**3GPP TSG- Meeting # 110-e *Draft* R2-2005781**

**Electronic, 1- 12 June 2020**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** |  | **rev** | **1** | **Current version:** |  |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Minor changes collected by Rapporteur | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | MBMS\_LTE\_enh2-Core, TEI15 | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | REL-15 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) Rel-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The changes included in this CR aim to correct several minor errors in the specification a.o:   * There are some obvious mistakes regarding name of logical channel and a radio bearer field * Field subcarrierSpacingMBMS-r14 is one case in which a minus sign is used for a value in kHz while it concerns a positive value. This deviates from the general convention and may henceresult in confusion * Several minor/ editorial changes e.g. incorrect suffices | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | The original version of the CR included the following changes   * 5.3.10.1: Section concerns SRB addition/ modification, so obviously "DTCH" should be revised to "DCCH * 5.3.10.3: Section concerns DRB addition/ modification, so obviously srb-Identity should be revised into "drb-Identity * MBSFN-AreaInfoList subfield subcarrierSpacingMBMS: removal of ‘-‘ in ASN.1 and field description (REL-14 and REL-15). Also change to kHz (captital H)   Changes introduced in the revised CR provided to R2#110e   * SIB26: Addition of container for late non-critical extensions * SL-V2X-ConfigDedicated: In field description of logicalChGroupInfoList, a suffix was corrected from –v 1520 to –v1530 * EPDCCH-Config, numberPRB-Pairs: Field descriptions was corrected to clarify that for BL UEs/ UEs in CE EUTRAN only configures values up to n6 (rather than stating that values n2 and n4 are configured only for BL/ CE).   Further changes introduced in the revised CR prepared during R2#110e   * Changes from R16 ASN.1 review ported back to REL-15 (R2-2005018)   **Impact Analysis:**  **Impacted functionality:**  None i.e. these minor corrections do not involve any functional changes  **Interoperability issue:**  No interoperability issue (as no functional change). | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Absence of container for late non-critical extensions in SIB26 may cause problems to introduce such extensions in future. Furthermore, several minor errors remain | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.3.10.1, 5.3.10.3, 6.2.2, 6.3.1, 6.3.2, 6.3.5, 6.3.7a, 6.3.8 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **x** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **x** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Revision of R2-2003233, R2-2005995 | | | | | | | | |

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> if the *RRCConnectionSetup* is received in response to an *RRCConnectionResumeRequest* from a suspended RRC connection:

2> if the UE has initiated UP-EDT:

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;

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> 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.

5.3.10.1 SRB addition/ modification

The UE shall:

1> if the UE is a NB-IoT UE and SRB1 is not established; or

1> for each *srb-Identity* value included in the *srb-ToAddModList* that is not part of the current UE configuration (SRB establishment):

2> if the UE is not a NB-IoT UE that only supports the Control Plane CIoT EPS optimisation:

3> apply the specified configuration defined in 9.1.2 for the corresponding SRB;

3> establish a primary (MCG) RLC entity in accordance with the received *rlc-Config*;

3> establish a primary (MCG) DCCH logical channel in accordance with the received *logicalChannelConfig* andwith the logical channel identity set in accordance with 9.1.2;

3> if the same *srb-Identity* is included in NR *srb-ToAddModList*:

4> after processing *nr-RadioBearerConfig1* and *nr-RadioBearerConfig2* if present in the *RRCConnectionReconfiguration* message which triggered the execution of the SRB addition/modification procedure, associate MCG RLC bearer with the NR PDCP entity associated with the same value of *srb-Identity* in the current UE configuraton as specified in TS 38.331 [82];

3> else:

4> establish a PDCP entity and configure it with the current (MCG) security configuration, if applicable;

3> if *rlc-BearerConfigSecondary* is received with value *setup*:

4> establish a secondary MCG RLC entity or entities and an associated DCCH logical channel in accordance with the received *rlc-BearerConfigSecondary* and associate these with the E-UTRA PDCP entity with the same value of *srb-Identity* within the current UE configuration;

4> configure the E-UTRA PDCP entity to activate duplication with *t-Reordering* set to *infinity*;

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

3> apply the specified configuration defined in 9.1.2 for SRB1bis;

3> establish an (MCG) RLC entity in accordance with the received *rlc-Config*;

3> establish a (MCG) DCCH logical channel in accordance with the received *logicalChannelConfig* andwith the logical channel identity set in accordance with 9.1.2.1a;

1> if the UE is a NB-IoT UE and SRB1 is established; or

1> for each *srb-Identity* value included in the *srb-ToAddModList* that is part of the current UE configuration (SRB reconfiguration):

2> if *pdcp-verChange* is included (i.e, NR PDCP to E-UTRA PDCP change):

3> establish an (E-UTRA) PDCP entity and configure it with the current (MCG) security configuration;

NOTE: The UE applies the LTE ciphering and integrity protection algorithms that are equivalent to the previously configured NR security algorithms.

3> associate the primary RLC bearer of this SRB with the established PDCP entity;

3> release the NR PDCP entity of this SRB;

2> reconfigure the primary RLC entity in accordance with the received *rlc-Config*;

2> reconfigure the primary DCCH logical channel in accordance with the received *logicalChannelConfig*;

2> if *rlc-BearerConfigSecondary* is included with value *release*:

3> release the secondary MCG RLC entity or entities as well as the associated DCCH logical channel;

2> if *rlc-BearerConfigSecondary* is received with value *setup*:

3> if the current SRB configuration does not include a secondary RLC bearer:

4> establish a secondary MCG RLC entity or entities and an associated DCCH logical channel in accordance with the received *rlc-BearerConfigSecondary* and associate these with the E-UTRA PDCP entity with the same value of *srb-Identity* within the current UE configuration;

4> configure the E-UTRA PDCP entity to activate duplication with *t-Reordering* set to *infinity*;

3> else:

4> reconfigure the secondary MCG RLC entity or entities and the associated DCCH logical channel in accordance with the received *rlc-BearerConfigSecondary*;

5.3.10.3 DRB addition/ modification

The UE shall:

1> for each *drb-Identity* value included in the *drb-ToAddModList* that is not part of the current UE configuration (DRB establishment including the case when full configuration option is used):

2> if the concerned entry of *drb-ToAddModList* includes the *drb-TypeLWA* set to *TRUE* (i.e. add LWA DRB):

3> perform the LWA specific DRB addition or reconfiguration as specified in 5.3.10.3a2;

2> if the concerned entry of *drb-ToAddModList* includes the *drb-TypeLWIP* (i.e. add LWIP DRB):

3> perform LWIP specific DRB addition or reconfiguration as specified in 5.3.10.3a3;

2> else if *drb-ToAddModListSCG* is not received or does not include the *drb-Identity* value (i.e. add MCG DRB or MCG RLC bearer):

3> if *pdcp-Config* is received, establish a PDCP entity and configure it with the current MCG security configuration and in accordance with the received *pdcp-Config*;

3> if *rlc-Config* is received, establish a (primary) MCG RLC entity or entities in accordance with the received rlc-Config;

3> if *logicalChannelIdentity* and *logicalChannelConfig* are received, establish a (primary) MCG DTCH logical channel in accordance with the received *logicalChannelIdentity* and the received *logicalChannelConfig*;

3> if *rlc-BearerConfigSecondary* is received with value *setup*:

4> establish a secondary MCG RLC entity or entities and an associated DTCH logical channel in accordance with the received *rlc-BearerConfigSecondary* and associate these with the E-UTRA PDCP entity with the same value of *drb-Identity* within the current UE configuration;

3> if *pdcp-Config* is not received, after processing *nr-RadioBearerConfig1* and *nr-RadioBearerConfig2* if present in the *RRCConnectionReconfiguration* message which triggered the execution of the DRB addition/modification procedure, associate MCG RLC bearer with the NR PDCP entity associated with the same value of *drb-Identity* in the current UE configuration as specified in TS 38.331 [82];

2> if a DRB was configured with the same *eps-BearerIdentity* (fullConfig or change to E-UTRA PDCP):

3> associate the established DRB with corresponding included *eps-BearerIdentity*;

2> else if the entry of *drb-ToAddModList* includes *pdcp-config* (establishment of bearer with E-UTRA PDCP):

3> indicate the establishment of the DRB(s) and the *eps-BearerIdentity* of the established DRB(s) to upper layers;

1> for each *drb-Identity* value included in the *drb-ToAddModList* that is part of the current UE configuration (DRB reconfiguration):

2> if the DRB indicated by *drb-Identity* is an LWA DRB (i.e. LWA to LTE only or reconfigure LWA DRB):

3> perform the LWA specific DRB reconfiguration as specified in 5.3.10.3a2;

2> else if the concerned entry of *drb-ToAddModList* includes the *drb-TypeLWA* set to *TRUE* (i.e. LTE only to LWA DRB):

3> perform the LWA specific DRB reconfiguration as specified in 5.3.10.3a2;

2> if the concerned entry of *drb-ToAddModList* includes the *drb-TypeLWIP* (i.e. add or reconfigure LWIP DRB):

3> perform LWIP specific DRB addition or reconfiguration as specified in 5.3.10.3a3;

2> if *drb-ToAddModListSCG* is not received or does not include the *drb-Identity* value:

3> if the DRB indicated by *drb-Identity* is an MCG DRB or configured with MCG RLC bearer (reconfigure MCG RLC bearer or reconfigure MCG DRB):

4> if the *pdcp-Config* is included:

5> reconfigure the PDCP entity in accordance with the received *pdcp-Config*;

4> if the *rlc-Config* is included:

5> if *reestablishRLC* is received:

6> re-establish the primary RLC entity of this DRB;

6> if the *logicalChannelIdentity* is included and the DRB indicated by *drb-Identity* is configured with MCG RLC bearer (reconfigure logical channel identity of MCG RLC bearer):

7> reconfigure the primary DTCH logical channel identity in accordance with the received *logicalChannelIdentity*;

5> reconfigure the primary RLC entity or entities in accordance with the received *rlc-Config*;

4> if the *logicalChannelConfig* is included:

5> reconfigure the primary DTCH logical channel in accordance with the received *logicalChannelConfig*;

4> if *rlc-BearerConfigSecondary* is included with value *release*:

5> release the secondary MCG RLC entity or entities as well as the associated DTCH logical channel;

4> if *rlc-BearerConfigSecondary* is included with value *setup*;

5> if the current DRB configuration does not include a secondary RLC bearer:

6> establish a secondary MCG RLC entity or entities and an associated DTCH logical channel in accordance with the received *rlc-BearerConfigSecondary* and associate these with the E-UTRA PDCP entity with the same value of *drb-Identity* within the current UE configuration;

5> else:

6> reconfigure the secondary MCG RLC entity or entities and the associated DTCH logical channel in accordance with the received *rlc-BearerConfigSecondary*;

NOTE: Removal and addition of DRB with *pdcp-Config* with the same *drb-Identity* in a single *radioResourceConfigDedicated* is not supported. In case *drb-Identity* is removed and added due to handover or re-establishment with the full configuration option, the eNB can use the same value of *drb-Identity*.

6.2.2 Message definitions

– *SystemInformationBlockType1*

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

Signalling radio bearer: N/A

RLC-SAP: TM

Logical channels: BCCH and BR-BCCH

Direction: E‑UTRAN to UE

***SystemInformationBlockType1 message***

-- ASN1START

SystemInformationBlockType1-BR-r13 ::= SystemInformationBlockType1

SystemInformationBlockType1 ::= SEQUENCE {

cellAccessRelatedInfo SEQUENCE {

plmn-IdentityList PLMN-IdentityList,

trackingAreaCode TrackingAreaCode,

cellIdentity CellIdentity,

cellBarred ENUMERATED {barred, notBarred},

intraFreqReselection ENUMERATED {allowed, notAllowed},

csg-Indication BOOLEAN,

csg-Identity CSG-Identity OPTIONAL -- Need OR

},

cellSelectionInfo SEQUENCE {

q-RxLevMin Q-RxLevMin,

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

},

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

freqBandIndicator FreqBandIndicator,

schedulingInfoList SchedulingInfoList,

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

si-WindowLength ENUMERATED {

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

ms40},

systemInfoValueTag INTEGER (0..31),

nonCriticalExtension SystemInformationBlockType1-v890-IEs OPTIONAL

}

SystemInformationBlockType1-v890-IEs::= SEQUENCE {

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

nonCriticalExtension SystemInformationBlockType1-v920-IEs OPTIONAL

}

-- Late non critical extensions

SystemInformationBlockType1-v8h0-IEs ::= SEQUENCE {

multiBandInfoList MultiBandInfoList OPTIONAL, -- Need OR

nonCriticalExtension SystemInformationBlockType1-v9e0-IEs OPTIONAL

}

SystemInformationBlockType1-v9e0-IEs ::= SEQUENCE {

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

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

nonCriticalExtension SystemInformationBlockType1-v10j0-IEs OPTIONAL

}

SystemInformationBlockType1-v10j0-IEs ::= SEQUENCE {

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

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

nonCriticalExtension SystemInformationBlockType1-v10l0-IEs OPTIONAL

}

SystemInformationBlockType1-v10l0-IEs ::= SEQUENCE {

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

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

nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- Regular non critical extensions

SystemInformationBlockType1-v920-IEs ::= SEQUENCE {

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

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

nonCriticalExtension SystemInformationBlockType1-v1130-IEs OPTIONAL

}

SystemInformationBlockType1-v1130-IEs ::= SEQUENCE {

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

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

nonCriticalExtension SystemInformationBlockType1-v1250-IEs OPTIONAL

}

SystemInformationBlockType1-v1250-IEs ::= SEQUENCE {

cellAccessRelatedInfo-v1250 SEQUENCE {

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

},

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

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

nonCriticalExtension SystemInformationBlockType1-v1310-IEs OPTIONAL

}

SystemInformationBlockType1-v1310-IEs ::= SEQUENCE {

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

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

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

bandwidthReducedAccessRelatedInfo-r13 SEQUENCE {

si-WindowLength-BR-r13 ENUMERATED {

ms20, ms40, ms60, ms80, ms120,

ms160, ms200, spare},

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

every8thRF},

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

fdd-DownlinkOrTddSubframeBitmapBR-r13 CHOICE {

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

subframePattern40-r13 BIT STRING (SIZE (40))

} OPTIONAL, -- Need OP

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

startSymbolBR-r13 INTEGER (1..4),

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

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

systemInfoValueTagList-r13 SystemInfoValueTagList-r13 OPTIONAL -- Need OR

} OPTIONAL, -- Cond BW-reduced

nonCriticalExtension SystemInformationBlockType1-v1320-IEs OPTIONAL

}

SystemInformationBlockType1-v1320-IEs ::= SEQUENCE {

freqHoppingParametersDL-r13 SEQUENCE {

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

interval-DLHoppingConfigCommonModeA-r13 CHOICE {

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

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

} OPTIONAL, -- Need OR

interval-DLHoppingConfigCommonModeB-r13 CHOICE {

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

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

} OPTIONAL, -- Need OR

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

} OPTIONAL, -- Cond Hopping

nonCriticalExtension SystemInformationBlockType1-v1350-IEs OPTIONAL

}

SystemInformationBlockType1-v1350-IEs ::= SEQUENCE {

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

nonCriticalExtension SystemInformationBlockType1-v1360-IEs OPTIONAL

}

SystemInformationBlockType1-v1360-IEs ::= SEQUENCE {

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

nonCriticalExtension SystemInformationBlockType1-v1430-IEs OPTIONAL

}

SystemInformationBlockType1-v1430-IEs ::= SEQUENCE {

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

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

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

CellAccessRelatedInfo-r14 OPTIONAL, -- Need OR

nonCriticalExtension SystemInformationBlockType1-v1450-IEs OPTIONAL

}

SystemInformationBlockType1-v1450-IEs ::= SEQUENCE {

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

nonCriticalExtension SystemInformationBlockType1-v1530-IEs OPTIONAL

}

SystemInformationBlockType1-v1530-IEs ::= SEQUENCE {

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

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

crs-IntfMitigConfig-r15 CHOICE {

crs-IntfMitigEnabled NULL,

crs-IntfMitigNumPRBs ENUMERATED {n6, n24}

} OPTIONAL, -- Need OR

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

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

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

cellAccessRelatedInfo-5GC-r15 SEQUENCE {

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

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

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

CellAccessRelatedInfo-5GC-r15

} OPTIONAL, -- Need OP

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

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

nonCriticalExtension SystemInformationBlockType1-v1540-IEs OPTIONAL

}

SystemInformationBlockType1-v1540-IEs ::= SEQUENCE {

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

nonCriticalExtension SEQUENCE {} OPTIONAL

}

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

PLMN-IdentityInfo ::= SEQUENCE {

plmn-Identity PLMN-Identity,

cellReservedForOperatorUse ENUMERATED {reserved, notReserved}

}

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

PLMN-IdentityInfo-v1530 ::= SEQUENCE {

cellReservedForOperatorUse-CRS-r15 ENUMERATED {reserved, notReserved}

}

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

PLMN-IdentityInfo-r15 ::= SEQUENCE {

plmn-Identity-5GC-r15 CHOICE{

plmn-Identity-r15 PLMN-Identity,

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

},

cellReservedForOperatorUse-r15 ENUMERATED {reserved, notReserved},

cellReservedForOperatorUse-CRS-r15 ENUMERATED {reserved, notReserved}

}

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

SchedulingInfo ::= SEQUENCE {

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

sib-MappingInfo SIB-MappingInfo

}

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

SchedulingInfo-BR-r13 ::= SEQUENCE {

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

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

}

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

SIB-Type ::= ENUMERATED {

sibType3, sibType4, sibType5, sibType6,

sibType7, sibType8, sibType9, sibType10,

sibType11, sibType12-v920, sibType13-v920,

sibType14-v1130, sibType15-v1130,

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

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

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

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

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

CellSelectionInfo-v920 ::= SEQUENCE {

q-QualMin-r9 Q-QualMin-r9,

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

}

CellSelectionInfo-v1130 ::= SEQUENCE {

q-QualMinWB-r11 Q-QualMin-r9

}

CellSelectionInfo-v1250 ::= SEQUENCE {

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

}

CellAccessRelatedInfo-r14 ::= SEQUENCE {

plmn-IdentityList-r14 PLMN-IdentityList,

trackingAreaCode-r14 TrackingAreaCode,

cellIdentity-r14 CellIdentity

}

CellAccessRelatedInfo-5GC-r15 ::= SEQUENCE {

plmn-IdentityList-r15 PLMN-IdentityList-r15,

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

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

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

}

CellIdentity-5GC-r15 ::= CHOICE{

cellIdentity-r15 CellIdentity,

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

}

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

PosSchedulingInfo-r15 ::= SEQUENCE {

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

posSIB-MappingInfo-r15 PosSIB-MappingInfo-r15

}

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

PosSIB-Type-r15 ::= SEQUENCE {

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

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

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

posSibType-r15 ENUMERATED { posSibType1-1,

posSibType1-2,

posSibType1-3,

posSibType1-4,

posSibType1-5,

posSibType1-6,

posSibType1-7,

posSibType2-1,

posSibType2-2,

posSibType2-3,

posSibType2-4,

posSibType2-5,

posSibType2-6,

posSibType2-7,

posSibType2-8,

posSibType2-9,

posSibType2-10,

posSibType2-11,

posSibType2-12,

posSibType2-13,

posSibType2-14,

posSibType2-15,

posSibType2-16,

posSibType2-17,

posSibType2-18,

posSibType2-19,

posSibType3-1,

...},

...

}

-- ASN1STOP

6.3.1 System information blocks

– *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

]]

}

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

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

IntraFreqNeighCellInfo ::= SEQUENCE {

physCellId PhysCellId,

q-OffsetCell Q-OffsetRange,

...

}

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. |
| ***intraFreqNeighCellList***  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]. |

| **Conditional presence** | **Explanation** |
| --- | --- |
| *CSG* | This field is optional, need OP, for non-CSG cells, and mandatory for CSG cells. |

– *SystemInformationBlockType26*

The IE *SystemInformationBlockType26* contains V2X sidelink communication configurations which can be used jointly with those included in *SystemInformationBlockType21*.

***SystemInformationBlockType26* information element**

-- ASN1START

SystemInformationBlockType26-r15 ::= SEQUENCE {

v2x-InterFreqInfoList-r15 SL-InterFreqInfoListV2X-r14 OPTIONAL, -- Need OR

cbr-pssch-TxConfigList-r15 SL-CBR-PPPP-TxConfigList-r15 OPTIONAL, -- Need OR

v2x-PacketDuplicationConfig-r15 SL-V2X-PacketDuplicationConfig-r15 OPTIONAL, -- Need OR

syncFreqList-r15 SL-V2X-SyncFreqList-r15 OPTIONAL, -- Need OR

slss-TxMultiFreq-r15 ENUMERATED{true} OPTIONAL, -- Need OR

v2x-FreqSelectionConfigList-r15 SL-V2X-FreqSelectionConfigList-r15 OPTIONAL, -- Need OR

threshS-RSSI-CBR-r15 INTEGER (0..45) OPTIONAL, -- Need OR

...,

lateNonCriticalExtension OCTET STRING OPTIONAL

}

-- ASN1STOP

6.3.2 Radio resource control information elements

– *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 36.213 [23]. 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 values 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. |

– *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

]]

}

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

]]

}

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}

-- 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. |
| ***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. |
| ***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]. |
| ***cfi-SlotSubslotNonMBSFN***  Indicates the semi-static control format indicator for slot/subslot operation in non-MBSFN subframes. |
| ***cfi-SlotSubslotMBSFN***  Indicates the semi-static control format indicator for slot/subslot operation in MBSFN subframes. |
| ***cfi-SubframeMBSFN***  Indicates the semi-static control format indicator for subframe operation in MBSFN subframes. |
| ***cfi-SubframeNonMBSFN***  Indicates the semi-static control format indicator for subframe operation in non-MBSFN subframes. |
| ***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). |
| ***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. |
| ***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. |

| **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.

– *RadioResourceConfigDedicated*

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

***RadioResourceConfigDedicated* information element**

-- ASN1START

RadioResourceConfigDedicated ::= SEQUENCE {

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

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

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

mac-MainConfig CHOICE {

explicitValue MAC-MainConfig,

defaultValue NULL

} OPTIONAL, -- Cond HO-toEUTRA2

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

physicalConfigDedicated PhysicalConfigDedicated OPTIONAL, -- Need ON

...,

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

]],

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

]],

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

]],

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

]],

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

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

]],

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

]],

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

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

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

crs-IntfMitigConfig-r15 CHOICE {

release NULL,

setup CHOICE {

crs-IntfMitigEnabled NULL,

crs-IntfMitigNumPRBs ENUMERATED {n6, n24}

}

} OPTIONAL, -- Need ON

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

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

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

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

]],

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

]]

}

RadioResourceConfigDedicated-v1370 ::= SEQUENCE {

physicalConfigDedicated-v1370 PhysicalConfigDedicated-v1370 OPTIONAL -- Need ON

}

RadioResourceConfigDedicated-v13c0 ::= SEQUENCE {

physicalConfigDedicated-v13c0 PhysicalConfigDedicated-v13c0

}

RadioResourceConfigDedicatedPSCell-r12 ::= SEQUENCE {

-- UE specific configuration extensions applicable for an PSCell

physicalConfigDedicatedPSCell-r12 PhysicalConfigDedicated OPTIONAL, -- Need ON

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

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

...,

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

]],

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

]],

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

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

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

]],

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

]]

}

RadioResourceConfigDedicatedPSCell-v1370 ::= SEQUENCE {

physicalConfigDedicatedPSCell-v1370 PhysicalConfigDedicated-v1370 OPTIONAL -- Need ON

}

RadioResourceConfigDedicatedPSCell-v13c0 ::= SEQUENCE {

physicalConfigDedicatedPSCell-v13c0 PhysicalConfigDedicated-v13c0

}

RadioResourceConfigDedicatedSCG-r12 ::= SEQUENCE {

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

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

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

...,

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

]],

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

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

]],

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

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

]]

}

RadioResourceConfigDedicatedSCell-r10 ::= SEQUENCE {

-- UE specific configuration extensions applicable for an SCell

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

...,

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

]],

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

]],

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

]],

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

]],

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

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

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

]]

}

RadioResourceConfigDedicatedSCell-v13c0 ::= SEQUENCE {

physicalConfigDedicatedSCell-v13c0 PhysicalConfigDedicatedSCell-v13c0

}

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

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

SRB-ToAddMod ::= SEQUENCE {

srb-Identity INTEGER (1..2),

rlc-Config CHOICE {

explicitValue RLC-Config,

defaultValue NULL

} OPTIONAL, -- Cond Setup

logicalChannelConfig CHOICE {

explicitValue LogicalChannelConfig,

defaultValue NULL

} OPTIONAL, -- Cond Setup

...,

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

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

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

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

]],

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

]]

}

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

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

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

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

DRB-ToAddMod ::= SEQUENCE {

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

drb-Identity DRB-Identity,

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

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

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

logicalChannelConfig LogicalChannelConfig OPTIONAL, -- Cond SetupM

...,

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

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

]],

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

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

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

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

]],

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

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

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

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

]],

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

]],

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

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

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

]]

}

DRB-ToAddModSCG-r12 ::= SEQUENCE {

drb-Identity-r12 DRB-Identity,

drb-Type-r12 CHOICE {

split-r12 NULL,

scg-r12 SEQUENCE {

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

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

}

} OPTIONAL, -- Cond SetupS2

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

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

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

logicalChannelConfigSCG-r12 LogicalChannelConfig OPTIONAL, -- Cond SetupS

...,

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

]],

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

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

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

]],

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

]]

}

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

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

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

MeasSubframePatternPCell-r10 ::= CHOICE {

release NULL,

setup MeasSubframePattern-r10

}

NeighCellsCRS-Info-r11 ::= CHOICE {

release NULL,

setup CRS-AssistanceInfoList-r11

}

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

CRS-AssistanceInfo-r11 ::= SEQUENCE {

physCellId-r11 PhysCellId,

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

mbsfn-SubframeConfigList-r11 MBSFN-SubframeConfigList,

...,

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

]]

}

NeighCellsCRS-Info-r13 ::= CHOICE {

release NULL,

setup CRS-AssistanceInfoList-r13

}

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

CRS-AssistanceInfo-r13 ::= SEQUENCE {

physCellId-r13 PhysCellId,

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

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

...,

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

]]

}

NeighCellsCRS-Info-r15 ::= CHOICE {

release NULL,

setup CRS-AssistanceInfoList-r15

}

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

CRS-AssistanceInfo-r15 ::= SEQUENCE {

physCellId-r15 PhysCellId,

crs-IntfMitigEnabled-r15 ENUMERATED {enabled} OPTIONAL -- Need ON

}

NAICS-AssistanceInfo-r12 ::= CHOICE {

release NULL,

setup SEQUENCE {

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

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

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

}

}

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

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

NeighCellsInfo-r12 ::= SEQUENCE {

physCellId-r12 PhysCellId,

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

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

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

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

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

resAllocGranularity-r12 INTEGER (1..4),

...

}

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

dB0, dB1, dB2, dB3}

RLC-BearerConfig-r15 ::= CHOICE {

release NULL,

setup SEQUENCE {

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

logicalChannelIdentityConfig-r15 CHOICE {

logicalChannelIdentity-r15 INTEGER (1..10),

logicalChannelIdentityExt-r15 INTEGER (32..38)

},

logicalChannelConfig-r15 LogicalChannelConfig OPTIONAL -- Need ON

}

}

-- ASN1STOP

6.3.5 Measurement information elements

– *MeasResults*

The IE *MeasResults* covers measured results for intra-frequency, inter-frequency and inter- RAT mobility.

***MeasResults* information element**

-- ASN1START

MeasResults ::= SEQUENCE {

measId MeasId,

measResultPCell SEQUENCE {

rsrpResult RSRP-Range,

rsrqResult RSRQ-Range

},

measResultNeighCells CHOICE {

measResultListEUTRA MeasResultListEUTRA,

measResultListUTRA MeasResultListUTRA,

measResultListGERAN MeasResultListGERAN,

measResultsCDMA2000 MeasResultsCDMA2000,

...,

measResultNeighCellListNR-r15 MeasResultCellListNR-r15

} OPTIONAL,

...,

[[ measResultForECID-r9 MeasResultForECID-r9 OPTIONAL

]],

[[ locationInfo-r10 LocationInfo-r10 OPTIONAL,

measResultServFreqList-r10 MeasResultServFreqList-r10 OPTIONAL

]],

[[ measId-v1250 MeasId-v1250 OPTIONAL,

measResultPCell-v1250 RSRQ-Range-v1250 OPTIONAL,

measResultCSI-RS-List-r12 MeasResultCSI-RS-List-r12 OPTIONAL

]],

[[ measResultForRSSI-r13 MeasResultForRSSI-r13 OPTIONAL,

measResultServFreqListExt-r13 MeasResultServFreqListExt-r13 OPTIONAL,

measResultSSTD-r13 MeasResultSSTD-r13 OPTIONAL,

measResultPCell-v1310 SEQUENCE {

rs-sinr-Result-r13 RS-SINR-Range-r13

} OPTIONAL,

ul-PDCP-DelayResultList-r13 UL-PDCP-DelayResultList-r13 OPTIONAL,

measResultListWLAN-r13 MeasResultListWLAN-r13 OPTIONAL

]],

[[ measResultPCell-v1360 RSRP-Range-v1360 OPTIONAL

]],

[[ measResultListCBR-r14 MeasResultListCBR-r14 OPTIONAL,

measResultListWLAN-r14 MeasResultListWLAN-r14 OPTIONAL

]],

[[ measResultServFreqListNR-r15 MeasResultServFreqListNR-r15 OPTIONAL,

measResultCellListSFTD-r15 MeasResultCellListSFTD-r15 OPTIONAL

]],

[[ logMeasResultListBT-r15 LogMeasResultListBT-r15 OPTIONAL,

logMeasResultListWLAN-r15 LogMeasResultListWLAN-r15 OPTIONAL,

measResultSensing-r15 MeasResultSensing-r15 OPTIONAL,

heightUE-r15 INTEGER (-400..8880) OPTIONAL

]]

}

MeasResultListEUTRA ::= SEQUENCE (SIZE (1..maxCellReport)) OF MeasResultEUTRA

MeasResultEUTRA ::= SEQUENCE {

physCellId PhysCellId,

cgi-Info SEQUENCE {

cellGlobalId CellGlobalIdEUTRA,

trackingAreaCode TrackingAreaCode,

plmn-IdentityList PLMN-IdentityList2 OPTIONAL

} OPTIONAL,

measResult SEQUENCE {

rsrpResult RSRP-Range OPTIONAL,

rsrqResult RSRQ-Range OPTIONAL,

...,

[[ additionalSI-Info-r9 AdditionalSI-Info-r9 OPTIONAL

]],

[[ primaryPLMN-Suitable-r12 ENUMERATED {true} OPTIONAL,

measResult-v1250 RSRQ-Range-v1250 OPTIONAL

]],

[[ rs-sinr-Result-r13 RS-SINR-Range-r13 OPTIONAL,

cgi-Info-v1310 SEQUENCE {

freqBandIndicator-r13 FreqBandIndicator-r11 OPTIONAL,

multiBandInfoList-r13 MultiBandInfoList-r11 OPTIONAL,

freqBandIndicatorPriority-r13 ENUMERATED {true} OPTIONAL

} OPTIONAL

]],

[[

measResult-v1360 RSRP-Range-v1360 OPTIONAL

]],

[[

cgi-Info-5GC-r15 SEQUENCE (SIZE (1..maxPLMN-r11)) OF CellAccessRelatedInfo-5GC-r15 OPTIONAL

]]

}

}

MeasResultListIdle-r15 ::= SEQUENCE (SIZE (1..maxIdleMeasCarriers-r15)) OF MeasResultIdle-r15

MeasResultIdle-r15 ::= SEQUENCE {

measResultServingCell-r15 SEQUENCE {

rsrpResult-r15 RSRP-Range,

rsrqResult-r15 RSRQ-Range-r13

},

measResultNeighCells-r15 CHOICE {

measResultIdleListEUTRA-r15 MeasResultIdleListEUTRA-r15,

...

} OPTIONAL,

...

}

MeasResultIdleListEUTRA-r15 ::= SEQUENCE (SIZE (1..maxCellMeasIdle-r15)) OF MeasResultIdleEUTRA-r15

MeasResultIdleEUTRA-r15 ::= SEQUENCE {

carrierFreq-r15 ARFCN-ValueEUTRA-r9,

physCellId-r15 PhysCellId,

measResult-r15 SEQUENCE {

rsrpResult-r15 RSRP-Range,

rsrqResult-r15 RSRQ-Range-r13

},

...

}

MeasResultServFreqListNR-r15 ::= SEQUENCE (SIZE (1..maxServCell-r13)) OF MeasResultServFreqNR-r15

MeasResultServFreqNR-r15 ::= SEQUENCE {

carrierFreq-r15 ARFCN-ValueNR-r15,

measResultSCell-r15 MeasResultCellNR-r15 OPTIONAL,

measResultBestNeighCell-r15 MeasResultCellNR-r15 OPTIONAL,

...

}

MeasResultCellListNR-r15::= SEQUENCE (SIZE (1..maxCellReport)) OF MeasResultCellNR-r15

MeasResultCellNR-r15 ::= SEQUENCE {

pci-r15 PhysCellIdNR-r15,

measResultCell-r15 MeasResultNR-r15,

measResultRS-IndexList-r15 MeasResultSSB-IndexList-r15 OPTIONAL,

...,

[[ cgi-Info-r15 CGI-InfoNR-r15 OPTIONAL

]]

}

MeasResultNR-r15 ::= SEQUENCE {

rsrpResult-r15 RSRP-RangeNR-r15 OPTIONAL,

rsrqResult-r15 RSRQ-RangeNR-r15 OPTIONAL,

rs-sinr-Result-r15 RS-SINR-RangeNR-r15 OPTIONAL,

...

}

MeasResultSSB-IndexList-r15::= SEQUENCE (SIZE (1..maxRS-IndexReport-r15)) OF MeasResultSSB-Index-r15

MeasResultSSB-Index-r15 ::= SEQUENCE {

ssb-Index-r15 RS-IndexNR-r15,

measResultSSB-Index-r15 MeasResultNR-r15 OPTIONAL,

...

}

MeasResultServFreqList-r10 ::= SEQUENCE (SIZE (1..maxServCell-r10)) OF MeasResultServFreq-r10

MeasResultServFreqListExt-r13 ::= SEQUENCE (SIZE (1..maxServCell-r13)) OF MeasResultServFreq-r13

MeasResultServFreq-r10 ::= SEQUENCE {

servFreqId-r10 ServCellIndex-r10,

measResultSCell-r10 SEQUENCE {

rsrpResultSCell-r10 RSRP-Range,

rsrqResultSCell-r10 RSRQ-Range

} OPTIONAL,

measResultBestNeighCell-r10 SEQUENCE {

physCellId-r10 PhysCellId,

rsrpResultNCell-r10 RSRP-Range,

rsrqResultNCell-r10 RSRQ-Range

} OPTIONAL,

...,

[[ measResultSCell-v1250 RSRQ-Range-v1250 OPTIONAL,

measResultBestNeighCell-v1250 RSRQ-Range-v1250 OPTIONAL

]],

[[ measResultSCell-v1310 SEQUENCE {

rs-sinr-Result-r13 RS-SINR-Range-r13

} OPTIONAL,

measResultBestNeighCell-v1310 SEQUENCE {

rs-sinr-Result-r13 RS-SINR-Range-r13

} OPTIONAL

]]

}

MeasResultServFreq-r13 ::= SEQUENCE {

servFreqId-r13 ServCellIndex-r13,

measResultSCell-r13 SEQUENCE {

rsrpResultSCell-r13 RSRP-Range,

rsrqResultSCell-r13 RSRQ-Range-r13,

rs-sinr-Result-r13 RS-SINR-Range-r13 OPTIONAL

} OPTIONAL,

measResultBestNeighCell-r13 SEQUENCE {

physCellId-r13 PhysCellId,

rsrpResultNCell-r13 RSRP-Range,

rsrqResultNCell-r13 RSRQ-Range-r13,

rs-sinr-Result-r13 RS-SINR-Range-r13 OPTIONAL

} OPTIONAL,

...,

[[ measResultBestNeighCell-v1360 SEQUENCE {

rsrpResultNCell-v1360 RSRP-Range-v1360

} OPTIONAL

]]

}

MeasResultCSI-RS-List-r12 ::= SEQUENCE (SIZE (1..maxCellReport)) OF MeasResultCSI-RS-r12

MeasResultCSI-RS-r12 ::= SEQUENCE {

measCSI-RS-Id-r12 MeasCSI-RS-Id-r12,

csi-RSRP-Result-r12 CSI-RSRP-Range-r12,

...

}

MeasResultListUTRA ::= SEQUENCE (SIZE (1..maxCellReport)) OF MeasResultUTRA

MeasResultUTRA ::= SEQUENCE {

physCellId CHOICE {

fdd PhysCellIdUTRA-FDD,

tdd PhysCellIdUTRA-TDD

},

cgi-Info SEQUENCE {

cellGlobalId CellGlobalIdUTRA,

locationAreaCode BIT STRING (SIZE (16)) OPTIONAL,

routingAreaCode BIT STRING (SIZE (8)) OPTIONAL,

plmn-IdentityList PLMN-IdentityList2 OPTIONAL

} OPTIONAL,

measResult SEQUENCE {

utra-RSCP INTEGER (-5..91) OPTIONAL,

utra-EcN0 INTEGER (0..49) OPTIONAL,

...,

[[ additionalSI-Info-r9 AdditionalSI-Info-r9 OPTIONAL

]],

[[ primaryPLMN-Suitable-r12 ENUMERATED {true} OPTIONAL

]]

}

}

MeasResultListGERAN ::= SEQUENCE (SIZE (1..maxCellReport)) OF MeasResultGERAN

MeasResultGERAN ::= SEQUENCE {

carrierFreq CarrierFreqGERAN,

physCellId PhysCellIdGERAN,

cgi-Info SEQUENCE {

cellGlobalId CellGlobalIdGERAN,

routingAreaCode BIT STRING (SIZE (8)) OPTIONAL

} OPTIONAL,

measResult SEQUENCE {

rssi INTEGER (0..63),

...

}

}

MeasResultsCDMA2000 ::= SEQUENCE {

preRegistrationStatusHRPD BOOLEAN,

measResultListCDMA2000 MeasResultListCDMA2000

}

MeasResultListCDMA2000 ::= SEQUENCE (SIZE (1..maxCellReport)) OF MeasResultCDMA2000

MeasResultCDMA2000 ::= SEQUENCE {

physCellId PhysCellIdCDMA2000,

cgi-Info CellGlobalIdCDMA2000 OPTIONAL,

measResult SEQUENCE {

pilotPnPhase INTEGER (0..32767) OPTIONAL,

pilotStrength INTEGER (0..63),

...

}

}

MeasResultListWLAN-r13 ::= SEQUENCE (SIZE (1..maxCellReport)) OF MeasResultWLAN-r13

MeasResultListWLAN-r14 ::= SEQUENCE (SIZE (1..maxWLAN-Id-Report-r14)) OF MeasResultWLAN-r13

MeasResultWLAN-r13 ::= SEQUENCE {

wlan-Identifiers-r13 WLAN-Identifiers-r12,

carrierInfoWLAN-r13 WLAN-CarrierInfo-r13 OPTIONAL,

bandWLAN-r13 WLAN-BandIndicator-r13 OPTIONAL,

rssiWLAN-r13 WLAN-RSSI-Range-r13,

availableAdmissionCapacityWLAN-r13 INTEGER (0..31250) OPTIONAL,

backhaulDL-BandwidthWLAN-r13 WLAN-backhaulRate-r12 OPTIONAL,

backhaulUL-BandwidthWLAN-r13 WLAN-backhaulRate-r12 OPTIONAL,

channelUtilizationWLAN-r13 INTEGER (0..255) OPTIONAL,

stationCountWLAN-r13 INTEGER (0..65535) OPTIONAL,

connectedWLAN-r13 ENUMERATED {true} OPTIONAL,

...

}

MeasResultListCBR-r14 ::= SEQUENCE (SIZE (1..maxCBR-Report-r14)) OF MeasResultCBR-r14

MeasResultCBR-r14 ::= SEQUENCE {

poolIdentity-r14 SL-V2X-TxPoolReportIdentity-r14,

cbr-PSSCH-r14 SL-CBR-r14,

cbr-PSCCH-r14 SL-CBR-r14 OPTIONAL

}

MeasResultSensing-r15 ::= SEQUENCE {

sl-SubframeRef-r15 INTEGER (0..10239),

sensingResult-r15 SEQUENCE (SIZE (0..400)) OF SensingResult-r15

}

SensingResult-r15 ::= SEQUENCE {

resourceIndex-r15 INTEGER (1..2000)

}

MeasResultForECID-r9 ::= SEQUENCE {

ue-RxTxTimeDiffResult-r9 INTEGER (0..4095),

currentSFN-r9 BIT STRING (SIZE (10))

}

PLMN-IdentityList2 ::= SEQUENCE (SIZE (1..5)) OF PLMN-Identity

AdditionalSI-Info-r9 ::= SEQUENCE {

csg-MemberStatus-r9 ENUMERATED {member} OPTIONAL,

csg-Identity-r9 CSG-Identity OPTIONAL

}

MeasResultForRSSI-r13 ::= SEQUENCE {

rssi-Result-r13 RSSI-Range-r13,

channelOccupancy-r13 INTEGER (0..100),

...

}

UL-PDCP-DelayResultList-r13 ::= SEQUENCE (SIZE (1..maxQCI-r13)) OF UL-PDCP-DelayResult-r13

UL-PDCP-DelayResult-r13 ::= SEQUENCE {

qci-Id-r13 ENUMERATED {qci1, qci2, qci3, qci4, spare4, spare3, spare2, spare1},

excessDelay-r13 INTEGER (0..31),

...

}

CGI-InfoNR-r15 ::= SEQUENCE {

plmn-IdentityInfoList-r15 PLMN-IdentityInfoListNR-r15 OPTIONAL,

frequencyBandList-r15 MultiFrequencyBandListNR-r15 OPTIONAL,

noSIB1-r15 SEQUENCE {

ssb-SubcarrierOffset-r15 INTEGER (0..15),

pdcch-ConfigSIB1-r15 INTEGER (0..255)

} OPTIONAL,

...

}

CellIdentityNR-r15 ::= BIT STRING (SIZE (36))

PLMN-IdentityListNR-r15 ::= SEQUENCE (SIZE (1.. maxPLMN-NR-r15)) OF PLMN-Identity

PLMN-IdentityInfoListNR-r15 ::= SEQUENCE (SIZE (1..maxPLMN-NR-r15)) OF PLMN-IdentityInfoNR-r15

PLMN-IdentityInfoNR-r15 ::= SEQUENCE {

plmn-IdentityList-r15 PLMN-IdentityListNR-r15,

trackingAreaCode-r15 TrackingAreaCodeNR-r15 OPTIONAL,

ran-AreaCode-r15 RAN-AreaCode-r15 OPTIONAL,

cellIdentity-r15 CellIdentityNR-r15

}

TrackingAreaCodeNR-r15 ::= BIT STRING (SIZE (24))

-- ASN1STOP

– *ReportConfigEUTRA*

The IE *ReportConfigEUTRA* specifies criteria for triggering of an E‑UTRA measurement reporting event. The E‑UTRA measurement reporting events concerning CRS are labelled A*N* with *N* equal to 1, 2 and so on.

Event A1: Serving becomes better than absolute threshold;

Event A2: Serving becomes worse than absolute threshold;

Event A3: Neighbour becomes amount of offset better than PCell/ PSCell;

Event A4: Neighbour becomes better than absolute threshold;

Event A5: PCell/ PSCell becomes worse than absolute threshold1 AND Neighbour becomes better than another absolute threshold2;

Event A6: Neighbour becomes amount of offset better than SCell.

The E‑UTRA measurement reporting events concerning CSI-RS are labelled C*N* with *N* equal to 1 and 2.

Event C1: CSI-RS resource becomes better than absolute threshold;

Event C2: CSI-RS resource becomes amount of offset better than reference CSI-RS resource.

The E-UTRA measurement reporting events concerning CBR are labelled VN with N equal to 1 and 2.

Event V1: CBR becomes larger than absolute threshold;

Event V2: CBR becomes smaller than absolute threshold.

The E-UTRA reporting events concerning Aerial UE height are labelled H*N* with *N* equal to 1 and 2.

Event H1: Aerial UE height becomes higher than absolute threshold;

Event H2: Aerial UE height becomes lower than absolute threshold.

***ReportConfigEUTRA* information element**

-- ASN1START

ReportConfigEUTRA ::= SEQUENCE {

triggerType CHOICE {

event SEQUENCE {

eventId CHOICE {

eventA1 SEQUENCE {

a1-Threshold ThresholdEUTRA

},

eventA2 SEQUENCE {

a2-Threshold ThresholdEUTRA

},

eventA3 SEQUENCE {

a3-Offset INTEGER (-30..30),

reportOnLeave BOOLEAN

},

eventA4 SEQUENCE {

a4-Threshold ThresholdEUTRA

},

eventA5 SEQUENCE {

a5-Threshold1 ThresholdEUTRA,

a5-Threshold2 ThresholdEUTRA

},

...,

eventA6-r10 SEQUENCE {

a6-Offset-r10 INTEGER (-30..30),

a6-ReportOnLeave-r10 BOOLEAN

},

eventC1-r12 SEQUENCE {

c1-Threshold-r12 ThresholdEUTRA-v1250,

c1-ReportOnLeave-r12 BOOLEAN

},

eventC2-r12 SEQUENCE {

c2-RefCSI-RS-r12 MeasCSI-RS-Id-r12,

c2-Offset-r12 INTEGER (-30..30),

c2-ReportOnLeave-r12 BOOLEAN

},

eventV1-r14 SEQUENCE {

v1-Threshold-r14 SL-CBR-r14

},

eventV2-r14 SEQUENCE {

v2-Threshold-r14 SL-CBR-r14

},

eventH1-r15 SEQUENCE {

h1-ThresholdOffset-r15 INTEGER (0..300),

h1-Hysteresis-r15 INTEGER (1..16)

},

eventH2-r15 SEQUENCE {

h2-ThresholdOffset-r15 INTEGER (0..300),

h2-Hysteresis-r15 INTEGER (1..16)

}

},

hysteresis Hysteresis,

timeToTrigger TimeToTrigger

},

periodical SEQUENCE {

purpose ENUMERATED {

reportStrongestCells, reportCGI}

}

},

triggerQuantity ENUMERATED {rsrp, rsrq},

reportQuantity ENUMERATED {sameAsTriggerQuantity, both},

maxReportCells INTEGER (1..maxCellReport),

reportInterval ReportInterval,

reportAmount ENUMERATED {r1, r2, r4, r8, r16, r32, r64, infinity},

...,

[[ si-RequestForHO-r9 ENUMERATED {setup} OPTIONAL, -- Cond reportCGI

ue-RxTxTimeDiffPeriodical-r9 ENUMERATED {setup} OPTIONAL -- Need OR

]],

[[ includeLocationInfo-r10 ENUMERATED {true} OPTIONAL, -- Need OR

reportAddNeighMeas-r10 ENUMERATED {setup} OPTIONAL -- Need OR

]],

[[ alternativeTimeToTrigger-r12 CHOICE {

release NULL,

setup TimeToTrigger

} OPTIONAL, -- Need ON

useT312-r12 BOOLEAN OPTIONAL, -- Need ON

usePSCell-r12 BOOLEAN OPTIONAL, -- Need ON

aN-Threshold1-v1250 RSRQ-RangeConfig-r12 OPTIONAL, -- Need ON

a5-Threshold2-v1250 RSRQ-RangeConfig-r12 OPTIONAL, -- Need ON

reportStrongestCSI-RSs-r12 BOOLEAN OPTIONAL, -- Need ON

reportCRS-Meas-r12 BOOLEAN OPTIONAL, -- Need ON

triggerQuantityCSI-RS-r12 BOOLEAN OPTIONAL -- Need ON

]],

[[ reportSSTD-Meas-r13 BOOLEAN OPTIONAL, -- Need ON

rs-sinr-Config-r13 CHOICE {

release NULL,

setup SEQUENCE {

triggerQuantity-v1310 ENUMERATED {sinr} OPTIONAL, -- Need ON

aN-Threshold1-r13 RS-SINR-Range-r13 OPTIONAL, -- Need ON

a5-Threshold2-r13 RS-SINR-Range-r13 OPTIONAL, -- Need ON

reportQuantity-v1310 ENUMERATED {rsrpANDsinr, rsrqANDsinr, all}

}

} OPTIONAL, -- Need ON

useWhiteCellList-r13 BOOLEAN OPTIONAL, -- Need ON

measRSSI-ReportConfig-r13 MeasRSSI-ReportConfig-r13 OPTIONAL, -- Need ON

includeMultiBandInfo-r13 ENUMERATED {true} OPTIONAL, -- Cond reportCGI

ul-DelayConfig-r13 UL-DelayConfig-r13 OPTIONAL -- Need ON

]],

[[ ue-RxTxTimeDiffPeriodicalTDD-r13 BOOLEAN OPTIONAL -- Need ON

]],

[[

purpose-v1430 ENUMERATED {reportLocation, sidelink, spare2, spare1}

OPTIONAL -- Need ON

]],

[[

maxReportRS-Index-r15 INTEGER (0..maxRS-IndexReport-r15) OPTIONAL -- Need ON

]],

[[ includeBT-Meas-r15 BT-NameListConfig-r15 OPTIONAL, -- Need ON

includeWLAN-Meas-r15 WLAN-NameListConfig-r15 OPTIONAL, -- Need ON

purpose-r15 ENUMERATED {sensing} OPTIONAL, -- Need ON

numberOfTriggeringCells-r15 INTEGER (2..maxCellReport) OPTIONAL, -- Cond a3a4a5

a4-a5-ReportOnLeave-r15 BOOLEAN OPTIONAL -- Cond a4a5

]]

}

RSRQ-RangeConfig-r12 ::= CHOICE {

release NULL,

setup RSRQ-Range-v1250

}

ThresholdEUTRA ::= CHOICE{

threshold-RSRP RSRP-Range,

threshold-RSRQ RSRQ-Range

}

ThresholdEUTRA-v1250 ::= CSI-RSRP-Range-r12

MeasRSSI-ReportConfig-r13 ::= SEQUENCE {

channelOccupancyThreshold-r13 RSSI-Range-r13 OPTIONAL -- Need OR

}

-- ASN1STOP

6.3.7a SC-PTM information elements

– *MBSFN-AreaInfoList*

The IE *MBSFN-AreaInfoList* contains the information required to acquire the MBMS control information associated with one or more MBSFN areas.

***MBSFN-AreaInfoList* information element**

-- ASN1START

MBSFN-AreaInfoList-r9 ::= SEQUENCE (SIZE(1..maxMBSFN-Area)) OF MBSFN-AreaInfo-r9

MBSFN-AreaInfo-r9 ::= SEQUENCE {

mbsfn-AreaId-r9 MBSFN-AreaId-r12,

non-MBSFNregionLength ENUMERATED {s1, s2},

notificationIndicator-r9 INTEGER (0..7),

mcch-Config-r9 SEQUENCE {

mcch-RepetitionPeriod-r9 ENUMERATED {rf32, rf64, rf128, rf256},

mcch-Offset-r9 INTEGER (0..10),

mcch-ModificationPeriod-r9 ENUMERATED {rf512, rf1024},

sf-AllocInfo-r9 BIT STRING (SIZE(6)),

signallingMCS-r9 ENUMERATED {n2, n7, n13, n19}

},

...,

[[ mcch-Config-r14 SEQUENCE {

mcch-RepetitionPeriod-v1430 ENUMERATED {rf1, rf2, rf4, rf8,

rf16 } OPTIONAL, -- Need OR

mcch-ModificationPeriod-v1430 ENUMERATED {rf1, rf2, rf4, rf8, rf16, rf32, rf64, rf128,

rf256, spare7} OPTIONAL -- Need OR

} OPTIONAL, -- Need OR

subcarrierSpacingMBMS-r14 ENUMERATED {kHz7dot5, kHz1dot25} OPTIONAL -- Need OR

]]

}

-- ASN1STOP

| ***MBSFN-AreaInfoList* field descriptions** |
| --- |
| ***mcch-ModificationPeriod***  Defines periodically appearing boundaries, i.e. radio frames for which SFN mod *mcch-ModificationPeriod* = 0. The contents of different transmissions of MCCH information can only be different if there is at least one such boundary in-between them. In case *mcch-ModificationPeriod-v1430* is configured, the UE shall ignore the *mcch-ModificationPeriod-r9*. |
| ***mcch-Offset***  Indicates, together with the *mcch-RepetitionPeriod*, the radio frames in which MCCH is scheduled i.e. MCCH is scheduled in radio frames for which: SFN mod *mcch-RepetitionPeriod* = *mcch-Offset*. |
| ***mcch-RepetitionPeriod***  Defines the interval between transmissions of MCCH information, in radio frames, Value rf32 corresponds to 32 radio frames, rf64 corresponds to 64 radio frames and so on. In case *mcch-RepetitionPeriod-v1430* is configured, the UE shall ignore the *mcch-RepetitionPeriod-r9*. |
| ***non-MBSFNregionLength***  Indicates how many symbols from the beginning of the subframe constitute the non-MBSFN region. This value applies in all subframes of the MBSFN area used for PMCH transmissions as indicated in the MSI. The values s1 and s2 correspond with 1 and 2 symbols, respectively: see TS 36.211 [21], Table 6.7-1. |
| ***notificationIndicator***  Indicates which PDCCH bit is used to notify the UE about change of the MCCH applicable for this MBSFN area. Value 0 corresponds with the least significant bit as defined in TS 36.212 [22], clause 5.3.3.1 and so on. |
| ***sf-AllocInfo***  Indicates the subframes of the radio frames indicated by the *mcch-RepetitionPeriod* and the *mcch-Offset*, that may carry MCCH. Value "1" indicates that the corresponding subframe is allocated. The following mapping applies:  FDD: The first/ leftmost bit defines the allocation for subframe #1 of the radio frame indicated by *mcch-RepetitionPeriod* and *mcch-Offset*, the second bit for #2, the third bit for #3, the fourth bit for #6, the fifth bit for #7 and the sixth bit for #8.  TDD: The first/leftmost bit defines the allocation for subframe #3 of the radio frame indicated by *mcch-RepetitionPeriod* and *mcch-Offset*, the second bit for #4, third bit for #7, fourth bit for #8, fifth bit for #9. Uplink subframes are not allocated. The last bit is not used. |
| ***signallingMCS***  Indicates the MCS applicable for the subframes indicated by the field *sf-AllocInfo* and for each (P)MCH that is configured for this MBSFN area, for the first subframe allocated to the (P)MCH within each MCH scheduling period (which may contain the MCH scheduling information provided by MAC). Value n2 corresponds with the value 2 for parameter in TS 36.213 [23], Table 7.1.7.1-1, and so on. |
| ***subcarrierSpacingMBMS***  The value indicates subcarrier spacing for MBSFN subframes and kHz7dot5 refers to 7.5kHz subcarrier spacing and kHz1dot25 refers to 1.25 kHz subcarrier spacing as defined in TS36.211 [21], clause 6.12. These subframes do not have non-MBSFN region. If *subcarrierSpacingMBMS* is present, then *non-MBSFNregionLength* shall be ignored. EUTRAN configures parameter *subcarrierSpacingMBMS* only when the MBSFN subframes have subcarrier spacing other than 15kHz. |

6.3.8 Sidelink information elements

– *SL-V2X-ConfigDedicated*

The IE *SL-V2X-ConfigDedicated* specifies the dedicated configuration information for V2X sidelink communication.

***SL-V2X-ConfigDedicated* information element**

-- ASN1START

SL-V2X-ConfigDedicated-r14 ::= SEQUENCE {

commTxResources-r14 CHOICE {

release NULL,

setup CHOICE {

scheduled-r14 SEQUENCE {

sl-V-RNTI-r14 C-RNTI,

mac-MainConfig-r14 MAC-MainConfigSL-r12,

v2x-SchedulingPool-r14 SL-CommResourcePoolV2X-r14 OPTIONAL, -- Need ON

mcs-r14 INTEGER (0..31) OPTIONAL, -- Need OR

logicalChGroupInfoList-r14 LogicalChGroupInfoList-r13

},

ue-Selected-r14 SEQUENCE {

-- Pool for normal usage

v2x-CommTxPoolNormalDedicated-r14 SEQUENCE {

poolToReleaseList-r14 SL-TxPoolToReleaseListV2X-r14 OPTIONAL, -- Need ON

poolToAddModList-r14 SL-TxPoolToAddModListV2X-r14 OPTIONAL, -- Need ON

v2x-CommTxPoolSensingConfig-r14 SL-CommTxPoolSensingConfig-r14

OPTIONAL -- Need ON

}

}

}

} OPTIONAL, -- Need ON

v2x-InterFreqInfoList-r14 SL-InterFreqInfoListV2X-r14 OPTIONAL, -- Need ON

thresSL-TxPrioritization-r14 SL-Priority-r13 OPTIONAL, -- Need OR

typeTxSync-r14 SL-TypeTxSync-r14 OPTIONAL, -- Need OR

cbr-DedicatedTxConfigList-r14 SL-CBR-CommonTxConfigList-r14 OPTIONAL, -- Need OR

...,

[[ commTxResources-v1530 CHOICE {

release NULL,

setup CHOICE {

scheduled-v1530 SEQUENCE {

logicalChGroupInfoList-v1530 LogicalChGroupInfoList-v1530 OPTIONAL, -- Need OR

mcs-r15 INTEGER (0..31) OPTIONAL -- Need OR

},

ue-Selected-v1530 SEQUENCE {

v2x-FreqSelectionConfigList-r15 SL-V2X-FreqSelectionConfigList-r15 OPTIONAL --Need OR

}

}

} OPTIONAL, -- Need ON

v2x-PacketDuplicationConfig-r15 SL-V2X-PacketDuplicationConfig-r15 OPTIONAL, -- Need OR

syncFreqList-r15 SL-V2X-SyncFreqList-r15 OPTIONAL, -- Need OR

slss-TxMultiFreq-r15 ENUMERATED {true} OPTIONAL -- Need OR

]],

[[

slss-TxDisabled-r15 ENUMERATED {true} OPTIONAL -- Need OR

]]

}

LogicalChGroupInfoList-v1530 ::= SEQUENCE (SIZE (1..maxLCG-r13)) OF SL-ReliabilityList-r15

SL-TxPoolToAddModListV2X-r14 ::= SEQUENCE (SIZE (1.. maxSL-V2X-TxPool-r14)) OF SL-TxPoolToAddMod-r14

SL-TxPoolToAddMod-r14 ::= SEQUENCE {

poolIdentity-r14 SL-V2X-TxPoolIdentity-r14,

pool-r14 SL-CommResourcePoolV2X-r14

}

SL-TxPoolToReleaseListV2X-r14 ::= SEQUENCE (SIZE (1.. maxSL-V2X-TxPool-r14)) OF SL-V2X-TxPoolIdentity-r14

-- ASN1STOP

| ***SL-V2X-ConfigDedicated* field descriptions** |
| --- |
| ***cbr-DedicatedTxConfigList***  Indicates the dedicated list of CBR range division and the list of PSCCH TX configurations available to configure congestion control to the UE for V2X sidelink communication. |
| ***logicalChGroupInfoList***  Indicates for each logical channel group the list of associated priorities and reliabilities, used as specified in TS 36.321 [6], in order of increasing logical channel group identity. If E-UTRAN includes *logicalChGroupInfoList-v1530*, it includes the same number of entries, and listed in the same order, as in*logicalChGroupInfoList–r14*, anda logical channel group identity of the same entry in *logicalChGroupInfoList-r14* and in *logicalChGroupInfo-v1530* is associated with both the priorties (as in *logicalChGroupInfoList-r14)* and reliablities (as in *logicalChGroupInfoList-v1530)* of that entry. If *logicalChGroupInfoList-v1530* is not included, this field indicates for each logical channel group the list of associated priorities. |
| ***mcs***  Indicates the MCS as defined in TS 36.213 [23], clause 14.2.1. If not configured, the selection of MCS is up to UE implementation. If included, *mcs-r14* corresponds to the MCS table in Table 8.6.1-1 with 64QAM indices overridden by 16QAM used for transmission on PSSCH. If included, *mcs-r15* corresponds to both the MCS table in Table 8.6.1-1 in TS 36.213 [23] and the MCS table supporting 64QAM in Table 14.1.1-2 in TS 36.213 [23] used for transmission on PSSCH. If this field is present, E-UTRAN shall configure both *mcs-r14* and *mcs-r15*. |
| ***scheduled***  Indicates the configuration for the case E-UTRAN schedules the transmission resources based on sidelink specific BSR from the UE. |
| ***sl-V-RNTI***  Indicates the RNTI used for DCI dynamically scheduling sidelink resources for V2X sidelink communication. |
| ***slss-TxDisabled***  Value TRUE indicates that the primary carrier, even though equipped with synchronisation resources, cannot be used as a synchronisation carrier frequency to transmit SLSS or PSBCH. |
| ***thresSL-TxPrioritization***  Indicates the threshold used to determine whether SL V2X transmission is prioritized over uplink transmission if they overlap in time (see TS 36.321 [6]). This value shall overwrite *thresSL-TxPrioritization* configured in *SIB21* or *SL-V2X-Preconfiguration* if any. |
| ***typeTxSync***  Indicates the prioritized synchronization type (i.e. eNB or GNSS) for performing V2X sidelink communication on PCell. |
| ***ue-Selected***  Indicates the configuration for the case the UE selects the transmission resources from a pool of resources configured by E-UTRAN. |
| ***v2x-InterFreqInfoList***  Indicates synchronization and resource allocation configurations of other carrier frequencies than the serving carrier frequency for V2X sidelink communication. For inter-carrier scheduled resource allocation, CIF=1 in DCI-5A corresponds to the first entry in this frequency list, CIF=2 corresponds to the second entry, and so on (see TS 36.213 [23]). CIF=0 in DCI-5A corresponds to the frequency where the DCI is received. |
| ***v2x-SchedulingPool***  Indicates a pool of resources when E-UTRAN schedules Tx resources for V2X sidelink communications. |

6.7.3.1 NB-IoT System information blocks

– *SystemInformationBlockType22-NB*

The IE *SystemInformationBlockType22-NB* contains radio resource configuration for paging and random access procedure on non-anchor carriers.

***SystemInformationBlockType22-NB* information element**

-- ASN1START

SystemInformationBlockType22-NB-r14 ::= SEQUENCE {

dl-ConfigList-r14 DL-ConfigCommonList-NB-r14 OPTIONAL, -- Need OR

ul-ConfigList-r14 UL-ConfigCommonList-NB-r14 OPTIONAL, -- Need OR

pagingWeightAnchor-r14 PagingWeight-NB-r14 OPTIONAL, -- Cond pcch-config

nprach-ProbabilityAnchorList-r14 NPRACH-ProbabilityAnchorList-NB-r14 OPTIONAL, -- Cond nprach-config

lateNonCriticalExtension OCTET STRING OPTIONAL,

...,

[[ mixedOperationModeConfig-r15 SEQUENCE {

dl-ConfigListMixed-r15 DL-ConfigCommonList-NB-r14 OPTIONAL, -- Cond dl-ConfigList

ul-ConfigListMixed-r15 UL-ConfigCommonList-NB-r14 OPTIONAL, -- Cond ul-ConfigList

pagingDistribution-r15 ENUMERATED {true} OPTIONAL, -- Need OR

nprach-Distribution-r15 ENUMERATED {true} OPTIONAL -- Need OR

} OPTIONAL, -- Need OR

ul-ConfigList-r15 UL-ConfigCommonListTDD-NB-r15 OPTIONAL -- Cond TDD

]]

}

DL-ConfigCommonList-NB-r14 ::= SEQUENCE (SIZE (1.. maxNonAnchorCarriers-NB-r14)) OF

DL-ConfigCommon-NB-r14

UL-ConfigCommonList-NB-r14 ::= SEQUENCE (SIZE (1.. maxNonAnchorCarriers-NB-r14)) OF

UL-ConfigCommon-NB-r14

UL-ConfigCommonListTDD-NB-r15 ::= SEQUENCE (SIZE (1.. maxNonAnchorCarriers-NB-r14)) OF

UL-ConfigCommonTDD-NB-r15

DL-ConfigCommon-NB-r14 ::= SEQUENCE {

dl-CarrierConfig-r14 DL-CarrierConfigCommon-NB-r14,

pcch-Config-r14 PCCH-Config-NB-r14 OPTIONAL, -- Need OR

...,

[[ wus-Config-r15 WUS-ConfigPerCarrier-NB-r15 OPTIONAL -- Cond WUS

]]

}

PCCH-Config-NB-r14 ::= SEQUENCE {

npdcch-NumRepetitionPaging-r14 ENUMERATED {

r1, r2, r4, r8, r16, r32, r64, r128,

r256, r512, r1024, r2048,

spare4, spare3, spare2, spare1} OPTIONAL, -- Need OP

pagingWeight-r14 PagingWeight-NB-r14 DEFAULT w1,

...

}

PagingWeight-NB-r14 ::= ENUMERATED {w1, w2, w3, w4, w5, w6, w7, w8,

w9, w10, w11, w12, w13, w14, w15, w16}

UL-ConfigCommon-NB-r14 ::= SEQUENCE {

ul-CarrierFreq-r14 CarrierFreq-NB-r13,

nprach-ParametersList-r14 NPRACH-ParametersList-NB-r14 OPTIONAL, -- Need OR

...,

[[ nprach-ParametersListEDT-r15 NPRACH-ParametersList-NB-r14 OPTIONAL -- Cond EDT

]]

}

UL-ConfigCommonTDD-NB-r15 ::= SEQUENCE {

tdd-UL-DL-AlignmentOffset-r15 TDD-UL-DL-AlignmentOffset-NB-r15,

nprach-ParametersListTDD-r15 NPRACH-ParametersListTDD-NB-r15 OPTIONAL, -- Need OR

...

}

NPRACH-ProbabilityAnchorList-NB-r14 ::= SEQUENCE (SIZE (1.. maxNPRACH-Resources-NB-r13)) OF

NPRACH-ProbabilityAnchor-NB-r14

NPRACH-ProbabilityAnchor-NB-r14 ::= SEQUENCE {

nprach-ProbabilityAnchor-r14 ENUMERATED {

zero, oneSixteenth, oneFifteenth, oneFourteenth,

oneThirteenth, oneTwelfth, oneEleventh, oneTenth,

oneNinth, oneEighth, oneSeventh, oneSixth,

oneFifth, oneFourth, oneThird, oneHalf}

OPTIONAL -- Need OP

}

-- ASN1STOP

| ***SystemInformationBlockType22-NB* field descriptions** |
| --- |
| ***dl-CarrierConfig***  For FDD: Provides the configuration of the DL non-anchor carrier.  For TDD: Provides the configuration of the non-anchor carrier. |
| ***dl-ConfigList, dl-ConfigListMixed***  For FDD: List of DL non-anchor carriers and associated configuration that can be used for paging and/or random access. E-UTRAN configures DL non-anchor carriers operating in mixed operation mode only in *dl-ConfigListMixed* and only a UE that supports mixed operation mode uses the carriers in *dl-ConfigListMixed*. A given carrier is either signalled in the *dl-ConfigList* or in *dl-ConfigListMixed*.  If *dl-ConfigListMixed* is present and at least one of the carriers in *dl-ConfigListMixed* is configured for paging:  - If *pagingDistribution* is present, the UE supporting mixed operation mode creates a combined list of DL carriers for paging by appending *dl-ConfigListMixed* to the *dl-ConfigList* while maintaining the order among *dl-ConfigList* and *dl-ConfigListMixed*; the total number of signalled DL non-anchor carriers cannot be more than *maxNonAnchorCarriers-NB-r14*.  - If *pagingDistribution* is absent, the UE supporting mixed operation mode uses the list of DL carriers for paging provided in *dl-ConfigListMixed* and considers *pagingWeightAncho*r being set to w0, i.e. the anchor carrier is not used*.*  Otherwise, the *pagingDistribution* field is not applicable and the UE shall ignore the value.  For TDD: List of non-anchor carriers and associated configuration that can be used for paging and/or random access. |
| ***mixedOperationModeConfig***  For FDD: Provides the configuration of DL and UL non-anchor carriers that can be used for paging and random access by a UE that supports mixed operation mode.  For TDD: This parameter is absent. |
| ***npdcch-NumRepetitionPaging***  Maximum number of repetitions for NPDCCH common search space (CSS) for paging, see TS 36.213 [23], clause 16.6.  If the field is absent, the value *of npdcch-NumRepetitionPaging* configured in *SystemInformationBlockType2-NB* in IE *pcch-Config* applies. |
| ***nprach-Distribution***  Indicates which UL carriers a UE supporting mixed operation mode uses for random access as defined in description of *ul-ConfigList, ul-ConfigListMixed*. |
| ***nprach-ParametersList, nprach-ParametersList-EDT***  Configure NPRACH parameters for each NPRACH resource on one non-anchor UL carrier. Up to three NPRACH resources can be configured on one non-anchor UL carrier. Each NPRACH resource is associated with a different number of NPRACH repetitions.  NPRACH resources in *nprach-ParametersListEDT* are used to initiateEDT. Each NPRACH resource is associated with a maximum TBS signalled in the corresponding entry of *edt-TBS-InfoList* in *SystemInformationBlockType2-NB*.  E-UTRAN includes the same number of entries, and listed in the same order, as in *nprach-ParametersList* in *SystemInformationBlockType2-NB*. |
| ***nprach-ParametersListTDD***  For TDD: Configure NPRACH parameters for each NPRACH resource on one non-anchor UL carrier. Up to three NPRACH resources can be configured on one non-anchor UL carrier. Each NPRACH resource is associated with a different number of NPRACH repetitions.  E-UTRAN includes the same number of entries in *nprach-ParametersListTDD*, and listed in the same order, as in *nprach-ParametersListTDD* in *SystemInformationBlockType2-NB*.. |
| ***nprach-ProbabilityAnchor***  Configure the selection probability for the anchor carrier NPRACH resource, see TS 36.321 [6]. Value zero corresponds to a probability of 0, oneSixteenth corresponds to the probability of 1/16, oneFifteenth corresponds to the probability of 1/15, and so on.  If the field is absent, the selection probability of the anchor carrier NPRACH resource is 1.  All non-anchor carriers NPRACH resources have equal probability between them.  If there is no NPRACH resource defined on the anchor carrier for one repetition level in *nprach-ParametersList-EDT*, (respectively *nprach-ParametersListFmt2*, *nprach-ParametersListFmt2-EDT*), the UE shall use the value 'zero' and ignore the signalled value of *nprach-ProbabilityAnchor* for this repetition level for the NPRACH resources defined by *nprach-ParametersList-EDT* (respectively *nprach-ParametersListFmt2*, *nprach-ParametersListFmt2-EDT*). |
| ***nprach-ProbabilityAnchorList***  Configures the selection probability for each NPRACH resource on the anchor carrier.  E-UTRAN includes the same number of entries, and listed in the same order, as in *nprach-ParametersList* in *SystemInformationBlockType2-NB.* |
| ***pagingDistribution***  Indicates which DL carriers a UE supporting mixed operation mode monitors for paging as defined in description of *dl-ConfigList, dl-ConfigListMixed*. |
| ***pagingWeight***  Weight of the non-anchor paging carrier for uneven paging load distribution across the carriers. Value w1 corresponds to a relative weight of 1, w2 corresponds to a relative weight of 2, and so on.  The paging load for a carrier 'i' is equal to w(i)/W where i is equal to 0 for the anchor carrier and equal to the index of the carrier in the *dl-ConfigList* / *dl-ConfigListMixed* for a non-anchor carrier, W is the sum of the weights of all paging carriers.  To avoid correlation between paging carrier and paging occasion, the weights should be assigned such that: nB \* W <= 16384. |
| ***pagingWeightAnchor***  Weight of the anchor carrier for uneven paging load distribution across the carriers. Value w1 corresponds to a relative weight of 1, w2 corresponds to a relative weight of 2, and so on.  If the field is absent, the (default) value of w0 is applied, i.e. the anchor carrier is not used for paging. |
| ***pcch-Config***  Configure the PCCH parameters for the non-anchor DL carrier. |
| ***tdd-UL-DL-AlignmentOffset***  Indicates the offset between the UL carrier frequency center with respect to DL carrier frequency center for the non-anchor carrier. |
| ***ul-CarrierFreq***  For FDD: UL carrier frequency of the non-anchor carrier as defined in TS 36.101 [42], clause 5.7.3F.  For TDD: This field is absent and the uplink carrier frequency is same as the downlink frequency. |
| ***ul-ConfigList, ul-ConfigListMixed***  For FDD: List of UL non-anchor carriers and associated configuration that can be used for random access. E-UTRAN configures UL non-anchor carriers operating in mixed operation mode only in *ul-ConfigListMixed* and only a UE that supports mixed operation mode uses the carriers in *ul-ConfigListMixed*. A given carrier is either signalled in the *ul-ConfigList* or in *ul-ConfigListMixed*.  If *ul-ConfigListMixed* is present and at least one of the carriers in *ul-ConfigListMixed* is configured for random access:  - If *nprach-Distribution* is present, the UE supporting mixed operation mode creates a combined list of UL carriers for random access by appending *ul-ConfigListMixed* to the *ul-ConfigList* while maintaining the order among both *ul-ConfigList* and *ul-ConfigListMixed*; the total number of signalled UL non-anchor carriers cannot be more than *maxNonAnchorCarriers-NB-r14*.  - If *nprach-Distribution* is absent, the UE supporting mixed operation mode uses the list of UL carriers for random access provided in *ul-ConfigListMixed* and considers *nprach-ProbabiliyAnchor* being set to zero for each NPRACH resource, i.e. the anchor carrier is not used for random access*.*  Otherwise, the *nprach-Distribution* field is not applicable and the UE shall ignore the value.  For TDD: E-UTRAN configures *ul-ConfigList-r15* and includes the same number of entries as in *dl-ConfigList*. The UL carrier frequency of the non-anchor carrier is same as the DL carrier frequency. |
| ***wus-Config***  For FDD: Carrier specific WUS Configuration. |

| **Conditional presence** | **Explanation** |
| --- | --- |
| *dl-ConfigList* | This field is optionally present, Need OR, if the field *dl-ConfigList* is present. Otherwise the field is not present. |
| *EDT* | The field is optionally present, Need OR, if *edt-Parameters* in *SystemInformationBlockType2-NB* is present; otherwise the field is not present and the UE shall delete any existing value for this field. |
| *pcch-config* | This field is optionally present, Need OP, if the field *dl-ConfigList* is present and at least one of the carriers in *dl-ConfigList* is configured for paging. Otherwise the field is not present and only the anchor carrier is used for paging. |
| *nprach-config* | This field is mandatory present, if the field *ul-ConfigList* is present and at least one of the carriers in *ul-ConfigList* is configured for random access. Otherwise the field is not present and only the anchor carrier is used for random access. |
| *TDD* | This field is optionally present, Need OR, for TDD. Otherwise the field is not present. |
| *ul-ConfigList* | This field is optionally present, Need OR, if the field *ul-ConfigList* is present. Otherwise the field is not present. |
| *WUS* | This field is mandatory present, if the field *wus-Config* is present in *SystemInformationBlockType2-NB*. Otherwise the field is not present, Need OR. |

6.7.3.6 NB-IoT Other information elements

– *UE-Capability-NB*

The IE *UE-Capability-NB* is used to convey the NB-IoT UE Radio Access Capability Parameters, see TS 36.306 [5]. The IE *UE-Capability-NB* is transferred in NB-IoT only.

***UE-Capability-NB* information element**

-- ASN1START

UE-Capability-NB-r13 ::= SEQUENCE {

accessStratumRelease-r13 AccessStratumRelease-NB-r13,

ue-Category-NB-r13 ENUMERATED {nb1} OPTIONAL,

multipleDRB-r13 ENUMERATED {supported} OPTIONAL,

pdcp-Parameters-r13 PDCP-Parameters-NB-r13 OPTIONAL,

phyLayerParameters-r13 PhyLayerParameters-NB-r13,

rf-Parameters-r13 RF-Parameters-NB-r13,

dummy SEQUENCE {} OPTIONAL

}

UE-Capability-NB-Ext-r14-IEs ::= SEQUENCE {

ue-Category-NB-r14 ENUMERATED {nb2} OPTIONAL,

mac-Parameters-r14 MAC-Parameters-NB-r14 OPTIONAL,

phyLayerParameters-v1430 PhyLayerParameters-NB-v1430 OPTIONAL,

rf-Parameters-v1430 RF-Parameters-NB-v1430,

nonCriticalExtension UE-Capability-NB-v1440-IEs OPTIONAL

}

UE-Capability-NB-v1440-IEs ::= SEQUENCE {

phyLayerParameters-v1440 PhyLayerParameters-NB-v1440 OPTIONAL,

nonCriticalExtension UE-Capability-NB-v14x0-IEs OPTIONAL

}

UE-Capability-NB-v14x0-IEs ::= SEQUENCE {

-- Following field is only to be used for late REL-14 extensions

lateNonCriticalExtension OCTET STRING OPTIONAL,

nonCriticalExtension UE-Capability-NB-v1530-IEs OPTIONAL

}

UE-Capability-NB-v1530-IEs ::= SEQUENCE {

earlyData-UP-r15 ENUMERATED {supported} OPTIONAL,

rlc-Parameters-r15 RLC-Parameters-NB-r15,

mac-Parameters-v1530 MAC-Parameters-NB-v1530,

phyLayerParameters-v1530 PhyLayerParameters-NB-v1530 OPTIONAL,

tdd-UE-Capability-r15 TDD-UE-Capability-NB-r15 OPTIONAL, nonCriticalExtension SEQUENCE {} OPTIONAL

}

TDD-UE-Capability-NB-r15 ::= SEQUENCE {

ue-Category-NB-r15 ENUMERATED {nb2} OPTIONAL,

phyLayerParametersRel13-r15 PhyLayerParameters-NB-r13 OPTIONAL,

phyLayerParametersRel14-r15 PhyLayerParameters-NB-v1430 OPTIONAL,

phyLayerParameters-v1530 PhyLayerParameters-NB-v1530 OPTIONAL,

...

}

AccessStratumRelease-NB-r13 ::= ENUMERATED {rel13, rel14, rel15, spare5, spare4, spare3, spare2, spare1, ...}

PDCP-Parameters-NB-r13 ::= SEQUENCE {

supportedROHC-Profiles-r13 SEQUENCE {

profile0x0002 BOOLEAN,

profile0x0003 BOOLEAN,

profile0x0004 BOOLEAN,

profile0x0006 BOOLEAN,

profile0x0102 BOOLEAN,

profile0x0103 BOOLEAN,

profile0x0104 BOOLEAN

},

maxNumberROHC-ContextSessions-r13 ENUMERATED {cs2, cs4, cs8, cs12} DEFAULT cs2,

...

}

RLC-Parameters-NB-r15 ::= SEQUENCE {

rlc-UM-r15 ENUMERATED {supported} OPTIONAL

}

MAC-Parameters-NB-r14 ::= SEQUENCE {

dataInactMon-r14 ENUMERATED {supported} OPTIONAL,

rai-Support-r14 ENUMERATED {supported} OPTIONAL

}

MAC-Parameters-NB-v1530 ::= SEQUENCE {

sr-SPS-BSR-r15 ENUMERATED {supported} OPTIONAL

}

PhyLayerParameters-NB-r13 ::= SEQUENCE {

multiTone-r13 ENUMERATED {supported} OPTIONAL,

multiCarrier-r13 ENUMERATED {supported} OPTIONAL

}

PhyLayerParameters-NB-v1430 ::= SEQUENCE {

multiCarrier-NPRACH-r14 ENUMERATED {supported} OPTIONAL,

twoHARQ-Processes-r14 ENUMERATED {supported} OPTIONAL

}

PhyLayerParameters-NB-v1440 ::= SEQUENCE {

interferenceRandomisation-r14 ENUMERATED {supported} OPTIONAL

}

PhyLayerParameters-NB-v1530 ::= SEQUENCE {

mixedOperationMode-r15 ENUMERATED {supported} OPTIONAL,

sr-WithHARQ-ACK-r15 ENUMERATED {supported} OPTIONAL,

sr-WithoutHARQ-ACK-r15 ENUMERATED {supported} OPTIONAL,

nprach-Format2-r15 ENUMERATED {supported} OPTIONAL,

additionalTransmissionSIB1-r15 ENUMERATED {supported} OPTIONAL,

npusch-3dot75kHz-SCS-TDD-r15 ENUMERATED {supported} OPTIONAL

}

RF-Parameters-NB-r13 ::= SEQUENCE {

supportedBandList-r13 SupportedBandList-NB-r13,

multiNS-Pmax-r13 ENUMERATED {supported} OPTIONAL

}

RF-Parameters-NB-v1430 ::= SEQUENCE {

powerClassNB-14dBm-r14 ENUMERATED {supported} OPTIONAL

}

SupportedBandList-NB-r13 ::= SEQUENCE (SIZE (1..maxBands)) OF SupportedBand-NB-r13

SupportedBand-NB-r13 ::= SEQUENCE {

band-r13 FreqBandIndicator-NB-r13,

powerClassNB-20dBm-r13 ENUMERATED {supported} OPTIONAL

}

-- ASN1STOP