is longer than the modification period, and at least one modification period boundary has passed since the UE last verified validity of stored system information, the UE verifies that stored system information remains valid by checking the *systemInfoValueTag* before establishing or resuming an RRC connection.

ETWS and/or CMAS capable UEs in RRC\_CONNECTED, other than BL UEs and UEs in CE, shall attempt to read paging at least once every *defaultPagingCycle* to check whether ETWS and/or CMAS notification is present or not.

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| Next change |

### 6.2.2 Message definitions

<Irrelevant Texts Omitted>

#### – *SystemInformationBlockType1*

*SystemInformationBlockType1* contains information relevant when evaluating if a UE is allowed to access a cell and defines the scheduling of other system information. *SystemInformationBlockType1-BR* uses the same structure as *SystemInformationBlockType1*.

Signalling radio bearer: N/A

RLC-SAP: TM

Logical channels: BCCH and BR-BCCH

Direction: E‑UTRAN to UE

*SystemInformationBlockType1 message*

-- ASN1START

SystemInformationBlockType1-BR-r13 ::= SystemInformationBlockType1

SystemInformationBlockType1 ::= SEQUENCE {

 cellAccessRelatedInfo SEQUENCE {

 plmn-IdentityList PLMN-IdentityList,

 trackingAreaCode TrackingAreaCode,

 cellIdentity CellIdentity,

 cellBarred ENUMERATED {barred, notBarred},

 intraFreqReselection ENUMERATED {allowed, notAllowed},

 csg-Indication BOOLEAN,

 csg-Identity CSG-Identity OPTIONAL -- Need OR

 },

 cellSelectionInfo SEQUENCE {

 q-RxLevMin Q-RxLevMin,

 q-RxLevMinOffset INTEGER (1..8) OPTIONAL -- Need OP

 },

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

 freqBandIndicator FreqBandIndicator,

 schedulingInfoList SchedulingInfoList,

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

 si-WindowLength ENUMERATED {

 ms1, ms2, ms5, ms10, ms15, ms20,

 ms40},

 systemInfoValueTag INTEGER (0..31),

 nonCriticalExtension SystemInformationBlockType1-v890-IEs OPTIONAL

}

SystemInformationBlockType1-v890-IEs::= SEQUENCE {

 lateNonCriticalExtension OCTET STRING (CONTAINING SystemInformationBlockType1-v8h0-IEs) OPTIONAL,

 nonCriticalExtension SystemInformationBlockType1-v920-IEs OPTIONAL

}

-- Late non critical extensions

SystemInformationBlockType1-v8h0-IEs ::= SEQUENCE {

 multiBandInfoList MultiBandInfoList OPTIONAL, -- Need OR

 nonCriticalExtension SystemInformationBlockType1-v9e0-IEs OPTIONAL

}

SystemInformationBlockType1-v9e0-IEs ::= SEQUENCE {

 freqBandIndicator-v9e0 FreqBandIndicator-v9e0 OPTIONAL, -- Cond FBI-max

 multiBandInfoList-v9e0 MultiBandInfoList-v9e0 OPTIONAL, -- Cond mFBI-max

 nonCriticalExtension SystemInformationBlockType1-v10j0-IEs OPTIONAL

}

SystemInformationBlockType1-v10j0-IEs ::= SEQUENCE {

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

 multiBandInfoList-v10j0 MultiBandInfoList-v10j0 OPTIONAL, -- Need OR

 nonCriticalExtension SystemInformationBlockType1-v10l0-IEs OPTIONAL

}

SystemInformationBlockType1-v10l0-IEs ::= SEQUENCE {

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

 multiBandInfoList-v10l0 MultiBandInfoList-v10l0 OPTIONAL, -- Need OR

 nonCriticalExtension SystemInformationBlockType1-v10x0-IEs OPTIONAL

}

SystemInformationBlockType1-v10x0-IEs ::= SEQUENCE {

 -- This field is only for late non-critical extensions from Rel-10 or Rel-11 onwards

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 nonCriticalExtension SystemInformationBlockType1-v12j0-IEs OPTIONAL

}

SystemInformationBlockType1-v12j0-IEs ::= SEQUENCE {

 schedulingInfoList-v12j0 SchedulingInfoList-v12j0 OPTIONAL, -- Need OR

 schedulingInfoListExt-r12 SchedulingInfoListExt-r12 OPTIONAL, -- Need OR

 nonCriticalExtension SystemInformationBlockType1-v15g0-IEs OPTIONAL

}

SystemInformationBlockType1-v15g0-IEs ::= SEQUENCE {

 bandwidthReducedAccessRelatedInfo-v15g0 SEQUENCE {

 posSchedulingInfoList-BR-r15 SchedulingInfoList-BR-r13

 } OPTIONAL, -- Need OR

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- Regular non critical extensions

SystemInformationBlockType1-v920-IEs ::= SEQUENCE {

 ims-EmergencySupport-r9 ENUMERATED {true} OPTIONAL, -- Need OR

 cellSelectionInfo-v920 CellSelectionInfo-v920 OPTIONAL, -- Cond RSRQ

 nonCriticalExtension SystemInformationBlockType1-v1130-IEs OPTIONAL

}

SystemInformationBlockType1-v1130-IEs ::= SEQUENCE {

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

 cellSelectionInfo-v1130 CellSelectionInfo-v1130 OPTIONAL, -- Cond WB-RSRQ

 nonCriticalExtension SystemInformationBlockType1-v1250-IEs OPTIONAL

}

SystemInformationBlockType1-v1250-IEs ::= SEQUENCE {

 cellAccessRelatedInfo-v1250 SEQUENCE {

 category0Allowed-r12 ENUMERATED {true} OPTIONAL -- Need OP

 },

 cellSelectionInfo-v1250 CellSelectionInfo-v1250 OPTIONAL, -- Cond RSRQ2

 freqBandIndicatorPriority-r12 ENUMERATED {true} OPTIONAL, -- Cond mFBI

 nonCriticalExtension SystemInformationBlockType1-v1310-IEs OPTIONAL

}

SystemInformationBlockType1-v1310-IEs ::= SEQUENCE {

 hyperSFN-r13 BIT STRING (SIZE (10)) OPTIONAL, -- Need OR

 eDRX-Allowed-r13 ENUMERATED {true} OPTIONAL, -- Need OR

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

 bandwidthReducedAccessRelatedInfo-r13 SEQUENCE {

 si-WindowLength-BR-r13 ENUMERATED {

 ms20, ms40, ms60, ms80, ms120,

 ms160, ms200, spare},

 si-RepetitionPattern-r13 ENUMERATED {everyRF, every2ndRF, every4thRF,

 every8thRF},

 schedulingInfoList-BR-r13 SchedulingInfoList-BR-r13 OPTIONAL, -- Cond SI-BR

 fdd-DownlinkOrTddSubframeBitmapBR-r13 CHOICE {

 subframePattern10-r13 BIT STRING (SIZE (10)),

 subframePattern40-r13 BIT STRING (SIZE (40))

 } OPTIONAL, -- Need OP

 fdd-UplinkSubframeBitmapBR-r13 BIT STRING (SIZE (10)) OPTIONAL, -- Need OP

 startSymbolBR-r13 INTEGER (1..4),

 si-HoppingConfigCommon-r13 ENUMERATED {on,off},

 si-ValidityTime-r13 ENUMERATED {true} OPTIONAL, -- Need OP

 systemInfoValueTagList-r13 SystemInfoValueTagList-r13 OPTIONAL -- Need OR

 } OPTIONAL, -- Cond BW-reduced

 nonCriticalExtension SystemInformationBlockType1-v1320-IEs OPTIONAL

}

SystemInformationBlockType1-v1320-IEs ::= SEQUENCE {

 freqHoppingParametersDL-r13 SEQUENCE {

 mpdcch-pdsch-HoppingNB-r13 ENUMERATED {nb2, nb4} OPTIONAL, -- Need OR

 interval-DLHoppingConfigCommonModeA-r13 CHOICE {

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

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

 } OPTIONAL, -- Need OR

 interval-DLHoppingConfigCommonModeB-r13 CHOICE {

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

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

 } OPTIONAL, -- Need OR

 mpdcch-pdsch-HoppingOffset-r13 INTEGER (1..maxAvailNarrowBands-r13) OPTIONAL -- Need OR

 } OPTIONAL, -- Cond Hopping

 nonCriticalExtension SystemInformationBlockType1-v1350-IEs OPTIONAL

}

SystemInformationBlockType1-v1350-IEs ::= SEQUENCE {

 cellSelectionInfoCE1-r13 CellSelectionInfoCE1-r13 OPTIONAL, -- Need OP

 nonCriticalExtension SystemInformationBlockType1-v1360-IEs OPTIONAL

}

SystemInformationBlockType1-v1360-IEs ::= SEQUENCE {

 cellSelectionInfoCE1-v1360 CellSelectionInfoCE1-v1360 OPTIONAL, -- Cond QrxlevminCE1

 nonCriticalExtension SystemInformationBlockType1-v1430-IEs OPTIONAL

}

SystemInformationBlockType1-v1430-IEs ::= SEQUENCE {

 eCallOverIMS-Support-r14 ENUMERATED {true} OPTIONAL, -- Need OR

 tdd-Config-v1430 TDD-Config-v1430 OPTIONAL, -- Cond TDD-OR

 cellAccessRelatedInfoList-r14 SEQUENCE (SIZE (1..maxPLMN-1-r14)) OF

 CellAccessRelatedInfo-r14 OPTIONAL, -- Need OR

 nonCriticalExtension SystemInformationBlockType1-v1450-IEs OPTIONAL

}

SystemInformationBlockType1-v1450-IEs ::= SEQUENCE {

 tdd-Config-v1450 TDD-Config-v1450 OPTIONAL, -- Cond TDD-OR

 nonCriticalExtension SystemInformationBlockType1-v1530-IEs OPTIONAL

}

SystemInformationBlockType1-v1530-IEs ::= SEQUENCE {

 hsdn-Cell-r15 ENUMERATED {true} OPTIONAL, -- Need OR

 cellSelectionInfoCE-v1530 CellSelectionInfoCE-v1530 OPTIONAL, -- Need OP

 crs-IntfMitigConfig-r15 CHOICE {

 crs-IntfMitigEnabled NULL,

 crs-IntfMitigNumPRBs ENUMERATED {n6, n24}

 } OPTIONAL, -- Need OR

 cellBarred-CRS-r15 ENUMERATED {barred, notBarred},

 plmn-IdentityList-v1530 PLMN-IdentityList-v1530 OPTIONAL, -- Need OR

 posSchedulingInfoList-r15 PosSchedulingInfoList-r15 OPTIONAL, -- Need OR

 cellAccessRelatedInfo-5GC-r15 SEQUENCE {

 cellBarred-5GC-r15 ENUMERATED {barred, notBarred},

 cellBarred-5GC-CRS-r15 ENUMERATED {barred, notBarred},

 cellAccessRelatedInfoList-5GC-r15 SEQUENCE (SIZE (1..maxPLMN-r11)) OF

 CellAccessRelatedInfo-5GC-r15

 } OPTIONAL, -- Need OP

 ims-EmergencySupport5GC-r15 ENUMERATED {true} OPTIONAL, -- Need OR

 eCallOverIMS-Support5GC-r15 ENUMERATED {true} OPTIONAL, -- Need OR

 nonCriticalExtension SystemInformationBlockType1-v1540-IEs OPTIONAL

}

SystemInformationBlockType1-v1540-IEs ::= SEQUENCE {

 si-posOffset-r15 ENUMERATED {true} OPTIONAL, -- Need ON

 nonCriticalExtension SystemInformationBlockType1-v1610-IEs OPTIONAL

}

SystemInformationBlockType1-v1610-IEs ::= SEQUENCE {

 eDRX-Allowed-5GC-r16 ENUMERATED {true} OPTIONAL, -- Need OR

 transmissionInControlChRegion-r16 ENUMERATED {true} OPTIONAL, -- Cond BW-reduced

 campingAllowedInCE-r16 ENUMERATED {true} OPTIONAL, -- Need OR

 plmn-IdentityList-v1610 PLMN-IdentityList-v1610 OPTIONAL, -- Need OR

 nonCriticalExtension SystemInformationBlockType1-v1700-IEs OPTIONAL

}

SystemInformationBlockType1-v1700-IEs ::= SEQUENCE {

 cellAccessRelatedInfo-NTN-r17 SEQUENCE {

 cellBarred-NTN-r17 ENUMERATED {barred, notBarred},

 plmn-IdentityList-v1700 PLMN-IdentityList-v1700 OPTIONAL -- Need OR

 } OPTIONAL, -- Need OR

 nonCriticalExtension SystemInformationBlockType1-v1800-IEs OPTIONAL

}

SystemInformationBlockType1-v1800-IEs ::= SEQUENCE {

 freqBandIndicatorAerial-r18 FreqBandIndicator-r11 OPTIONAL, -- Need OR

 freqBandInfoAerial-r18 NS-PmaxListAerial-r18 OPTIONAL, -- Need OR

 multiBandInfoListAerial-r18 MultiBandInfoListAerial-r18 OPTIONAL, -- Need OR

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

PLMN-IdentityList ::= SEQUENCE (SIZE (1..maxPLMN-r11)) OF PLMN-IdentityInfo

PLMN-IdentityInfo ::= SEQUENCE {

 plmn-Identity PLMN-Identity,

 cellReservedForOperatorUse ENUMERATED {reserved, notReserved}

}

PLMN-IdentityList-v1530 ::= SEQUENCE (SIZE (1..maxPLMN-r11)) OF PLMN-IdentityInfo-v1530

PLMN-IdentityInfo-v1530 ::= SEQUENCE {

 cellReservedForOperatorUse-CRS-r15 ENUMERATED {reserved, notReserved}

}

PLMN-IdentityList-r15::= SEQUENCE (SIZE (1..maxPLMN-r11)) OF PLMN-IdentityInfo-r15

PLMN-IdentityList-v1610::= SEQUENCE (SIZE (1..maxPLMN-r11)) OF PLMN-IdentityInfo-v1610

PLMN-IdentityList-v1700::= SEQUENCE (SIZE (1..maxPLMN-r11)) OF PLMN-IdentityInfo-v1700

PLMN-IdentityInfo-r15 ::= SEQUENCE {

 plmn-Identity-5GC-r15 CHOICE{

 plmn-Identity-r15 PLMN-Identity,

 plmn-Index-r15 INTEGER (1..maxPLMN-r11)

 },

 cellReservedForOperatorUse-r15 ENUMERATED {reserved, notReserved},

 cellReservedForOperatorUse-CRS-r15 ENUMERATED {reserved, notReserved}

}

PLMN-IdentityInfo-v1610 ::= SEQUENCE {

 cp-CIoT-5GS-Optimisation-r16 ENUMERATED {true} OPTIONAL, -- Need OR

 up-CIoT-5GS-Optimisation-r16 ENUMERATED {true} OPTIONAL, -- Need OR

 iab-Support-r16 ENUMERATED {true} OPTIONAL -- Need OR

}

PLMN-IdentityInfo-v1700 ::= SEQUENCE {

 trackingAreaList-r17 TrackingAreaList-r17 OPTIONAL -- Need OP

}

SchedulingInfoList ::= SEQUENCE (SIZE (1..maxSI-Message)) OF SchedulingInfo

SchedulingInfoList-v12j0 ::= SEQUENCE (SIZE (1..maxSI-Message)) OF SchedulingInfo-v12j0

SchedulingInfoListExt-r12 ::= SEQUENCE (SIZE (1..maxSI-Message)) OF SchedulingInfoExt-r12

SchedulingInfo ::= SEQUENCE {

 si-Periodicity SI-Periodicity-r12,

 sib-MappingInfo SIB-MappingInfo

}

SchedulingInfo-v12j0 ::= SEQUENCE {

 sib-MappingInfo-v12j0 SIB-MappingInfo-v12j0 OPTIONAL -- Need OR

}

SchedulingInfoExt-r12 ::= SEQUENCE {

 si-Periodicity-r12 SI-Periodicity-r12,

 sib-MappingInfo-r12 SIB-MappingInfo-v12j0

}

SchedulingInfoList-BR-r13 ::= SEQUENCE (SIZE (1..maxSI-Message)) OF SchedulingInfo-BR-r13

SchedulingInfo-BR-r13 ::= SEQUENCE {

 si-Narrowband-r13 INTEGER (1..maxAvailNarrowBands-r13),

 si-TBS-r13 ENUMERATED {b152, b208, b256, b328, b408, b504, b600, b712, b808, b936}

}

SIB-MappingInfo ::= SEQUENCE (SIZE (0..maxSIB-1)) OF SIB-Type

SIB-MappingInfo-v12j0 ::= SEQUENCE (SIZE (1..maxSIB-1)) OF SIB-Type-v12j0

-- Note: The IE SIB-Type (without suffix) will not be extended any further in this release of the specification. If needed, the IE SIB-Type-v12j0 will be used for new SIB(s).

SIB-Type ::= ENUMERATED {

 sibType3, sibType4, sibType5, sibType6,

 sibType7, sibType8, sibType9, sibType10,

 sibType11, sibType12-v920, sibType13-v920,

 sibType14-v1130, sibType15-v1130,

 sibType16-v1130, sibType17-v1250, sibType18-v1250,

 ..., sibType19-v1250, sibType20-v1310, sibType21-v1430,

 sibType24-v1530, sibType25-v1530, sibType26-v1530,

 sibType26a-v1610, sibType27-v1610, sibType28-v1610,

 sibType29-v1610

}

SIB-Type-v12j0 ::= ENUMERATED {

 sibType19-v1250, sibType20-v1310, sibType21-v1430,

 sibType24-v1530, sibType25-v1530, sibType26-v1530,

 sibType26a-v1610, sibType27-v1610, sibType28-v1610,

 sibType29-v1610, sibType30-v1700, sibType31-v1700, sibType32-v1700,

 sibType33-v1800, spare2, spare1, ...}

SI-Periodicity-r12 ::= ENUMERATED {rf8, rf16, rf32, rf64, rf128, rf256, rf512}

SystemInfoValueTagList-r13 ::= SEQUENCE (SIZE (1..maxSI-Message)) OF SystemInfoValueTagSI-r13

SystemInfoValueTagSI-r13 ::= INTEGER (0..3)

CellSelectionInfo-v920 ::= SEQUENCE {

 q-QualMin-r9 Q-QualMin-r9,

 q-QualMinOffset-r9 INTEGER (1..8) OPTIONAL -- Need OP

}

CellSelectionInfo-v1130 ::= SEQUENCE {

 q-QualMinWB-r11 Q-QualMin-r9

}

CellSelectionInfo-v1250 ::= SEQUENCE {

 q-QualMinRSRQ-OnAllSymbols-r12 Q-QualMin-r9

}

CellAccessRelatedInfo-r14 ::= SEQUENCE {

 plmn-IdentityList-r14 PLMN-IdentityList,

 trackingAreaCode-r14 TrackingAreaCode,

 cellIdentity-r14 CellIdentity

}

CellAccessRelatedInfo-5GC-r15 ::= SEQUENCE {

 plmn-IdentityList-r15 PLMN-IdentityList-r15,

 ran-AreaCode-r15 RAN-AreaCode-r15 OPTIONAL, -- Need OR

 trackingAreaCode-5GC-r15 TrackingAreaCode-5GC-r15,

 cellIdentity-5GC-r15 CellIdentity-5GC-r15

}

CellIdentity-5GC-r15 ::= CHOICE{

 cellIdentity-r15 CellIdentity,

 cellId-Index-r15 INTEGER (1..maxPLMN-r11)

}

TrackingAreaList-r17 ::= SEQUENCE (SIZE (1..maxTAC-r17)) OF TrackingAreaCode

PosSchedulingInfoList-r15 ::= SEQUENCE (SIZE (1..maxSI-Message)) OF PosSchedulingInfo-r15

PosSchedulingInfo-r15 ::= SEQUENCE {

 posSI-Periodicity-r15 ENUMERATED {rf8, rf16, rf32, rf64, rf128, rf256, rf512},

 posSIB-MappingInfo-r15 PosSIB-MappingInfo-r15

}

PosSIB-MappingInfo-r15 ::= SEQUENCE (SIZE (1..maxSIB)) OF PosSIB-Type-r15

PosSIB-Type-r15 ::= SEQUENCE {

 encrypted-r15 ENUMERATED { true } OPTIONAL, -- Need OP

 gnss-id-r15 GNSS-ID-r15 OPTIONAL, -- Need OP

 sbas-id-r15 SBAS-ID-r15 OPTIONAL, -- Need OP

 posSibType-r15 ENUMERATED { posSibType1-1,

 posSibType1-2,

 posSibType1-3,

 posSibType1-4,

 posSibType1-5,

 posSibType1-6,

 posSibType1-7,

 posSibType2-1,

 posSibType2-2,

 posSibType2-3,

 posSibType2-4,

 posSibType2-5,

 posSibType2-6,

 posSibType2-7,

 posSibType2-8,

 posSibType2-9,

 posSibType2-10,

 posSibType2-11,

 posSibType2-12,

 posSibType2-13,

 posSibType2-14,

 posSibType2-15,

 posSibType2-16,

 posSibType2-17,

 posSibType2-18,

 posSibType2-19,

 posSibType3-1,

 ...,

 posSibType1-8-v1610,

 posSibType2-20-v1610,

 posSibType2-21-v1610,

 posSibType2-22-v1610,

 posSibType2-23-v1610,

 posSibType2-24-v1610,

 posSibType2-25-v1610,

 posSibType4-1-v1610,

 posSibType5-1-v1610,

 posSibType1-9-v1700,

 posSibType1-10-v1700,

 posSibType2-17a-v1770,

 posSibType2-18a-v1770,

 posSibType2-20a-v1770,

 posSibType1-11-v1800,

 posSibType1-12-v1800,

 posSibType2-26-v1800, posSibType2-27-v1800

 },

 ...

}

-- ASN1STOP

| *SystemInformationBlockType1* field descriptions |
| --- |
| ***bandwithReducedAccessRelatedInfo***Access related information for BL UEs and UEs in CE. NOTE 3. |
| ***campingAllowedInCE***Indicates whether non-BL UE is allowed to camp in the non-standalone BL cell in enhanced coverage mode when S-criterion for normal coverage is fulfilled. The field is not applicable for standalone BL cell. |
| ***category0Allowed***The presence of this field indicates category 0 UEs are allowed to access the cell. |
| ***cellAccessRelatedInfoList***This field contains a list allowing signalling of access related information per PLMN. One PLMN can be included in only one entry of this list. NOTE 4. |
| ***cellAccessRelatedInfoList-5GC***This field contains a PLMN list and a list allowing signalling of access related information per PLMN for PLMNs that provides connectivity to 5GC. One PLMN can be included in only one entry of this list. NOTE4 |
| ***cellBarred, cellBarred-CRS***barred means the cell is barred, as defined in TS 36.304 [4]. |
| ***cellBarred-5GC, cellBarred-5GC-CRS***barred means the cell is barred for connectivity to 5GC, as defined in TS 36.304 [4].  |
| ***cellBarred-NTN***barred means the cell is barred for connectivity to NTN, as defined in TS 36.304 [4].E-UTRAN always includes *cellBarred-NTN* and sets *cellBarred* to 'barred' in an NTN cell. |
| ***cellIdentity***Indicates the cell identity. NOTE 2. |
| ***cellId-Index***The index of the cell ID in the PLMN lists for EPC, indicates UE the corresponding cell ID is used for 5GC. Value 1 indicates the cell ID of the 1st PLMN list for EPC in the SIB1. Value 2 indicates the cell ID of the 2nd PLMN list for EPC, and so on. |
| ***cellReservedForOperatorUse, cellReservedForOperatorUse-CRS***As defined in TS 36.304 [4]. |
| ***cellSelectionInfoCE***Cell selection information for BL UEs and UEs in CE. If absent, coverage enhancement S criteria is not applicable. NOTE 3. |
| ***cellSelectionInfoCE1***Cell selection information for BL UEs and UEs in CE supporting CE Mode B. E-UTRAN includes this IE only if *cellSelectionInfoCE* is present in *SystemInformationBlockType1-BR*. NOTE 3. |
| ***cp-CIoT-5GS-Optimisation***Indicates whether the UE is allowed to establish the connection with Control plane CIoT 5GS optimisation, see TS 24.501 [95]. |
| ***crs-IntfMitigConfig****crs-IntfMitigEnabled* indicates CRS interference mitigation is enabled for the cell, as specified in TS 36.133 [16], clause 3.6.1.1. For BL UEs supporting *ce-CRS-IntfMitig,* presence of *crs-IntfMitigNumPRBs* 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 of *crs-IntfMitigNumPRBs* indicates number 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*. |
| ***csg-Identity***Identity of the Closed Subscriber Group the cell belongs to. |
| ***csg-Indication***If set to TRUE the UE is only allowed to access the cell if it is a CSG member cell, if selected during manual CSG selection or to obtain limited service, see TS 36.304 [4]. |
| ***eCallOverIMS-Support***Indicates whether the cell supports eCall over IMS services via EPC for UEs as defined in TS 23.401 [41]. If absent, eCall over IMS via EPC is not supported by the network in the cell.NOTE 2. |
| ***eCallOverIMS-Support5GC***Indicates whether the cell supports eCall over IMS services via 5GC as defined in TS 23.401 [41]. If absent, eCall over IMS via 5GC is not supported by the network in the cell.NOTE 2. |
| ***eDRX-Allowed***The presence of this field indicates if idle mode extended DRX is allowed in the cell for the UE connected to EPC. The UE shall stop using extended DRX in idle mode if *eDRX-Allowed* is not present when connected to EPC. |
| ***eDRX-Allowed-5GC***The presence of this field indicates if idle mode extended DRX is allowed in the cell for the UE connected to 5GC. The UE shall stop using extended DRX in idle mode if *eDRX-Allowed-5GC* is not present when connected to 5GC. |
| ***encrypted***The presence of this field indicates that the posSibType is encrypted as specified in TS 36.355 [54]. |
| ***fdd-DownlinkOrTddSubframeBitmapBR***The set of valid subframes for FDD downlink or TDD transmissions, see TS 36.213 [23].If this field is present, *SystemInformationBlockType1-BR-r13* is transmitted in *RRCConnectionReconfiguration*, and if *RRCConnectionReconfiguration* does not include *systemInformationBlockType2Dedicated*, UE may assume the valid subframes in fdd-*DownlinkOrTddSubframeBitmapBR* are not indicated as MBSFN subframes. If this field is not present, the set of valid subframes is the set of non-MBSFN subframes as indicated by *mbsfn-SubframeConfigList*. If neither this field nor *mbsfn-SubframeConfigList* is present, all subframes are considered as valid subframes for FDD downlink transmission, all DL subframes according to the uplink-downlink configuration (see TS 36.211 [21]) are considered as valid subframes for TDD DL transmission, and all UL subframes according to the uplink-downlink configuration (see TS 36.211 [21]) are considered as valid subframes for TDD UL transmission.The first/leftmost bit corresponds to the subframe #0 of the radio frame satisfying SFN mod x = 0, where x is the size of the bit string divided by 10. Value 0 in the bitmap indicates that the corresponding subframe is invalid for transmission. Value 1 in the bitmap indicates that the corresponding subframe is valid for transmission. |
| ***fdd-UplinkSubframeBitmapBR***The set of valid subframes for FDD uplink transmissions for BL UEs, see TS 36.213 [23].If the field is not present, then UE considers all uplink subframes as valid subframes for FDD uplink transmissions.The first/leftmost bit corresponds to the subframe #0 of the radio frame satisfying SFN mod x = 0, where x is the size of the bit string divided by 10. Value 0 in the bitmap indicates that the corresponding subframe is invalid for transmission. Value 1 in the bitmap indicates that the corresponding subframe is valid for transmission. |
| ***freqBandIndicatorPriority***If the field is present and supported by the UE, the UE shall prioritize the frequency bands in the *multiBandInfoList* field in decreasing priority order. Only if the UE does not support any of the frequency band in *multiBandInfoList,* the UE shall use the value in *freqBandIndicator* field. Otherwise, the UE applies frequency band according to the rules defined in *multiBandInfoList.* NOTE 2. |
| ***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, TS 36.101 [42], table 6.2.4E-1, for UEs in CE or BL UEs and TS 36.102 [113], table 6.2A.3-1, for NTN capable UE, for the frequency band in *freqBandIndicator*. If E-UTRAN includes *freqBandInfo-v10l0* it includes the same number of entries, and listed in the same order, as in *freqBandInfo-r10*. |
| ***freqHoppingParametersDL***Downlink frequency hopping parameters for BR versions of SI messages, MPDCCH/PDSCH of paging, MPDCCH/PDSCH of RAR/Msg4 and unicast MPDCCH/PDSCH. If not present, the UE is not configured downlink frequency hopping. |
| ***gnss-ID***The presence of this field indicates that the *posSibType* is for a specific GNSS. |
| ***hsdn-Cell***This field indicates this is a HSDN cell as specified in TS 36.304 [4]. |
| ***hyperSFN***Indicates hyper SFN which increments by one when the SFN wraps around. |
| ***iab-Support***This field combines both the support of IAB-node and the cell status for IAB-node. If the field is present, the cell supports IAB-nodes and the cell is also considered as a candidate for cell (re)selection for IAB-nodes; if the field is absent, the cell does not support IAB and/or the cell is barred for IAB-node. |
| ***ims-EmergencySupport***Indicates whether the cell supports IMS emergency bearer services via EPC for UEs in limited service mode. If absent, IMS emergency call via EPC is not supported by the network in the cell for UEs in limited service mode.NOTE 2. |
| ***ims-EmergencySupport5GC***Indicates whether the cell supports IMS emergency bearer services for UEs in limited service mode via 5GC. If absent, IMS emergency call via 5GC is not supported by the network in the cell for UEs in limited service mode. NOTE 2. |
| ***intraFreqReselection***Used to control cell reselection to intra-frequency cells when the highest ranked cell is barred, or treated as barred by the UE, as specified in TS 36.304 [4].NOTE 2. |
| ***multiBandInfoList***A list of additional frequency band indicators, as defined in TS 36.101 [42], table 5.5-1 and TS 36.102 [113], table 5.2-1, for NTN capable UE that the cell belongs to. If the UE supports the frequency band in the *freqBandIndicator* field it shall apply that frequency band. Otherwise, the UE shall apply the first listed band which it supports in the *multiBandInfoList* field. If E-UTRAN includes *multiBandInfoList-v9e0* it includes the same number of entries, and listed in the same order, as in *multiBandInfoList* (i.e. without suffix). See Annex D for more descriptions. The UE shall ignore the rule defined in this field description if *freqBandIndicatorPriority*is present and supported by the UE. |
| ***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, TS 36.101 [42], table 6.2.4E-1, for UEs in CE or BL UEs and TS 36.102 [113], table 6.2A.3-1, for NTN capable UE, 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*. |
| ***plmn-IdentityList***List of PLMN identities. The first listed *PLMN-Identity* is the primary PLMN.If *plmn-IdentityList-v1530* is included, E-UTRAN includes the same number of entries, and listed in the same order, as in *plmn-IdentityList* (without suffix). If *plmn-IdentityList-v1610* is included, E-UTRAN includes the same number of entries, and listed in the same order, as in *plmn-IdentityList-r15*. If *plmn-IdentityList-v1700* is included, E-UTRAN includes the same number of entries, and listed in the same order, as in *plmn-IdentityList* (without suffix). NOTE 2. |
| ***plmn-Index***Index of the PLMN in the *plmn-IdentityList* fields included in SIB1 for EPC, indicating the same PLMN ID is connected to 5GC. Value 1 indicates the 1st PLMN in the 1st *plmn-IdentityList* included in SIB1, value 2 indicates the 2nd PLMN in the same *plmn-IdentityList*, or when no more PLMNs are present within the same *plmn-IdentityList*, then the PLMN listed 1st in the subsequent *plmn-IdentityList* within the same SIB1 and so on. NOTE 6. |
| ***p-Max***Value applicable for the cell. If absent the UE applies the maximum power according to its capability as specified in TS 36.101 [42], clause 6.2.2.NOTE 2. This field is ignored by IAB-MT. The IAB-MT applies output power and emissions requirements, as specified in TS 38.174 [107]. |
| ***posSchedulingInfoList-BR***Indicates additional scheduling information of positioning SI messages for BL UEs and UEs in CE. E-UTRAN always includes this field if *posSchedulingInfoList-r15* is included in *SystemInformationBlockType1-BR*, and includes the same number of entries, and listed in the same order, as in *posSchedulingInfoList-r15*. |
| ***posSIB-MappingInfo***List of the posSIBs mapped to this *SystemInformation* message. |
| ***posSibType***The positioning SIB type is defined in TS 36.355 [54]. |
| ***q-QualMin***Parameter "Qqualmin" in TS 36.304 [4]. If *cellSelectionInfo-v920* 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-QualMinOffset***Parameter "Qqualminoffset" in TS 36.304 [4]. Actual value Qqualminoffset = field value [dB]. If *cellSelectionInfo-v920* is not present or the field is not present, the UE applies the (default) value of 0 dB for Qqualminoffset.Affects the minimum required quality level in the cell. |
| ***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. |
| ***q-RxLevMinOffset***Parameter Qrxlevminoffset in TS 36.304 [4]. Actual value Qrxlevminoffset = field value \* 2 [dB]. If absent, the UE applies the (default) value of 0 dB for Qrxlevminoffset*.* Affects the minimum required Rx level in the cell. |
| ***sbas-ID***The presence of this field indicates that the *posSibType* is for a specific SBAS. |
| ***schedulingInfoList***Indicates scheduling information of SI messages. The *schedulingInfoList-v12j0* (if present) provides additional SIBs mapped into the SI message scheduled via *schedulingInfoList* (without suffix). If E-UTRAN includes *schedulingInfoList-v12j0*, it includes the same number of entries, and listed in the same order, as in *schedulingInfoList* (without suffix). |
| ***schedulingInfoListExt***Indicates scheduling information of additional SI messages. The UE concatenates the entries of *schedulingInfoListExt* to the entries in *schedulingInfoList*, according to the general concatenation principles for list extension as defined in 5.1.2. If the *schedulingInfoListExt* is present, E-UTRAN ensures that the total number of entries of this field plus *schedulingInfoList* (without suffix) shall not exceed the value of *maxSI-Message*. |
| ***sib-MappingInfo***List of the SIBs mapped to this *SystemInformation* message. There is no mapping information of SIB2; it is always present in the first *SystemInformation* message listed in the *schedulingInfoList* (without suffix) list. If present, *sib-MappingInfo-v12j0* indicates one or more additional SIBs mapped to the concerned SI message listed in the *schedulingInfoList* (without suffix) list. If *schedulingInfoList-v12j0* or *schedulingInfoListExt-r12* is present, E-UTRAN does not include any value indicating SIB of type 19 or higher in *sib-MappingInfo* (without suffix). If *schedulingInfoList-v12j0* is present, E-UTRAN ensures that the total number of entries of this field plus *sib-MappingInfo* (without suffix) shall not exceed the value of *maxSIB-1*. |
| ***si-HoppingConfigCommon***Frequency hopping activation/deactivation for BR versions of SI messages and MPDCCH/PDSCH of paging. |
| ***si-Narrowband***This field indicates the index of a narrowband used to broadcast the SI message towards BL UEs and UEs in CE, see TS 36.211 [21], clause 6.4.1 and TS 36.213 [23], clause 7.1.6. Field values (1..*maxAvailNarrowBands-r13*) correspond to narrowband indices (0..*maxAvailNarrowBands-r13*-1) as specified in TS 36.211 [21]. |
| ***si-RepetitionPattern***Indicates the radio frames within the SI window used for SI message transmission. Value everyRF corresponds to every radio frame, value every2ndRF corresponds to every 2 radio frames, and so on. The first transmission of the SI message is transmitted from the first radio frame of the SI window. |
| ***si-Periodicity, posSI-Periodicity***Periodicity of the SI-message in radio frames, such that rf8 denotes 8 radio frames, rf16 denotes 16 radio frames, and so on. If the *si-posOffset* is configured, the *posSI-Periodicity* of rf8 cannot be used. |
| ***si-posOffset***This field, if present and set to *true* indicates that the SI messages in *PosSchedulingInfoList* are scheduled with an offset of 8 radio frames compared to SI messages in *SchedulingInfoList*. *si-posOffset* may be present only if the shortest configured SI message periodicity for SI messages in *SchedulingInfoList* is 80ms. |
| ***si-TBS***This field indicates the transport block size information used to broadcast the SI message towards BL UEs and UEs in CE, see TS 36.213 [23], Table 7.1.7.2.1-1, for a 6 PRB bandwidth and a QPSK modulation. |
| ***schedulingInfoList-BR***Indicates additional scheduling information of SI messages for BL UEs and UEs in CE. It includes the same number of entries, and listed in the same order, as in *schedulingInfoList* (without suffix). |
| ***si-ValidityTime***Indicates system information validity timer. If set to TRUE, the timer is set to 3h, otherwise the timer is set to 24h. |
| ***si-WindowLength, si-WindowLength-BR***Common SI scheduling window for all SIs. Unit in milliseconds, where ms1 denotes 1 millisecond, ms2 denotes 2 milliseconds and so on. In case s*i-WindowLength-BR-r13* is present and the UE is a BL UE or a UE in CE, the UE shall use s*i-WindowLength-BR-r13* and ignore the original field *si-WindowLength* (without suffix). UEs other than BL UEs or UEs in CE shall ignore the extension field s*i-WindowLength-BR-r13.* |
| ***startSymbolBR***For BL UEs and UEs in CE, indicates the OFDM starting symbol for any MPDCCH, PDSCH scheduled on the same cell except the PDSCH carrying *SystemInformationBlockType1-BR*, see TS 36.213 [23]. Values 1, 2, and 3 are applicable for *dl-Bandwidth* greater than 10 resource blocks. Values 2, 3, and 4 are applicable otherwise. |
| ***systemInfoValueTagList***Indicates SI message specific value tags for BL UEs and UEs in CE. It includes the same number of entries, and listed in the same order, as in *schedulingInfoList* (without suffix). |
| ***systemInfoValueTagSI***SI message specific value tag as specified in clause 5.2.1.3. Common for all SIBs within the SI message other than MIB, SIB1, SIB10, SIB11, SIB12, SIB14, SIB31 and SIB33. |
| ***systemInfoValueTag***Common for all SIBs other than MIB, MIB-MBMS, SIB1, SIB1-MBMS, SIB10, SIB11, SIB12, SIB14, SIB31 and SIB33. Change of MIB, MIB-MBMS, SIB1 and SIB1-MBMS is detected by acquisition of the corresponding message. |
| ***tdd-Config***Specifies the TDD specific physical channel configurations. NOTE 2. |
| ***trackingAreaCode/trackingAreaCode-5GC***A *trackingAreaCode* that is common for all the PLMNs listed. NOTE2. NOTE 5. |
| ***trackingAreaList***A list of tracking area codes for the PLMN listed.For the first entry in *plmn-IdentityList-v1700*: If this field is present,thelist oftracking area codes include the tracking area code in *trackingAreaCode*(without suffix) andthe tracking area codesin *trackingAreaList*. If this field is absent, *trackingAreaCode* (without suffix) applies.For other entries in *plmn-IdentityList-v1700*: If this field is present,thelist oftracking area codes include the tracking area codesin *trackingAreaList*. If this field is absent, the list of tracking area codes of the preceding entry in *plmn-IdentityList-v1700* applies.The total number of signalled tracking area codes across all PLMNs cannot be more than *maxTAC-r17*. |
| ***transmissionInControlChRegion***Indicates, for BL UEs and UEs in CE, LTE control channel region may be used for DL broadcast transmission. NOTE 3. |
| ***up-CIoT-5GS-Optimisation***Indicates whether the UE is allowed to resume the connection with User plane CIoT 5GS optimisation, see TS 24.501 [95]. |

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* |

NOTE 2: E-UTRAN sets this field to the same value for all instances of SIB1 message that are broadcasted within the same cell.

NOTE 3: E-UTRAN configures this field only in the BR version of SIB1 message.

NOTE 4: E-UTRAN configures at most 6 EPC PLMNs in total (i.e. across all the PLMN lists except for PLMN lists in *cellAccessRelatedInfoList-5GC* in SIB1). E-UTRAN configures at most 6 5GC PLMNs in total (i.e. across all the PLMN lists in *cellAccessRelatedInfoList-5GC* in SIB1).

NOTE 5: E-UTRAN configures only one value for this parameter per PLMN.

NOTE 6: E-UTRAN configures *plmn-Index* only if the *cellBarred* is set to *notBarred.*

| Conditional presence | Explanation |
| --- | --- |
| *BW-reduced* | The field is optional present, Need OR, if *schedulingInfoSIB1-BR* in MIB is set to a value greater than 0. Otherwise the field is not present. |
| *FBI-max* | The field is mandatory present if *freqBandIndicator* (i.e. without suffix) is set to *maxFBI*. Otherwise the field is not present. |
| *mFBI* | The field is optional present, Need OR, if *multiBandInfoList* is present. Otherwise the field is not present. |
| *mFBI-max* | The field is mandatory present if one or more entries in *multiBandInfoList* (i.e. without suffix, introduced in -v8h0) is set to *maxFBI*. Otherwise the field is not present. |
| *RSRQ* | The field is mandatory present if SIB3 is being broadcast and *threshServingLowQ* is present in SIB3; otherwise optionally present, Need OP. |
| *RSRQ2* | The field is mandatory present if *q-QualMinRSRQ-OnAllSymbols* is present in SIB3; otherwise it is not present and the UE shall delete any existing value for this field. |
| *Hopping* | The field is mandatory present if *si-HoppingConfigCommon* field is broadcasted and set to *on*. Otherwise the field is optionally present, need OP. |
| *QrxlevminCE1* | The field is optionally present, Need OR, if *q-RxLevMinCE1-r13* is set below -140 dBm. Otherwise the field is not present. |
| *TDD* | This field is mandatory present for TDD; it is not present for FDD and the UE shall delete any existing value for this field. |
| *TDD-OR* | The field is optional present for TDD, need OR; it is not present for FDD. |
| *WB-RSRQ* | The field is optionally present, need OP if the measurement bandwidth indicated by *allowedMeasBandwidth* in *systemInformationBlockType3* is 50 resource blocks or larger; otherwise it is not present. |
| *SI-BR* | The field is mandatory present if *schedulingInfoSIB1-BR* is included in MIB with a value greater than 0. Otherwise the field is not present. |

<Irrelevant Texts Omitted>

|  |
| --- |
| Next change |

### 6.3.1 System information blocks

<Irrelevant Texts Omitted>

#### – *SystemInformationBlockType3*

The IE *SystemInformationBlockType3* contains cell re-selection information common for intra-frequency, inter-frequency and/ or inter-RAT cell re-selection (i.e. applicable for more than one type of cell re-selection but not necessarily all) as well as intra-frequency cell re-selection information other than neighbouring cell related.

*SystemInformationBlockType3* information element

-- ASN1START

SystemInformationBlockType3 ::= SEQUENCE {

 cellReselectionInfoCommon SEQUENCE {

 q-Hyst ENUMERATED {

 dB0, dB1, dB2, dB3, dB4, dB5, dB6, dB8, dB10,

 dB12, dB14, dB16, dB18, dB20, dB22, dB24},

 speedStateReselectionPars SEQUENCE {

 mobilityStateParameters MobilityStateParameters,

 q-HystSF SEQUENCE {

 sf-Medium ENUMERATED {

 dB-6, dB-4, dB-2, dB0},

 sf-High ENUMERATED {

 dB-6, dB-4, dB-2, dB0}

 }

 } OPTIONAL -- Need OP

 },

 cellReselectionServingFreqInfo SEQUENCE {

 s-NonIntraSearch ReselectionThreshold OPTIONAL, -- Need OP

 threshServingLow ReselectionThreshold,

 cellReselectionPriority CellReselectionPriority

 },

 intraFreqCellReselectionInfo SEQUENCE {

 q-RxLevMin Q-RxLevMin,

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

 s-IntraSearch ReselectionThreshold OPTIONAL, -- Need OP

 allowedMeasBandwidth AllowedMeasBandwidth OPTIONAL, -- Need OP

 presenceAntennaPort1 PresenceAntennaPort1,

 neighCellConfig NeighCellConfig,

 t-ReselectionEUTRA T-Reselection,

 t-ReselectionEUTRA-SF SpeedStateScaleFactors OPTIONAL -- Need OP

 },

 ...,

 lateNonCriticalExtension OCTET STRING (CONTAINING SystemInformationBlockType3-v10j0-IEs) OPTIONAL,

 [[ s-IntraSearch-v920 SEQUENCE {

 s-IntraSearchP-r9 ReselectionThreshold,

 s-IntraSearchQ-r9 ReselectionThresholdQ-r9

 } OPTIONAL, -- Need OP

 s-NonIntraSearch-v920 SEQUENCE {

 s-NonIntraSearchP-r9 ReselectionThreshold,

 s-NonIntraSearchQ-r9 ReselectionThresholdQ-r9

 } OPTIONAL, -- Need OP

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

 threshServingLowQ-r9 ReselectionThresholdQ-r9 OPTIONAL -- Need OP

 ]],

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

 ]],

 [[ q-QualMinRSRQ-OnAllSymbols-r12 Q-QualMin-r9 OPTIONAL -- Cond RSRQ

 ]],

 [[ cellReselectionServingFreqInfo-v1310 CellReselectionServingFreqInfo-v1310 OPTIONAL, -- Need OP

 redistributionServingInfo-r13 RedistributionServingInfo-r13 OPTIONAL, --Need OR

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

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

 ]],

 [[ cellSelectionInfoCE1-r13 CellSelectionInfoCE1-r13 OPTIONAL -- Need OP

 ]],

 [[ cellSelectionInfoCE1-v1360 CellSelectionInfoCE1-v1360 OPTIONAL -- Cond QrxlevminCE1

 ]],

 [[ cellReselectionInfoCommon-v1460 CellReselectionInfoCommon-v1460 OPTIONAL -- Need OR

 ]],

 [[ cellReselectionInfoHSDN-r15 CellReselectionInfoHSDN-r15 OPTIONAL, -- Need OR

 cellSelectionInfoCE-v1530 CellSelectionInfoCE-v1530 OPTIONAL, -- Need OP

 crs-IntfMitigNeighCellsCE-r15 ENUMERATED {enabled} OPTIONAL -- Need OP

 ]],

 [[ cellReselectionServingFreqInfo-v1610 CellReselectionServingFreqInfo-v1610 OPTIONAL -- Need OR

 ]],

 [[ t-Service-r17 TimeOffsetUTC-r17 OPTIONAL -- Need OR

 ]],

 [[ satelliteAssistanceInfoList-r18

 SEQUENCE (SIZE(1..maxSat-r17)) OF SatelliteId-r18 OPTIONAL, -- Need OR

 freqBandInfoAerial-r18 NS-PmaxListAerial-r18 OPTIONAL, -- Need OR

 multiBandInfoListAerial-r18 MultiBandInfoListAerial-r18 OPTIONAL -- Need OR

 ]]

}

RedistributionServingInfo-r13 ::= SEQUENCE {

 redistributionFactorServing-r13 INTEGER(0..10),

 redistributionFactorCell-r13 ENUMERATED{true} OPTIONAL, --Need OP

 t360-r13 ENUMERATED {min4, min8, min16, min32,infinity,

 spare3,spare2,spare1},

 redistrOnPagingOnly-r13 ENUMERATED {true} OPTIONAL --Need OP

}

CellReselectionServingFreqInfo-v1310 ::= SEQUENCE {

 cellReselectionSubPriority-r13 CellReselectionSubPriority-r13

}

CellReselectionServingFreqInfo-v1610 ::= SEQUENCE {

 altCellReselectionPriority-r16 CellReselectionPriority OPTIONAL, -- Need OR

 altCellReselectionSubPriority-r16 CellReselectionSubPriority-r13 OPTIONAL -- Need OR

}

-- Late non critical extensions

SystemInformationBlockType3-v10j0-IEs ::= SEQUENCE {

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

 multiBandInfoList-v10j0 MultiBandInfoList-v10j0 OPTIONAL, -- Need OR

 nonCriticalExtension SystemInformationBlockType3-v10l0-IEs OPTIONAL

}

SystemInformationBlockType3-v10l0-IEs ::= SEQUENCE {

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

 multiBandInfoList-v10l0 MultiBandInfoList-v10l0 OPTIONAL, -- Need OR

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

CellReselectionInfoCommon-v1460 ::= SEQUENCE {

 s-SearchDeltaP-r14 ENUMERATED {dB6, dB9, dB12, dB15}

}

CellReselectionInfoHSDN-r15 ::= SEQUENCE {

 cellEquivalentSize-r15 INTEGER(2..16)

}

-- ASN1STOP

| *SystemInformationBlockType3* field descriptions |
| --- |
| ***allowedMeasBandwidth***If absent, the value corresponding to the downlink bandwidth indicated by the *dl-Bandwidth* included in *MasterInformationBlock* applies. |
| ***altCellReselectionPriority***Alternative cell reselection priorities to be used by the UEs for which the *altFreqPriorities* is set to *true* in the *RRCConnectionRelease* message. |
| ***altCellReselectionSubPriority***Alternative cell reselection sub-priorities to be used by the UEs for which the *altFreqPriorities* is set to *true* in the *RRCConnectionRelease* message. |
| ***cellEquivalentSize***The number of cell count used for mobility state estimation for this cell as specified in TS 36.304 [4].  |
| ***cellSelectionInfoCE***Parameters included in coverage enhancement S criteria for BL UEs and UEs in CE, applicable for intra-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, applicable for intra-frequency neighbour cells. E-UTRAN includes this IE only if *cellSelectionInfoCE* in SIB3 is present. |
| ***cellReselectionInfoCommon***Cell re-selection information common for cells. |
| ***cellReselectionServingFreqInfo***Information common for Cell re-selection to inter-frequency and inter-RAT cells. |
| ***crs-IntfMitigNeighCellsCE***For BL UEs supporting *ce-CRS-IntfMitig*, this field indicates CRS interference mitigation, as specified in TS 36.133 [16], clause 3.6.1.2 and 3.6.1.3, is enabled in any of the intra-frequency neibhour cells, and the UE shall perform intra-frequency neighbour cell RRM measurements in the center 6 PRBs. |
| ***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, TS 36.101 [42], table 6.2.4E-1, for UEs in CE or BL UEs and TS 36.102 [113], table 6.2A.3-1, for NTN capable UE, applicable for the intra-frequency neighouring E-UTRA cells if the UE selects the frequency band from *freqBandIndicator* in *SystemInformationBlockType1*. If E-UTRAN includes *freqBandInfo-v10l0* it includes the same number of entries, and listed in the same order, as in *freqBandInfo-r10*. |
| ***intraFreqcellReselectionInfo***Cell re-selection information common for intra-frequency cells. |
| ***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, TS 36.101 [42], table 6.2.4E-1, for UEs in CE or BL UEs and TS 36.102 [113], table 6.2A.3-1, for NTN capable UE, applicable for the intra-frequency neighouring E-UTRA cells if the UE selects the frequency bands in *multiBandInfoList* (i.e. without suffix) or *multiBandInfoList-v9e0* in *SystemInformationBlockType1*. 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) in *SystemInformationBlockType1*. 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 intra-frequency neighbouring E-UTRA cells. If absent the UE applies the maximum power according to its capability as specified in TS 36.101 [42], clause 6.2.2. This field is ignored by IAB-MT. The IAB-MT applies output power and emissions requirements, as specified in TS 38.174 [107]. |
| ***redistrOnPagingOnly***If this field is present and the UE is redistribution capable, the UE shall only wait for the paging message to trigger E-UTRAN inter-frequency redistribution procedure as specified in clause 5.2.4.10 of TS 36.304 [4]. |
| ***q-Hyst***Parameter *Qhyst* in TS 36.304 [4], Value in dB. Value dB1 corresponds to 1 dB, dB2 corresponds to 2 dB and so on. |
| ***q-HystSF***Parameter "Speed dependent ScalingFactor for *Qhyst*" in TS 36.304 [4]. The sf-Medium and sf-High concern the additional hysteresis to be applied, in Medium and High Mobility state respectively, to *Qhyst* as defined in TS 36.304 [4]. In dB. Value dB-6 corresponds to -6dB, dB-4 corresponds to -4dB and so on. |
| ***q-QualMin***Parameter "Qqualmin" in TS 36.304 [4], applicable for intra-frequency neighbour cells. 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. |
| ***q-RxLevMin***Parameter "Qrxlevmin" in TS 36.304 [4], applicable for intra-frequency neighbour cells. |
| ***redistributionFactorCell***If *redistributionFactorCell* is present, *redistributionFactorServing* is only applicable for the serving cell otherwise it is applicable for serving frequency |
| ***redistributionFactorServing***Parameter *redistributionFactorServing* in TS 36.304 [4]. |
| ***s-IntraSearch***Parameter "SIntraSearchP" in TS 36.304 [4]. If the field *s-IntraSearchP* is present, the UE applies the value of *s-IntraSearchP* instead. Otherwise if neither *s-IntraSearch* nor *s-IntraSearchP* is present, the UE applies the (default) value of infinity for SIntraSearchP. |
| ***s-IntraSearchP***Parameter "SIntraSearchP" in TS 36.304 [4]. See descriptions under *s-IntraSearch*. |
| ***s-IntraSearchQ***Parameter "SIntraSearchQ" in TS 36.304 [4]. If the field is not present, the UE applies the (default) value of 0 dB for SIntraSearchQ. |
| ***s-NonIntraSearch***Parameter "SnonIntraSearchP" in TS 36.304 [4]. If the field *s-NonIntraSearchP* is present, the UE applies the value of *s-NonIntraSearchP* instead. Otherwise if neither *s-NonIntraSearch* nor *s-NonIntraSearchP* is present, the UE applies the (default) value of infinity for SnonIntraSearchP. |
| ***s-NonIntraSearchP***Parameter "SnonIntraSearchP" in TS 36.304 [4]. See descriptions under *s-NonIntraSearch*. |
| ***s-NonIntraSearchQ***Parameter "SnonIntraSearchQ" in TS 36.304 [4]. If the field is not present, the UE applies the (default) value of 0 dB for SnonIntraSearchQ. |
| ***s-SearchDeltaP***Parameter "SSearchDeltaP" in TS 36.304 [4]. This parameter is only applicable for UEs supporting relaxed monitoring as specified in TS 36.306 [5]. Value dB6 corresponds to 6 dB, dB9 corresponds to 9 dB and so on. |
| ***satelliteAssistanceInfoList***List of satellite ID(s), used to associate with the satellite assistance information for intra-frequency neighbour cell measurements. Each satellite ID included in this list corresponds to a *satelliteId* configured in *neighSatelliteInfoList* via *SystemInformationBlockType33* or configured via *SystemInformationBlockType31*. |
| ***speedStateReselectionPars***Speed dependent reselection parameters, see TS 36.304 [4]. If this field is absent, i.e, *mobilityStateParameters* is also not present, UE behaviour is specified in TS 36.304 [4]. |
| ***t-Service***Time information on when an NTN cell is going to stop serving the area it is currently covering, as specified in TS 36.304 [4]. This field applies for service link switches in NTN quasi-Earth fixed cells and feeder link switches for both NTN quasi-Earth fixed and earth-moving cells. |
| ***t360***Parameter "T360" in TS 36.304 [4]. Value *min4* corresponds to 4 minutes, value *min8* corresponds to 8 minutes, and so on. |
| ***threshServingLow***Parameter "ThreshServing, LowP" in TS 36.304 [4]. |
| ***threshServingLowQ***Parameter "ThreshServing, 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 |
| --- | --- |
| *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 optionally present, Need OR, if *threshServingLowQ* is present in SIB3; otherwise it is not present. |
| *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. |

<Irrelevant Texts Omitted>

#### – *SystemInformationBlockType5*

The IE *SystemInformationBlockType5* contains information relevant for inter-frequency cell re-selection (i.e. information about other E‑UTRA frequencies and inter-frequency neighbouring cells relevant for cell re-selection) and information relevant for E-UTRA and NR idle/inactive measurements. 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-v1610 InterFreqCarrierFreqList-v1610 OPTIONAL, -- Need OR

 interFreqCarrierFreqListExt-v1610 InterFreqCarrierFreqListExt-v1610 OPTIONAL, -- Need OR

 measIdleConfigSIB-NR-r16 MeasIdleConfigSIB-NR-r16 OPTIONAL -- Need OR

 ]],

 [[ interFreqCarrierFreqList-v1800 InterFreqCarrierFreqList-v1800 OPTIONAL, -- Need OR

 interFreqCarrierFreqListExt-v1800 InterFreqCarrierFreqListExt-v1800 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-v1610 ::= SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo-v1610

InterFreqCarrierFreqList-v1800 ::= SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo-v1800

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-v1610 ::= SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo-v1610

InterFreqCarrierFreqListExt-v1800 ::= SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo-v1800

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

 interFreqExcludedCellList InterFreqExcludedCellList 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

 interFreqExcludedCellList-r12 InterFreqExcludedCellList 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-v1610 ::= SEQUENCE {

 altCellReselectionPriority-r16 CellReselectionPriority OPTIONAL, -- Need OR

 altCellReselectionSubPriority-r16 CellReselectionSubPriority-r13 OPTIONAL, -- Need OR

 rss-ConfigCarrierInfo-r16 RSS-ConfigCarrierInfo-r16 OPTIONAL, -- Cond RSS

 interFreqNeighCellList-v1610 InterFreqNeighCellList-v1610 OPTIONAL -- Cond RSS

}

InterFreqCarrierFreqInfo-v1800 ::= SEQUENCE {

 satelliteAssistanceInfoList-r18 SEQUENCE (SIZE(1..maxSat-r17)) OF SatelliteId-r18

 OPTIONAL, -- Need OR

 freqBandIndicatorAerial-r18 FreqBandIndicator-r11 OPTIONAL, -- Need OR

 freqBandInfoAerial-r18 NS-PmaxListAerial-r18 OPTIONAL, -- Need OR

 multiBandInfoListAerial-r18 MultiBandInfoListAerial-r18 OPTIONAL -- Need OR

}

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

InterFreqNeighCellList-v1610 ::= SEQUENCE (SIZE (1..maxCellInter)) OF InterFreqNeighCellInfo-v1610

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

InterFreqNeighCellInfo ::= SEQUENCE {

 physCellId PhysCellId,

 q-OffsetCell Q-OffsetRange

}

InterFreqNeighCellInfo-v1610 ::= SEQUENCE {

 rss-MeasPowerBias-r16 RSS-MeasPowerBias-r16

}

InterFreqExcludedCellList ::= SEQUENCE (SIZE (1..maxExcludedCell)) 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 |
| --- |
| ***altCellReselectionPriority***Alternative cell reselection priorities to be used by the UEs for which the *altFreqPriorities* is set to *true* in the *RRCConnectionRelease* message. |
| ***altCellReselectionSubPriority***Alternative cell reselection sub-priorities to be used by the UEs for which the *altFreqPriorities* is set to *true* in the *RRCConnectionRelease* message. |
| ***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, TS 36.101 [42], table 6.2.4E-1, for UEs in CE or BL UEs and TS 36.102 [113], table 6.2A.3-1, for NTN capable UE, 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*.  |
| ***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*, *InterFreqCarrierFreqList-v1530, InterFreqCarrierFreqList-v1610*, and/or *InterFreqCarrierFreqList-v1800*, 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*, *InterFreqCarrierFreqListExt-v1530, InterFreqCarrierFreqListExt-v1610,* and/or *InterFreqCarrierFreqListExt-v1800*, it includes the same number of entries, and listed in the same order, as in *interFreqCarrierFreqListExt-r12.* |
| ***interFreqExcludedCellList***List of exclude-listed inter-frequency neighbouring cells. |
| ***interFreqNeighCellList***List of inter-frequency neighbouring cells with specific cell re-selection parameters. *interFreqNeighCellList-v1610* indicates list of RSS assistance information which is used for the corresponding *physCellId*. If E-UTRAN includes *interFreqNeighCellList-v1610* in *interFreqCarrierFreqList-v1610 / interFreqCarrierFreqListExt-v1610*, it includes the same number of entries, and listed in the same order, as in *interFreqNeighCellList* (i.e. without suffix) / *interFreqNeighCellList-r12.* If *interFreqNeighCellList-v1610* is absent in *interFreqCarrierFreqList-v1610/ interFreqCarrierFreqListExt-v1610*, measurement based on RSS is not applicable for all the neighbour cells in *interFreqNeighCellList* (i.e. without suffix) / *interFreqNeighCellList-r12*. |
| ***interFreqNeighHSDN-CellList***List of inter-frequency neighbouring HSDN cells as specified in TS 36.304 [4]. |
| ***measIdleConfigSIB***Indicates E-UTRA measurement configuration to be stored and used by the UE while in RRC\_IDLE or RRC\_INACTIVE. |
| ***measIdleConfigSIB-NR***Indicates the NR measurement configuration to be stored and used by the UE while in RRC\_IDLE or RRC\_INACTIVE.  |
| ***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, TS 36.101 [42], table 6.2.4E-1, for UEs in CE or BL UEs and TS 36.102 [113], table 6.2A.3-1, for NTN capable UE, 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. This field is ignored by IAB-MT. The IAB-MT applies output power and emissions requirements, as specified in TS 38.174 [107]. |
| ***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-ConfigCarrierInfo***RSS configuration for this carrier frequency. If absent and *rss-MeasConfig* is included in *SIB2*, RSS is collocated (time and frequency domain) in all cells on this carrier. |
| ***satelliteAssistanceInfoList***List of satellite ID(s), used to associate with the satellite assistance information for neighbour cell measurements on this frequency. Each satellite ID included in this list corresponds to a *satelliteId* configured in *neighSatelliteInfoList* via *SystemInformationBlockType33* or configured via *SystemInformationBlockType31*. If the field is not present for a frequency and *neighSatelliteInfoList* is broadcast in *SystemInformationBlockType33*, the UE considers the cells on the frequency to be terrestrial cells. |
| ***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. |
| *RSS* | This field is optional, need OP, if *rss-MeasConfig* is included in SIB2. Otherwise the field 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. |

<Irrelevant Texts Omitted>

#### – *SystemInformationBlockType24*

The IE *SystemInformationBlockType24* contains information relevant for inter-RAT cell re-selection (i.e. information about NR frequencies and NR neighbouring cells relevant for cell re-selection), which can also be used for NR idle/inactive measurements. The IE includes cell re-selection parameters common for a frequency.

*SystemInformationBlockType24* information element

-- ASN1START

SystemInformationBlockType24-r15 ::= SEQUENCE {

 carrierFreqListNR-r15 CarrierFreqListNR-r15 OPTIONAL, -- Need OR

 t-ReselectionNR-r15 T-Reselection,

 t-ReselectionNR-SF-r15 SpeedStateScaleFactors OPTIONAL, -- Need OR

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 ...,

 [[ carrierFreqListNR-v1610 CarrierFreqListNR-v1610 OPTIONAL -- Need OR

 ]],

 [[ carrierFreqListNR-v1700 CarrierFreqListNR-v1700 OPTIONAL -- Need OR

 ]],

 [[ carrierFreqListNR-v1720 CarrierFreqListNR-v1720 OPTIONAL -- Need OR

 ]],

 [[ carrierFreqListNR-v1810 CarrierFreqListNR-v1810 OPTIONAL -- Need OR

 ]],

 [[ carrierFreqListNR-v19xy CarrierFreqListNR-v19xy OPTIONAL -- Need OR

 ]]

}

CarrierFreqListNR-r15 ::= SEQUENCE (SIZE (1..maxFreq)) OF CarrierFreqNR-r15

CarrierFreqListNR-v1610 ::= SEQUENCE (SIZE (1..maxFreq)) OF CarrierFreqNR-v1610

CarrierFreqListNR-v1700 ::= SEQUENCE (SIZE (1..maxFreq)) OF CarrierFreqNR-v1700

CarrierFreqListNR-v1720 ::= SEQUENCE (SIZE (1..maxFreq)) OF CarrierFreqNR-v1720

CarrierFreqListNR-v1810 ::= SEQUENCE (SIZE (1..maxFreq)) OF CarrierFreqNR-v1810

CarrierFreqListNR-v19xy ::= SEQUENCE (SIZE (1..maxFreq)) OF CarrierFreqNR-v19xy

CarrierFreqNR-r15 ::= SEQUENCE {

 carrierFreq-r15 ARFCN-ValueNR-r15,

 multiBandInfoList-r15 MultiFrequencyBandListNR-r15 OPTIONAL, -- Need OR

 multiBandInfoListSUL-r15 MultiFrequencyBandListNR-r15 OPTIONAL, -- Need OR

 measTimingConfig-r15 MTC-SSB-NR-r15 OPTIONAL, -- Need OR

 subcarrierSpacingSSB-r15 ENUMERATED {kHz15, kHz30, kHz120, kHz240},

 ss-RSSI-Measurement-r15 SS-RSSI-Measurement-r15 OPTIONAL, -- Cond RSRQ2

 cellReselectionPriority-r15 CellReselectionPriority OPTIONAL, -- Need OP

 cellReselectionSubPriority-r15 CellReselectionSubPriority-r13 OPTIONAL, -- Need OR

 threshX-High-r15 ReselectionThreshold,

 threshX-Low-r15 ReselectionThreshold,

 threshX-Q-r15 SEQUENCE {

 threshX-HighQ-r15 ReselectionThresholdQ-r9,

 threshX-LowQ-r15 ReselectionThresholdQ-r9

 } OPTIONAL, -- Cond RSRQ

 q-RxLevMin-r15 INTEGER (-70..-22),

 q-RxLevMinSUL-r15 INTEGER (-70..-22) OPTIONAL, -- Need OR

 p-MaxNR-r15 P-MaxNR-r15,

 ns-PmaxListNR-r15 NS-PmaxListNR-r15 OPTIONAL, -- Need OR

 q-QualMin-r15 INTEGER (-43..-12) OPTIONAL, -- Need OP

 deriveSSB-IndexFromCell-r15 BOOLEAN,

 maxRS-IndexCellQual-r15 MaxRS-IndexCellQualNR-r15 OPTIONAL, -- Need OR

 threshRS-Index-r15 ThresholdListNR-r15 OPTIONAL, -- Need OR

 ...,

 [[ multiBandNsPmaxListNR-v1550 MultiBandNsPmaxListNR-1-v1550 OPTIONAL, -- Need OR

 multiBandNsPmaxListNR-SUL-v1550 MultiBandNsPmaxListNR-v1550 OPTIONAL, -- Need OR

 ssb-ToMeasure-r15 SSB-ToMeasure-r15 OPTIONAL -- Need OR

 ]],

 [[ ns-PmaxListNR-v1760 NS-PmaxListNR-v1760 OPTIONAL, -- Need OR

 multiBandNsPmaxListNR-v1760 MultiBandNsPmaxListNR-1-v1760 OPTIONAL, -- Need OR

 multiBandNsPmaxListNR-SUL-v1760 MultiBandNsPmaxListNR-v1760 OPTIONAL -- Need OR

 ]]

}

CarrierFreqNR-v1610 ::= SEQUENCE {

 smtc2-LP-r16 MTC-SSB2-LP-NR-r16 OPTIONAL, -- Need OR

 ssb-PositionQCL-CommonNR-r16 SSB-PositionQCL-RelationNR-r16 OPTIONAL, -- Cond SharedSpectrum2

 allowedCellListNR-r16 AllowedCellListNR-r16 OPTIONAL, -- Cond SharedSpectrum

 highSpeedCarrierNR-r16 ENUMERATED {true} OPTIONAL -- Need OR

}

CarrierFreqNR-v1700 ::= SEQUENCE {

 nr-FreqNeighHSDN-CellList-r17 NR-FreqNeighHSDN-CellList-r17 OPTIONAL -- Need OR

}

CarrierFreqNR-v1720 ::= SEQUENCE {

 subcarrierSpacingSSB-r17 ENUMERATED {kHz480, spare1} OPTIONAL, -- Need OR

 ssb-PositionQCL-CommonNR-r17 SSB-PositionQCL-RelationNR-r17 OPTIONAL -- Cond SharedSpectrum2

}

CarrierFreqNR-v1810 ::= SEQUENCE {

 carrierFreq-r18 ARFCN-ValueNR-r15 OPTIONAL, -- Cond LessThan5MHz

 multiBandInfoList-r18 MultiFrequencyBandListNR-r15 OPTIONAL, -- Cond LessThan5MHz

 multiBandInfoListAerial-r18 MultiFrequencyBandListNR-r15 OPTIONAL, -- Need OR

 ns-PmaxListNR-Aerial-r18 NS-PmaxListNR-Aerial-r18 OPTIONAL, -- Need OR

 multiBandNsPmaxListNR-Aerial-r18 MultiBandNsPmaxListNR-Aerial-1-r18 OPTIONAL, -- Need OR

 mobileIAB-CellList-r18 PhysCellIdRangeNR-r16 OPTIONAL, -- Need OR

 mobileIAB-Freq-r18 ENUMERATED {true} OPTIONAL -- Need OR

}

CarrierFreqNR-v19xy ::= SEQUENCE {

 satelliteAssistanceInfoList-r19 SEQUENCE (SIZE(1..maxSatNR-r19)) OF SatelliteId-r18

 OPTIONAL -- Need OR

}

MultiBandNsPmaxListNR-1-v1550 ::= SEQUENCE (SIZE (1.. maxMultiBandsNR-1-r15)) OF NS-PmaxListNR-r15

MultiBandNsPmaxListNR-v1550 ::= SEQUENCE (SIZE (1.. maxMultiBandsNR-r15)) OF NS-PmaxListNR-r15

MultiBandNsPmaxListNR-1-v1760 ::= SEQUENCE (SIZE (1.. maxMultiBandsNR-1-r15)) OF NS-PmaxListNR-v1760

MultiBandNsPmaxListNR-v1760 ::= SEQUENCE (SIZE (1.. maxMultiBandsNR-r15)) OF NS-PmaxListNR-v1760

MultiBandNsPmaxListNR-Aerial-1-r18 ::= SEQUENCE (SIZE (1.. maxMultiBandsNR-1-r15)) OF NS-PmaxListNR-Aerial-r18

AllowedCellListNR-r16 ::= SEQUENCE (SIZE (1..maxCellAllowedNR-r16)) OF PhysCellIdNR-r15

NR-FreqNeighHSDN-CellList-r17 ::= SEQUENCE (SIZE (1..maxCellNR-r17)) OF PhysCellIdRangeNR-r16

-- ASN1STOP

|  |
| --- |
| *SystemInformationBlockType24* field descriptions |
| ***allowedCellListNR***List of allow-listed neighbouring NR cells. |
| ***carrierFreqListNR***List of carrier frequencies of NR carriers. These frequencies correspond to GSCN values as specified in TS 38.101 [85]. If the *carrierFreqListNR-v1610, carrierFreqListNR-v1700*, *carrierFreqListNR-v1720*, *carrierFreqListNR-v1810* or *carrierFreqListNR-v19xy* is present, it contains the same number of entries, listed in the same order as in the *carrierFreqListNR* (without suffix).For a neighbouring carrier frequency when *carrierFreq-r18* is included, the network sets the corresponding value of *carrierFreq-r15* to 250, and the UE applies *carrierFreq-r18* instead of *carrierFreq-r15*. In such case, if the UE does not support the GSCN value corresponding to the *carrierFreq-r18*, it ignores the corresponding neighbour cell. |
| ***cellReselectionPriority***The field concerns the absolute priority of the concerned carrier frequency as used by the cell reselection procedure. Corresponds with parameter "priority" in TS 36.304 [4]. |
| ***deriveSSB-IndexFromCell***The field indicates whether the UE may use, to derive the SSB index of a cell on the indicated SSB frequency and subcarrier spacing, the timing of any detected cell with the same SSB frequency and subcarrier spacing. If this field is set to TRUE, the UE assumes SFN and frame boundary alignment across cells on the same NR carrier frequency as specified in TS 36.133 [16]. |
| ***highSpeedCarrierNR***If the field is present, the UE shall apply the enhanced inter-RAT NR measurement requirements to support high speed up to 500 km/h as specified in TS 36.133 [16] to the NR carrier. |
| ***maxRS-IndexCellQual***Number of SS blocks to average for cell measurement derivation. Corresponds to the parameter *nrofSS-BlocksToAverage* in TS 38.304 [92]. |
| ***measTimingConfig***Used to configure measurement timing configurations, i.e., timing occasions at which the UE measures SSBs. If the field is absent, the UE assumes that SSB periodicity is 5ms in this frequency. If field *satelliteAssistanceInfoList* is configured for the corresponding entry, the *offset* (derived from parameter *periodicityAndOffset*) is based on the assumption that the gNB-UE propagation delay equals to 0 ms, and UE can adjust the offset based on the actual propagation delay. |
| ***mobileIAB-CellList***List of neighbouring mobile IAB cells as specified in TS 36.304 [4]. |
| ***mobileIAB-Freq***If present, it indicates that a mobile IAB node may be deployed on the NR frequency.  |
| ***multiBandInfoList***Indicates the list of frequency bands for which the NR cell reselection parameters apply. The UE shall select the first listed band which it supports in the *multiBandInfoList* field to represent the NR neighbour carrier frequency. The network always includes *multiBandInfoList-r15*.For a neighbouring carrier frequency when *multiBandInfoList-r18* is included, the network sets the corresponding value of *FreqBandIndicatorNR-r15* in *multiBandInfoList-r15* to 200, and the UE applies *multBandInfoList-r18* instead of *multiBandInfoList-r15*. |
| ***multiBandInfoListAerial***Indicates the list of frequency bands for which the NR cell reselection parameters apply. The aerial UE shall select the first listed band which it supports in the *multiBandInfoListAerial* field to represent the NR neighbour carrier frequency. |
| ***multiBandInfoListSUL***Indicates the list of frequency bands for which the NR cell reselection parameters apply. The UE shall select the first listed band which it supports in the *multiBandInfoListSUL* field to represent the NR neighbour carrier frequency. |
| ***multiBandNsPmaxListNR***Indicates the *NS-PmaxListNR* configuration for the NR frequency band(s) listed in *multiBandInfoList*. The first entry corresponds to the second listed band in *multiBandInfoList*, and second entry corresponds to the third listed band in *multiBandInfoList*, and so on.  |
| ***multiBandNsPmaxListNR-Aerial***Indicates the *NS-PmaxListNR-Aerial* configuration for the NR frequency band(s) listed in *multiBandInfoListAerial*. The first entry corresponds to the second listed band in *multiBandInfoListAerial*, and second entry corresponds to the third listed band in *multiBandInfoListAerial*, and so on. |
| ***multiBandNsPmaxListNR-SUL***Indicates the *NS-PmaxListNR* configuration for the NR SUL frequency band(s) listed in *multiBandInfoListSUL*. The first entry corresponds to the first listed band in *multiBandInfoListSUL*, and second entry corresponds to the second listed band in *multiBandInfoListSUL*, and so on. |
| ***nr-FreqNeighHSDN-CellList***List of neighbouring NR HSDN cells as specified in TS 38.304 [92]. |
| ***ns-PmaxListNR***Indicates a list of *additionalPmax* and *additionalSpectrumEmission*, corresponds to the first listed band in the *multiBandInfoList*. |
| ***ns-PmaxListNR-Aerial***Indicates a list of *additionalPmax* and *additionalSpectrumEmission* for aerial UE, corresponds to the first listed band in the *multiBandInfoListAerial*. |
| ***p-MaxNR***Indicates the maximum power for NR (see TS 38.104 [91]). |
| ***q-QualMin***Parameter "Qqualmin" in TS 36.304 [4], applicable for NR neighbour cells. If the field is not present, the UE applies the (default) value of negative infinity for Qqualmin. The actual value Qqualmin = field value [dB]. |
| ***q-RxLevMin***Parameter "Qrxlevmin" in TS 38.304 [92], applicable for NR neighbour cells. The actual value Qrxlevmin = field value \* 2 [dBm]. |
| ***q-RxLevMinSUL***Parameter "Qrxlevmin" in TS 38.304 [92], applicable for NR neighbouring cells. The actual value Qrxlevmin = field value \* 2 [dBm]. |
| ***satelliteAssistanceInfoList***List of satellite ID(s), used to associate with the satellite assistance information for neighbour cell measurements on this frequency. Each satellite ID included in this list corresponds to a *satelliteId* configured in *neighSatelliteInfoNR-List* via *SystemInformationBlockType33*. If the field is not present for a frequency and *neighSatelliteInfoNR-List* is broadcast in *SystemInformationBlockType33*, the UE considers the cells on the frequency to be terrestrial cells. |
| ***smtc2-LP***Measurement timing configuration for inter-RAT neighbour cells in NR with a Long Periodicity (LP) indicated by periodicity in *smtc2-LP*. The timing offset and duration are equal to the offset and duration indicated in *measTimingConfig* in *CarrierFreqNR*. The periodicity in *smtc2-LP* can only be set to a value strictly larger than the periodicity in *measTimingConfig* in *CarrierFreqNR* (e.g. if *measTimingConfig* indicates sf20 the Long Periodicity can only be set to sf40, sf80 or sf160, if *measTimingConfig* indicates sf160, *smtc2-LP* cannot be configured). The *pci-List*, if present, includes the physical cell identities of the inter-RAT neighbour cells with Long Periodicity. If *smtc2-LP* is absent, the UE assumes that there are no inter-RAT neighbour cells with a Long Periodicity. |
| ***ssb-PositionQCL-CommonNR***Indicates the QCL relationship between SS/PBCH blocks for NR neighbor cells on the indicated frequency as specified in TS 38.213 [88], clause 4.1. If *ssb-PositionQCL-CommonNR-r17* is present, the UE ignores *ssb-PositionQCL-CommonNR-r16*. |
| ***ssb-ToMeasure***The set of SS blocks to be measured within the SMTC measurement duration (see TS 38.215 [89]). When the field is absent the UE measures on all SS-blocks. |
| ***ss-RSSI-Measurements***Indicates the SSB-based RSSI measurement configuration. If the field is absent, the UE behaviour is defined in TS 38.215 [89], clause 5.1.3. |
| ***subcarrierSpacingSSB***Indicates the subcarrier spacing of SSB of NR frequency. Only the values 15 kHz or 30 kHz (FR1), 120 kHz or 240 kHz (FR2-1), 120 kHz or 480 kHz (FR2-2) are applicable. If *subcarrierSpacingSSB-r17* is present, the UE ignores *subcarrierSpacingSSB-r15*. |
| ***threshRS-Index***List of thresholds for consolidation of L1 measurements per RS index. Corresponds to the parameter *absThreshSS-BlocksConsolidation* in TS 38.304 [92]. |
| ***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-ReselectionNR***Parameter "TreselectionNR" in TS 36.304 [4]. |
| ***t-ReselectionNR-SF***Parameter "Speed dependent ScalingFactor for TreselectionNR" in TS 36.304 [4]. If the field is not present, the UE behaviour is specified in TS 36.304 [4]. |

| Conditional presence | Explanation |
| --- | --- |
| *LessThan5MHz* | The field is mandatory present if the NR neighbor cell supports 12 PRB, 15 PRB or 20 PRB transmission bandwidth configuration as defined in TS 38.101-1 [85], TS 38.211 [117] and TS 38.213 [88]. Otherwise, the field is not present and the corresponding Rel-15 field applies. |
| *RSRQ* | The field is mandatory present if the *threshServingLowQ* is present in *systemInformationBlockType3*; otherwise it is not present. |
| *RSRQ2* | The field is optional Need OP if the *threshServingLowQ* is present in *systemInformationBlockType3*; otherwise it is not present. |
| *SharedSpectrum* | The field is optional Need OP if NR operates with shared spectrum channel access; otherwise, it is not present. |
| *SharedSpectrum2* | The field is mandatory present if NR operates with shared spectrum channel access; otherwise, it is not present. |

<Irrelevant Texts Omitted>

**========== Alternative A ==========**

#### – *SystemInformationBlockType33*

The IE *SystemInformationBlockType33* contains satellite assistance information for neighbour cells.

*SystemInformationBlockType33* information element

-- ASN1START

SystemInformationBlockType33-r18 ::= SEQUENCE {

 neighSatelliteInfoList-r18 NeighSatelliteInfoList-r18 OPTIONAL, -- Need OR

 neighValidityDuration-r18 ENUMERATED {s5, s10, s15, s20, s25, s30, s35, s40,

 s45, s50, s55, s60, s120, s180, s240, s900}

 OPTIONAL, -- Need OP

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 ...,

 [[

 neighSatelliteInfoNR-List-r19 NeighSatelliteInfoNR-List-r19 OPTIONAL -- Need OR

 ]]

}

NeighSatelliteInfoList-r18 ::= SEQUENCE (SIZE(1..maxSat-r17)) OF NeighSatelliteInfo-r18

NeighSatelliteInfoNR-List-r19 ::= SEQUENCE (SIZE(1..maxSatNR-r19)) OF NeighSatelliteInfoNR-r19

NeighSatelliteInfo-r18 ::= SEQUENCE {

 satelliteId-r18 SatelliteId-r18,

 ephemerisInfo-r18 CHOICE {

 stateVectors-r18 EphemerisStateVectors-r17,

 orbitalParameters-r18 EphemerisOrbitalParameters-r17

 },

 nta-CommonParameters-r18 SEQUENCE {

 nta-Common-r18 INTEGER (0..8316827) OPTIONAL, -- Need OP

 nta-CommonDrift-r18 INTEGER (-261935..261935) OPTIONAL, -- Need OP

 nta-CommonDriftVariation-r18 INTEGER (0..29479) OPTIONAL -- Need OP

 },

 epochTime-r18 SEQUENCE {

 startSFN-r18 INTEGER (0..1023),

 startSubFrame-r18 INTEGER (0..9)

 } OPTIONAL, -- Need OP

 k-Mac-r18 INTEGER (1..512) OPTIONAL, -- Need OP

 t-ServiceStartNeigh-r18 TimeOffsetUTC-r17 OPTIONAL -- Need OR

}

NeighSatelliteInfoNR-r19::= SEQUENCE {

 satelliteId-r19 SatelliteId-r18,

 ephemerisInfo-r19 CHOICE {

 ephemerisInfoNR-r19 CHOICE {

 stateVectors-r19 EphemerisStateVectors-r17,

 orbitalParameters-r19 EphemerisOrbitalParameters-r17

 },

 satelliteRefId SatelliteId-r18

 },

 nta-CommonParametersNR-r19 SEQUENCE {

 nta-CommonNR-r19 INTEGER (0.. 66485757) OPTIONAL, -- Need OP

 nta-CommonDriftNR-r19 INTEGER (-257303..257303) OPTIONAL, -- Need OP

 nta-CommonDriftVariationNR-r19 INTEGER (0..28949) OPTIONAL -- Need OP

 },

 epochTime-r19 SEQUENCE {

 startSFN-r19 INTEGER (0..1023),

 startSubFrame-r19 INTEGER (0..9)

 } OPTIONAL, -- Need OP

 k-Mac-r19 INTEGER (1..512) OPTIONAL, -- Need OP

 ntn-PolarizationDL-r19 ENUMERATED {rhcp,lhcp,linear} OPTIONAL -- Need OP

}

-- ASN1STOP

|  |
| --- |
| *SystemInformationBlockType33* field descriptions |
| ***ephemerisInfo***Ephemeris data for a neighbour NR NTN satellites. If this field is set to *satelliteRefId*, UE uses the *ephemerisInfo* identified by that satellite ID that matches *satelliteRefId* in the *neighSatelliteInfoList.* |
| ***epochTime***Epoch time of the neighbour satellite ephemeris data and common TA parameters, see TS 36.213 [23]. The reference point for epoch time of the neighbour satellite ephemeris and Common TA parameters is the uplink time synchronization reference point when this field is provided in an NTN cell and the eNB when this field is provided in a TN cell.*epochTime* is the starting time of a DL subframe indicated by *startSFN* and *startSubframe*. If this field is absent, the UE uses epoch time of the serving cell, otherwise the field is based on the timing of the serving cell, i.e. the SFN and sub-frame number indicated in this field refers to the SFN and sub-frame of the serving cell. *The startSFN* indicates the SFN nearest to the frame where the message indicating the *epochTime* is received. |
| ***k-Mac***Scheduling offset used when downlink and uplink frame timing are not aligned at the eNB/gNB, see TS 36.213 [23]. Unit in ms.If the field if absent, the UE uses the (default) value of 0. |
| ***neighValidityDuration***Validity duration of the neighbour satellite ephemeris data and common TA parameters, i.e. maximum time duration (from *epochTime*) during which the UE can apply the satellite ephemeris without acquiring new satellite ephemeris, see TS 36.213 [23]. Unit in second.Value *s5* corresponds to 5 seconds, value *s10* corresponds to 10 seconds and so on.If this field is absent, the UE uses validity duration from the serving cell assistance information. |
| ***nta-Common, nta-CommonNR***Network-controlled common TA, see TS 36.213 [23]. Unit of μs.For *nta-Common*, step of 32.55208 ×10-3 μs. For *nta-CommonNR*, step of 4.072 × 10-3μs. Actual value = field value \* step.If the field is absent, the UE uses the (default) value of 0. |
| ***nta-CommonDrift, nta-CommonDriftNR***Drift rate of the common TA, see TS 36.213 [23]. Unit of μs/s.Step of 0.2 ×10-3 μs/s. Actual value = field value \* 0.2 ×10-3.If the field is absent, the UE uses the (default) value of 0. |
| ***nta-CommonDriftVariation, nta-CommonDriftVariationNR***Drift rate variation of the common TA, see TS 36.213 [23]. Unit of μs/s2.Step of 0.2 ×10-4 μs/s2. Actual value = field value \* 0.2 ×10-4.If the field is absent, the UE uses the (default) value of 0. |
| ***ntn-PolarizationDL***If present, this parameter indicates polarization information for downlink transmission on service link: including Right hand, Left hand circular polarizations (RHCP, LHCP) and Linear polarization. |
| ***t-ServiceStartNeigh***Indicates the earliest time when the area covered by the current serving cell is going to be covered by the neighbour cell(s) served by the satellite indicated by *satelliteId*, see 5.5.3.1, 5.5.8 and 36.304 [4]. This field is only present for the NTN quasi-Earth fixed neighbour cell(s). |

**========== Alternatie B ==========**

#### – *SystemInformationBlockType33*

The IE *SystemInformationBlockType33* contains satellite assistance information for neighbour cells.

*SystemInformationBlockType33* information element

-- ASN1START

SystemInformationBlockType33-r18 ::= SEQUENCE {

 neighSatelliteInfoList-r18 NeighSatelliteInfoList-r18 OPTIONAL, -- Need OR

 neighValidityDuration-r18 ENUMERATED {s5, s10, s15, s20, s25, s30, s35, s40,

 s45, s50, s55, s60, s120, s180, s240, s900}

 OPTIONAL, -- Need OP

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 ...,

 [[

 neighSatelliteInfoNR-List-r19 NeighSatelliteInfoNR-List-r19 OPTIONAL -- Need OR

 ]]

}

NeighSatelliteInfoList-r18 ::= SEQUENCE (SIZE(1..maxSat-r17)) OF NeighSatelliteInfo-r18

NeighSatelliteInfoNR-List-r19 ::= SEQUENCE (SIZE(1..maxSatNR-r19)) OF NeighSatelliteInfoNR-r19

NeighSatelliteInfo-r18 ::= SEQUENCE {

 satelliteId-r18 SatelliteId-r18,

 ephemerisInfo-r18 CHOICE {

 stateVectors-r18 EphemerisStateVectors-r17,

 orbitalParameters-r18 EphemerisOrbitalParameters-r17

 },

 nta-CommonParameters-r18 SEQUENCE {

 nta-Common-r18 INTEGER (0..8316827) OPTIONAL, -- Need OP

 nta-CommonDrift-r18 INTEGER (-261935..261935) OPTIONAL, -- Need OP

 nta-CommonDriftVariation-r18 INTEGER (0..29479) OPTIONAL -- Need OP

 },

 epochTime-r18 SEQUENCE {

 startSFN-r18 INTEGER (0..1023),

 startSubFrame-r18 INTEGER (0..9)

 } OPTIONAL, -- Need OP

 k-Mac-r18 INTEGER (1..512) OPTIONAL, -- Need OP

 t-ServiceStartNeigh-r18 TimeOffsetUTC-r17 OPTIONAL -- Need OR

}

NeighSatelliteInfoNR-r19::= SEQUENCE {

 satelliteId-r19 SatelliteId-r18,

 ephemerisInfoNR-r19 CHOICE {

 stateVectors-r19 EphemerisStateVectors-r17,

 orbitalParameters-r19 EphemerisOrbitalParameters-r17

 }, OPTIONAL -- Cond NRSatOnly nta-CommonParametersNR-r19 SEQUENCE {

 nta-CommonNR-r19 INTEGER (0.. 66485757) OPTIONAL, -- Need OP

 nta-CommonDriftNR-r19 INTEGER (-257303..257303) OPTIONAL, -- Need OP

 nta-CommonDriftVariationNR-r19 INTEGER (0..28949) OPTIONAL -- Need OP

 },

 epochTime-r19 SEQUENCE {

 startSFN-r19 INTEGER (0..1023),

 startSubFrame-r19 INTEGER (0..9)

 } OPTIONAL, -- Need OP

 k-Mac-r19 INTEGER (1..512) OPTIONAL, -- Need OP

 ntn-PolarizationDL-r19 ENUMERATED {rhcp,lhcp,linear} OPTIONAL -- Need OP

}

-- ASN1STOP

|  |
| --- |
| *SystemInformationBlockType33* field descriptions |
| ***ephemerisInfoNR***Ephemeris data for a neighbour NR NTN satellites. If this field is absent and *satellitId* in the same entry matches a satellite ID in the *neighSatelliteInfoList*, UE uses the *ephemerisInfo* identified by that satellite ID in the *neighSatelliteInfoList.*  |
| ***epochTime***Epoch time of the neighbour satellite ephemeris data and common TA parameters, see TS 36.213 [23]. The reference point for epoch time of the neighbour satellite ephemeris and Common TA parameters is the uplink time synchronization reference point when this field is provided in an NTN cell and the eNB when this field is provided in a TN cell.*epochTime* is the starting time of a DL subframe indicated by *startSFN* and *startSubframe*. If this field is absent, the UE uses epoch time of the serving cell, otherwise the field is based on the timing of the serving cell, i.e. the SFN and sub-frame number indicated in this field refers to the SFN and sub-frame of the serving cell. *The startSFN* indicates the SFN nearest to the frame where the message indicating the *epochTime* is received. |
| ***k-Mac***Scheduling offset used when downlink and uplink frame timing are not aligned at the eNB/gNB, see TS 36.213 [23]. Unit in ms.If the field if absent, the UE uses the (default) value of 0. |
| ***neighValidityDuration***Validity duration of the neighbour satellite ephemeris data and common TA parameters, i.e. maximum time duration (from *epochTime*) during which the UE can apply the satellite ephemeris without acquiring new satellite ephemeris, see TS 36.213 [23]. Unit in second.Value *s5* corresponds to 5 seconds, value *s10* corresponds to 10 seconds and so on.If this field is absent, the UE uses validity duration from the serving cell assistance information. |
| ***nta-Common, nta-CommonNR***Network-controlled common TA, see TS 36.213 [23]. Unit of μs.For *nta-Common*, step of 32.55208 ×10-3 μs. For *nta-CommonNR*, step of 4.072 × 10-3μs. Actual value = field value \* step.If the field is absent, the UE uses the (default) value of 0. |
| ***nta-CommonDrift, nta-CommonDriftNR***Drift rate of the common TA, see TS 36.213 [23]. Unit of μs/s.Step of 0.2 ×10-3 μs/s. Actual value = field value \* 0.2 ×10-3.If the field is absent, the UE uses the (default) value of 0. |
| ***nta-CommonDriftVariation, nta-CommonDriftVariationNR***Drift rate variation of the common TA, see TS 36.213 [23]. Unit of μs/s2.Step of 0.2 ×10-4 μs/s2. Actual value = field value \* 0.2 ×10-4.If the field is absent, the UE uses the (default) value of 0. |
| ***ntn-PolarizationDL***If present, this parameter indicates polarization information for downlink transmission on service link: including Right hand, Left hand circular polarizations (RHCP, LHCP) and Linear polarization. |
| ***t-ServiceStartNeigh***Indicates the earliest time when the area covered by the current serving cell is going to be covered by the neighbour cell(s) served by the satellite indicated by *satelliteId*, see 5.5.3.1, 5.5.8 and 36.304 [4]. This field is only present for the NTN quasi-Earth fixed neighbour cell(s). |

| Conditional presence | Explanation |
| --- | --- |
| *NRSatOnly* | The field is mandatory present if, the value of the *satelliteId* in the same entry does not equal any satellite ID values included in *neighSatelliteInfoList*. It is optionally present, Need OP, otherwise. |

|  |
| --- |
| Next change |

### 6.3.6 Other information elements

<Irrelevant Texts Omitted>

#### – *SatelliteId*

The IE *SatelliteId* is used to uniquely identify the satellite assistance information of the serving satellite, or neighbour satellites for E-UTRA or neighbour NR satellites.

*SatelliteId* information element

-- ASN1START

SatelliteId-r18 ::= INTEGER (0..255)

-- ASN1STOP

<Irrelevant Texts Omitted>

|  |
| --- |
| Next change |

## 6.4 RRC multiplicity and type constraint values

### – Multiplicity and type constraint definitions

-- ASN1START

maxAccessCat-1-r15 INTEGER ::= 63 -- Maximum number of Access Categories - 1

maxACDC-Cat-r13 INTEGER ::= 16 -- Maximum number of ACDC categories (per PLMN)

maxAvailNarrowBands-r13 INTEGER ::= 16 -- Maximum number of narrowbands

maxAvailNarrowBands-1-r16 INTEGER ::= 15 -- Maximum number of narrowbands minus one

maxBandComb-r10 INTEGER ::= 128 -- Maximum number of band combinations.

maxBandComb-r11 INTEGER ::= 256 -- Maximum number of additional band combinations.

maxBandComb-r13 INTEGER ::= 384 -- Maximum number of band combinations in Rel-13

maxBandCombSidelinkNR-r16 INTEGER ::= 512 -- Maximum number of NR sidelink band combinations

maxBands INTEGER ::= 64 -- Maximum number of bands listed in EUTRA UE caps

maxBandsNR-r15 INTEGER ::= 1024 -- Maximum number of NR bands listed in EUTRA UE caps

maxBandsENDC-r16 INTEGER ::= 10 -- Maximum number of NR bands from across all the PLMNs

 -- sharing the serving cell in EN-DC for the forwarding

 -- of *upperLayerIndication*.

maxBandwidthClass-r10 INTEGER ::= 16 -- Maximum number of supported CA BW classes per band

maxBandwidthCombSet-r10 INTEGER ::= 32 -- Maximum number of bandwidth combination sets per

 -- supported band combination

maxBarringInfoSet-r15 INTEGER ::= 8 -- Maximum number of UAC barring information sets

maxBT-IdReport-r15 INTEGER ::= 32 -- Maximum number of Bluetooth IDs to report

maxBT-Name-r15 INTEGER ::= 4 -- Maximum number of Bluetooth name

maxCBR-Level-r14 INTEGER ::= 16 -- Maximum number of CBR levels

maxCBR-Level-1-r14 INTEGER ::= 15

maxCBR-Report-r14 INTEGER ::= 72 -- Maximum number of CBR results in a report

maxCDMA-BandClass INTEGER ::= 32 -- Maximum value of the CDMA band classes

maxCE-Level-r13 INTEGER ::= 4 -- Maximum number of CE levels

maxExcludedCell INTEGER ::= 16 -- Maximum number of exclude-listed physical cell identity

 -- ranges listed in SIB type 4 and 5

maxCellHistory-r12 INTEGER ::= 16 -- Maximum number of visited EUTRA cells reported

maxCellInfoGERAN-r9 INTEGER ::= 32 -- Maximum number of GERAN cells for which system in-

 -- formation can be provided as redirection assistance

maxCellInfoUTRA-r9 INTEGER ::= 16 -- Maximum number of UTRA cells for which system

 -- information can be provided as redirection

 -- assistance

maxCellMeasIdle-r15 INTEGER ::= 8 -- Maximum number of neighbouring inter-frequency

 -- cells per carrier measured in RRC\_IDLE and RRC\_INACTIVE

maxCellNR-r17 INTEGER ::= 8 -- Maximum number of NR cells

maxCombIDC-r11 INTEGER ::= 128 -- Maximum number of reported UL CA or

 -- MR-DC combinations

maxCSI-IM-r11 INTEGER ::= 3 -- Maximum number of CSI-IM configurations

 -- (per carrier frequency)

maxCSI-IM-r12 INTEGER ::= 4 -- Maximum number of CSI-IM configurations

 -- (per carrier frequency)

minCSI-IM-r13 INTEGER ::= 5 -- Minimum number of CSI IM configurations from which

 -- REL-13 extension is used

maxCSI-IM-r13 INTEGER ::= 24 -- Maximum number of CSI-IM configurations

 -- (per carrier frequency)

maxCSI-IM-v1310 INTEGER ::= 20 -- Maximum number of additional CSI-IM configurations

 -- (per carrier frequency)

maxCSI-Proc-r11 INTEGER ::= 4 -- Maximum number of CSI processes (per carrier

 -- frequency)

maxCSI-RS-NZP-r11 INTEGER ::= 3 -- Maximum number of CSI RS resource

 -- configurations using non-zero Tx power

 -- (per carrier frequency)

minCSI-RS-NZP-r13 INTEGER ::= 4 -- Minimum number of CSI RS resource from which

 -- REL-13 extension is used

maxCSI-RS-NZP-r13 INTEGER ::= 24 -- Maximum number of CSI RS resource

 -- configurations using non-zero Tx power

 -- (per carrier frequency)

maxCSI-RS-NZP-v1310 INTEGER ::= 21 -- Maximum number of additional CSI RS resource

 -- configurations using non-zero Tx power

 -- (per carrier frequency)

maxCSI-RS-ZP-r11 INTEGER ::= 4 -- Maximum number of CSI RS resource

 -- configurations using zero Tx power(per carrier

 -- frequency)

maxCQI-ProcExt-r11 INTEGER ::= 3 -- Maximum number of additional periodic CQI

 -- configurations (per carrier frequency)

maxFreqUTRA-TDD-r10 INTEGER ::= 6 -- Maximum number of UTRA TDD carrier frequencies for

 -- which system information can be provided as

 -- redirection assistance

maxCellInter INTEGER ::= 16 -- Maximum number of neighbouring inter-frequency

 -- cells listed in SIB type 5

maxCellIntra INTEGER ::= 16 -- Maximum number of neighbouring intra-frequency

 -- cells listed in SIB type 4

maxCellListGERAN INTEGER ::= 3 -- Maximum number of lists of GERAN cells

maxCellMeas INTEGER ::= 32 -- Maximum number of entries in each of the

 -- cell lists in a measurement object

maxCellRAReportNR-r18 INTEGER ::= 8 -- Maximum number of unique Cells identities of RA

 -- reports included in the NR RA report container

maxCellReport INTEGER ::= 8 -- Maximum number of reported cells/CSI-RS resources

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

maxCellAllowedNR-r16 INTEGER ::= 16 -- Maximum number of allowlisted NR cells in SIB24

maxCondConfig-r16 INTEGER ::= 8 -- Maximum number of conditional configurations

maxConfigSPS-r14 INTEGER ::= 8 -- Maximum number of simultaneous SPS configurations

maxConfigSPS-r15 INTEGER ::= 6 -- Maximum number of simultaneous SPS configurations

 -- configured with SPS C-RNTI

maxCSI-RS-Meas-r12 INTEGER ::= 96 -- Maximum number of entries in the CSI-RS list

 -- in a measurement object

maxDRB INTEGER ::= 11 -- Maximum number of Data Radio Bearers

maxDRBExt-r15 INTEGER ::= 4 -- Maximum number of additional DRBs

maxDRB-r15 INTEGER ::= 15 -- Highest value of extended maximum number of DRBs

maxDS-Duration-r12 INTEGER ::= 5 -- Maximum number of subframes in a discovery signals

 -- occasion

maxDS-ZTP-CSI-RS-r12 INTEGER ::= 5 -- Maximum number of zero transmission power CSI-RS for

 -- a serving cell concerning discovery signals

maxEARFCN INTEGER ::= 65535 -- Maximum value of EUTRA carrier frequency

maxEARFCN-Plus1 INTEGER ::= 65536 -- Lowest value extended EARFCN range

maxEARFCN2 INTEGER ::= 262143 -- Highest value extended EARFCN range

maxEPDCCH-Set-r11 INTEGER ::= 2 -- Maximum number of EPDCCH sets

maxFBI INTEGER ::= 64 -- Maximum value of fequency band indicator

maxFBI-NR-r15 INTEGER ::= 1024 -- Highest value FBI range for NR.

maxFBI-Plus1 INTEGER ::= 65 -- Lowest value extended FBI range

maxFBI2 INTEGER ::= 256 -- Highest value extended FBI range

maxFeatureSets-r15 INTEGER ::= 256 -- Total number of feature sets (size of pool)

maxPerCC-FeatureSets-r15 INTEGER ::= 32 -- Total number of CC-specific feature sets

 -- (size of the pool)

maxFreq INTEGER ::= 8 -- Maximum number of carrier frequencies

maxFreq-1-r16 INTEGER ::= 7 -- Maximum number of carrier frequencies

maxFreqIDC-r11 INTEGER ::= 32 -- Maximum number of carrier frequencies that are

 -- affected by the IDC problems

maxFreqIdle-r15 INTEGER ::= 8 -- Maximum number of carrier frequencies for

 -- IDLE mode measurements configured by eNB

maxFreqMBMS-r11 INTEGER ::= 5 -- Maximum number of carrier frequencies for which an

 -- MBMS capable UE may indicate an interest

maxFreqNBIOT-r16 INTEGER ::= 8 -- Maximum number of NB-IoT carrier frequencies that can

 -- be provided as assistance information for inter-RAT

 -- cell selection

maxFreqNR-r15 INTEGER ::= 5 -- Maximum number of NR carrier frequencies for

 -- which a UE may provide measurement results upon

 -- NR SCG failure

maxFreqSL-NR-r16 INTEGER ::= 8 -- Maximum number of NR anchor carrier frequencies on

 -- which configurations for V2X sidelink communication

 -- are provided

maxFreqV2X-r14 INTEGER ::= 8 -- Maximum number of carrier frequencies for which V2X

 -- sidelink communication can be configured

maxFreqV2X-1-r14 INTEGER ::= 7 -- Highest index of frequencies

maxGERAN-SI INTEGER ::= 10 -- Maximum number of GERAN SI blocks that can be

 -- provided as part of NACC information

maxGNFG INTEGER ::= 16 -- Maximum number of GERAN neighbour freq groups

maxGWUS-Groups-1-r16 INTEGER ::= 31 -- Maximum number of groups minus one for each

 -- probability group

maxGWUS-Resources-r16 INTEGER ::= 4 -- Maximum number of GWUS resources for each group

maxGWUS-ProbThresholds-r16 INTEGER ::= 3 -- Maximum number of paging probability thresholds

maxIdleMeasCarriers-r15 INTEGER ::= 3 -- Maximum number of neighbouring inter-

 -- frequency carriers measured in RRC\_IDLE and RRC\_INACTIVE

maxIdleMeasCarriersExt-r16 INTEGER ::= 5 --Additional number of neighbouring inter-

 -- frequency carriers measured in RRC\_IDLE and RRC\_INACTIVE

maxIdleMeasCarriers-r16 INTEGER ::= 8 -- Maximum number of neighbouring inter-

 -- frequency/inter-RAT carriers measured in RRC\_IDLE and RRC\_INACTIVE

maxLCG-r13 INTEGER ::= 4 -- Maximum number of logical channel groups

maxLogMeasReport-r10 INTEGER ::= 520 -- Maximum number of logged measurement entries

 -- that can be reported by the UE in one message

maxLowerMSD-r18 INTEGER ::= 256 -- Maximum number of lower MSD capability sets for

 -- a victim band

maxLowerMSD-Info-r18 INTEGER ::= 64 -- Maximum number of lower MSD capability sets for

 -- a band combination

maxMBSFN-Allocations INTEGER ::= 8 -- Maximum number of MBSFN frame allocations with

 -- different offset

maxMBSFN-Area INTEGER ::= 8

maxMBSFN-Area-1 INTEGER ::= 7

maxMBMS-ServiceListPerUE-r13 INTEGER ::= 15 -- Maximum number of services which the UE can

 -- include in the MBMS interest indication

maxMeasId INTEGER ::= 32

maxMeasId-Plus1 INTEGER ::= 33

maxMeasId-r12 INTEGER ::= 64

maxMultiBands INTEGER ::= 8 -- Maximum number of additional frequency bands

 -- that a cell belongs to

maxMultiBandsNR-r15 INTEGER ::= 32 -- Maximum number of additional NR frequency bands

 -- that a cell belongs to

maxMultiBandsNR-1-r15 INTEGER ::= 31

maxNS-Pmax-r10 INTEGER ::= 8 -- Maximum number of NS and P-Max values per band

maxNAICS-Entries-r12 INTEGER ::= 8 -- Maximum number of supported NAICS combination(s)

maxNeighCell-r12 INTEGER ::= 8 -- Maximum number of neighbouring cells in NAICS

 -- configuration (per carrier frequency)

maxNeighCell-SCPTM-r13 INTEGER ::= 8 -- Maximum number of SCPTM neighbour cells

maxNrofPCI-PerSMTC-r16 INTEGER ::= 64 -- Maximum number of PCIs per SMTC

maxNrofS-NSSAI-r15 INTEGER ::= 8 -- Maximum number of S-NSSAI

maxObjectId INTEGER ::= 32

maxObjectId-Plus1-r13 INTEGER ::= 33

maxObjectId-r13 INTEGER ::= 64

maxP-a-PerNeighCell-r12 INTEGER ::= 3 -- Maximum number of power offsets for a neighbour cell

 -- in NAICS configuration

maxPageRec INTEGER ::= 16 --

maxPhysCellIdRange-r9 INTEGER ::= 4 -- Maximum number of physical cell identity ranges

maxPLMN-r11 INTEGER ::= 6 -- Maximum number of PLMNs

maxPLMN-1-r14 INTEGER ::= 5 -- Maximum number of PLMNs minus one

maxPLMN-r15 INTEGER ::= 8 -- Maximum number of PLMNs for RNA configuration

maxPLMN-NR-r15 INTEGER ::= 12 -- Maximum number of NR PLMNs

maxPNOffset INTEGER ::= 511 -- Maximum number of CDMA2000 PNOffsets

maxPMCH-PerMBSFN INTEGER ::= 15

maxPSSCH-TxConfig-r14 INTEGER ::= 16 -- Maximum number of PSSCH TX configurations

maxQuantSetsNR-r15 INTEGER ::= 2 -- Maximum number of NR quantity configuration sets

maxQCI-r13 INTEGER ::= 6 -- Maximum number of QCIs

maxRAT-Capabilities INTEGER ::= 8 -- Maximum number of interworking RATs (incl EUTRA)

maxRE-MapQCL-r11 INTEGER ::= 4 -- Maximum number of PDSCH RE Mapping configurations

 -- (per carrier frequency)

maxReportConfigId INTEGER ::= 32

maxReservationPeriod-r14 INTEGER ::= 16 -- Maximum number of resource reservation periodicities

 -- for sidelink V2X communication

maxRS-Index-r15 INTEGER ::= 64 -- Maximum number of RS indices

maxRS-Index-1-r15 INTEGER ::= 63 -- Highest value of RS index as used to identify

 -- RS index in RRM reports.

maxRS-IndexCellQual-r15 INTEGER ::= 16 -- Maximum number of RS indices averaged to derive

 -- cell quality for RRM.

maxRS-IndexReport-r15 INTEGER ::= 32 -- Maximum number of RS indices for RRM.

maxRSTD-Freq-r10 INTEGER ::= 3 -- Maximum number of frequency layers for RSTD

 -- measurement

maxSAI-MBMS-r11 INTEGER ::= 64 -- Maximum number of MBMS service area identities

 -- broadcast per carrier frequency

maxSat-r17 INTEGER ::= 4 -- Maximum number of satellites for E-UTRA

maxSatNR-r19 INTEGER ::= FFS -- Maximum number of NR satellites

maxSCell-r10 INTEGER ::= 4 -- Maximum number of SCells

maxSCell-r13 INTEGER ::= 31 -- Highest value of extended number range of SCells

maxSCellGroups-r15 INTEGER ::= 4 -- Maximum number of SCell common parameter groups

maxSC-MTCH-r13 INTEGER ::= 1023 -- Maximum number of SC-MTCHs in one cell

maxSC-MTCH-BR-r14 INTEGER ::= 128 -- Maximum number of SC-MTCHs in one cell for feMTC

maxSL-CommRxPoolNFreq-r13 INTEGER ::= 32 -- Maximum number of individual sidelink communication

 -- Rx resource pools on neighbouring freq

maxSL-CommRxPoolPreconf-v1310 INTEGER ::= 12 -- Maximum number of additional preconfigured

 -- sidelink communication Rx resource pool entries

maxSL-TxPool-r12Plus1-r13 INTEGER ::= 5 -- First additional individual sidelink

 -- Tx resource pool

maxSL-TxPool-v1310 INTEGER ::= 4 -- Maximum number of additional sidelink

 -- Tx resource pool entries

maxSL-TxPool-r13 INTEGER ::= 8 -- Maximum number of individual sidelink

 -- Tx resource pools

maxSL-CommTxPoolPreconf-v1310 INTEGER ::= 7 -- Maximum number of additional preconfigured

 -- sidelink Tx resource pool entries

maxSL-Dest-r12 INTEGER ::= 16 -- Maximum number of sidelink destinations

maxSL-DiscCells-r13 INTEGER ::= 16 -- Maximum number of cells with similar sidelink

 -- configurations

maxSL-DiscPowerClass-r12 INTEGER ::= 3 -- Maximum number of sidelink power classes

maxSL-DiscRxPoolPreconf-r13 INTEGER ::= 16 -- Maximum number of preconfigured sidelink

 -- discovery Rx resource pool entries

maxSL-DiscSysInfoReportFreq-r13 INTEGER ::= 8 -- Maximum number of frequencies to include in a

 -- SidelinkUEInformation for SI reporting

maxSL-DiscTxPoolPreconf-r13 INTEGER ::= 4 -- Maximum number of preconfigured sidelink

 -- discovery Tx resource pool entries

maxSL-GP-r13 INTEGER ::= 8 -- Maximum number of gap patterns that can be requested

 -- for a frequency or assigned

maxSL-PoolToMeasure-r14 INTEGER ::= 72 -- Maximum number of TX resource pools for CBR

 -- measurement and report

maxSL-Prio-r13 INTEGER ::= 8 -- Maximum number of entries in sidelink priority list

maxSL-RxPool-r12 INTEGER ::= 16 -- Maximum number of individual sidelink Rx resource pools

maxSL-Reliability-r15 INTEGER ::= 8 -- Maximum number of entries in sidelink reliability list

maxSL-SyncConfig-r12 INTEGER ::= 16 -- Maximum number of sidelink Sync configurations

maxSL-TF-IndexPair-r12 INTEGER ::= 64 -- Maximum number of sidelink Time Freq resource index

 -- pairs

maxSL-TxPool-r12 INTEGER ::= 4 -- Maximum number of individual sidelink Tx resource pools

maxSL-V2X-RxPool-r14 INTEGER ::= 16 -- Maximum number of RX resource pools for

 -- V2X sidelink communication

maxSL-V2X-RxPoolPreconf-r14 INTEGER ::= 16 -- Maximum number of RX resource pools for

 -- V2X sidelink communication

maxSL-V2X-TxPool-r14 INTEGER ::= 8 -- Maximum number of TX resource pools for

 -- V2X sidelink communication

maxSL-V2X-TxPoolPreconf-r14 INTEGER ::= 8 -- Maximum number of TX resource pools for

 -- V2X sidelink communication

maxSL-V2X-SyncConfig-r14 INTEGER ::= 16 -- Maximum number of sidelink Sync configurations

 -- for V2X sidelink communication

maxSL-V2X-CBRConfig-r14 INTEGER ::= 4 -- Maximum number of CBR range configurations

 -- for V2X sidelink communication congestion

 -- control

maxSL-V2X-CBRConfig-1-r14 INTEGER ::= 3

maxSL-V2X-TxConfig-r14 INTEGER ::= 64 -- Maximum number of TX parameter configurations

 -- for V2X sidelink communication congestion

 -- control

maxSL-V2X-TxConfig-1-r14 INTEGER ::= 63

maxSL-V2X-CBRConfig2-r14 INTEGER ::= 8 -- Maximum number of CBR range configurations in

 -- pre-configuration for V2X sidelink

 -- communication congestion control

maxSL-V2X-CBRConfig2-1-r14 INTEGER ::= 7

maxSL-V2X-TxConfig2-r14 INTEGER ::= 128 -- Maximum number of TX parameter

 -- configurations in pre-configuration for V2X

 -- sidelink communication congestion control

maxSL-V2X-TxConfig2-1-r14 INTEGER ::= 127

maxSTAG-r11 INTEGER ::= 3 -- Maximum number of STAGs

maxServCell-r10 INTEGER ::= 5 -- Maximum number of Serving cells

maxServCell-r13 INTEGER ::= 32 -- Highest value of extended number range of Serving cells

maxServCellNR-r15 INTEGER ::= 16 -- Maximum number of NR serving cells

maxServiceCount INTEGER ::= 16 -- Maximum number of MBMS services that can be included

 -- in an MBMS counting request and response

maxServiceCount-1 INTEGER ::= 15

maxSessionPerPMCH INTEGER ::= 29

maxSessionPerPMCH-1 INTEGER ::= 28

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

maxSIB-1 INTEGER ::= 31

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

maxSimultaneousBands-r10 INTEGER ::= 64 -- Maximum number of simultaneously aggregated bands

maxSubframePatternIDC-r11 INTEGER ::= 8 -- Maximum number of subframe reservation patterns

 -- that the UE can simultaneously recommend to the

 -- E-UTRAN for use.

maxTAC-r17 INTEGER ::= 12 -- Maximum number of Tracking Area Codes

 -- broadcast in a cell

maxTrafficPattern-r14 INTEGER ::= 8 -- Maximum number of periodical traffic patterns

 -- that the UE can simultaneously report to the

 -- E-UTRAN.

maxUTRA-FDD-Carrier INTEGER ::= 16 -- Maximum number of UTRA FDD carrier frequencies

maxUTRA-TDD-Carrier INTEGER ::= 16 -- Maximum number of UTRA TDD carrier frequencies

maxWayPoint-r15 INTEGER ::= 20 -- Maximum number of flight path information waypoints

maxWLAN-Id-r12 INTEGER ::= 16 -- Maximum number of WLAN identifiers

maxWLAN-Bands-r13 INTEGER ::= 8 -- Maximum number of WLAN bands

maxWLAN-Id-r13 INTEGER ::= 32 -- Maximum number of WLAN identifiers

maxWLAN-Channels-r13 INTEGER ::= 16 -- maximum number of WLAN channels used in

-- WLAN-CarrierInfo

maxWLAN-CarrierInfo-r13 INTEGER ::= 8 -- Maximum number of WLAN Carrier Information

maxWLAN-Id-Report-r14 INTEGER ::= 32 -- Maximum number of WLAN IDs to report

maxWLAN-Name-r15 INTEGER ::= 4 -- Maximum number of WLAN name

-- ASN1STOP

NOTE: The value of maxDRB aligns with SA2.

### – End of EUTRA-RRC-Definitions

-- ASN1START

END

-- ASN1STOP

|  |
| --- |
| End of change |