**3GPP TSG-RAN2 Meeting #109bis-e**  ***DRAFT R2-20xx***

**Online, 20-30 April, 2020**

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| --- |
| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **36.331** | **CR** | **4239** | **rev** | **1** | **Current version:** | **16.0.0** |  |
|  |
| *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:***  | Miscellaneous Rel-16 eMTC corrections |
|  |  |
| ***Source to WG:*** | Qualcomm Incorporated |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | LTE\_eMTC5-Core |  | ***Date:*** | 2020-04-09 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-16 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)Rel-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
|  |  |
| ***Reason for change:*** | Miscellanous correction for Rel-16 eMTC enhancements to RRC specification. |
|  |  |
| ***Summary of change:*** | * TBD
* Also addresses RIL [Q603], [H157], [H115], [Z605]
* Changes from R2-2003138 (RSS) are included
 |
|  |  |
| ***Consequences if not approved:*** | Rel-16 eMTC enhancements will be incomplete from RRC specifications. |
|  |  |
| ***Clauses affected:*** | TBD |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS 36.300 CR 1267TS 36.302 CR 1203TS 36.304 CR 0781TS 36.306 CR 1735TS 36.321 CR 1465TS 36.331 CR 4191 |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | R2-2002849: initial version submitted to RAN2#109bis-eR2-2003923: this version (updated during RAN2#109bis-e) |

First change

#### 5.3.3.4 Reception of the *RRCConnectionSetup* by the UE

NOTE 1: Prior to this, lower layer signalling is used to allocate a C-RNTI. For further details see TS 36.321 [6];

The UE shall:

1> except for BL UE or UE in CE connected to 5GC, if the *RRCConnectionSetup* is received in response to an *RRCConnectionResumeRequest* from a suspended RRC connection:

2> if the UE is resuming an RRC connection after early security reactivation in accordance with conditions in 5.3.3.18:

3> discard any current AS security context including the KRRCenc key, the KRRCint key, the KUPint key and the KUPenc key;

2> release all radio resources, including release of the RLC entity, the MAC configuration and the associated PDCP entity for all established or suspended RBs, except for SRB0;

2> discard the stored UE AS context and *resumeIdentity*;

2> if stored, discard the stored *nextHopChainingCount*;

2> if stored, discard the stored *drb-ContinueROHC*;

2> indicate to upper layers fallback of the RRC connection;

1> if the *RRCConnectionSetup* is received in response to an *RRCConnectionResumeRequest* from RRC\_INACTIVE:

2> stop T380 if running;

2> discard the stored UE Inactive AS context;

2> release *rrc-InactiveConfig*, if configured;

1> for BL UE or UE in CE connected to 5GC, if the *RRCConnectionSetup* is received in response to an *RRCConnectionResumeRequest* from a suspended RRC connection:

2> discard the stored UE AS context and *resumeIdentity*;

2> if stored, discard the stored *nextHopChainingCount*;

2> if stored, discard the stored *drb-ContinueROHC*;

1> if the *RRCConnectionSetup* is received in response to an *RRCConnectionResumeRequest* from RRC\_INACTIVE; or

1> for BL UE or UE in CE connected to 5GC, if the *RRCConnectionSetup* is received in response to an *RRCConnectionResumeRequest* from a suspended RRC connection:

2> discard any current AS security context including the KRRCenc key, the KRRCint key, the KUPint key and the KUPenc key;

2> release radio resources for all established RBs except SRB0, including release of the RLC entities, of the associated PDCP entities and of SDAP entities;

2> release the RRC configuration except for the default L1 parameter values, default MAC main configuration and CCCH;

2> apply the default NR PDCP configuration as specified in TS 38.331 [82], clause 9.2.1.1 for SRB1;

2> use NR PDCP for all subsequent messages received and sent by the UE via SRB1;

2> indicate to upper layers fallback of the RRC connection;

1> if the *RRCConnectionSetup* is received in response to an *RRCConnectionResumeRequest* or *RRCEarlyDataRequest* for transmission using PUR:

2> if *newUE-Identity* is included:

3> apply the value of the *newUE-Identity* as the C-RNTI;

2> else:

3> apply the value of the *pur-RNTI* as the C-RNTI;

1> perform the radio resource configuration procedure in accordance with the received *radioResourceConfigDedicated* and as specified in 5.3.10;

1> if stored, discard the cell reselection priority information provided by the *idleModeMobilityControlInfo* or inherited from another RAT;

1> if stored, discard the dedicated offset provided by the *redirectedCarrierOffsetDedicated*;

1> stop timer T300;

1> if T302 is running:

2> stop timer T302;

2> if the UE is connected to 5GC:

3> perform the actions as specified in 5.3.16.4;

1> stop timer T303, if running;

1> stop timer T305, if running;

1> stop timer T306, if running;

1> stop timer T308, if running;

1> perform the actions as specified in 5.3.3.7;

1> stop timer T320, if running;

1> stop timer T350, if running;

1> perform the actions as specified in 5.6.12.4;

1> release *rclwi-Configuration*, if configured, as specified in 5.6.16.2;

1> stop timer T360, if running;

1> stop timer T322, if running;

1> stop timer T331, if running;

1> forward the *dedicatedInfoNAS,* if received, to the upper layers;

1> if T309 is running:

2> stop timer T309 for all access categories;

2> perform the actions as specified in 5.3.16.4.

1> enter RRC\_CONNECTED;

1> stop the cell re-selection procedure;

1> consider the current cell to be the PCell;

1> set the content of *RRCConnectionSetup**Complete* message as follows:

2> if the *RRCConnectionSetup* is received in response to an *RRCConnectionResumeRequest*:

3> if upper layers provide an S-TMSI:

4> set the *s-TMSI* to the value received from upper layers;

3> else if upper layers provide a 5G-S-TMSI:

4> if the UE is a NB-IoT UE:

5> set the *ng-5G-S-TMSI* to the value received from upper layers;

4> else:

5> set the *ng-5G-S-TMSI-Bits* to *ng-5G-S-TMSI* with the value received from upper layers;

2> else if upper layers provide a 5G-S-TMSI:

3> except for NB-IoT, set the *ng-5G-S-TMSI-Bits* to *ng-5G-S-TMSI-Part2* to the leftmost 8 bits of 5G-S-TMSI received from upper layers;

2> set the *selectedPLMN-Identity* to the PLMN selected by upper layers (see TS 23.122 [11], TS 24.301 [35] for E-UTRA/EPC and TS 24.501 [95] for E-UTRA/5GC) from the PLMN(s) included in the *plmn-IdentityList* in *SystemInformationBlockType1* (or *SystemInformationBlockType1-NB* in NB-IoT);

2> if upper layers provide the 'Registered MME', include and set the *registeredMME* as follows:

3> if the PLMN identity of the 'Registered MME' is different from the PLMN selected by the upper layers:

4> include the *plmnIdentity* in the *registeredMME* and set it to the value of the PLMN identity in the 'Registered MME' received from upper layers;

3> set the *mmegi* andthe *mmec* to the value received from upper layers;

2> if upper layers provided the 'Registered MME':

3> include and set the *gummei-Type* to the value provided by the upper layers;

2> if upper layers provide the 'Registered AMF', include and set the *registeredAMF* as follows:

3> if the PLMN identity of the 'Registered AMF' is different from the PLMN selected by the upper layers:

4> include the *plmnIdentity* in the *registeredAMF* and set it to the value of the PLMN identity in the 'Registered AMF' received from upper layers;

3> set the *amf-Identifier* to AMF Identifier of the 'Registered AMF' received from upper layers;

2> if upper layers provided the 'Registered AMF':

3> include and set the *guami-Type* to the value provided by the upper layers;

2> if upper layers provide one or more S-NSSAI (see TS 23.003 [27]):

3> include the *s-NSSAI-list* and set the content to the values provided by the upper layers;

2> if the UE supports CIoT EPS optimisation(s):

3> include a*ttachWithoutPDN-Connectivity* if received from upper layers;

3> include *up-CIoT-EPS-Optimisation* if received from upper layers;

3> except for NB-IoT, include *cp-CIoT-EPS-Optimisation* if received from upper layers;

2> if the UE supports CIoT 5GS optimisation(s):

3> for NB-IoT, include *ng-U-DataTransfer* if received from upper layers;

3> except for NB-IoT, include *cp-CIoT-5GS-Optimisatoin* if received from upper layers;

2> if connecting as an RN:

3> include the *rn-SubframeConfigReq*;

2> if the *RRCConnectionSetup* is received in response to *RRCEarlyDataRequest*:

3> set the *dedicatedInfoNAS* to a zero-length octet string;

2> else:

3> set the *dedicatedInfoNAS* to include the information received from upper layers;

2> if the UE is connected to EPC:

3> except for NB-IoT:

4> if the UE has radio link failure or handover failure information available in *VarRLF-Report* and if the RPLMN is included in *plmn-IdentityList* stored in *VarRLF-Report*:

5> include *rlf-InfoAvailable*;

4> if the UE has MBSFN logged measurements available for E-UTRA and if the RPLMN is included in *plmn-IdentityList* stored in *VarLogMeasReport*:

5> include *logMeasAvailableMBSFN*;

4> else if the UE has logged measurements available for E-UTRA and if the RPLMN is included in *plmn-IdentityList* stored in *VarLogMeasReport*:

5> include *logMeasAvailable*;

4> if the UE has Bluetooth logged measurements available and if the RPLMN is included in *plmn-IdentityList* stored in *VarLogMeasReport*:

5> include *logMeasAvailableBT*;

4> if the UE has WLAN logged measurements available and if the RPLMN is included in *plmn-IdentityList* stored in *VarLogMeasReport*:

5> include *logMeasAvailableWLAN*;

4> if the UE has connection establishment failure information available in *VarConnEstFailReport* and if the RPLMN is equal to *plmn-Identity* stored in *VarConnEstFailReport*:

5> include *connEstFailInfoAvailable*;

4> include the *mobilityState* and set it to the mobility state (as specified in TS 36.304 [4]) of the UE just prior to entering RRC\_CONNECTED state;

4> if the UE has flight path information available:

5> include *flightPathInfoAvailable*;

3> for NB-IoT:

4> if the UE has radio link failure information available in *VarRLF-Report-NB* and if the RPLMN is included in *plmn-IdentityList* stored in *VarRLF-Report*:

5> include *rlf-InfoAvailable*;

4> if the UE has ANR measurements results available in *VarANR-MeasReport-NB* and if the RPLMN is included in *plmn-IdentityList* stored in *VarANR-MeasReport-NB*:

5> include *anr-InfoAvailable*;

3> include *dcn-ID* if a DCN-ID value (see TS 23.401 [41]) is received from upper layers;

2> else (i.e. the UE is connected to 5GC):

3> if the UE is a BL UE:

4> include *lte-M*;

2> except for NB-IoT:

3> if the UE supports storage of mobility history information and the UE has mobility history information available in *VarMobilityHistoryReport*:

4> include the *mobilityHistoryAvail*;

3> if the SIB2 contains *idleModeMeasurements*, and the UE has idle/inactive measurement information concerning cells other than the PCell available in *VarMeasIdleReport*:

4> include the *idleMeasAvailable*;

3> if upper layers indicate that access to RLOS is initiated (see TS 23.401 [41] subclause 4.3.8.3):

4> set *rlos-Request* to *true*;

2> if UE needs UL gaps during continuous uplink transmission:

3> include *ue-CE-NeedULGaps*;

2> for NB-IoT:

3> if the UE supports serving cell idle mode measurements reporting and *servingCellMeasInfo* is present in *SystemInformationBlockType2-NB*:

4> set the *measResultServCell* to include the measurements of the serving cell;

 NOTE 2: The UE includes the latest results of the serving cell measurements as used for cell selection/ reselection evaluation, which are performed in accordance with the performance requirements as specified in TS 36.133 [16].

2> if connecting as an IAB-node:

3> include *iab-NodeIndication;*

1> submit the *RRCConnectionSetupComplete* message to lower layers for transmission;

1> the procedure ends.

Next change

Next change

### 6.2.2 Message definitions

<<unchanged text skipped>>

#### *– PURConfigurationRequest*

The *PURConfigurationRequest* message is used by BL UE or UE in CE to indicate to the E-UTRAN that the UE is interested to be configured with PUR and provide PUR related information to E-UTRAN.

Signalling radio bearer: SRB1

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to E‑UTRAN

*PURConfigurationRequest message*

-- ASN1START

PURConfigurationRequest-r16 ::= SEQUENCE {

 criticalExtensions CHOICE {

 purConfigurationRequest PURConfigurationRequest-r16-IEs,

 criticalExtensionsFuture SEQUENCE {}

 }

}

PURConfigurationRequest-r16-IEs ::= SEQUENCE {

 pur-ConfigRequest-r16 CHOICE {

 pur-ReleaseRequest NULL,

 pur-SetupRequest SEQUENCE {

 requestedNumOccasions-r16 ENUMERATED {one, infinite},

 requestedPeriodicity-r16 ENUMERATED {n8, n16, n32, n64, n128, n256, n512,

 n1024, n2048, n4096, n8192, spare5},

 requestedTBS-r16 ENUMERATED {b328, b408, b504, b600, b712, b808,

 b936, b1000, b1352, b1544, b1736, b1992,

 b2152, b2344, b2792, b2984},

 l1-ACK-r16 ENUMERATED {true} OPTIONAL,

 requestedTimeOffset-r16 TypeFFS OPTIONAL,

 ...

 }

 } OPTIONAL,

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- ASN1STOP

| *PURConfigurationRequest* field descriptions |
| --- |
| ***l1-ACK***Indicates UE preference that RRC response message for acknowledging the transmission using PUR is not needed, i.e. using L1 ACK to conclude the UL transmissions using PUR and move the UE to RRC\_IDLE is sufficient. |
| ***requestedNumOccasions***Indicates the requested number of PUR grant occasions. Value *one* corresponds to one occasion and value *infinite* corresponds to infinite occasions. |
| ***requestedPeriodicity***Indicates the requested periodicity for the PUR expressed as multiple of 10.24s. Value n8 indicates 8, value n16 inidcates 16 and so on. Actual value = indicated value \* 10.24s. |
| ***requestedTBS***Indicates the requested TBS for the PUR. b328 corresponds to 328 bits, b408 corresponds to 408 bits and so on. The maximum requested TBS is limited to the UL TBS size supported by the UE. |
| ***requestedTimeOffset***Indicates the requested time offset for the first PUR occasion, i.e. the requested time gap from transmission of PUR request until the first PUR occasion.Editor's Note: Exact wording and type FFS. |

<<unchanged text skipped>>

#### – *RRCConnectionRelease*

The *RRCConnectionRelease* message is used to command the release of an RRC connection, or to complete an UP-EDT procedure.

Signalling radio bearer: SRB1

RLC-SAP: AM

Logical channel: DCCH

Direction: E‑UTRAN to UE

*RRCConnectionRelease message*

-- ASN1START

RRCConnectionRelease ::= SEQUENCE {

 rrc-TransactionIdentifier RRC-TransactionIdentifier,

 criticalExtensions CHOICE {

 c1 CHOICE {

 rrcConnectionRelease-r8 RRCConnectionRelease-r8-IEs,

 spare3 NULL, spare2 NULL, spare1 NULL

 },

 criticalExtensionsFuture SEQUENCE {}

 }

}

RRCConnectionRelease-r8-IEs ::= SEQUENCE {

 releaseCause ReleaseCause,

 redirectedCarrierInfo RedirectedCarrierInfo OPTIONAL, -- Need ON

 idleModeMobilityControlInfo IdleModeMobilityControlInfo OPTIONAL, -- Need OP

 nonCriticalExtension RRCConnectionRelease-v890-IEs OPTIONAL

}

RRCConnectionRelease-v890-IEs ::= SEQUENCE {

 lateNonCriticalExtension OCTET STRING (CONTAINING RRCConnectionRelease-v9e0-IEs) OPTIONAL,

 nonCriticalExtension RRCConnectionRelease-v920-IEs OPTIONAL

}

-- Late non critical extensions

RRCConnectionRelease-v9e0-IEs ::= SEQUENCE {

 redirectedCarrierInfo-v9e0 RedirectedCarrierInfo-v9e0 OPTIONAL, -- Cond NoRedirect-r8

 idleModeMobilityControlInfo-v9e0 IdleModeMobilityControlInfo-v9e0 OPTIONAL, -- Cond IdleInfoEUTRA

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- Regular non critical extensions

RRCConnectionRelease-v920-IEs ::= SEQUENCE {

 cellInfoList-r9 CHOICE {

 geran-r9 CellInfoListGERAN-r9,

 utra-FDD-r9 CellInfoListUTRA-FDD-r9,

 utra-TDD-r9 CellInfoListUTRA-TDD-r9,

 ...,

 utra-TDD-r10 CellInfoListUTRA-TDD-r10

 } OPTIONAL, -- Cond Redirection

 nonCriticalExtension RRCConnectionRelease-v1020-IEs OPTIONAL

}

RRCConnectionRelease-v1020-IEs ::= SEQUENCE {

 extendedWaitTime-r10 INTEGER (1..1800) OPTIONAL, -- Need ON

 nonCriticalExtension RRCConnectionRelease-v1320-IEs OPTIONAL

}

RRCConnectionRelease-v1320-IEs::= SEQUENCE {

 resumeIdentity-r13 ResumeIdentity-r13 OPTIONAL, -- Need OR

 nonCriticalExtension RRCConnectionRelease-v1530-IEs OPTIONAL

}

RRCConnectionRelease-v1530-IEs ::= SEQUENCE {

 drb-ContinueROHC-r15 ENUMERATED {true} OPTIONAL, -- Cond UP-EDT

 nextHopChainingCount-r15 NextHopChainingCount OPTIONAL, -- Cond EarlySec

 measIdleConfig-r15 MeasIdleConfigDedicated-r15 OPTIONAL, -- Need ON

 rrc-InactiveConfig-r15 RRC-InactiveConfig-r15 OPTIONAL, -- Need OR

 cn-Type-r15 ENUMERATED {epc,fivegc} OPTIONAL, -- Need OR

 nonCriticalExtension RRCConnectionRelease-v1540-IEs OPTIONAL

}

RRCConnectionRelease-v1540-IEs ::= SEQUENCE {

 waitTime INTEGER (1..16) OPTIONAL, -- Cond 5GC

 nonCriticalExtension RRCConnectionRelease-v16xy-IEs OPTIONAL

}

RRCConnectionRelease-v16xy-IEs ::= SEQUENCE {

 resumeIdentity-r16 I-RNTI-r15 OPTIONAL, -- Need OR

 pur-Config-r16 CHOICE {

 release NULL,

 setup PUR-Config-r16

 } OPTIONAL, -- Need ON

 rrc-InactiveConfig-v16xy RRC-InactiveConfig-v16xy OPTIONAL, -- Cond BLCE-IDLEeDRX

 releaseIdleMeasConfig ENUMERATED {true} OPTIONAL, -- Need ON

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

ReleaseCause ::= ENUMERATED {loadBalancingTAUrequired,

 other, cs-FallbackHighPriority-v1020, rrc-Suspend-v1320}

RedirectedCarrierInfo ::= CHOICE {

 eutra ARFCN-ValueEUTRA,

 geran CarrierFreqsGERAN,

 utra-FDD ARFCN-ValueUTRA,

 utra-TDD ARFCN-ValueUTRA,

 cdma2000-HRPD CarrierFreqCDMA2000,

 cdma2000-1xRTT CarrierFreqCDMA2000,

 ...,

 utra-TDD-r10 CarrierFreqListUTRA-TDD-r10,

 nr-r15 CarrierInfoNR-r15

}

RedirectedCarrierInfo-v9e0 ::= SEQUENCE {

 eutra-v9e0 ARFCN-ValueEUTRA-v9e0

}

RRC-InactiveConfig-r15::= SEQUENCE {

 fullI-RNTI-r15 I-RNTI-r15,

 shortI-RNTI-r15 ShortI-RNTI-r15,

 ran-PagingCycle-r15 ENUMERATED { rf32, rf64, rf128, rf256} OPTIONAL, --Need OR

 ran-NotificationAreaInfo-r15 RAN-NotificationAreaInfo-r15 OPTIONAL, --Need ON

 periodic-RNAU-timer-r15 ENUMERATED {min5, min10, min20, min30, min60,

 min120, min360, min720} OPTIONAL, --Need OR

 nextHopChainingCount-r15 NextHopChainingCount OPTIONAL, --Cond INACTIVE

 dummy SEQUENCE{} OPTIONAL

}

RRC-InactiveConfig-v16xy::= SEQUENCE {

 ran-PagingCycle-v16xy ENUMERATED {rf512, rf1024}

}

RAN-NotificationAreaInfo-r15 ::= CHOICE {

 cellList-r15 PLMN-RAN-AreaCellList-r15,

 ran-AreaConfigList-r15 PLMN-RAN-AreaConfigList-r15

}

PLMN-RAN-AreaCellList-r15 ::= SEQUENCE (SIZE (1..maxPLMN-r15)) OF PLMN-RAN-AreaCell-r15

PLMN-RAN-AreaCell-r15 ::= SEQUENCE {

 plmn-Identity-r15 PLMN-Identity OPTIONAL,

 ran-AreaCells-r15 SEQUENCE (SIZE (1..32)) OF CellIdentity

}

PLMN-RAN-AreaConfigList-r15 ::= SEQUENCE (SIZE (1..maxPLMN-r15)) OF PLMN-RAN-AreaConfig-r15

PLMN-RAN-AreaConfig-r15 ::= SEQUENCE {

 plmn-Identity-r15 PLMN-Identity OPTIONAL,

 ran-Area-r15 SEQUENCE (SIZE (1..16)) OF RAN-AreaConfig-r15

}

RAN-AreaConfig-r15 ::= SEQUENCE {

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

 ran-AreaCodeList-r15 SEQUENCE (SIZE (1..32)) OF RAN-AreaCode-r15 OPTIONAL --Need OR

}

CarrierFreqListUTRA-TDD-r10 ::= SEQUENCE (SIZE (1..maxFreqUTRA-TDD-r10)) OF ARFCN-ValueUTRA

IdleModeMobilityControlInfo ::= SEQUENCE {

 freqPriorityListEUTRA FreqPriorityListEUTRA OPTIONAL, -- Need ON

 freqPriorityListGERAN FreqsPriorityListGERAN OPTIONAL, -- Need ON

 freqPriorityListUTRA-FDD FreqPriorityListUTRA-FDD OPTIONAL, -- Need ON

 freqPriorityListUTRA-TDD FreqPriorityListUTRA-TDD OPTIONAL, -- Need ON

 bandClassPriorityListHRPD BandClassPriorityListHRPD OPTIONAL, -- Need ON

 bandClassPriorityList1XRTT BandClassPriorityList1XRTT OPTIONAL, -- Need ON

 t320 ENUMERATED {

 min5, min10, min20, min30, min60, min120, min180,

 spare1} OPTIONAL, -- Need OR

 ...,

 [[ freqPriorityListExtEUTRA-r12 FreqPriorityListExtEUTRA-r12 OPTIONAL -- Need ON

 ]],

 [[ freqPriorityListEUTRA-v1310 FreqPriorityListEUTRA-v1310 OPTIONAL, -- Need ON

 freqPriorityListExtEUTRA-v1310 FreqPriorityListExtEUTRA-v1310 OPTIONAL -- Need ON

 ]],

 [[ freqPriorityListNR-r15 FreqPriorityListNR-r15 OPTIONAL -- Need ON

 ]]

}

IdleModeMobilityControlInfo-v9e0 ::= SEQUENCE {

 freqPriorityListEUTRA-v9e0 SEQUENCE (SIZE (1..maxFreq)) OF FreqPriorityEUTRA-v9e0

}

FreqPriorityListEUTRA ::= SEQUENCE (SIZE (1..maxFreq)) OF FreqPriorityEUTRA

FreqPriorityListExtEUTRA-r12 ::= SEQUENCE (SIZE (1..maxFreq)) OF FreqPriorityEUTRA-r12

FreqPriorityListEUTRA-v1310 ::= SEQUENCE (SIZE (1..maxFreq)) OF FreqPriorityEUTRA-v1310

FreqPriorityListExtEUTRA-v1310 ::= SEQUENCE (SIZE (1..maxFreq)) OF FreqPriorityEUTRA-v1310

FreqPriorityEUTRA ::= SEQUENCE {

 carrierFreq ARFCN-ValueEUTRA,

 cellReselectionPriority CellReselectionPriority

}

FreqPriorityEUTRA-v9e0 ::= SEQUENCE {

 carrierFreq-v9e0 ARFCN-ValueEUTRA-v9e0 OPTIONAL -- Cond EARFCN-max

}

FreqPriorityEUTRA-r12 ::= SEQUENCE {

 carrierFreq-r12 ARFCN-ValueEUTRA-r9,

 cellReselectionPriority-r12 CellReselectionPriority

}

FreqPriorityEUTRA-v1310 ::= SEQUENCE {

 cellReselectionSubPriority-r13 CellReselectionSubPriority-r13 OPTIONAL -- Need ON

}

FreqPriorityListNR-r15 ::= SEQUENCE (SIZE (1..maxFreq)) OF FreqPriorityNR-r15

FreqPriorityNR-r15 ::= SEQUENCE {

 carrierFreq-r15 ARFCN-ValueNR-r15,

 cellReselectionPriority-r15 CellReselectionPriority,

 cellReselectionSubPriority-r15 CellReselectionSubPriority-r13 OPTIONAL -- Need OR

}

FreqsPriorityListGERAN ::= SEQUENCE (SIZE (1..maxGNFG)) OF FreqsPriorityGERAN

FreqsPriorityGERAN ::= SEQUENCE {

 carrierFreqs CarrierFreqsGERAN,

 cellReselectionPriority CellReselectionPriority

}

FreqPriorityListUTRA-FDD ::= SEQUENCE (SIZE (1..maxUTRA-FDD-Carrier)) OF FreqPriorityUTRA-FDD

FreqPriorityUTRA-FDD ::= SEQUENCE {

 carrierFreq ARFCN-ValueUTRA,

 cellReselectionPriority CellReselectionPriority

}

FreqPriorityListUTRA-TDD ::= SEQUENCE (SIZE (1..maxUTRA-TDD-Carrier)) OF FreqPriorityUTRA-TDD

FreqPriorityUTRA-TDD ::= SEQUENCE {

 carrierFreq ARFCN-ValueUTRA,

 cellReselectionPriority CellReselectionPriority

}

BandClassPriorityListHRPD ::= SEQUENCE (SIZE (1..maxCDMA-BandClass)) OF BandClassPriorityHRPD

BandClassPriorityHRPD ::= SEQUENCE {

 bandClass BandclassCDMA2000,

 cellReselectionPriority CellReselectionPriority

}

BandClassPriorityList1XRTT ::= SEQUENCE (SIZE (1..maxCDMA-BandClass)) OF BandClassPriority1XRTT

BandClassPriority1XRTT ::= SEQUENCE {

 bandClass BandclassCDMA2000,

 cellReselectionPriority CellReselectionPriority

}

CellInfoListGERAN-r9 ::= SEQUENCE (SIZE (1..maxCellInfoGERAN-r9)) OF CellInfoGERAN-r9

CellInfoGERAN-r9 ::= SEQUENCE {

 physCellId-r9 PhysCellIdGERAN,

 carrierFreq-r9 CarrierFreqGERAN,

 systemInformation-r9 SystemInfoListGERAN

}

CarrierInfoNR-r15 ::= SEQUENCE {

 carrierFreq-r15 ARFCN-ValueNR-r15,

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

 smtc-r15 MTC-SSB-NR-r15 OPTIONAL -- Need OP

}

CellInfoListUTRA-FDD-r9 ::= SEQUENCE (SIZE (1..maxCellInfoUTRA-r9)) OF CellInfoUTRA-FDD-r9

CellInfoUTRA-FDD-r9 ::= SEQUENCE {

 physCellId-r9 PhysCellIdUTRA-FDD,

 utra-BCCH-Container-r9 OCTET STRING

}

CellInfoListUTRA-TDD-r9 ::= SEQUENCE (SIZE (1..maxCellInfoUTRA-r9)) OF CellInfoUTRA-TDD-r9

CellInfoUTRA-TDD-r9 ::= SEQUENCE {

 physCellId-r9 PhysCellIdUTRA-TDD,

 utra-BCCH-Container-r9 OCTET STRING

}

CellInfoListUTRA-TDD-r10 ::= SEQUENCE (SIZE (1..maxCellInfoUTRA-r9)) OF CellInfoUTRA-TDD-r10

CellInfoUTRA-TDD-r10 ::= SEQUENCE {

 physCellId-r10 PhysCellIdUTRA-TDD,

 carrierFreq-r10 ARFCN-ValueUTRA,

 utra-BCCH-Container-r10 OCTET STRING

}

-- ASN1STOP

| *RRCConnectionRelease* field descriptions |
| --- |
| ***carrierFreq or bandClass***The carrier frequency (UTRA, E-UTRA, and NR) and band class (HRPD and 1xRTT) for which the associated cellReselectionPriority is applied. For NR, the *ARFCN-ValueNR* corresponds to a GSCN value as specified in TS 38.101 [85]. |
| ***carrierFreqs***The list of GERAN carrier frequencies organised into one group of GERAN carrier frequencies. |
| ***cellInfoList***Used to provide system information of one or more cells on the redirected inter-RAT carrier frequency. The system information can be used if, upon redirection, the UE selects an inter-RAT cell indicated by the *physCellId* and *carrierFreq* (GERAN and UTRA TDD) or by the *physCellId* (other RATs). The choice shall match the *redirectedCarrierInfo*. In particular, E-UTRAN only applies value *utra-TDD-r10* in case *redirectedCarrierInfo* is set to *utra-TDD-r10*. |
| ***cellList***Indicates a list of cells configured as RAN area. For each element, in the absence of *plmn-Identity* the UE considers the registered PLMN. Total number of cells across all PLMNs does not exceed 32. |
| ***cn-Type***The*cn-Type* is used to indicate that the UE is redirected from 5GC to EPC or 5GC when*redirectedCarrierInfo* indicates E-UTRA frequency. |
| ***drb-ContinueROHC***This field indicates whether to continue or reset the header compression protocol context for the DRBs configured with the header compression protocol. Presence of the field indicates that the header compression protocol context continues when UE initiates UP-EDT in the same cell, while absence indicates that the header compression protocol context is reset.  |
| ***dummy***This field is not used in the specification. If received it shall be ignored by the UE. |
| ***extendedWaitTime***Value in seconds for the wait time for Delay Tolerant access requests. |
| ***freqPriorityListX***Provides a cell reselection priority for each frequency, by means of separate lists for each RAT (including E-UTRA). The UE shall be able to store at least 3 occurrences of *FreqsPriorityGERAN*. If E-UTRAN includes *freqPriorityListEUTRA-v9e0* and/or *freqPriorityListEUTRA-v1310* it includes the same number of entries, and listed in the same order, as in *freqPriorityListEUTRA* (i.e. without suffix). Field *freqPriorityListExt* includes additional neighbouring inter-frequencies, i.e. extending the size of the inter-frequency carrier list using the general principles specified in 5.1.2. EUTRAN only includes *freqPriorityListExtEUTRA* if *freqPriorityListEUTRA* (i.e without suffix) includes *maxFreq* entries. If E-UTRAN includes *freqPriorityListExtEUTRA-v1310* it includes the same number of entries, and listed in the same order, as in *freqPriorityListExtEUTRA-r12.* |
| ***idleModeMobilityControlInfo***Provides dedicated cell reselection priorities. Used for cell reselection as specified in TS 36.304 [4]. For E-UTRA and UTRA frequencies, a UE that supports multi-band cells for the concerned RAT considers the dedicated priorities to be common for all overlapping bands (i.e. regardless of the ARFCN that is used). |
| ***measIdleConfig***Indicates a one-shot measurement configuration to be stored and used by the UE while in RRC\_IDLE or RRC\_INACTIVE. |
| ***periodic-RNAU-timer***Refers to the timer that triggers the periodic RNAU procedure in UE. Value min5 corresponds to 5 minutes, value min10 corresponds to 10 minutes and so on. |
| ***ran-Area***Indicates whether TA code(s) or RAN area code(s) are used for the RAN notification area. The network uses only TA code(s) or RAN area code(s) to configure a UE. Total number of TACs across all PLMNs does not exceed 16. Total number of RAN-AreaCode across all PLMNs does not exceed 32. |
| ***ran-NotificationAreaInfo***Network ensures that the UE in RRC\_INACTIVE always has a valid *ran-NotificationAreaInfo*. |
| ***ranAreaConfigList***Indicates a list of RAN area codes or RA code(s) as RAN area. For each element, in the absence of *plmn-Identity* the UE considers the registered PLMN. |
| ***ran-pagingCycle***Refers to the UE specific cycle for RAN-initiated paging. Value rf32 corresponds to 32 radio frames, rf64 corresponds to 64 radio frames and so on. |
| ***redirectedCarrierInfo***The r*edirectedCarrierInfo* indicates a carrier frequency (downlink for FDD) and is used to redirect the UE to an E‑UTRA or an inter-RAT carrier frequency, by means of the cell selection upon leaving RRC\_CONNECTED as specified in TS 36.304 [4]. The value *geran* can only be included after successful security activation when UE is connected to 5GC. |
| ***releaseCause***The *releaseCause* is used to indicate the reason for releasing the RRC Connection. The cause value *cs-FallbackHighPriority* is only applicable when *redirectedCarrierInfo* is present with the value set to *utra-FDD,* *utra-TDD* or *utra-TDD-r10*. E-UTRAN should not set the *releaseCause* to *loadBalancingTAURequired* or to *cs-FallbackHighPriority* if the *extendedWaitTime* is present. The network should not set the *releaseCause* to *loadBalancingTAURequired* if the UE is connected to 5GC. |
| ***releaseIdleMeasConfig***Indicates that the UE shall release the idle/inactive measurement configurations, if configured. |
| ***rrc-InactiveConfig***Indicates configuration for the RRC\_INACTIVE state. The network does not configure this field when the UE is redirected to an inter-RAT carrier frequency. |
| ***smtc***The SSB periodicity/offset/duration configuration of the redirected target NR frequency. It is based on the timing reference of EUTRAN PCell. If the field is absent, the UE uses the SMTC configured in the *measObjectNR* having the same SSB frequency and subcarrier spacing |
| ***subcarrierSpacingSSB***Indicate subcarrier spacing of SSB of redirected target NR frequency. Only the values 15 or 30 (<6GHz), 120 kHz or 240 kHz (>6GHz) are applicable. |
| ***systemInformation***Container for system information of the GERAN cell i.e. one or more System Information (SI) messages as defined in TS 44.018 [45], table 9.1.1.  |
| ***t320***Timer T320 as described in clause 7.3. Value minN corresponds to N minutes. |
| ***utra-BCCH-Container***Contains System Information Container message as defined in TS 25.331 [19]. |
| ***waitTime***Wait time value in seconds. |

| Conditional presence | Explanation |
| --- | --- |
| *5GC* | The field is optionally present, Need ON, if the UE is connected to 5GC; otherwise the field is not present. |
| *BLCE-IDLEeDRX* | The field is optionally present, Need OR, if the UE is a BL UE or UE in CE and the UE is connected to 5GC and IDLE mode eDRX is configured and *ran-PagingCycle-r15* is absent; otherwise the field is not present. |
| *EARFCN-max* | The field is mandatory present if the corresponding *carrierFreq* (i.e. without suffix) is set to *maxEARFCN*. Otherwise the field is not present. |
| *EarlySec* | The field is optionally present, Need ON, if the UE supports UP-EDT or UP transmission using PUR or UP CIoT 5GS optimisation or early security reactivation and *releaseCause* is set to *rrc-Suspend*; otherwise the field is not present. |
| *IdleInfoEUTRA* | The field is optionally present, Need OP, if the *IdleModeMobilityControlInfo* (i.e. without suffix) is included and includes *freqPriorityListEUTRA*; otherwise the field is not present. |
| *INACTIVE* | The field is mandatory present in this release. |
| *NoRedirect-r8* | The field is optionally present, Need OP, if the *redirectedCarrierInfo* (i.e. without suffix) is not included; otherwise the field is not present. |
| *Redirection* | The field is optionally present, Need ON, if the *redirectedCarrierInfo* is included and set to *geran*, *utra-FDD*, *utra-TDD* or *utra-TDD-r10*; otherwise the field is not present. |
| *UP-EDT* | The field is optionally present, Need ON, if the UE supports UP-EDT and *releaseCause* is set to *rrc-Suspend*; otherwise the field is not present. |

#### – *RRCConnectionSetupComplete*

The *RRCConnectionSetupComplete* message is used to confirm the successful completion of an RRC connection establishment.

Signalling radio bearer: SRB1

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to E‑UTRAN

*RRCConnectionSetupComplete message*

-- ASN1START

RRCConnectionSetupComplete ::= SEQUENCE {

 rrc-TransactionIdentifier RRC-TransactionIdentifier,

 criticalExtensions CHOICE {

 c1 CHOICE{

 rrcConnectionSetupComplete-r8 RRCConnectionSetupComplete-r8-IEs,

 spare3 NULL, spare2 NULL, spare1 NULL

 },

 criticalExtensionsFuture SEQUENCE {}

 }

}

RRCConnectionSetupComplete-r8-IEs ::= SEQUENCE {

 selectedPLMN-Identity INTEGER (1..maxPLMN-r11),

 registeredMME RegisteredMME OPTIONAL,

 dedicatedInfoNAS DedicatedInfoNAS,

 nonCriticalExtension RRCConnectionSetupComplete-v8a0-IEs OPTIONAL

}

RRCConnectionSetupComplete-v8a0-IEs ::= SEQUENCE {

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 nonCriticalExtension RRCConnectionSetupComplete-v1020-IEs OPTIONAL

}

RRCConnectionSetupComplete-v1020-IEs ::= SEQUENCE {

 gummei-Type-r10 ENUMERATED {native, mapped} OPTIONAL,

 rlf-InfoAvailable-r10 ENUMERATED {true} OPTIONAL,

 logMeasAvailable-r10 ENUMERATED {true} OPTIONAL,

 rn-SubframeConfigReq-r10 ENUMERATED {required, notRequired} OPTIONAL,

 nonCriticalExtension RRCConnectionSetupComplete-v1130-IEs OPTIONAL

}

RRCConnectionSetupComplete-v1130-IEs ::= SEQUENCE {

 connEstFailInfoAvailable-r11 ENUMERATED {true} OPTIONAL,

 nonCriticalExtension RRCConnectionSetupComplete-v1250-IEs OPTIONAL

}

RRCConnectionSetupComplete-v1250-IEs ::= SEQUENCE {

 mobilityState-r12 ENUMERATED {normal, medium, high, spare} OPTIONAL,

 mobilityHistoryAvail-r12 ENUMERATED {true} OPTIONAL,

 logMeasAvailableMBSFN-r12 ENUMERATED {true} OPTIONAL,

 nonCriticalExtension RRCConnectionSetupComplete-v1320-IEs OPTIONAL

}

RRCConnectionSetupComplete-v1320-IEs ::= SEQUENCE {

 ce-ModeB-r13 ENUMERATED {supported} OPTIONAL,

 s-TMSI-r13 S-TMSI OPTIONAL,

 attachWithoutPDN-Connectivity-r13 ENUMERATED {true} OPTIONAL,

 up-CIoT-EPS-Optimisation-r13 ENUMERATED {true} OPTIONAL,

 cp-CIoT-EPS-Optimisation-r13 ENUMERATED {true} OPTIONAL,

 nonCriticalExtension RRCConnectionSetupComplete-v1330-IEs OPTIONAL

}

RRCConnectionSetupComplete-v1330-IEs ::= SEQUENCE {

 ue-CE-NeedULGaps-r13 ENUMERATED {true} OPTIONAL,

 nonCriticalExtension RRCConnectionSetupComplete-v1430-IEs OPTIONAL

}

RRCConnectionSetupComplete-v1430-IEs ::= SEQUENCE {

 dcn-ID-r14 INTEGER (0..65535) OPTIONAL,

 nonCriticalExtension RRCConnectionSetupComplete-v1530-IEs OPTIONAL

}

RRCConnectionSetupComplete-v1530-IEs ::= SEQUENCE {

 logMeasAvailableBT-r15 ENUMERATED {true} OPTIONAL,

 logMeasAvailableWLAN-r15 ENUMERATED {true} OPTIONAL,

 idleMeasAvailable-r15 ENUMERATED {true} OPTIONAL,

 flightPathInfoAvailable-r15 ENUMERATED {true} OPTIONAL,

 connectTo5GC-r15 ENUMERATED {true} OPTIONAL,

 registeredAMF-r15 RegisteredAMF-r15 OPTIONAL,

 s-NSSAI-list-r15 SEQUENCE(SIZE (1..maxNrofS-NSSAI-r15)) OF S-NSSAI-r15 OPTIONAL,

 ng-5G-S-TMSI-Bits-r15 CHOICE {

 ng-5G-S-TMSI-r15 NG-5G-S-TMSI-r15,

 ng-5G-S-TMSI-Part2-r15 BIT STRING (SIZE (8))

 } OPTIONAL,

 nonCriticalExtension RRCConnectionSetupComplete-v1540-IEs OPTIONAL

}

-- Editors Note: FFS whether to have a separate availability indicator for rel-16 idle/inactive measurements.

RRCConnectionSetupComplete-v1540-IEs ::= SEQUENCE {

 gummei-Type-v1540 ENUMERATED {mappedFrom5G-v1540} OPTIONAL,

 guami-Type-r15 ENUMERATED {native, mapped} OPTIONAL,

 nonCriticalExtension RRCConnectionSetupComplete-v16xy-IEs OPTIONAL

}

RRCConnectionSetupComplete-v16xy-IEs ::= SEQUENCE {

 rlos-Request-r16 ENUMERATED {true} OPTIONAL,

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

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

 lte-M-r16 ENUMERATED {true} OPTIONAL,

 iab-NodeIndication ENUMERATED {true} OPTIONAL,

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

RegisteredMME ::= SEQUENCE {

 plmn-Identity PLMN-Identity OPTIONAL,

 mmegi BIT STRING (SIZE (16)),

 mmec MMEC

}

RegisteredAMF-r15 ::= SEQUENCE {

 plmn-Identity-r15 PLMN-Identity OPTIONAL,

 amf-Identifier-r15 AMF-Identifier-r15

}

-- ASN1STOP

| *RRCConnectionSetupComplete* field descriptions |
| --- |
| ***attachWithoutPDN-Connectivity***This field is used to indicate that the UE performs an Attach without PDN connectivity procedure, as indicated by the upper layers and specified in TS 24.301 [35]. |
| ***cp-CIoT-5GS-Optimisation***This field is included when the UE supports the Control plane CIoT 5GS optimisation, as indicated by the upper layers, see TS 24.501 [95]. |
| ***cp-CIoT-EPS-Optimisation***This field is included when the UE supports the Control plane CIoT EPS Optimisation, as indicated by the upper layers, see TS 24.301 [35]. |
| ***ce-ModeB***Indicates whether the UE supports operation in CE mode B, as specified in TS 36.306 [5]. |
| ***connectTo5GC***This field is not used in the specification. It shall not be sent by the UE. |
| ***dcn-ID***The Dedicated Core Network Identity, see TS 23.401 [41]. |
| ***guami-Type***This field is used to indicate whether the GUAMI included is native (derived from native 5G-GUTI) or mapped (from EPS, derived from EPS GUTI) as specified in TS 24.501 [95]. |
| ***gummei-Type***This field is used to indicate whether the GUMMEI included is native (assigned by EPC) or mapped. The value native indicates the GUMMEI is native, mapped indicates the GUMMEI is mapped from 2G/3G identifiers, and mappedFrom5G indicates the GUMMEI is mapped from 5G identifiers. A UE that sets *gummei-Type-v1540* to mappedFrom5G shall also include *gummei-Type-r10* and set it to native. |
| ***iab-NodeIndication***This field is used to indicate that the connection is being established by an IAB-node [9]. |
| ***idleMeasAvailable***Indication that the UE has idle/inactive measurement report available. |
| ***lte-M***Indicates the UE is category M. |
| ***mmegi***Provides the Group Identity of the registered MME within the PLMN, as provided by upper layers, see TS 23.003 [27]. |
| ***mobilityState***This field indicates the UE mobility state (as defined in TS 36.304 [4], clause 5.2.4.3) just prior to UE going into RRC\_CONNECTED state. The UE indicates the value of *medium* and *high* when being in Medium-mobility and High-mobility states respectively. Otherwise the UE indicates the value *normal*. |
| ***ng-5G-S-TMSI-Part2***The leftmost 8 bits of 5G-S-TMSI. |
| ***registeredAMF***This field is used to transfer the GUAMI of the AMF where the UE is registered, as provided by upper layers, see TS 23.003 [27]. |
| ***registeredMME***This field is used to transfer the GUMMEI of the MME where the UE is registered, as provided by upper layers. |
| ***rlos-Request***Indicates whether the UE is initiating RLOS as specified in TS 23.401 [41]. |
| ***rn-SubframeConfigReq***If present, this field indicates that the connection establishment is for an RN and whether a subframe configuration is requested or not. |
| ***selectedPLMN-Identity***Index of the PLMN selected by the UE from the *plmn-IdentityList* fields included in SIB1. 1 if the 1st PLMN is selected from the 1st *plmn-IdentityList* included in SIB1, 2 if the 2nd PLMN is selected from the same *plmn-IdentityList*, or when no more PLMN are present within the same *plmn-IdentityList*, then the PLMN listed 1st in the subsequent *plmn-IdentityList* within the same SIB1 and so on. |
| ***s-NSSAI-List***This field is a list of S-NSSAI as indicated by the upper layers. The UE can report up to eight S-NSSAI per NSSAI, see TS 23.003 [27]. |
| ***ue-CE-NeedULGaps***Indicates whether the UE needs uplink gaps during continuous uplink transmission in FDD as specified in TS 36.211 [21] and TS 36.306 [5]. |
| ***up-CIoT-5GS-Optimisation***This field is included when the UE supports the User plane CIoT 5GS optimisation, as indicated by the upper layers, see TS 24.501 [95]. |
| ***up-CIoT-EPS-Optimisation***This field is included when the UE supports the User plane CIoT EPS Optimisation, as indicated by the upper layers, see TS 24.301 [35]. |

Next change

### 6.3.1 System information blocks

<<unchanged text skipped>>

#### – *SystemInformationBlockType4*

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

*SystemInformationBlockType4* information element

-- ASN1START

SystemInformationBlockType4 ::= SEQUENCE {

 intraFreqNeighCellList IntraFreqNeighCellList OPTIONAL, -- Need OR

 intraFreqBlackCellList IntraFreqBlackCellList OPTIONAL, -- Need OR

 csg-PhysCellIdRange PhysCellIdRange OPTIONAL, -- Cond CSG

 ...,

 lateNonCriticalExtension OCTET STRING OPTIONAL,

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

 ]],

 [[ rss-ConfigCarrierInfo-r16 RSS-ConfigCarrierInfo-r16 OPTIONAL -- Cond RSS

 ]]

}

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

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

IntraFreqNeighCellInfo ::= SEQUENCE {

 physCellId PhysCellId,

 q-OffsetCell Q-OffsetRange,

 ...,

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

 ]]

}

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

-- ASN1STOP

| *SystemInformationBlockType4* field descriptions |
| --- |
| ***csg-PhysCellIdRange***Set of physical cell identities reserved for CSG cells on the frequency on which this field was received. The received *csg-PhysCellIdRange* applies if less than 24 hours has elapsed since it was received and the UE is camped on a cell of the same primary PLMN where this field was received. The 3 hour validity restriction (clause 5.2.1.3) does not apply to this field. The UE shall not apply any stored *csg-PhysCellIdRange* when it is in *any cell selection* state defined in TS 36.304 [4]. |
| ***intraFreqBlackCellList***List of blacklisted intra-frequency neighbouring cells. |
| ***intraFreqNeighbCellList***List of intra-frequency neighbouring cells with specific cell re-selection parameters. |
| ***intraFreqNeighHSDN-CellList***List of intra-frequency neighbouring HSDN cells as specified in TS 36.304 [4]. |
| ***q-OffsetCell***Parameter "Qoffsets,n" in TS 36.304 [4]. |
| ***rss-ConfigCarrierInfo***RSS configurations for this carrier frequency. If absent and *rss-MeasConfig* is included in *SIB2*, RSS is collocated (time and frequency domain) in all cells. |
| ***rss-MeasPowerBias*** Power bias in dB relative to q\_offset of neighbour cell CRS. Value dB-6 corresponds to -6 dB, value dB-3 corresponds to -3 dB and so on. Value *rssNotUsed* indicates measurement based on RSS is not applicable for the corresponding neighbour cell. |

| Conditional presence | Explanation |
| --- | --- |
| *CSG* | This field is optional, need OP, for non-CSG cells, and mandatory for CSG cells. |
| *RSS* | This field is optional, need OR, if *rss-MeasConfig* is included in SIB2. Otherwise the field is not present, and the UE shall delete any existing value for this field. |

#### – *SystemInformationBlockType5*

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

*SystemInformationBlockType5* information element

-- ASN1START

SystemInformationBlockType5 ::= SEQUENCE {

 interFreqCarrierFreqList InterFreqCarrierFreqList,

 ...,

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

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

 interFreqCarrierFreqListExt-r12 InterFreqCarrierFreqListExt-r12 OPTIONAL -- Need OR

 ]],

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

 ]],

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

 interFreqCarrierFreqListExt-v1310 InterFreqCarrierFreqListExt-v1310 OPTIONAL -- Need OR

 ]],

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

 interFreqCarrierFreqListExt-v1350 InterFreqCarrierFreqListExt-v1350 OPTIONAL -- Need OR

 ]],

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

 ]],

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

 ]],

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

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

 measIdleConfigSIB-r15 MeasIdleConfigSIB-r15 OPTIONAL -- Need OR

 ]],

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

 interFreqCarrierFreqListExt-v16xy InterFreqCarrierFreqListExt-v16xy OPTIONAL -- Need OR

 ]]

}

-- Late non critical extensions

SystemInformationBlockType5-v8h0-IEs ::= SEQUENCE {

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

 nonCriticalExtension SystemInformationBlockType5-v9e0-IEs OPTIONAL

}

SystemInformationBlockType5-v9e0-IEs ::= SEQUENCE {

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

 nonCriticalExtension SystemInformationBlockType5-v10j0-IEs OPTIONAL

}

SystemInformationBlockType5-v10j0-IEs ::= SEQUENCE {

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

 nonCriticalExtension SystemInformationBlockType5-v10l0-IEs OPTIONAL

}

SystemInformationBlockType5-v10l0-IEs ::= SEQUENCE {

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

 nonCriticalExtension SystemInformationBlockType5-v13a0-IEs OPTIONAL

}

SystemInformationBlockType5-v13a0-IEs ::= SEQUENCE {

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

 lateNonCriticalExtension OCTET STRING OPTIONAL, -- Need OR

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

 -- Late non critical extensions from REL-13

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

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

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

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

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

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

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

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

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

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

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

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

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

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

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

InterFreqCarrierFreqInfo ::= SEQUENCE {

 dl-CarrierFreq ARFCN-ValueEUTRA,

 q-RxLevMin Q-RxLevMin,

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

 t-ReselectionEUTRA T-Reselection,

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

 threshX-High ReselectionThreshold,

 threshX-Low ReselectionThreshold,

 allowedMeasBandwidth AllowedMeasBandwidth,

 presenceAntennaPort1 PresenceAntennaPort1,

 cellReselectionPriority CellReselectionPriority OPTIONAL, -- Need OP

 neighCellConfig NeighCellConfig,

 q-OffsetFreq Q-OffsetRange DEFAULT dB0,

 interFreqNeighCellList InterFreqNeighCellList OPTIONAL, -- Need OR

 interFreqBlackCellList InterFreqBlackCellList OPTIONAL, -- Need OR

 ...,

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

 threshX-Q-r9 SEQUENCE {

 threshX-HighQ-r9 ReselectionThresholdQ-r9,

 threshX-LowQ-r9 ReselectionThresholdQ-r9

 } OPTIONAL -- Cond RSRQ

 ]],

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

 ]]

}

InterFreqCarrierFreqInfo-v8h0 ::= SEQUENCE {

 multiBandInfoList MultiBandInfoList OPTIONAL -- Need OR

}

InterFreqCarrierFreqInfo-v9e0 ::= SEQUENCE {

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

 multiBandInfoList-v9e0 MultiBandInfoList-v9e0 OPTIONAL -- Need OR

}

InterFreqCarrierFreqInfo-v10j0 ::= SEQUENCE {

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

 multiBandInfoList-v10j0 MultiBandInfoList-v10j0 OPTIONAL -- Need OR

}

InterFreqCarrierFreqInfo-v10l0 ::= SEQUENCE {

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

 multiBandInfoList-v10l0 MultiBandInfoList-v10l0 OPTIONAL -- Need OR

}

InterFreqCarrierFreqInfo-v1250 ::= SEQUENCE {

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

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

}

InterFreqCarrierFreqInfo-r12 ::= SEQUENCE {

 dl-CarrierFreq-r12 ARFCN-ValueEUTRA-r9,

 q-RxLevMin-r12 Q-RxLevMin,

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

 t-ReselectionEUTRA-r12 T-Reselection,

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

 threshX-High-r12 ReselectionThreshold,

 threshX-Low-r12 ReselectionThreshold,

 allowedMeasBandwidth-r12 AllowedMeasBandwidth,

 presenceAntennaPort1-r12 PresenceAntennaPort1,

 cellReselectionPriority-r12 CellReselectionPriority OPTIONAL, -- Need OP

 neighCellConfig-r12 NeighCellConfig,

 q-OffsetFreq-r12 Q-OffsetRange DEFAULT dB0,

 interFreqNeighCellList-r12 InterFreqNeighCellList OPTIONAL, -- Need OR

 interFreqBlackCellList-r12 InterFreqBlackCellList OPTIONAL, -- Need OR

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

 threshX-Q-r12 SEQUENCE {

 threshX-HighQ-r12 ReselectionThresholdQ-r9,

 threshX-LowQ-r12 ReselectionThresholdQ-r9

 } OPTIONAL, -- Cond RSRQ

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

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

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

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

...

}

InterFreqCarrierFreqInfo-v1310 ::= SEQUENCE {

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

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

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

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

}

InterFreqCarrierFreqInfo-v1350 ::= SEQUENCE {

 cellSelectionInfoCE1-r13 CellSelectionInfoCE1-r13 OPTIONAL -- Need OP

}

InterFreqCarrierFreqInfo-v1360 ::= SEQUENCE {

 cellSelectionInfoCE1-v1360 CellSelectionInfoCE1-v1360 OPTIONAL -- Cond QrxlevminCE1

}

InterFreqCarrierFreqInfo-v1530 ::= SEQUENCE {

 hsdn-Indication-r15 BOOLEAN,

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

 cellSelectionInfoCE-v1530 CellSelectionInfoCE-v1530 OPTIONAL -- Need OP

}

InterFreqCarrierFreqInfo-v16xy ::= SEQUENCE {

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

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

}

RSS-AssistanceInfo-r16 ::= SEQUENCE {

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

}

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

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

InterFreqNeighCellInfo ::= SEQUENCE {

 physCellId PhysCellId,

 q-OffsetCell Q-OffsetRange

}

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

RedistributionInterFreqInfo-r13 ::= SEQUENCE {

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

 redistributionNeighCellList-r13 RedistributionNeighCellList-r13 OPTIONAL --Need OP

}

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

RedistributionNeighCell-r13 ::= SEQUENCE {

 physCellId-r13 PhysCellId,

 redistributionFactorCell-r13 RedistributionFactor-r13

}

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

-- ASN1STOP

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

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

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

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

Next change

### 6.3.2 Radio resource control information elements

<<unchanged text skipped>>

#### – *EPDCCH-Config*

The IE EPDCCH-Config specifies the subframes and resource blocks for EPDCCH monitoring that E-UTRAN may configure for a serving cell.

*EPDCCH-Config* information element

-- ASN1START

EPDCCH-Config-r11 ::= SEQUENCE{

 config-r11 CHOICE {

 release NULL,

 setup SEQUENCE {

 subframePatternConfig-r11 CHOICE {

 release NULL,

 setup SEQUENCE {

 subframePattern-r11 MeasSubframePattern-r10

 }

 } OPTIONAL, -- Need ON

 startSymbol-r11 INTEGER (1..4) OPTIONAL, -- Need OP

 setConfigToReleaseList-r11 EPDCCH-SetConfigToReleaseList-r11 OPTIONAL, -- Need ON

 setConfigToAddModList-r11 EPDCCH-SetConfigToAddModList-r11 OPTIONAL -- Need ON

 }

 }

}

EPDCCH-SetConfigToAddModList-r11 ::= SEQUENCE (SIZE(1..maxEPDCCH-Set-r11)) OF EPDCCH-SetConfig-r11

EPDCCH-SetConfigToReleaseList-r11 ::= SEQUENCE (SIZE(1..maxEPDCCH-Set-r11)) OF EPDCCH-SetConfigId-r11

EPDCCH-SetConfig-r11 ::= SEQUENCE {

 setConfigId-r11 EPDCCH-SetConfigId-r11,

 transmissionType-r11 ENUMERATED {localised, distributed},

 resourceBlockAssignment-r11 SEQUENCE{

 numberPRB-Pairs-r11 ENUMERATED {n2, n4, n8},

 resourceBlockAssignment-r11 BIT STRING (SIZE(4..38))

 },

 dmrs-ScramblingSequenceInt-r11 INTEGER (0..503),

 pucch-ResourceStartOffset-r11 INTEGER (0..2047),

 re-MappingQCL-ConfigId-r11 PDSCH-RE-MappingQCL-ConfigId-r11 OPTIONAL, -- Need OR

 ...,

 [[ csi-RS-ConfigZPId2-r12 CHOICE {

 release NULL,

 setup CSI-RS-ConfigZPId-r11

 } OPTIONAL -- Need ON

 ]],

 [[ numberPRB-Pairs-v1310 CHOICE {

 release NULL,

 setup ENUMERATED {n6}

 } OPTIONAL, -- Need ON

 mpdcch-config-r13 CHOICE {

 release NULL,

 setup SEQUENCE {

 csi-NumRepetitionCE-r13 ENUMERATED {sf1, sf2, sf4, sf8, sf16, sf32},

 mpdcch-pdsch-HoppingConfig-r13 ENUMERATED {on,off},

 mpdcch-StartSF-UESS-r13 CHOICE {

 fdd-r13 ENUMERATED {v1, v1dot5, v2, v2dot5, v4,

 v5, v8, v10},

 tdd-r13 ENUMERATED {v1, v2, v4, v5, v8, v10,

 v20, spare1}

 },

 mpdcch-NumRepetition-r13 ENUMERATED {r1, r2, r4, r8, r16,

 r32, r64, r128, r256},

 mpdcch-Narrowband-r13 INTEGER (1.. maxAvailNarrowBands-r13)

 }

 } OPTIONAL -- Need ON

 ]]

}

EPDCCH-SetConfigId-r11 ::= INTEGER (0..1)

-- ASN1STOP

|  |
| --- |
| *EPDCCH-Config* field descriptions |
| ***csi-NumRepetitionCE***Number of subframes for CSI reference resource, see TS 36.213 [23]. Value sf1 corresponds to 1 subframe, sf2 corresponds to 2 subframes and so on. |
| ***csi-RS-ConfigZPId2***Indicates the rate matching parameters in addition to those indicated by *re-MappingQCL-ConfigId*. E-UTRAN configures this field only when tm10 is configured. |
| ***dmrs-ScramblingSequenceInt***The DMRS scrambling sequence initialization parameter  or  defined in TS 36.211 [21], clause 6.10.3A.1. |
| ***EPDCCH-SetConfig***Provides EPDCCH configuration set. See TS 36.213 [23], clause 9.1.4. E-UTRAN configures at least one *EPDCCH-SetConfig when EPDCCH-Config* is configured. For BL UEs or UEs in CE, EUTRAN does not configure more than one EPDCCH-SetConfig. |
| ***mpdcch-Narrowband***Parameter: cid:image015.png@01D1F4C1.16D3F4B0, see TS 36.211 [21], clause 6.8B.5. Field values (1..*maxAvailNarrowBands-r13*) correspond to narrowband indices (0..[*maxAvailNarrowBands-r13*-1]) as specified in TS 36.211 [21]. |
| ***mpdcch-NumRepetition***Maximum numbers of repetitions for UE-SS for MPDCCH, see TS 36.213 [23]. |
| ***mpdcch-pdsch-HoppingConfig***Frequency hopping activation/deactivation for unicast MPDCCH/PDSCH, see TS 36.211 [21]. E-UTRAN does not configure the value *on* if *freqHoppingParametersDL* is not present in *SystemInformationBlockType1*. |
| ***mpdcch-StartSF-UESS***Starting subframe configuration for an MPDCCH UE-specific search space, see TS 36.213 [23]. Value v1 corresponds to 1, value v1dot5 corresponds to 1.5, and so on. |
| ***numberPRB-Pairs***Indicates the number of physical resource-block pairs used for the EPDCCH set. Value n2 corresponds to 2 physical resource-block pairs; n4 corresponds to 4 physical resource-block pairs and so on. Value n8 is not supported if *dl-Bandwidth* is set to 6 resource blocks. EUTRAN only configures value up to n6 for BL UEs or UEs in CE. Value n6 is only applicable to BL UEs or UEs in CE . |
| ***pucch-ResourceStartOffset***PUCCH format 1a, 1b and 3 resource starting offset for the EPDCCH set. See TS 36.213 [23], clause 10.1. |
| ***re-MappingQCL-ConfigId***Indicates the starting OFDM symbol, the related rate matching parameters and quasi co-location assumption for EPDCCH when the UE is configured with tm10. This field provides the identity of a configured *PDSCH-RE-MappingQCL-Config*. E-UTRAN configures this field only when tm10 is configured. |
| ***resourceBlockAssignment***Indicates the index to a specific combination of physical resource-block pair for EPDCCH set. See TS 36.213 [23], clause 9.1.4.4. The size of *resourceBlockAssignment* is specified in TS 36.213 [23], clause 9.1.4.4, and based on *numberPRB-Pairs* andthe signalled value of *dl-Bandwidth.* If *numberPRB-Pairs-v1310* field is present, the total number of physical resource-block pairs is 6 and it is composed of one subset of 2 physical resource-block pairs and another subset of 4 physical resource-block pairs, and the *resourceBlockAssignment* field defines the subset of 2 physical resource-block pairs. |
| ***setConfigId***Indicates the identity of the EPDCCH configuration set. |
| ***startSymbol***Indicates the OFDM starting symbol for any EPDCCH and PDSCH scheduled by EPDCCH on the same cell, see TS 36.213 [23], clause 9.1.4.1. If not present, the UE shall release the configuration and shall derive the starting OFDM symbol of EPDCCH and PDSCH scheduled by EPDCCH from PCFICH. Values 1, 2, and 3 are applicable for *dl-Bandwidth* greater than 10 resource blocks. Values 2, 3, and 4 are applicable otherwise. E-UTRAN does not configure the field for UEs configured with tm10. |
| ***subframePatternConfig***Configures the subframes which the UE shall monitor the UE-specific search space on EPDCCH, except for pre-defined rules in TS 36.213 [23], clause 9.1.4. If the field is not configured when EPDCCH is configured, the UE shall monitor the UE-specific search space on EPDCCH in all subframes except for pre-defined rules in TS 36.213 [23], clause 9.1.4. |
| ***transmissionType***Indicates whether distributed or localized EPDCCH transmission mode is used as defined in TS 36.211 [21], clause 6.8A.1. |

<<unchanged text skipped>>

#### – *NR-ResourceReservationConfig*

The IE *NR-ResourceReservationConfig* is used to specify the NR resource reservation for coexistence with NR.

*NR-ResourceReservationConfig* information element

-- ASN1START

NR-ResourceReservationConfig-r16 ::= SEQUENCE {

 periodicity-r16 ENUMERATED {ms10, ms20, ms40, ms80, ms160} OPTIONAL,

 startPosition-r16 INTEGER (0..15) OPTIONAL,

 resourceReservationFreq-r16 CHOICE {

 rbg-bw1dot4MHz BIT STRING (SIZE (6)),

 rbg-bw3MHz BIT STRING (SIZE (8)),

 rbg-bw5MHz BIT STRING (SIZE (13)),

 rbg-bw10MHz BIT STRING (SIZE (17)),

 rbg-bw15MHz BIT STRING (SIZE (19)),

 rbg-bw20MHz BIT STRING (SIZE (25))

 } OPTIONAL, -- Cond DL

 slotConfig-r16 SEQUENCE {

 slotBitmap-r16 CHOICE {

 slotPattern10ms BIT STRING (SIZE (20)),

 slotPattern40ms BIT STRING (SIZE (80))

 } OPTIONAL, -- Cond FDD-OR-TDD-DL

 symbolBitmap1-r16 BIT STRING (SIZE (7)) OPTIONAL,

 symbolBitmap2-r16 BIT STRING (SIZE (7)) OPTIONAL

 } OPTIONAL,

 ...

}

-- ASN1STOP

| *NR-ResourceReservationConfig* field descriptions |
| --- |
| FFS |

| Conditional presence | Explanation |
| --- | --- |
| *DL* | The field is mandatory present if *NR-ResourceReservationConfig* configures downlink parameters; otherwise the field is not present. |
| *FDD-OR-TDD-DL* | The field is mandatory present for FDD and mandatory present for TDD downlink; otherwise the field is not present. |

<<unchanged text skipped>>

#### – *PhysicalConfigDedicated*

The IE *PhysicalConfigDedicated* is used to specify the UE specific physical channel configuration.

*PhysicalConfigDedicated* information element

-- ASN1START

PhysicalConfigDedicated ::= SEQUENCE {

 pdsch-ConfigDedicated PDSCH-ConfigDedicated OPTIONAL, -- Need ON

 pucch-ConfigDedicated PUCCH-ConfigDedicated OPTIONAL, -- Need ON

 pusch-ConfigDedicated PUSCH-ConfigDedicated OPTIONAL, -- Need ON

 uplinkPowerControlDedicated UplinkPowerControlDedicated OPTIONAL, -- Need ON

 tpc-PDCCH-ConfigPUCCH TPC-PDCCH-Config OPTIONAL, -- Need ON

 tpc-PDCCH-ConfigPUSCH TPC-PDCCH-Config OPTIONAL, -- Need ON

 cqi-ReportConfig CQI-ReportConfig OPTIONAL, -- Cond CQI-r8

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

 antennaInfo CHOICE {

 explicitValue AntennaInfoDedicated,

 defaultValue NULL

 } OPTIONAL, -- Cond AI-r8

 schedulingRequestConfig SchedulingRequestConfig OPTIONAL, -- Need ON

 ...,

 [[ cqi-ReportConfig-v920 CQI-ReportConfig-v920 OPTIONAL, -- Cond CQI-r8

 antennaInfo-v920 AntennaInfoDedicated-v920 OPTIONAL -- Cond AI-r8

 ]],

 [[ antennaInfo-r10 CHOICE {

 explicitValue-r10 AntennaInfoDedicated-r10,

 defaultValue NULL

 } OPTIONAL, -- Cond AI-r10

 antennaInfoUL-r10 AntennaInfoUL-r10 OPTIONAL, -- Need ON

 cif-Presence-r10 BOOLEAN OPTIONAL, -- Need ON

 cqi-ReportConfig-r10 CQI-ReportConfig-r10 OPTIONAL, -- Cond CQI-r10

 csi-RS-Config-r10 CSI-RS-Config-r10 OPTIONAL, -- Need ON

 pucch-ConfigDedicated-v1020 PUCCH-ConfigDedicated-v1020 OPTIONAL, -- Need ON

 pusch-ConfigDedicated-v1020 PUSCH-ConfigDedicated-v1020 OPTIONAL, -- Need ON

 schedulingRequestConfig-v1020 SchedulingRequestConfig-v1020 OPTIONAL, -- Need ON

 soundingRS-UL-ConfigDedicated-v1020

 SoundingRS-UL-ConfigDedicated-v1020 OPTIONAL, -- Need ON

 soundingRS-UL-ConfigDedicatedAperiodic-r10

 SoundingRS-UL-ConfigDedicatedAperiodic-r10 OPTIONAL, -- Need ON

 uplinkPowerControlDedicated-v1020

 UplinkPowerControlDedicated-v1020 OPTIONAL -- Need ON

 ]],

 [[ additionalSpectrumEmissionCA-r10 CHOICE {

 release NULL,

 setup SEQUENCE {

 additionalSpectrumEmissionPCell-r10 AdditionalSpectrumEmission

 }

 } OPTIONAL -- Need ON

 ]],

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

 csi-RS-ConfigNZPToReleaseList-r11

 CSI-RS-ConfigNZPToReleaseList-r11 OPTIONAL, -- Need ON

 csi-RS-ConfigNZPToAddModList-r11

 CSI-RS-ConfigNZPToAddModList-r11 OPTIONAL, -- Need ON

 csi-RS-ConfigZPToReleaseList-r11

 CSI-RS-ConfigZPToReleaseList-r11 OPTIONAL, -- Need ON

 csi-RS-ConfigZPToAddModList-r11 CSI-RS-ConfigZPToAddModList-r11 OPTIONAL, -- Need ON

 epdcch-Config-r11 EPDCCH-Config-r11 OPTIONAL, -- Need ON

 pdsch-ConfigDedicated-v1130 PDSCH-ConfigDedicated-v1130 OPTIONAL, -- Need ON

 -- UL configuration

 cqi-ReportConfig-v1130 CQI-ReportConfig-v1130 OPTIONAL, -- Need ON

 pucch-ConfigDedicated-v1130 PUCCH-ConfigDedicated-v1130 OPTIONAL, -- Need ON

 pusch-ConfigDedicated-v1130 PUSCH-ConfigDedicated-v1130 OPTIONAL, -- Need ON

 uplinkPowerControlDedicated-v1130

 UplinkPowerControlDedicated-v1130 OPTIONAL -- Need ON

 ]],

 [[ antennaInfo-v1250 AntennaInfoDedicated-v1250 OPTIONAL, -- Cond AI-r10

 eimta-MainConfig-r12 EIMTA-MainConfig-r12 OPTIONAL, -- Need ON

 eimta-MainConfigPCell-r12 EIMTA-MainConfigServCell-r12 OPTIONAL, -- Need ON

 pucch-ConfigDedicated-v1250 PUCCH-ConfigDedicated-v1250 OPTIONAL, -- Need ON

 cqi-ReportConfigPCell-v1250 CQI-ReportConfig-v1250 OPTIONAL, -- Need ON

 uplinkPowerControlDedicated-v1250

 UplinkPowerControlDedicated-v1250 OPTIONAL, -- Need ON

 pusch-ConfigDedicated-v1250 PUSCH-ConfigDedicated-v1250 OPTIONAL, -- Need ON

 csi-RS-Config-v1250 CSI-RS-Config-v1250 OPTIONAL -- Need ON

 ]],

 [[ pdsch-ConfigDedicated-v1280 PDSCH-ConfigDedicated-v1280 OPTIONAL -- Need ON

 ]],

 [[ pdsch-ConfigDedicated-v1310 PDSCH-ConfigDedicated-v1310 OPTIONAL, -- Need ON

 pucch-ConfigDedicated-r13 PUCCH-ConfigDedicated-r13 OPTIONAL, -- Need ON

 pusch-ConfigDedicated-r13 PUSCH-ConfigDedicated-r13 OPTIONAL, -- Need ON

 pdcch-CandidateReductions-r13

 PDCCH-CandidateReductions-r13 OPTIONAL, -- Need ON

 cqi-ReportConfig-v1310 CQI-ReportConfig-v1310 OPTIONAL, -- Need ON

 soundingRS-UL-ConfigDedicated-v1310

 SoundingRS-UL-ConfigDedicated-v1310 OPTIONAL, -- Need ON

 soundingRS-UL-ConfigDedicatedUpPTsExt-r13

 SoundingRS-UL-ConfigDedicatedUpPTsExt-r13 OPTIONAL, -- Need ON

 soundingRS-UL-ConfigDedicatedAperiodic-v1310

 SoundingRS-UL-ConfigDedicatedAperiodic-v1310 OPTIONAL, -- Need ON

 soundingRS-UL-ConfigDedicatedAperiodicUpPTsExt-r13

 SoundingRS-UL-ConfigDedicatedAperiodicUpPTsExt-r13 OPTIONAL, -- Need ON

 csi-RS-Config-v1310 CSI-RS-Config-v1310 OPTIONAL, -- Need ON

 ce-Mode-r13 CHOICE {

 release NULL,

 setup ENUMERATED {ce-ModeA,ce-ModeB}

 } OPTIONAL, -- Need ON

 csi-RS-ConfigNZPToAddModListExt-r13 CSI-RS-ConfigNZPToAddModListExt-r13 OPTIONAL, -- Need ON

 csi-RS-ConfigNZPToReleaseListExt-r13 CSI-RS-ConfigNZPToReleaseListExt-r13 OPTIONAL -- Need ON

 ]],

 [[ cqi-ReportConfig-v1320 CQI-ReportConfig-v1320 OPTIONAL -- Need ON

 ]],

 [[ typeA-SRS-TPC-PDCCH-Group-r14 CHOICE {

 release NULL,

 setup SEQUENCE (SIZE (1..32)) OF SRS-TPC-PDCCH-Config-r14

 } OPTIONAL, -- Need ON

 must-Config-r14 CHOICE{

 release NULL,

 setup SEQUENCE {

 k-max-r14 ENUMERATED {l1, l3},

 p-a-must-r14 ENUMERATED {

 dB-6, dB-4dot77, dB-3, dB-1dot77,

 dB0, dB1, dB2, dB3} OPTIONAL -- Need ON

 }

 } OPTIONAL, -- Need ON

 pusch-EnhancementsConfig-r14 PUSCH-EnhancementsConfig-r14 OPTIONAL, -- Need ON

 ce-pdsch-pusch-EnhancementConfig-r14 ENUMERATED {on} OPTIONAL, -- Need OR

 antennaInfo-v1430 AntennaInfoDedicated-v1430 OPTIONAL, -- Need ON

 pucch-ConfigDedicated-v1430 PUCCH-ConfigDedicated-v1430 OPTIONAL, -- Need ON

 pdsch-ConfigDedicated-v1430 PDSCH-ConfigDedicated-v1430 OPTIONAL, -- Need ON

 pusch-ConfigDedicated-v1430 PUSCH-ConfigDedicated-v1430 OPTIONAL, -- Need ON

 soundingRS-UL-PeriodicConfigDedicatedList-r14 SEQUENCE (SIZE (1..2)) OF SoundingRS-UL-ConfigDedicated OPTIONAL, -- Cond PeriodicSRSPCell

 soundingRS-UL-PeriodicConfigDedicatedUpPTsExtList-r14 SEQUENCE (SIZE (1..4)) OF SoundingRS-UL-ConfigDedicatedUpPTsExt-r13 OPTIONAL, -- Cond PeriodicSRSExt

 soundingRS-UL-AperiodicConfigDedicatedList-r14 SEQUENCE (SIZE (1..2)) OF SoundingRS-UL-ConfigDedicatedAperiodic-r10 OPTIONAL, -- Cond AperiodicSRS

 soundingRS-UL-ConfigDedicatedApUpPTsExtList-r14 SEQUENCE (SIZE (1..4)) OF SoundingRS-UL-ConfigDedicatedAperiodicUpPTsExt-r13 OPTIONAL, -- Cond AperiodicSRSExt

 csi-RS-Config-v1430 CSI-RS-Config-v1430 OPTIONAL, -- Need ON

 csi-RS-ConfigZP-ApList-r14 CSI-RS-ConfigZP-ApList-r14 OPTIONAL, -- Need ON

 cqi-ReportConfig-v1430 CQI-ReportConfig-v1430 OPTIONAL, -- Need ON

 semiOpenLoop-r14 BOOLEAN OPTIONAL -- Need ON

 ]],

 [[ csi-RS-Config-v1480 CSI-RS-Config-v1480 OPTIONAL -- Need ON

 ]],

 [[ physicalConfigDedicatedSTTI-r15 PhysicalConfigDedicatedSTTI-r15 OPTIONAL,-- Need ON

 pdsch-ConfigDedicated-v1530 PDSCH-ConfigDedicated-v1530 OPTIONAL,-- Need ON

 pusch-ConfigDedicated-v1530 PUSCH-ConfigDedicated-v1530 OPTIONAL,-- Need ON

 cqi-ReportConfig-v1530 CQI-ReportConfig-v1530 OPTIONAL,-- Need ON

 antennaInfo-v1530 AntennaInfoDedicated-v1530 OPTIONAL,-- Need ON

 csi-RS-Config-v1530 CSI-RS-Config-v1530 OPTIONAL,-- Need ON

 uplinkPowerControlDedicated-v1530

 UplinkPowerControlDedicated-v1530 OPTIONAL, -- Need ON

 semiStaticCFI-Config-r15 CHOICE{

 release NULL,

 setup CHOICE{

 cfi-Config-r15 CFI-Config-r15,

 cfi-PatternConfig-r15 CFI-PatternConfig-r15

 }

 } OPTIONAL, -- Need ON

 blindPDSCH-Repetition-Config-r15 CHOICE{

 release NULL,

 setup SEQUENCE {

 blindSubframePDSCH-Repetitions-r15 BOOLEAN,

 blindSlotSubslotPDSCH-Repetitions-r15 BOOLEAN,

 maxNumber-SubframePDSCH-Repetitions-r15 ENUMERATED {n4,n6} OPTIONAL, -- Need ON

 maxNumber-SlotSubslotPDSCH-Repetitions-r15 ENUMERATED {n4,n6} OPTIONAL, -- Need ON

 rv-SubframePDSCH-Repetitions-r15 ENUMERATED {dlrvseq1, dlrvseq2} OPTIONAL, -- Need ON

 rv-SlotsublotPDSCH-Repetitions-r15 ENUMERATED {dlrvseq1, dlrvseq2} OPTIONAL, -- Need ON

 numberOfProcesses-SubframePDSCH-Repetitions-r15 INTEGER(1..16) OPTIONAL, -- Need ON

 numberOfProcesses-SlotSubslotPDSCH-Repetitions-r15 INTEGER(1..16) OPTIONAL, -- Need ON

 mcs-restrictionSubframePDSCH-Repetitions-r15 ENUMERATED {n0, n1} OPTIONAL, -- Need ON

 mcs-restrictionSlotSubslotPDSCH-Repetitions-r15 ENUMERATED {n0, n1} OPTIONAL -- Need ON

 }

 } OPTIONAL -- Need ON

 ]],

 [[ spucch-Config-v1550 SPUCCH-Config-v1550 OPTIONAL -- Need ON

 ]],

 [[ pdsch-ConfigDedicated-v16xy PDSCH-ConfigDedicated-v16xy OPTIONAL, -- Need ON

 pusch-ConfigDedicated-v16xy PUSCH-ConfigDedicated-v16xy OPTIONAL, -- Need ON

 ce-CSI-RS-Feedback-r16 ENUMERATED {enabled} OPTIONAL, -- Need OR

-- Editor's Note: NR resource allocation for eMTC coexistence with NR is not captured in this version of the specification.

 soundingRS-UL-ConfigDedicatedAdd-r16 SoundingRS-UL-ConfigDedicatedAdd-r16

 OPTIONAL, -- Need ON

 uplinkPowerControlAddSRS-r16 UplinkPowerControlAddSRS-r16 OPTIONAL, -- Need ON

 soundingRS-VirtualCellID-r16 SoundingRS-VirtualCellID-r16 OPTIONAL, -- Need ON

 widebandPRG-r16 WidebandPRG-r16 OPTIONAL -- Need ON

 ]]

}

PhysicalConfigDedicated-v1370 ::= SEQUENCE {

 pucch-ConfigDedicated-v1370 PUCCH-ConfigDedicated-v1370 OPTIONAL -- Cond PUCCH-Format4or5

}

PhysicalConfigDedicated-v13c0 ::= SEQUENCE {

 pucch-ConfigDedicated-v13c0 PUCCH-ConfigDedicated-v13c0

}

PhysicalConfigDedicatedSCell-r10 ::= SEQUENCE {

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

 nonUL-Configuration-r10 SEQUENCE {

 antennaInfo-r10

 AntennaInfoDedicated-r10 OPTIONAL, -- Need ON

 crossCarrierSchedulingConfig-r10

 CrossCarrierSchedulingConfig-r10 OPTIONAL, -- Need ON

 csi-RS-Config-r10 CSI-RS-Config-r10 OPTIONAL, -- Need ON

 pdsch-ConfigDedicated-r10 PDSCH-ConfigDedicated OPTIONAL -- Need ON

 } OPTIONAL, -- Cond SCellAdd

 -- UL configuration

 ul-Configuration-r10 SEQUENCE {

 antennaInfoUL-r10 AntennaInfoUL-r10 OPTIONAL, -- Need ON

 pusch-ConfigDedicatedSCell-r10

 PUSCH-ConfigDedicatedSCell-r10 OPTIONAL, -- Cond PUSCH-SCell1

 uplinkPowerControlDedicatedSCell-r10

 UplinkPowerControlDedicatedSCell-r10 OPTIONAL, -- Need ON

 cqi-ReportConfigSCell-r10 CQI-ReportConfigSCell-r10 OPTIONAL, -- Need ON

 soundingRS-UL-ConfigDedicated-r10

 SoundingRS-UL-ConfigDedicated OPTIONAL, -- Need ON

 soundingRS-UL-ConfigDedicated-v1020

 SoundingRS-UL-ConfigDedicated-v1020 OPTIONAL, -- Need ON

 soundingRS-UL-ConfigDedicatedAperiodic-r10

 SoundingRS-UL-ConfigDedicatedAperiodic-r10 OPTIONAL -- Need ON

 } OPTIONAL, -- Cond CommonUL

 ...,

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

 csi-RS-ConfigNZPToReleaseList-r11

 CSI-RS-ConfigNZPToReleaseList-r11 OPTIONAL, -- Need ON

 csi-RS-ConfigNZPToAddModList-r11

 CSI-RS-ConfigNZPToAddModList-r11 OPTIONAL, -- Need ON

 csi-RS-ConfigZPToReleaseList-r11

 CSI-RS-ConfigZPToReleaseList-r11 OPTIONAL, -- Need ON

 csi-RS-ConfigZPToAddModList-r11

 CSI-RS-ConfigZPToAddModList-r11 OPTIONAL, -- Need ON

 epdcch-Config-r11 EPDCCH-Config-r11 OPTIONAL, -- Need ON

 pdsch-ConfigDedicated-v1130 PDSCH-ConfigDedicated-v1130 OPTIONAL, -- Need ON

 -- UL configuration

 cqi-ReportConfig-v1130 CQI-ReportConfig-v1130 OPTIONAL, -- Need ON

 pusch-ConfigDedicated-v1130

 PUSCH-ConfigDedicated-v1130 OPTIONAL, -- Cond PUSCH-SCell1

 uplinkPowerControlDedicatedSCell-v1130

 UplinkPowerControlDedicated-v1130 OPTIONAL -- Need ON

 ]],

 [[ antennaInfo-v1250 AntennaInfoDedicated-v1250 OPTIONAL, -- Need ON

 eimta-MainConfigSCell-r12

 EIMTA-MainConfigServCell-r12 OPTIONAL, -- Need ON

 cqi-ReportConfigSCell-v1250 CQI-ReportConfig-v1250 OPTIONAL, -- Need ON

 uplinkPowerControlDedicatedSCell-v1250

 UplinkPowerControlDedicated-v1250 OPTIONAL, -- Need ON

 csi-RS-Config-v1250 CSI-RS-Config-v1250 OPTIONAL -- Need ON

 ]],

 [[ pdsch-ConfigDedicated-v1280 PDSCH-ConfigDedicated-v1280 OPTIONAL -- Need ON

 ]],

 [[ pucch-Cell-r13 ENUMERATED {true} OPTIONAL, -- Cond PUCCH-SCell1

 pucch-SCell CHOICE{

 release NULL,

 setup SEQUENCE {

 pucch-ConfigDedicated-r13

 PUCCH-ConfigDedicated-r13 OPTIONAL, -- Need ON

 schedulingRequestConfig-r13

 SchedulingRequestConfigSCell-r13 OPTIONAL, -- Need ON

 tpc-PDCCH-ConfigPUCCH-SCell-r13

 TPC-PDCCH-ConfigSCell-r13 OPTIONAL, -- Need ON

 pusch-ConfigDedicated-r13

 PUSCH-ConfigDedicated-r13 OPTIONAL, -- Cond PUSCH-SCell

 uplinkPowerControlDedicated-r13

 UplinkPowerControlDedicatedSCell-v1310 OPTIONAL -- Need ON

 }

 } OPTIONAL, -- Need ON

 crossCarrierSchedulingConfig-r13

 CrossCarrierSchedulingConfig-r13 OPTIONAL, -- Cond Cross-Carrier-Config

 pdcch-ConfigSCell-r13 PDCCH-ConfigSCell-r13 OPTIONAL, -- Need ON

 cqi-ReportConfig-v1310 CQI-ReportConfig-v1310 OPTIONAL, -- Need ON

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

 soundingRS-UL-ConfigDedicated-v1310

 SoundingRS-UL-ConfigDedicated-v1310 OPTIONAL, -- Need ON

 soundingRS-UL-ConfigDedicatedUpPTsExt-r13

 SoundingRS-UL-ConfigDedicatedUpPTsExt-r13 OPTIONAL, -- Need ON

 soundingRS-UL-ConfigDedicatedAperiodic-v1310

 SoundingRS-UL-ConfigDedicatedAperiodic-v1310 OPTIONAL, -- Need ON

 soundingRS-UL-ConfigDedicatedAperiodicUpPTsExt-r13

 SoundingRS-UL-ConfigDedicatedAperiodicUpPTsExt-r13 OPTIONAL, -- Need ON

 csi-RS-Config-v1310 CSI-RS-Config-v1310 OPTIONAL, -- Need ON

 laa-SCellConfiguration-r13 LAA-SCellConfiguration-r13 OPTIONAL, -- Need ON

 csi-RS-ConfigNZPToAddModListExt-r13 CSI-RS-ConfigNZPToAddModListExt-r13 OPTIONAL, -- Need ON

 csi-RS-ConfigNZPToReleaseListExt-r13 CSI-RS-ConfigNZPToReleaseListExt-r13 OPTIONAL -- Need ON

 ]],

 [[ cqi-ReportConfig-v1320 CQI-ReportConfig-v1320 OPTIONAL -- Need ON

 ]],

 [[ laa-SCellConfiguration-v1430 LAA-SCellConfiguration-v1430

 OPTIONAL, -- Need ON

 typeB-SRS-TPC-PDCCH-Config-r14 SRS-TPC-PDCCH-Config-r14 OPTIONAL, -- Need ON

 uplinkPUSCH-LessPowerControlDedicated-v1430 UplinkPUSCH-LessPowerControlDedicated-v1430 OPTIONAL, -- Need ON

 soundingRS-UL-PeriodicConfigDedicatedList-r14 SEQUENCE (SIZE (1..2)) OF SoundingRS-UL-ConfigDedicated OPTIONAL, -- Cond PeriodicSRS

 soundingRS-UL-PeriodicConfigDedicatedUpPTsExtList-r14 SEQUENCE (SIZE (1..4)) OF SoundingRS-UL-ConfigDedicatedUpPTsExt-r13 OPTIONAL, -- Cond PeriodicSRSExt

 soundingRS-UL-AperiodicConfigDedicatedList-r14 SEQUENCE (SIZE (1..2)) OF SoundingRS-AperiodicSet-r14 OPTIONAL, -- Cond AperiodicSRS

 soundingRS-UL-ConfigDedicatedApUpPTsExtList-r14 SEQUENCE (SIZE (1..4)) OF SoundingRS-AperiodicSetUpPTsExt-r14 OPTIONAL, -- Cond AperiodicSRSExt

 must-Config-r14 CHOICE{

 release NULL,

 setup SEQUENCE {

 k-max-r14 ENUMERATED {l1, l3},

 p-a-must-r14 ENUMERATED {

 dB-6, dB-4dot77, dB-3, dB-1dot77,

 dB0, dB1, dB2, dB3} OPTIONAL -- Need ON

 }

 } OPTIONAL, -- Need ON

 pusch-ConfigDedicated-v1430 PUSCH-ConfigDedicatedSCell-v1430 OPTIONAL, -- Need ON

 csi-RS-Config-v1430 CSI-RS-Config-v1430 OPTIONAL, -- Need ON

 csi-RS-ConfigZP-ApList-r14 CSI-RS-ConfigZP-ApList-r14 OPTIONAL, -- Need ON

 cqi-ReportConfig-v1430 CQI-ReportConfig-v1430 OPTIONAL, -- Need ON

 semiOpenLoop-r14 BOOLEAN OPTIONAL, -- Need ON

 pdsch-ConfigDedicatedSCell-v1430 PDSCH-ConfigDedicatedSCell-v1430 OPTIONAL -- Need ON

 ]],

 [[ csi-RS-Config-v1480 CSI-RS-Config-v1480 OPTIONAL -- Need ON

 ]],

 [[ physicalConfigDedicatedSTTI-r15 PhysicalConfigDedicatedSTTI-r15 OPTIONAL, -- Need ON

 pdsch-ConfigDedicated-v1530 PDSCH-ConfigDedicated-v1530 OPTIONAL, -- Need ON

 dummy CQI-ReportConfig-v1530 OPTIONAL, -- Need ON

 cqi-ReportConfigSCell-r15 CQI-ReportConfigSCell-r15 OPTIONAL, -- Need ON

 cqi-ShortConfigSCell-r15 CQI-ShortConfigSCell-r15 OPTIONAL, -- Need ON

 csi-RS-Config-v1530 CSI-RS-Config-v1530 OPTIONAL, -- Need ON

 uplinkPowerControlDedicatedSCell-v1530

 UplinkPowerControlDedicated-v1530 OPTIONAL, -- Need ON

 laa-SCellConfiguration-v1530 LAA-SCellConfiguration-v1530 OPTIONAL, -- Need ON

 pusch-ConfigDedicated-v1530 PUSCH-ConfigDedicatedScell-v1530 OPTIONAL, -- Cond AUL

 semiStaticCFI-Config-r15 CHOICE{

 release NULL,

 setup CHOICE{

 cfi-Config-r15 CFI-Config-r15,

 cfi-PatternConfig-r15 CFI-PatternConfig-r15

 }

 } OPTIONAL, -- Need ON

 blindPDSCH-Repetition-Config-r15 CHOICE{

 release NULL,

 setup SEQUENCE {

 blindSubframePDSCH-Repetitions-r15 BOOLEAN,

 blindSlotSubslotPDSCH-Repetitions-r15 BOOLEAN,

 maxNumber-SubframePDSCH-Repetitions-r15 ENUMERATED {n4,n6} OPTIONAL, -- Need ON

 maxNumber-SlotSubslotPDSCH-Repetitions-r15 ENUMERATED {n4,n6} OPTIONAL, -- Need ON

 rv-SubframePDSCH-Repetitions-r15 ENUMERATED {dlrvseq1, dlrvseq2} OPTIONAL, -- Need ON

 rv-SlotsublotPDSCH-Repetitions-r15 ENUMERATED {dlrvseq1, dlrvseq2} OPTIONAL, -- Need ON

 numberOfProcesses-SubframePDSCH-Repetitions-r15 INTEGER(1..16) OPTIONAL, -- Need ON

 numberOfProcesses-SlotSubslotPDSCH-Repetitions-r15 INTEGER(1..16) OPTIONAL, -- Need ON

 mcs-restrictionSubframePDSCH-Repetitions-r15 ENUMERATED {n0, n1} OPTIONAL, -- Need ON

 mcs-restrictionSlotSubslotPDSCH-Repetitions-r15 ENUMERATED {n0, n1} OPTIONAL -- Need ON

 }

 } OPTIONAL -- Need ON

 ]],

 [[ spucch-Config-v1550 SPUCCH-Config-v1550 OPTIONAL -- Need ON

 ]],

 [[ soundingRS-UL-ConfigDedicatedAdd-r16 SoundingRS-UL-ConfigDedicatedAdd-r16

 OPTIONAL, -- Need ON

 uplinkPowerControlAddSRS-r16 UplinkPowerControlAddSRS-r16

 OPTIONAL, -- Need ON

 soundingRS-VirtualCellID-r16 SoundingRS-VirtualCellID-r16

 OPTIONAL, -- Need ON

 widebandPRG-r16 WidebandPRG-r16 OPTIONAL -- Need ON

 ]]

}

PhysicalConfigDedicatedSCell-v1370 ::= SEQUENCE {

 pucch-SCell-v1370 CHOICE{

 release NULL,

 setup SEQUENCE {

 pucch-ConfigDedicated-v1370 PUCCH-ConfigDedicated-v1370 OPTIONAL -- Cond PUCCH-Format4or5

 }

 }

}

PhysicalConfigDedicatedSCell-v13c0 ::= SEQUENCE {

 pucch-SCell-v13c0 CHOICE{

 release NULL,

 setup SEQUENCE {

 pucch-ConfigDedicated-v13c0 PUCCH-ConfigDedicated-v13c0

 }

 }

}

CFI-Config-r15 ::= SEQUENCE {

 cfi-SubframeNonMBSFN-r15 INTEGER (1..4) OPTIONAL, -- Need ON

 cfi-SlotSubslotNonMBSFN-r15 INTEGER (1..3) OPTIONAL, -- Need ON

 cfi-SubframeMBSFN-r15 INTEGER (1..2) OPTIONAL, -- Need ON

 cfi-SlotSubslotMBSFN-r15 INTEGER (1..2) OPTIONAL -- Need ON

}

CFI-PatternConfig-r15 ::= SEQUENCE {

 cfi-PatternSubframe-r15 SEQUENCE (SIZE(10)) OF INTEGER (1..4) OPTIONAL, -- Need ON

 cfi-PatternSlotSubslot-r15 SEQUENCE (SIZE(10)) OF INTEGER (1..3) OPTIONAL -- Need ON

}

LAA-SCellConfiguration-r13 ::= SEQUENCE {

 subframeStartPosition-r13 ENUMERATED {s0, s07},

 laa-SCellSubframeConfig-r13 BIT STRING (SIZE(8))

}

LAA-SCellConfiguration-v1430 ::= SEQUENCE {

 crossCarrierSchedulingConfig-UL-r14 CHOICE {

 release NULL,

 setup SEQUENCE {

 crossCarrierSchedulingConfigLAA-UL-r14 CrossCarrierSchedulingConfigLAA-UL-r14

 }

 } OPTIONAL, -- Cond Cross-Carrier-ConfigUL

 lbt-Config-r14 LBT-Config-r14 OPTIONAL, -- Need ON

 pdcch-ConfigLAA-r14 PDCCH-ConfigLAA-r14 OPTIONAL, -- Need ON

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

 soundingRS-UL-ConfigDedicatedAperiodic-v1430

 SoundingRS-UL-ConfigDedicatedAperiodic-v1430 OPTIONAL -- Need ON

}

LAA-SCellConfiguration-v1530 ::= SEQUENCE {

 aul-Config-r15 AUL-Config-r15 OPTIONAL, -- Need ON

 pusch-ModeConfigLAA-r15 PUSCH-ModeConfigLAA-r15 OPTIONAL -- Need OR

}

PUSCH-ModeConfigLAA-r15 ::= SEQUENCE {

 laa-PUSCH-Mode1 BOOLEAN,

 laa-PUSCH-Mode2 BOOLEAN,

 laa-PUSCH-Mode3 BOOLEAN

}

LBT-Config-r14 ::= CHOICE{

 maxEnergyDetectionThreshold-r14 INTEGER(-85..-52),

 energyDetectionThresholdOffset-r14 INTEGER(-13..20)

}

CSI-RS-ConfigNZPToAddModList-r11 ::= SEQUENCE (SIZE (1..maxCSI-RS-NZP-r11)) OF CSI-RS-ConfigNZP-r11

CSI-RS-ConfigNZPToAddModListExt-r13 ::= SEQUENCE (SIZE (1..maxCSI-RS-NZP-v1310)) OF CSI-RS-ConfigNZP-r11

CSI-RS-ConfigNZPToAddModList-r15 ::= SEQUENCE (SIZE (1..maxCSI-RS-NZP-r13)) OF CSI-RS-ConfigNZP-r11

CSI-RS-ConfigNZPToReleaseList-r11 ::= SEQUENCE (SIZE (1..maxCSI-RS-NZP-r11)) OF CSI-RS-ConfigNZPId-r11

CSI-RS-ConfigNZPToReleaseListExt-r13 ::= SEQUENCE (SIZE (1..maxCSI-RS-NZP-v1310)) OF CSI-RS-ConfigNZPId-v1310

CSI-RS-ConfigNZPToReleaseList-r15 ::= SEQUENCE (SIZE (1..maxCSI-RS-NZP-r13)) OF CSI-RS-ConfigNZPId-r13

CSI-RS-ConfigZPToAddModList-r11 ::= SEQUENCE (SIZE (1..maxCSI-RS-ZP-r11)) OF CSI-RS-ConfigZP-r11

CSI-RS-ConfigZPToReleaseList-r11 ::= SEQUENCE (SIZE (1..maxCSI-RS-ZP-r11)) OF CSI-RS-ConfigZPId-r11

PhysicalConfigDedicatedSTTI-r15 ::= CHOICE {

 release NULL,

 setup SEQUENCE {

 antennaInfoDedicatedSTTI-r15 AntennaInfoDedicatedSTTI-r15 OPTIONAL, -- Need ON

 antennaInfoUL-STTI-r15 AntennaInfoUL-STTI-r15 OPTIONAL, -- Need ON

 pucch-ConfigDedicated-v1530 PUCCH-ConfigDedicated-v1530 OPTIONAL, -- Need ON

 schedulingRequestConfig-v1530 SchedulingRequestConfig-v1530 OPTIONAL, -- Need ON

 uplinkPowerControlDedicatedSTTI-r15 UplinkPowerControlDedicatedSTTI-r15 OPTIONAL, --Need ON

 cqi-ReportConfig-r15 CQI-ReportConfig-r15 OPTIONAL, -- Need ON

 csi-RS-Config-r15 CSI-RS-Config-r15 OPTIONAL, -- Need ON

 csi-RS-ConfigNZPToReleaseList-r15 CSI-RS-ConfigNZPToReleaseList-r15 OPTIONAL, -- Need ON

 csi-RS-ConfigNZPToAddModList-r15 CSI-RS-ConfigNZPToAddModList-r15 OPTIONAL, -- Need ON

 csi-RS-ConfigZPToReleaseList-r15 CSI-RS-ConfigZPToReleaseList-r11 OPTIONAL, -- Need ON

 csi-RS-ConfigZPToAddModList-r11 CSI-RS-ConfigZPToAddModList-r11 OPTIONAL, -- Need ON

 csi-RS-ConfigZP-ApList-r15 CSI-RS-ConfigZP-ApList-r14 OPTIONAL, -- Need ON

 eimta-MainConfig-r12 EIMTA-MainConfig-r12 OPTIONAL, -- Need ON

 eimta-MainConfigServCell-r15 EIMTA-MainConfigServCell-r12 OPTIONAL, -- Need ON

 semiOpenLoopSTTI-r15 BOOLEAN,

 slotOrSubslotPDSCH-Config-r15 SlotOrSubslotPDSCH-Config-r15 OPTIONAL, -- Need ON

 slotOrSubslotPUSCH-Config-r15 SlotOrSubslotPUSCH-Config-r15 OPTIONAL, -- Need ON

 spdcch-Config-r15 SPDCCH-Config-r15 OPTIONAL, -- Need ON

 spucch-Config-r15 SPUCCH-Config-r15 OPTIONAL, -- Need ON

 srs-DCI7-TriggeringConfig-r15 BOOLEAN,

 shortProcessingTime-r15 BOOLEAN,

 shortTTI-r15 ShortTTI-r15 OPTIONAL -- Need ON

 }

}

SoundingRS-AperiodicSet-r14 ::= SEQUENCE{

 srs-CC-SetIndexList-r14

 SEQUENCE (SIZE (1..4)) OF SRS-CC-SetIndex-r14

 OPTIONAL, -- Cond SRS-Trigger-TypeA

 soundingRS-UL-ConfigDedicatedAperiodic-r14

 SoundingRS-UL-ConfigDedicatedAperiodic-r10

}

SoundingRS-AperiodicSetUpPTsExt-r14 ::= SEQUENCE{

 srs-CC-SetIndexList-r14

 SEQUENCE (SIZE (1..4)) OF SRS-CC-SetIndex-r14

 OPTIONAL, -- Cond SRS-Trigger-TypeA

 soundingRS-UL-ConfigDedicatedAperiodicUpPTsExt-r14

 SoundingRS-UL-ConfigDedicatedAperiodicUpPTsExt-r13

}

ShortTTI-r15 ::= SEQUENCE {

 dl-STTI-Length-r15 ShortTTI-Length-r15 OPTIONAL, -- Need OR

 ul-STTI-Length-r15 ShortTTI-Length-r15 OPTIONAL -- Need OR

}

ShortTTI-Length-r15 ::= ENUMERATED {slot, subslot}

SoundingRS-VirtualCellID-r16 ::= SEQUENCE {

 srs-VirtualCellID-r16 INTEGER (0..503),

 srs-VirtualCellID-AllSRS-r16 BOOLEAN

}

WidebandPRG-r16 ::= SEQUENCE {

 widebandPRG-Subframe-r16 BOOLEAN,

 widebandPRG-SlotSubslot-r16 BOOLEAN

}

-- ASN1STOP

| *PhysicalConfigDedicated* field descriptions |
| --- |
| ***absenceOfAnyOtherTechnology***Presence of this field indicates absence on a long term basis (e.g. by level of regulation) of any other technology sharing the carrier; absence of this field indicates the potential presence of any other technology sharing the carrier, as specified in TS 37.213 [94].  |
| ***additionalSpectrumEmissionPCell***E-UTRAN does not configure this field in this release of the specification. |
| ***antennaInfo***A choice is used to indicate whether the *antennaInfo* is signalled explicitly or set to the default antenna configuration as specified in clause 9.2.4. |
| ***blindSlotSubslotPDSCH-Repetitions***Enables HARQ-less/blind slot or subslot PDSCH repetitions for a UE in a given cell, i.e. back to back slot/subslot PDSCH transmissions for the same transport block. The number of slot/subslot PDSCH transmissions is indicated in the DCI. |
| ***blindSubframePDSCH-Repetitions***Enables HARQ-less/blind subframe PDSCH repetitions for a UE in a given cell, i.e. back to back PDSCH transmissions for the same transport block. The number of PDSCH transmissions is indicated in the DCI. |
| ***ce-CSI-RS-Feedback***Indicates whether CSI-RS-based CSI feedback is enabled for non-BL UE in CE mode A, see TS 36.213 [23], clause 7.2.2. |
| ***ce-Mode***Indicates the CE mode as specified in TS 36.213 [23]. |
| ***ce-pdsch-pusch-Enhancement-Config***Activation of new numbers of repetitions for PUSCH and modulation restrictions for PDSCH/PUSCH in CE mode A, see TS 36.212 [22] and TS 36.213 [23]. |
| ***cqi-ShortConfigSCell***Indicates whether the CSI (CQI/PMI/RI/PTI/CRI) reporting resource configured by *cqi-ShortConfigSCell* is available upon receiving the SCell activation command for this SCell. E-UTRAN only configures this field when transmission mode 1-8 is configured for the serving cell on this carrier frequency. |
| ***csi-RS-Config***For a serving frequency E-UTRAN does not configure *csi-RS-Config* (includes *zeroTxPowerCSI-RS*) when transmission mode 10 is configured for the serving cell on this carrier frequency. |
| ***csi-RS-ConfigNZPToAddModList***For a serving frequency E-UTRAN configures one or more *CSI-RS-ConfigNZP* only when transmission mode 9 or 10 is configured for the serving cell on this carrier frequency. For a serving frequency, EUTRAN configures a maximum number of *CSI-RS-ConfigNZP* in accordance with transmission mode (including CSI processes), eMIMO (including class) and associated UE capabilities (e.g. k-Max, n-MaxList). |
| ***csi-RS-ConfigZP-ApList***The aperiodic ZP CSI-RS for PDSCH rate matching. The field *subframeConfig* is applicable to semi-persistent CSI RS reporting. In other cases, the UE shall ignore field *subframeConfig*. |
| ***csi-RS-ConfigZPToAddModList***For a serving frequency E-UTRAN configures one or more *CSI-RS-ConfigZP* only when transmission mode 10 is configured for the serving cell on this carrier frequency. |
| ***dl-STTI-Length, ul-STTI-Length***Indicates the DL and UL short TTI lengths. Value slot corresponds to 7 OFDM symbols and value subslot corresponds to 2 or 3 OFDM symbols. E-UTRAN configures the same value for all serving cells sending PUCCH feedback on the same cell. If one SCell is configured with short TTI in the group of cells configured to send PUCCH on the same cell, the cell carrying PUCCH shall be configured with short TTI. E-UTRAN can configure different value of *dl-STTI-Length* and *ul-STTI-Length* for serving cells sending PUCCH feedback on different cells. E-UTRAN does not configure the combination {slot,subslot} for {DL,UL}.  |
| ***dummy***This field is not used in the specification. If received it shall be ignored by the UE. |
| ***eimta-MainConfigPCell, eimta-MainConfigSCell***If E-UTRAN configures *eimta-MainConfigPCell* or *eimta-MainConfigSCell* for one serving cell in a frequency band, E-UTRAN configures *eimta-MainConfigPCell* or *eimta-MainConfigSCell* for all serving cells residing on the frequency band. E-UTRAN configures *eimta-MainConfigPCell* or *eimta-MainConfigSCell* only if *eimta-MainConfig* is configured. |
| ***energyDetectionThresholdOffset***Indicates the offset to the default maximum energy detection threshold value. Unit in dB. Value -13 corresponds to -13dB, value -12 corresponds to -12dB, and so on (i.e. in steps of 1dB) as specified in TS 37.213 [94]. |
| ***epdcch-Config***indicates the *EPDCCH-Config* for the cell. E-UTRAN does not configure *EPDCCH-Config* for an SCell that is configured with value *other* for *schedulingCellInfo* in *CrossCarrierSchedulingConfig*. |
| ***k-max***Indicates the maximum number of interfering spatial layers signaled in the assistance information for MUST. Value l1 corresponds to 1 layer, Value l3 corresponds to 3 layers. |
| ***laa-PUSCH-Mode1, laa-PUSCH-Mode2, laa-PUSCH-Mode3***Indicates whether LAA PUSCH mode 1, 2 and/or 3 is configured as specified in TS 36.212 [22], clause 5.3.3.1. |
| ***laa-SCellSubframeConfig***A bit-map indicating LAA SCell subframe configuration, "1" denotes that the corresponding subframe is allocated as MBSFN subframe. The bitmap is interpreted as follows:Starting from the first/leftmost bit in the bitmap, the allocation applies to subframes #1, #2, #3, #4, #6, #7, #8, and #9. |
| ***maxEnergyDetectionThreshold***Indicates the absolute maximum energy detection threshold value. Unit in dBm. Value -85 corresponds to -85 dBm, value -84 corresponds to -84 dBm, and so on (i.e. in steps of 1dBm) as specified in TS 36.213 [23]. If the field is not configured, the UE shall use a default maximum energy detection threshold value as specified in TS 37.213 [94]. |
| ***maxNumber-SlotSubslotPDSCH-Repetitions***Indicates the maximum number of PDSCH transmissions for slot or subslot PDSCH repetitions.  |
| ***maxNumber-SubframePDSCH-Repetitions***Indicates the maximum number of PDSCH transmissions for subframe PDSCH repetitions.  |
| ***mcs-restrictionSlotSubslotPDSCH-Repetitions***Indicates the MCS restriction in terms of number of non-addressable MSB in the MCS bit-field for slot or subslot PDSCH repetition applicable when k > 1. |
| ***mcs-restrictionSubframePDSCH-Repetitions***Indicates MCS restriction in terms of number of non-addressable MSB in the MCS bit-field for subframe PDSCH repetition applicable when k > 1. |
| ***numberOfProcesses-SlotSubslotPDSCH-Repetitions***Indicates the number of HARQ processes for slot/subslot PDSCH repetition applicable when k > 1 configured per serving cell. |
| ***numberOfProcesses-SubframePDSCH-Repetitions***Indicates the number of HARQ processes for subframe PDSCH repetition applicable when k > 1 configured per serving cell. |
| ***p-a-must***Parameter: , see TS 36.213 [23], clause 5.2. Value dB-6 corresponds to -6 dB, dB-4dot77 corresponds to -4.77 dB etc. |
| ***pdsch-ConfigDedicated-v1130***For a serving frequency, E-UTRAN configures *pdsch-ConfigDedicated-v1130* only when transmission mode 10 is configured for the serving cell on this carrier frequency. |
| ***pdsch-ConfigDedicated-v1280***For a serving frequency, E-UTRAN configures *pdsch-ConfigDedicated-v1280* only when transmission mode 9 or 10 is configured for the serving cell on this carrier frequency. |
| ***pucch-Cell***If present, PUCCH feedback of this SCell is sent on the PUCCH SCell. If absent, PUCCH feedback of this SCell is sent on PCell or PSCell, or if the cell concerns the PUCCH SCell, on the concerned cell. If this field is not modified upon change of PUCCH SCell, the UE shall always send the PUCCH feedback of the concerned SCell using the configured PUCCH SCell. |
| ***pucch-ConfigDedicated***E-UTRAN configures *pucch-ConfigDedicated-r13* only if *pucch-ConfigDedicated* (i.e., without suffix) is not configured. UE shall ignore *pucch-ConfigDedicated-v1020* when *pucch-ConfigDedicated-r13* is configured. |
| ***pucch-SCell***If present, the concerned SCell is the PUCCH SCell. E-UTRAN only configures this field upon SCell addition i.e. this field is only released when the SCell is released. The field is not applicable for an LAA SCell in this release. |
| ***pusch-ConfigDedicated-r13***E-UTRAN configures *pusch-ConfigDedicated-r13* only if *pusch-ConfigDedicated* is not configured. |
| ***pusch-ConfigDedicated-v1250***E-UTRAN configures *pusch-ConfigDedicated-v1250* only if *tpc-SubframeSet* is configured. |
| ***pusch-EnhancementsConfig***Indicates that the UE shall transmit in the PUSCH enhancement mode if *pusch-EnhancementsConfig* is set to *setup*, see TS 36.211 [21] and TS 36.213 [23]. |
| ***rv-SlotsublotPDSCH-Repetitions***Indicates the RV cycling sequence for slot or subslot PDSCH repetition. Value dlrvseq1 = {0, 0, 0, 0} and value dlrvseq2 = {0, 2, 3, 1}. |
| ***rv-SubframePDSCH-Repetitions***Indicates the RV cycling sequence for subframe PDSCH repetition. Value dlrvseq1 = {0, 0, 0, 0} and value dlrvseq2 = {0, 2, 3, 1}. |
| ***semiOpenLoop, semiOpenLoopSTTI***Value TRUE indicates that semi-open-loop transmission is used for deriving CSI reporting and corresponding PDSCH transmission (DMRS). |
| ***semiStaticCFI-SlotSubslotNonMBSFN***Indicates the semi-static control format indicator for slot/subslot operation in non-MBSFN subframes. |
| ***semiStaticCFI-SlotSubslotMBSFN***Indicates the semi-static control format indicator for slot/subslot operation in MBSFN subframes. |
| ***semiStaticCFI-SubframeMBSFN***Indicates the semi-static control format indicator for subframe operation in MBSFN subframes. |
| ***semiStaticCFI-SubframeNonMBSFN***Indicates the semi-static control format indicator for subframe operation in non-MBSFN subframes. |
| ***shortProcessingTime***Indicates whether short processing time is configured as specific in TS 36.321 [6]. An SCell can only be configured with short processing if the cell carrying PUCCH for that SCell is configured with short processing time. |
| ***soundingRS-UL-PeriodicConfigDedicatedList***Indicates periodic soundingRS configuration except for the extension sounding symbols of the UpPTs subframe. E-UTRAN configures this field in *PhysicalConfigDedicated* only for the UE indicating support of *ce-SRS-Enhancement-r14* or *ce-SRS-EnhancementWithoutComb4-r14*. E-UTRAN configures this field in *PhysicalConfigDedicatedSCell-r10* only for the UE indicating support of *srs-UpPTS-6sym-r14*. |
| ***soundingRS-UL-PeriodicConfigDedicatedUpPTsExtList***Indicates periodic soundingRS configuration in extension sounding symbols of the UpPTs subframe. E-UTRAN configures this field in *PhysicalConfigDedicated* only for the UE indicating support of *ce-SRS-Enhancement-r14* or *ce-SRS-EnhancementWithoutComb4-r14*. E-UTRAN configures this field in *PhysicalConfigDedicatedSCell-r10* only for the UE indicating support of *srs-UpPTS-6sym-r14*. |
| ***soundingRS-UL-AperiodicConfigDedicatedList***Indicates aperiodic soundingRS configuration except for the extension sounding symbols of the UpPTs subframe. E-UTRAN configures this field in *PhysicalConfigDedicated* only for the UE indicating support of *ce-SRS-Enhancement-r14* or *ce-SRS-EnhancementWithoutComb4-r14*. E-UTRAN configures this field in *PhysicalConfigDedicatedSCell-r10* only for the UE indicating support of *srs-UpPTS-6sym-r14*. |
| ***soundingRS-UL-DedicatedApUpPTsExtList***Indicates aperiodic soundingRS configuration in extension sounding symbols of the UpPTs subframe. E-UTRAN configures this field in *PhysicalConfigDedicated* only for the UE indicating support of *ce-SRS-Enhancement-r14* or *ce-SRS-EnhancementWithoutComb4-r14*. E-UTRAN configures this field in *PhysicalConfigDedicatedSCell-r10* only for the UE indicating support of *srs-UpPTS-6sym-r14*. |
| ***srs-CC-SetIndexList***Indicates the *srs-CC-SetIndex* list which the *soundingRS-UL-ConfigDedicatedAperiodic* and*soundingRS-UL-ConfigDedicatedAperiodicUpPTsExt* belongs to. |
| ***srs-DCI7-TriggeringConfig***Indicates whether SRS triggering via DCI7 is configured. |
| ***srs-VirtualCellID***Indicates the virtual cell ID for SRS. |
| ***srs-VirtualCellID-AllSRS***Value TRUE indicates the configured virtual cell ID is applied to all SRS symbols. Value FALSE indicates the configured virtual cell ID is applied only to additional SRS symbols. |
| ***subframeStartPosition***Indicates possible starting positions of transmission in the first subframe of the DL transmission burst, see TS 36.211 [21]. Value *s0* means the starting position is subframe boundary, *s07* means the starting position is either subframe boundary or slot boundary. |
| ***tpc-PDCCH-ConfigPUCCH***PDCCH configuration for power control of PUCCH using format 3/3A, see TS 36.212 [22]. |
| ***tpc-PDCCH-ConfigPUSCH***PDCCH configuration for power control of PUSCH using format 3/3A, see TS 36.212 [22]. |
| ***typeA-SRS-TPC-PDCCH-Group***Indicates Type A trigger configuration for SRS transmission on a PUSCH-less SCell. E-UTRAN configures the UE with either *typeA-SRS-TPC-PDCCH-Group* or *typeB-SRS-TPC-PDCCH-Group*, if any. |
| ***uplinkPowerControlDedicated***E-UTRAN configures *uplinkPowerControlDedicated-v1130* only if *uplinkPowerControlDedicated* (without suffix) is configured. |
| ***uplinkPowerControlDedicatedSCell***E-UTRAN configures *uplinkPowerControlDedicatedSCell-v1130* only if *uplinkPowerControlDedicatedSCell-r10* is configured for this serving cell. |
| ***widebandPRG-SlotSubslot***Indicates whether the precoding resource block group size is the whole scheduled bandwidth for slot or subslot PDSCH operation as specified in TS 36.213 [23]. |
| ***widebandPRG-Subframe***Indicates whether the precoding resource block group size is the whole scheduled bandwidth for subframe PDSCH operation as specified in TS 36.213 [23]. |

| Conditional presence | Explanation |
| --- | --- |
| *AI-r8* | The field is optionally present, need ON, if *antennaInfoDedicated-r10* is absent. Otherwise the field is not present |
| *AI-r10* | The field is optionally present, need ON, if *antennaInfoDedicated* is absent. Otherwise the field is not present |
| *AperiodicSRS* | If *soundingRS-UL-ConfigDedicatedAperiodic-r10* is absent, the field is optional, Need ON. Otherwise the field is not present and the UE shall delete any existing value for this field. |
| *AperiodicSRSExt* | If *soundingRS-UL-ConfigDedicatedAperiodicUpPTsExt-r13* is absent, the field is optional, Need ON. Otherwise the field is not present and the UE shall delete any existing value for this field. |
| *AUL* | The field is optionally present, need ON, if *aul-config-r15* is present. Otherwise the field is not present. |
| *CommonUL* | The field is mandatory present if *ul-Configuration* of *RadioResourceConfigCommonSCell-r10* is present; otherwise it is optional, need ON. |
| *CQI-r8* | The field is optionally present, need ON, if *cqi-ReportConfig-r10* is absent. Otherwise the field is not present |
| *CQI-r10* | The field is optionally present, need ON, if *cqi-ReportConfig* is absent. Otherwise the field is not present |
| *Cross-Carrier-Config* | The field is optionally present, need ON, if *crossCarrierSchedulingConfig-r10* is absent. Otherwise the field is not present |
| *Cross-Carrier-ConfigUL* | The field is optionally present, need ON, if *crossCarrierSchedulingConfig-r10* and *crossCarrierSchedulingConfig-r13* are absent or *schedulingCellInfo* is set to 'own'. Otherwise the field is not present. |
| *PeriodicSRS* | If *soundingRS-UL-ConfigDedicated-r10* is absent, the field is optional, Need ON. Otherwise the field is not present and the UE shall delete any existing value for this field. |
| *PeriodicSRSPCell* | If *soundingRS-UL-ConfigDedicated* is absent, the field is optional, Need ON. Otherwise the field is not present and the UE shall delete any existing value for this field. |
| *PeriodicSRSExt* | If *soundingRS-UL-ConfigDedicatedUpPTsExt-r13* is absent, the field is optional, Need ON. Otherwise the field is not present and the UE shall delete any existing value for this field. |
| *PUCCH-Format4or5* | The field is mandatory present with *pucch-Format-v1370* set to *setup* if *pucch-ConfigDedicated-r13* is configured and *pucch-ConfigDedicated-r13* indicates PUCCH format 4 or PUCCH format 5; otherwise it is not present and the UE shall delete any existing value for this field. |
| *PUCCH-SCell1* | The field is optionally present, need OR, for SCell not configured with *pucch-configDedicated-r13*. Otherwise it is not present. |
| *PUSCH-SCell* | The field is optionally present, need ON, if *pusch-ConfigDedicatedSCell-r10 and pusch-ConfigDedicated-v1130* are absent. Otherwise the field is not present |
| *PUSCH-SCell1* | The field is optionally present, need ON, for SCell not configured with *pucch-configDedicated-r13*. Otherwise it is not present. |
| *SCellAdd* | The field is mandatory present if *cellIdentification* is present; otherwise it is optional, need ON. |
| *SRS-Trigger-TypeA* | The field is mandatory present if *typeA-SRS-TPC-PDCCH-Group-r14* is present. Otherwise the field is not present and the UE shall delete any existing value for this field. |

NOTE 1: During handover, the UE performs a MAC reset, which involves reverting to the default CQI/ SRS/ SR configuration in accordance with clause 5.3.13 and TS 36.321 [6], clauses 5.9 and 5.2. Hence, for these parts of the dedicated radio resource configuration, the default configuration (rather than the configuration used in the source PCell) is used as the basis for the delta signalling that is included in the message used to perform handover.

NOTE 2: Since delta signalling is not supported for the common SCell configuration, E-UTRAN can only add or release the uplink of an SCell by releasing and adding the concerned SCell.

<<unchanged text skipped>>

#### – *PUR-Config*

The IE *PUR-Config* is used to specify the PUR configuration.

*PUR-Config* information element

-- ASN1START

PUR-Config-r16 ::= SEQUENCE {

 pur-ImplicitReleaseAfter-r16 ENUMERATED {e2, e4, e8, spare} OPTIONAL, -- Need OR

 pur-Periodicity-r16 ENUMERATED {n8, n16, n32, n64, n128, n256, n512, n1024, n2048, n4096, n8192, spare5, spare4, spare3, spare2, spare1} OPTIONAL, --Need ON

 pur-NumOccasions-r16 ENUMERATED {one, infinite},

 pur-RNTI-r16 C-RNTI OPTIONAL, -- Need ON

 ta-ValidationConfig-r16 TA-ValidationConfig-r16 OPTIONAL, -- Need ON

 pur-StartTime-r16 TypeFFS OPTIONAL, -- Need ON

 pur-ResponseWindowTimer-r16 ENUMERATED {sf240, sf480, sf960, sf1920, sf3840, sf5760, sf7680, sf10240} OPTIONAL, -- Need ON

 pur-MPDCCH-Config-r16 PUR-MPDCCH-Config-r16 OPTIONAL, -- Need ON

 pur-PDSCH-FreqHopping-r16 BOOLEAN,

 pur-PUCCH-Config-r16 PUR-PUCCH-Config-r16 OPTIONAL, -- Need ON

 pur-PUSCH-Config-r16 PUR-PUSCH-Config-r16 OPTIONAL, -- Need ON

 ...

}

PUR-MPDCCH-Config-r16 ::= SEQUENCE {

 mpdcch-FreqHopping-r16 BOOLEAN,

 mpdcch-Narrowband-r16 INTEGER (1..maxAvailNarrowBands-r13),

 mpdcch-PRB-PairsConfig-r16 SEQUENCE{

 numberPRB-Pairs-r16 ENUMERATED {n2, n4, n6, spare1},

 resourceBlockAssignment-r11 BIT STRING (SIZE(4))

 },

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

 mpdcch-StartSF-UESS-r16 CHOICE {

 fdd ENUMERATED {v1, v1dot5, v2, v2dot5, v4, v5, v8, v10},

 tdd ENUMERATED {v1, v2, v4, v5, v8, v10, v20, spare1}

 },

 mpdcch-Offset-PUR-SS-r16 ENUMERATED {zero, oneEighth, oneQuarter,

 threeEighth, oneHalf, fiveEighth,

 threeQuarter, sevenEighth}

}

PUR-PUCCH-Config-r16 ::= SEQUENCE {

 n1PUCCH-AN-r16 INTEGER (0..2047) OPTIONAL, -- Need ON

 pucch-NumRepetitionCE-Format1-r16 ENUMERATED {n1, n2, n4, n8} OPTIONAL -- Need ON

}

PUR-PUSCH-Config-r16 ::= SEQUENCE {

 pur-GrantInfo-r16 CHOICE {

 ce-ModeA SEQUENCE {

 numRUs-r16 BIT STRING (SIZE(2)),

 prb-AllocationInfo-r16 BIT STRING (SIZE(10)),

 mcs-r16 BIT STRING (SIZE(4)),

 numRepetitions-r16 BIT STRING (SIZE(3))

 },

 ce-ModeB SEQUENCE {

 subPRB-Allocation-r16 BOOLEAN,

 numRUs-r16 BOOLEAN,

 prb-AllocationInfo-r16 BIT STRING (SIZE(8)),

 mcs-r16 BIT STRING (SIZE(4)),

 numRepetitions-r16 BIT STRING (SIZE(3))

 }

 } OPTIONAL, -- Need ON

 pur-PUSCH-FreqHopping-r16 BOOLEAN,

 p0-UE-PUSCH-r16 INTEGER (-8..7),

 alpha-r16 Alpha-r12,

 pusch-CyclicShift-r16 ENUMERATED {n0, n6}, pusch-NB-MaxTBS-r16 BOOLEAN

}

TA-ValidationConfig-r16 ::= SEQUENCE {

 pur-TimeAlignmentTimer-r16 INTEGER (1..8) OPTIONAL, --Need OR

 pur-RSRP-ChangeThreshold-r16 CHOICE {

 release NULL ,

 setup SEQUENCE {

 rsrp-IncreaseThresh-r16 RSRP-ChangeThresh-r16,

 rsrp-DecreaseThresh-r16 RSRP-ChangeThresh-r16 OPTIONAL --Need OP

 }

 } OPTIONAL --Need ON

}

RSRP-ChangeThresh-r16 ::= ENUMERATED {dB4, dB6, dB8, dB10, dB14, dB18, dB22, dB26, dB30, dB34, spare6, spare5, spare4, spare3, spare2, spare1}

-- ASN1STOP

| *PUR-Config* field descriptions |
| --- |
| ***alpha***Parameter: *αc*(3). See TS 36.213 [23], clause 5.1.1.1. Value al0 corresponds to 0, value al04 corresponds to 0.4, value al05 to 0.5 and so on. |
| ***mpdcch-FreqHopping***Frequency hopping activation/deactivation for MPDCCH. See TS 36.213 [23]. |
| ***mpdcch-Narrowband***Indicates the index of a narrowband on which the UE monitors for MPDCCH, see TS 36.213 [23], clause 9.1.5. Field values (1..*maxAvailNarrowBands-r13*) correspond to narrowband indices (0..[*maxAvailNarrowBands-r13*-1]) as specified in TS 36.211 [21]. |
| ***mpdcch-PRB-PairsConfig***Indicates the configuration of physical resource-block pairs used for MPDCCH. See TS 36.213 [23]. *mpdcch-PRB-Pairs* indicates the number of PRB pairs. Value n2 corresponds to 2 PRB pairs; n4 corresponds to 4 PRB pairs and so on. *resourceBlockAssignment*indicates the index to a specific combination of PRB pair for MPDCCH set. See TS 36.213 [23], clause 9.1.4.4. |
| ***mpdcch-NumRepetition***Maximum number of repetitions levels for UE-SS for MPDCCH, see TS 36.213 [23]. |
| ***mpdcch-StartSF-UESS***Starting subframe configuration for an MPDCCH PUR search space, see TS 36.213 [23]. Value v1 corresponds to 1, value v1dot5 corresponds to 1.5, and so on. |
| ***mpdcch-Offset-PUR-SS***Starting subframes configuration of the MPDCCH search space for PUR, see TS 36.213 [23]. |
| ***pusch-NB-MaxTBS***Activation of 2984 bits maximum PUSCH TBS in 1.4 MHz in CE mode A, see TS 36.212 [22] and TS 36.213 [23]. |
| ***n1PUCCH-AN***Indicates UE-specific PUCCH AN resource offset, see TS 36.213 [23], clause 10.1. |
| ***pusch-CyclicShift***PUR PUSCH cyclic shift for the DMRS, *s*ee TS 36.211 [21]. |
| ***pur-ImplicitReleaseAfter***Number of consecutive empty PUR occasions before implicit release, as specified in TS 36.321 [6]. Value e2 corresponds to 2 PUR occasions, value e4 corresponds to 4 PUR occasions and so on.If *pur-ImplicitReleaseAfter* is not configured, implicit PUR release based on consecutive empty PUR occasions is not applicable. |
| ***p0-UE-PUSCH***Parameter: P0\_UE\_PUSCH,c (3). See TS 36.213 [23], clause 5.1.1.1, unit dB. |
| ***pucch-NumRepetitionCE-Format1***Number of PUCCH repetitions for PUCCH format 1/1a, see TS 36.211 [21] and TS 36.213 [23]. When *pur-GrantInfo* is set to *ce-ModeA*, value n1 corresponds to 1 repetition, value n2 corresponds to 2 repetitions, and so on. When *pur-GrantInfo* is set to *ce-ModeB*, actual value corresponds to 4 \* indicated value. |
| ***pur-GrantInfo***Indicates UL grant for transmission using PUR. Field set to *ce-ModeA* indicates the PUR grant is for CE Mode A and the field set to *ce-ModeB* indicates the PUR grant is for CE Mode B. *numRUs* indicates DCI field for PUSCH number of resource units, see TS 36.213 [23] clause 8.1.6. *prbAllocationInfo* indicates DCI field for PUSCH resource block assignment, see TS 36.212 [22], clause 5.3.3.1.10 (CE Mode A) and clause 5.3.3.1.11 (CE Mode B). *mcs* indicates DCI field for PUSCH modulation and coding scheme, see TS 36.213 [23] clause 8.6. *numRepetitions* indicates DCI field for PUSCH repetition number, see TS 36.213 [23] clause 8.0.For CE Mode A, *numRUs* set to '00' indicates use of full-PRB resource allocation, otherwise sub-PRB resource allocation as defined in TS 36.213 [23], clause 8.1.6. For CE Mode B, *subPRB-Allocation* indicates whether sub-PRB resource allocation is used. |
| ***pur-NumOccasions***Number of PUR occasions. Value *one* corresponds to 1 PUR occasion, and value *infinite* corresponds to an infinite number of PUR occasions. |
| ***pur-PDSCH-FreqHopping***Frequency hopping activation/deactivation for PDSCH. See TS 36.213 [23]. |
| ***pur-PUSCH-FreqHopping***Frequency hopping activation/deactivation for PUSCH. See TS 36.213 [23]. |
| ***pur-Periodicity***Indicates the periodicity for the PUR occasions expressed as multiple of 10.24s. Value n8 indicates 8, value n16 inidcates 16 and so on. Actual value = indicated value \* 10.24s. |
| ***pur-ResponseWindowTimer***PUR MPDCCH search space window duration. See TS 36.321 [6] and TS 36.213 [23]. Value in subframes. Value sf240 corresponds to 240 subframes, value sf480 corresponds to 480 subframes and so on. |
| ***pur-RSRP-ChangeThreshold***Indicates the threshold of change in serving cell RSRP in dB for TA validation. Value dB4 corresponds to 4 dB, value dB6 corresponds to 6 dB and so on. When *pur-RSRP-ChangeThreshold* is set to *setup*, if *rsrp-DecreaseThresh* is absent the value of *rsrp-IncreaseThresh* is also used for *rsrp-DecreaseThresh*.If *pur-RSRP-ChangeThreshold* is not configured, TA validation based on change in serving cell RSRP is not applicable. |
| ***pur-TimeAlignmentTimer***Indicates the idle mode TA timer in seconds for TA validation. Actual value = indicated value \* *pur-Periodicity*.If *pur-TimeAlignmentTimer* is not configured, TA validation based on idle mode TA timer is not applicable. |
| ***pur-StartTime***Indicates the time gap with respect to current time until the first PUR occasion. Details FFS. |

<<unchanged text skipped>>

#### – *RadioResourceConfigCommon*

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

*RadioResourceConfigCommon* information element

-- ASN1START

RadioResourceConfigCommonSIB ::= SEQUENCE {

 rach-ConfigCommon RACH-ConfigCommon,

 bcch-Config BCCH-Config,

 pcch-Config PCCH-Config,

 prach-Config PRACH-ConfigSIB,

 pdsch-ConfigCommon PDSCH-ConfigCommon,

 pusch-ConfigCommon PUSCH-ConfigCommon,

 pucch-ConfigCommon PUCCH-ConfigCommon,

 soundingRS-UL-ConfigCommon SoundingRS-UL-ConfigCommon,

 uplinkPowerControlCommon UplinkPowerControlCommon,

 ul-CyclicPrefixLength UL-CyclicPrefixLength,

 ...,

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

 ]],

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

 ]],

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

 ]],

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

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

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

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

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

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

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

 ]],

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

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

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

 ]],

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

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

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

 highSpeedConfig-v1530 HighSpeedConfig-v1530 OPTIONAL -- Need OR

 ]],

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

 ]],

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

 ]],

 [[ highSpeedConfig-v16xy HighSpeedConfig-v16xy OPTIONAL, -- Need OR

 crs-ChEstMPDCCH-ConfigCommon-r16 CRS-ChEstMPDCCH-ConfigCommon-r16 OPTIONAL, -- Need OR

 wus-Config-v16xy WUS-Config-v16xy OPTIONAL, -- Need OR

 gwus-Config-r16 GWUS-Config-r16 OPTIONAL, -- Need OR

 uplinkPowerControlCommon-v16xy UplinkPowerControlCommon-v16xy OPTIONAL, -- Need OR

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

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

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

 ]]

}

RadioResourceConfigCommon ::= SEQUENCE {

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

 prach-Config PRACH-Config,

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

 pusch-ConfigCommon PUSCH-ConfigCommon,

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

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

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

 uplinkPowerControlCommon UplinkPowerControlCommon OPTIONAL, -- Need ON

 antennaInfoCommon AntennaInfoCommon OPTIONAL, -- Need ON

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

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

 ul-CyclicPrefixLength UL-CyclicPrefixLength,

 ...,

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

 ]],

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

 ]],

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

 ]],

 [[

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

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

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

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

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

 uplinkPowerControlCommon-v1310 UplinkPowerControlCommon-v1310 OPTIONAL -- Need ON

 ]],

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

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

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

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

 ]],

 [[

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

 ]],

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

 highSpeedConfig-v1530 HighSpeedConfig-v1530 OPTIONAL -- Need OR

 ]],

 [[

 highSpeedConfig-v16xy HighSpeedConfig-v16xy OPTIONAL, -- Need OR

 uplinkPowerControlCommon-v16xy UplinkPowerControlCommon-v16xy OPTIONAL -- Need OR

 ]]

}

RadioResourceConfigCommonPSCell-r12 ::= SEQUENCE {

 basicFields-r12 RadioResourceConfigCommonSCell-r10,

 pucch-ConfigCommon-r12 PUCCH-ConfigCommon,

 rach-ConfigCommon-r12 RACH-ConfigCommon,

 uplinkPowerControlCommonPSCell-r12 UplinkPowerControlCommonPSCell-r12,

 ...,

 [[ uplinkPowerControlCommonPSCell-v1310

 UplinkPowerControlCommon-v1310 OPTIONAL -- Need ON

 ]],

 [[ uplinkPowerControlCommonPSCell-v1530

 UplinkPowerControlCommon-v1530 OPTIONAL -- Need ON

 ]]

}

RadioResourceConfigCommonPSCell-v12f0 ::= SEQUENCE {

 basicFields-v12f0 RadioResourceConfigCommonSCell-v10l0

}

RadioResourceConfigCommonPSCell-v1440 ::= SEQUENCE {

 basicFields-v1440 RadioResourceConfigCommonSCell-v1440

}

RadioResourceConfigCommonSCell-r10 ::= SEQUENCE {

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

 nonUL-Configuration-r10 SEQUENCE {

 -- 1: Cell characteristics

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

 -- 2: Physical configuration, general

 antennaInfoCommon-r10 AntennaInfoCommon,

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

 -- 3: Physical configuration, control

 phich-Config-r10 PHICH-Config,

 -- 4: Physical configuration, physical channels

 pdsch-ConfigCommon-r10 PDSCH-ConfigCommon,

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

 },

 -- UL configuration

 ul-Configuration-r10 SEQUENCE {

 ul-FreqInfo-r10 SEQUENCE {

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

 ul-Bandwidth-r10 ENUMERATED {n6, n15,

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

 additionalSpectrumEmissionSCell-r10 AdditionalSpectrumEmission

 },

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

 uplinkPowerControlCommonSCell-r10 UplinkPowerControlCommonSCell-r10,

 -- A special version of IE UplinkPowerControlCommon may be introduced

 -- 3: Physical configuration, control

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

 ul-CyclicPrefixLength-r10 UL-CyclicPrefixLength,

 -- 4: Physical configuration, physical channels

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

 pusch-ConfigCommon-r10 PUSCH-ConfigCommon

 } OPTIONAL, -- Need OR

 ...,

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

 ]],

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

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

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

 uplinkPowerControlCommonSCell-v1130

 UplinkPowerControlCommonSCell-v1130 OPTIONAL -- Cond UL

 ]],

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

 ]],

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

 uplinkPowerControlCommonSCell-v1310

 UplinkPowerControlCommonSCell-v1310 OPTIONAL -- Cond UL

 ]],

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

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

 ul-Configuration-r14 SEQUENCE {

 ul-FreqInfo-r14 SEQUENCE {

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

 ul-Bandwidth-r14 ENUMERATED {n6, n15,

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

 additionalSpectrumEmissionSCell-r14 AdditionalSpectrumEmission

 },

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

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

 ul-CyclicPrefixLength-r14 UL-CyclicPrefixLength,

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

 uplinkPowerControlCommonPUSCH-LessCell-v1430

 UplinkPowerControlCommonPUSCH-LessCell-v1430 OPTIONAL -- Need OR

} OPTIONAL, -- Cond ULSRS

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

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

 ]],

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

 ]],

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

 ]],

 [[

 highSpeedConfigSCell-v16xy HighSpeedConfigSCell-v16xy OPTIONAL -- Need OR

 ]]

}

RadioResourceConfigCommonSCell-v10l0 ::= SEQUENCE {

 -- UL configuration

 ul-Configuration-v10l0 SEQUENCE {

 additionalSpectrumEmissionSCell-v10l0 AdditionalSpectrumEmission-v10l0

 }

}

RadioResourceConfigCommonSCell-v1440 ::= SEQUENCE {

 ul-Configuration-v1440 SEQUENCE {

 ul-FreqInfo-v1440 SEQUENCE {

 additionalSpectrumEmissionSCell-v1440 AdditionalSpectrumEmission-v10l0

 }

 }

}

BCCH-Config ::= SEQUENCE {

 modificationPeriodCoeff ENUMERATED {n2, n4, n8, n16}

}

BCCH-Config-v1310 ::= SEQUENCE {

 modificationPeriodCoeff-v1310 ENUMERATED {n64}

}

FreqHoppingParameters-r13 ::= SEQUENCE {

 dummy ENUMERATED {nb2, nb4} OPTIONAL,

 dummy2 CHOICE {

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

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

 } OPTIONAL,

 dummy3 CHOICE {

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

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

 } OPTIONAL,

 interval-ULHoppingConfigCommonModeA-r13 CHOICE {

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

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

 } OPTIONAL, -- Cond MP-A

 interval-ULHoppingConfigCommonModeB-r13 CHOICE {

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

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

 } OPTIONAL, -- Cond MP-B

 dummy4 INTEGER (1..maxAvailNarrowBands-r13) OPTIONAL

}

PCCH-Config ::= SEQUENCE {

 defaultPagingCycle ENUMERATED {

 rf32, rf64, rf128, rf256},

 nB ENUMERATED {

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

 oneSixteenthT, oneThirtySecondT}

}

PCCH-Config-v1310 ::= SEQUENCE {

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

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

 nB-v1310 ENUMERATED {one64thT, one128thT, one256thT}

 OPTIONAL -- Need OR

}

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

HighSpeedConfig-r14 ::= SEQUENCE {

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

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

}

HighSpeedConfig-v1530 ::= SEQUENCE {

 highSpeedMeasGapCE-ModeA-r15 ENUMERATED {true}

}

HighSpeedConfigSCell-r14 ::= SEQUENCE {

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

}

HighSpeedConfig-v16xy ::= SEQUENCE {

 highSpeedEnhMeasFlag2-r16 ENUMERATED {true} OPTIONAL, -- Need OR

 highSpeedEnhDemodFlag2-r16 ENUMERATED {true} OPTIONAL -- Need OR

}

HighSpeedConfigSCell-v16xy ::= SEQUENCE {

 highSpeedEnhMeasFlagSCell-r16 ENUMERATED {true}

}

-- ASN1STOP

| *RadioResourceConfigCommon* field descriptions |
| --- |
| ***additionalSpectrumEmissionSCell***The UE requirements related to *additionalSpectrumEmissionSCell* are defined in TS 36.101 [42]. E-UTRAN configures the same value in *additionalSpectrumEmissionSCell* for all SCell(s) of the same band with UL configured. The *additionalSpectrumEmissionSCell* is applicable for all serving cells (including PCell) of the same band with UL configured. |
| ***crs-ChEstMPDCCH-ConfigCommon***Presence of this field indicates use of CRS for improving channel estimation on MPDCCH is enabled in RRC\_IDLE and RRC\_CONNECTED mode for UEs indicating support of *ce-CRS-ChannelEstMPDCCH*. |
| ***defaultPagingCycle***Default paging cycle, used to derive 'T' in TS 36.304 [4]. Value rf32 corresponds to 32 radio frames, rf64 corresponds to 64 radio frames and so on. |
| ***dummy***This field is not used in the specification. If received it shall be ignored by the UE. |
| ***harq-ReferenceConfig***Indicates UL/ DL configuration used as the DL HARQ reference configuration for this serving cell. Value sa2 corresponds to Configuration2, sa4 to Configuration4 etc, as specified in TS 36.211 [21], table 4.2-2. E-UTRAN configures the same value for all serving cells residing on same frequency band. |
| ***highSpeedEnhancedMeasFlag***If the field is present, the UE shall apply the high speed (350 km/h) measurement enhancements as specified in TS 36.133 [16]. If *highSpeedEnhMeasFlag2* is present, the UE indicating *measurementEnhancements2* shall ignore this field. |
| ***highSpeedEnhancedDemodulationFlag***If the field is present, the UE shall apply the advanced receiver in SFN scenario (350 km/h) as specified in TS 36.101 [42]. If this field is included in *HighSpeedConfig* and *highSpeedEnhDemodFlag2* is present, the UE indicating *demodulationEnhancements2* shall ignore this field in *HighSpeedConfig*. |
| ***highSpeedEnhDemodFlag2***If the field is present, the UE shall apply the further enhanced receiver in HST-SFN scenario (500 km/h) as specified in TS 36.101 [42]. |
| ***highSpeedEnhMeasFlag2***If the field is present, the UE shall apply the high speed (500 km/h) measurement enhancements as specified in TS 36.133 [16]. |
| ***highSpeedEnhMeasFlagSCell***If the field is present, the UE shall apply the high speed (350 km/h) SCell measurement enhancements as specified in TS 36.133 [16]. |
| ***highSpeedMeasGapCE-ModeA***If the field is present, the UE in CE mode A shall apply the measurement gap sharing table associated with high-velocity scenario for measurements, as specified in TS 36.133 [16]. |
| ***interval-DLHoppingConfigCommonModeX***Number of consecutive absolute subframes over which MPDCCH or PDSCH for CE mode X stays at the same narrowband before hopping to another narrowband. For interval-FDD, int1 corresponds to 1 subframe, int2 corresponds to 2 subframes, and so on. For interval-TDD, int1 corresponds to 1 subframe, int5 corresponds to 5 subframes, and so on. |
| ***interval-ULHoppingConfigCommonModeX***Number of consecutive absolute subframes over which PUCCH or PUSCH for CE mode X stays at the same narrowband before hopping to another narrowband. For interval-FDD, int1 corresponds to 1 subframe, int2 corresponds to 2 subframes, and so on. For interval-TDD, int1 corresponds to 1 subframe, int5 corresponds to 5 subframes, and so on. |
| ***modificationPeriodCoeff***Actual modification period, expressed in number of radio frames= *modificationPeriodCoeff* \* *defaultPagingCycle*. n2 corresponds to value 2, n4 corresponds to value 4, n8 corresponds to value 8, n16 corresponds to value 16, and n64 corresponds to value 64. |
| ***mpdcch-NumRepetition-Paging***Maximum number of repetitions for MPDCCH common search space (CSS) for paging, see TS 36.211 [21]. |
| ***mpdcch-pdsch-HoppingOffset***Parameter: cid:image020.png@01D1F4C1.16D3F4B0, see TS 36.211 [21], clause 6.4.1. |
| ***mpdcch-pdsch-HoppingNB***The number of narrowbands for MPDCCH/PDSCH frequency hopping. Value nb2 corresponds to 2 narrowbands and value nb4 corresponds to 4 narrowbands. |
| ***nB***Parameter: nB is used as one of parameters to derive the Paging Frame and Paging Occasion according to TS 36.304 [4]. Value in multiples of 'T' as defined in TS 36.304 [4]. A value of fourT corresponds to 4 \* T, a value of twoT corresponds to 2 \* T and so on. In case *nB-v1310* is signalled, the UE shall ignore *nB* (i.e. without suffix). EUTRAN configures *nB-v1310* only in the BR version of SI message. |
| ***paging-narrowBands***Number of narrowbands used for paging, see TS 36.304 [4], TS 36.212 [22] and TS 36.213 [23]. |
| ***p-Max***Pmax to be used in the target cell. If absent, for the band used in the target cell, the UE applies the maximum power according to its capability as specified in 36.101 [42], clause 6.2.2. In case the UE is configured with uplink intra-band contiguous CA and the UE indicates *ue-CA-PowerClass-N* in that band combination, then the *p-Max* in *RadioResourceConfigCommonSCell* for that SCell, if present, also applies for that band combination whenever that SCell is activated. |
| ***prach-ConfigSCell***Indicates a PRACH configuration for an SCell. The field is not applicable for an LAA SCell in this release. |
| ***rach-ConfigCommonSCell***Indicates a RACH configuration for an SCell. The field is not applicable for an LAA SCell in this release. |
| ***rss-MeasConfig***Indicates whether RSS-based measurement is enabled. |
| ***rss-MeasNonNCL***Indicates RSS of neighbour cells not in the Neighbour Cell List may be used for measurements. When this field is included, the UE assumes for all neighbour cells not in the Neighbour Cell List the RSS power bias is same as used for the serving cell or the camped cell. |
| ***rss-MeasPowerBias***Indicates default power bias in dB relative to q\_offset of the neighbour cell CRS when neighbour cell list (*intraFreqNeighCellList*, *interFreqNeighCellLis*) is not present. Value dB-6 corresponds to -6 dB, value dB-3 corresponds to -3 dB and so on. Value *rssNotUsed* indicates measurement based on RSS is not applicable for the corresponding neighbour cell. |
| ***soundingRS-FlexibleTiming***Indicates the SRS flexible timing (if configured) for aperiodic SRS triggered by DL grant. If the SRS transmission is collided with ACK/NACK, postpone once to the next configured SRS transmission opportunity. |
| ***ul-Bandwidth***Parameter: transmission bandwidth configuration, NRB, in uplink, see TS 36.101 [42], table 5.6-1. Value n6 corresponds to 6 resource blocks, n15 to 15 resource blocks and so on. If for FDD this parameter is absent, the uplink bandwidth is equal to the downlink bandwidth. For TDD this parameter is absent and it is equal to the downlink bandwidth. |
| ***ul-CarrierFreq***For FDD: If absent, the (default) value determined from the default TX-RX frequency separation defined in TS 36.101 [42], table 5.7.3-1, applies.For TDD: This parameter is absent and it is equal to the downlink frequency. |
| ***ul-CyclicPrefixLength***Parameter: Uplink cyclic prefix length see TS 36.211 [21], clause 5.2.1, where len1 corresponds to normal cyclic prefix and len2 corresponds to extended cyclic prefix. |

| **Conditional presence** | **Explanation** |
| --- | --- |
| *CellInNCL* | If a neighbour cell list is absent (*intraFreqNeighCellList, interFreqNeighCellLis*) and *rss-MeasConfig-r16* is included in SIB2, the field is mandatory present. Otherwise the field is not present, and the UE shall delete any existing value for this field. |
| *EDT* | The field is optionally present, Need OR, if *edt-Parameters* is present; otherwise the field is not present and the UE shall delete any existing value for this field. |
| *MP-A* | The field is mandatory present for CE mode A. Otherwise the field is optional, Need OR. |
| *MP-B* | The field is mandatory present for CE mode B. Otherwise the field is optional, Need OR. |
| *TDD* | The field is optional for TDD, Need ON; it is not present for FDD and the UE shall delete any existing value for this field. |
| *TDD2* | If *tdd-Config-r10* is present, the field is optional, Need OR. Otherwise the field is not present and the UE shall delete any existing value for this field. |
| *TDD3* | If *tdd-Config* is present, the field is optional, Need OR. Otherwise the field is not present and the UE shall delete any existing value for this field. |
| *TDD-OR-NoR11* | If *prach-ConfigSCell-r11* is absent, the field is optional for TDD, Need OR. Otherwise the field is not present and the UE shall delete any existing value for this field. |
| *TDDSCell* | This field is mandatory present for TDD; it is not present for FDD and LAA SCell, and the UE shall delete any existing value for this field. |
| *UL* | If the SCell is part of the STAG or concerns the PSCell or PUCCH SCell and if *ul-Configuration* is included, the field is optional, Need OR. Otherwise the field is not present and the UE shall delete any existing value for this field. |
| *ULSCell* | For the PSCell (IE is included in *RadioResourceConfigCommonPSCell*) the field is absent. Otherwise, if the SCell is part of the STAG and if *ul-Configuration* is included, the field is optional, Need OR. Otherwise the field is not present and the UE shall delete any existing value for this field. |
| *ULSRS* | If *ul-Configuration-r10* is absent, the field is optional, Need OR. Otherwise the field is not present and the UE shall delete any existing value for this field. |

Next change

### 6.3.4 Mobility control information elements

<<unchanged text skipped>>

#### – *RSS-ConfigCarrierInfo*

The IE *RSS-ConfigCarrierInfo* contains RSS configuration for a carrier.

***RSS-ConfigCarrierInfo* information element**

-- ASN1START

RSS-ConfigCarrierInfo-r16::= SEQUENCE {

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

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

}

-- ASN1STOP

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

Next change

### 6.3.6 Other information elements

<<unchanged text skipped>>

End of changes