**3GPP TSG-RAN WG2 Meeting #110-e** **R2-2005598**

**Electronic, 1 Jun – 12 Jun 2020**

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| *CR-Form-v11.4* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **36.331** | **CR** | **4229** | **rev** | **5** | **Current version:** | **16.0.0** |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | Introduce of alternative cell reselection priority for EN-DC | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | CMCC, SoftBank, Ericsson, Huawei, ZTE, CATT, vivo, Samsung | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI16 | | | | |  | ***Date:*** | | | 2020-06-01 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories 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)* | |
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| ***Reason for change:*** | | To allow different UEs to apply different cell reselection priorities the network can indicate to the UE if the UE shall use the legacy priorities or use alternative priorities. This can be used for example to make EN-DC capable UEs to apply different cell reselection priorities compared to non-EN-DC capable UEs such that EN-DC capable UEs are on frequencies on which EN-DC enabled cells are deployed. | | | | | | | | |
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| ***Summary of change:*** | | Rev 1:   1. A new indicator (altFreqPriorities) is added to the RRCConnectionRelease message to inform the UE to use the alternative frequency priorities broadcast in the system information. 2. SIB3 and SIB5 are added with alternative frequency priorities (altCellReselectionPriority and altCellReselectionSubPriority). 3. A new UE capability is added to indicate whether the UE supports alternative cell reselection priority.   Rev 2:   1. Add a new timer T3xx 2. Add corresponding behavior for start/stop/atExpire T3xx | | | | | | | | |
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| ***Consequences if not approved:*** | | EN-DC UEs and other UEs will use the same cell reselection priorities, thus reducing network optimization possibilities. | | | | | | | | |
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| ***Clauses affected:*** | | 5.3.3, 6.2.2, 6.3.1, 6.3.6, 7.3.1 | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 36.304 CR 0782  TS 36.306 CR 1755 | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
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/\*Start of first change\*/

5.3.3 RRC connection establishment

/\*Unaffected parts omitted\*/

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> 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 *altFreqPriorities* provided by the *RRCConnectionRelease*;

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> stop timer T3xx, 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.

5.3.3.4a Reception of the *RRCConnectionResume* by the UE

The UE shall:

1> stop timer T300;

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> stop T380 if running;

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

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

1> else:

2> if resuming an RRC connection from a suspended RRC connection in EPC; or

2> for NB-IoT, if resuming an RRC connection from a suspended RRC connection in 5GC and *fullConfig* is not present in the *RRCConnectionResume* message:

3> if the *RRCConnectionResume* message does not include the *restoreMCG-SCells*:

4> release the MCG SCell(s) from the UE AS context, if stored;

3> if the *RRCConnectionResume* message does not include the *restoreSCG*:

4> if the UE was configured with (NG)EN-DC:

5> perform MR-DC release, as specified in TS 38.331 [82], clause 5.3.5.10;

3> restore the PDCP state and re-establish PDCP entities for SRB2, if configured withE-UTRA PDCP, and for all DRBs that are configured with E-UTRA PDCP;

3> if *drb-ContinueROHC* is included:

4> indicate to lower layers that stored UE AS context is used and that *drb-ContinueROHC* is configured;

4> continue the header compression protocol context for the DRBs configured with the header compression protocol;

3> else:

4> indicate to lower layers that stored UE AS context is used;

4> reset the header compression protocol context for the DRBs configured with the header compression protocol;

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

3> configure lower layers to consider the restored MCG and SCG SCell(s) (if any) to be in deactivated state;

2> else if the *RRCConnectionResume* message includes the *fullConfig* (i.e., for resuming an RRC connection from RRC\_INACTIVE or for resuming a suspended RRC connection in 5GC):

3> perform the radio configuration procedure as specified in 5.3.5.8;

2> else (i.e., for resuming an RRC connection from RRC\_INACTIVE, or except for NB-IoT for resuming a suspended RRC connection in 5GC):

3> if the *RRCConnectionResume* message does not include the *restoreMCG-SCells*:

4> release the MCG SCell(s) from the UE Inactive AS context, if stored;

3> if the *RRCConnectionResume* message does not include the *restoreSCG*:

4> if the UE was configured with (NG)EN-DC:

5> perform MR-DC release, as specified in TS 38.331 [82], clause 5.3.5.10;

3> restore the following from the stored UE Inactive AS context:

- MCG physical layer configuration,

- MCG MAC configuration,

- MCG RLC configuration,

- PDCP configuration,

- MCG SCell configurations, if stored

*- nr*-*SecondaryCellGroupConfig*, if stored;

3> discard the stored UE Inactive AS context;

3> configure lower layers to consider the restored MCG and SCG SCell(s) (if any) to be in deactivated state;

3> release the *rrc-InactiveConfig*, except *ran-NotificationAreaInfo*;

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

NOTE 1: When performing the radio resource configuration procedure, for the physical layer configuration and the MAC Main configuration, the restored RRC configuration from the stored UE AS context is used as basis for the reconfiguration.

1> if the received *RRCConnectionResume* includes the *sCellToReleaseList*:

2> perform SCell release as specified in 5.3.10.3a;

1> if the received *RRCConnectionResume* includes the *sCellToAddModList*:

2> perform SCell addition or modification as specified in 5.3.10.3b;

1> if the received *RRCConnectionResume* includes the *sCellGroupToReleaseList*:

2> perform SCell group release as specified in 5.3.10.3d;

1> if the received *RRCConnectionResume* includes the *sCellGroupToAddModList*:

2> perform SCell group addition or modification as specified in 5.3.10.3e;

1> if the received *RRCConnectionResume* message includes the *nr-SecondaryCellGroupConfig*:

2> perform NR RRC Reconfiguration as specified in TS 38.331 [82], clause 5.3.5.3;

1> if the received *RRCConnectionResume* message includes the *sk-Counter*:

2> perform key update procedure as specified in TS 38.331 [82], clause 5.3.5.8;

1> if the received *RRCConnectionResume* message includes the *nr-RadioBearerConfig1*:

2> perform radio bearer configuration as specified in TS 38.331 [82], clause 5.3.5.6;

1> if the received *RRCConnectionResume* message includes the *nr-RadioBearerConfig2*:

2> perform radio bearer configuration as specified in TS 38.331 [82], clause 5.3.5.6;

1> except if the *RRCConnectionResume* is received in response to an *RRCConnectionResumeRequest* for EDT or for transmission using PUR:

2> resume SRB2 and all DRBs, if any, including RBs configured with NR PDCP;

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

1> if stored, discard the *altFreqPriorities* provided by the *RRCConnectionRelease*;

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

1> if the *RRCConnectionResume* message includes the *measConfig*:

2> perform the measurement configuration procedure as specified in 5.5.2;

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> stop timer T360, if running;

1> stop timer T322, if running;

1> stop timer T3xx, if running;

1> if timer T331 is running:

2> stop timer T331;

2> perform the actions as specified in 5.6.20.3;

1> if the UE is resuming an RRC connection after early security reactivation in accordance with conditions in 5.3.3.18 or *RRCConnectionResume* is received in response to an *RRCConnectionResumeRequest* from RRC\_INACTIVE:

2> ignore the *nextHopChainingCount* value indicated in the *RRCConnectionResume* message;

2> if the *RRCConnectionResume* is received in response to an *RRCConnectionResumeRequest* for transmission using PUR:

3> if *newUE-Identity* is included:

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

3> else:

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

1> else:

2> if resuming an RRC connection from a suspended RRC connection in EPC:

3> update the KeNB key based on the KASME key to which the current KeNB is associated, using the *nextHopChainingCount* value indicated in the *RRCConnectionResume* message, as specified in TS 33.401 [32];

3> store the *nextHopChainingCount* value;

3> derive the KRRCint key associated with the previously configured integrity algorithm, as specified in TS 33.401 [32];

3> request lower layers to verify the integrity protection of the *RRCConnectionResume* message, using the previously configured algorithm and the KRRCint key;

3> if the integrity protection check of the *RRCConnectionResume* message fails:

4> perform the actions upon leaving RRC\_CONNECTED as specified in 5.3.12, with release cause 'other', upon which the procedure ends;

3> derive the KRRCenc key and the KUPenc key associated with the previously configured ciphering algorithm, as specified in TS 33.401 [32];

3> configure lower layers to resume integrity protection using the previously configured algorithm and the KRRCint key immediately, i.e., integrity protection shall be applied to all subsequent messages received and sent by the UE;

3> configure lower layers to resume ciphering and to apply the ciphering algorithm, the KRRCenc key and the KUPenc key, i.e. the ciphering configuration shall be applied to all subsequent messages received and sent by the UE;

1> enter RRC\_CONNECTED;

1> indicate to upper layers that the suspended RRC connection has been resumed;

1> stop the cell re-selection procedure;

1> consider the current cell to be the PCell;

1> set the content of *RRCConnectionResumeComplete* message as follows:

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*;

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

2> except for NB-IoT:

3> if resuming an RRC connection from a suspended RRC connection:

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

4> include *mobilityHistoryAvail*;

3> if the *idleModeMeasurementReq* is included in the *RRCConnectionResume* message:

4> if the UE has idle/inactive measurement information concerning cells other than the PCell available in *VarMeasIdleReport*:

Editor's note: FFS if the *idleModeMeasurementReq* indicates all results (EUTRA and NR), or can request only EUTRA or NR results. The procedure below assumes the former.

5> set the *measResultListIdle* in the *RRCConnectionResumeComplete* message to the value of *measReportIdle* in the *VarMeasIdleReport,* if available;

5> set the *measResultListIdleNR* in the *RRCConnectionResumeComplete* message to the value of *measReportIdleNR* in the *VarMeasIdleReport*, if available;

5> discard the *VarMeasIdleReport* upon successful delivery of the *RRCConnectionResumeComplete* message is confirmed by lower layers;

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 the *RRCConnectionResume* message includes *nr-SecondaryCellGroupConfig*:

4> include *scg-ConfigResponseNR* in accordance with TS 38.331 [82], clause 5.3.5.3;

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].

3> if the UE is connected to EPC:

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-NB*:

5> include *rlf-InfoAvailable*;

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

5> include *anr-InfoAvailable*;

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

1> the procedure ends.

5.3.3.4b Reception of the *RRCEarlyDataComplete* by the UE

The UE shall:

1> indicate to upper layers that the RRC connection has been established;

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

1> if stored, discard the *altFreqPriorities* provided by the *RRCConnectionRelease*;

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

1> stop timer T300;

1> stop timer T302, if running;

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 T322, if running;

1> stop timer T3xx, if running;

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

1> reset MAC and release the MAC configuration;

1> if the *RRCEarlyDataComplete* message includes *redirectedCarrierInfo* indicating redirection to *geran*; and

1> if upper layers indicate that redirect to GERAN without AS security is not allowed:

2> perform the actions upon leaving RRC\_CONNECTED as specified in 5.3.12, with release cause 'other', upon which the procedure ends;

1> if the *RRCEarlyDataComplete* message includes *idleModeMobilityControlInfo*:

2> store the cell reselection priority information provided by the *idleModeMobilityControlInfo*;

2> if the *t320* is included:

3> start timer T320, with the timer value set according to the value of *t320*;

1> else:

2> apply the cell reselection priority information broadcast in the system information;

1> for NB-IoT, if the *RRCEarlyDataComplete* message includes *redirectedCarrierInfo*:

2> if the *redirectedCarrierOffsetDedicated* isincluded in the *redirectedCarrierInfo*:

3> store the dedicated offsetfor the frequency in *redirectedCarrierInfo*;

3> start timer T322, with the timer value set according to the value of *T322* in *redirectedCarrierInfo*;

1> if the *extendedWaitTime* is present; and

1> if the UE supports delay tolerant access or the UE is a NB-IoT UE:

2> forward the *extendedWaitTime* to upper layers;

1> indicate the release of the RRC connection to upper layers together with the release cause 'other', upon which the procedure ends;

/\*Unaffected parts are omited \*/

5.3.8.3 Reception of the *RRCConnectionRelease* by the UE

The UE shall:

1> except for NB-IoT, BL UEs or UEs in CE, delay the following actions defined in this sub-clause 60 ms from the moment the *RRCConnectionRelease* message was received or optionally when lower layers indicate that the receipt of the *RRCConnectionRelease* message has been successfully acknowledged, whichever is earlier;

1> for BL UEs or UEs in CE, delay the following actions defined in this sub-clause 1.25 seconds from the moment the *RRCConnectionRelease* message was received or optionally when lower layers indicate that the receipt of the *RRCConnectionRelease* message has been successfully acknowledged, whichever is earlier;

1> for NB-IoT, delay the following actions defined in this sub-clause 10 seconds from the moment the *RRCConnectionRelease* message was received or optionally when lower layers indicate that the receipt of the *RRCConnectionRelease* message has been successfully acknowledged, whichever is earlier.

NOTE: For BL UEs, UEs in CE and NB-IoT, when STATUS reporting, as defined in TS 36.322 [7], has not been triggered and the UE has sent positive HARQ feedback (ACK), as defined in TS 36.321 [6], the lower layers can be considered to have indicated that the receipt of the *RRCConnectionRelease* message has been successfully acknowledged.

1> stop T380, if running;

1> for NB -IoT, if the UE has reported *anr-InfoAvailable*, clear *VarANR-MeasConfig-NB* and *VarANR-MeasReport-NB*;

1> if the *RRCConnectionRelease* message is received in response to an *RRCConnectionResumeRequest* for EDT or for UP transmission using PUR:

2> indicate to upper layers that the suspended RRC connection has been resumed;

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

2> stop timer T300;

2> stop timer T302, if running;

2> stop timer T303, if running;

2> stop timer T305, if running;

2> stop timer T306, if running;

2> stop timer T308, if running;

2> perform the actions as specified in 5.3.3.7;

2> stop timer T316, if running;

2> stop timer T320, if running;

2> stop timer T322, if running;

2> stop timer T3xx, if running;

1> if ASsecurity is not activated and if UE is connected to 5GC:

2> ignore any field included in *RRCConnectionRelease* message except *waitTime*;

2> perform the actions upon leaving RRC\_CONNECTED or RRC\_INACTIVE as specified in 5.3.12 with the release cause '*other'* upon which the procedure ends;

1> if the *RRCConnectionRelease* message includes *redirectedCarrierInfo* indicating redirection to *geran*; or

1> if the *RRCConnectionRelease* message includes *idleModeMobilityControlInfo* including *freqPriorityListGERAN*:

2> if AS security has not been activated; and

2> if upper layers indicate that redirect to GERAN without AS security is not allowed:

3> ignore the content of the *RRCConnectionRelease*;

3> perform the actions upon leaving RRC\_CONNECTED or RRC\_INACTIVE as specified in 5.3.12, with release cause 'other', upon which the procedure ends;

1> if AS security has not been activated:

2> ignore the content of *redirectedCarrierInfo*, if included and indicating redirection to *nr*;

2> ignore the content of *idleModeMobilityControlInfo*, if included and including *freqPriorityListNR*;

2> ignore the *altFreqPriorities* and T3xx, if included;

2> if the UE ignores the content of *redirectedCarrierInfo* or of *idleModeMobilityControlInfo*:

3> perform the actions upon leaving RRC\_CONNECTED as specified in 5.3.12, with release cause 'other', upon which the procedure ends;

1> if the *RRCConnectionRelease* message includes *redirectedCarrierInfo* indicating redirection to *eutra* and if UE is connected to 5GC:

2> if *cn-Type* is included:

3> after the cell selection, indicate the available CN Type(s) and the received *cn-Type* to upper layers;

NOTE 1: Handling the case if the E-UTRA cell selected after the redirection does not support the core network type specified by the *cn-Type,* is up to UE implementation.

1> if the *RRCConnectionRelease* message includes the *idleModeMobilityControlInfo*:

2> store the cell reselection priority information provided by the *idleModeMobilityControlInfo*;

2> if the *t320* is included:

3> start timer T320, with the timer value set according to the value of *t320*;

1> else if the *RRCConnectionRelease* message includes the *altFreqPriorities*:

2> store the received *altFreqPriorities*;

2> for E-UTRA frequency, apply the alternative cell reselection priority information broadcast in the system information ifavailable, otherwise apply the cell reselection priority broadcast in the system information;

2> for inter-RAT frequency, apply the cell reselection priority broadcast in the system information;

2> if the *t3xx* is included:

3> start timer T3xx, with the timer value set according to the value of *t3xx*;

1> else:

2> apply the cell reselection priority information broadcast in the system information;

1> if the *RRCConnectionRelease* message includes the *releaseMeasIdleConfig*:

2> if timer T331 is running:

3> stop timer T331;

3> perform the actions as specified in 5.6.20.3;

1> if the *RRCConnectionRelease* message includes the *measIdleConfig*:

2> clear *VarMeasIdleConfig* and *VarMeasIdleReport*;

2> store the received *measIdleDuration* in *VarMeasIdleConfig*;

2> start or restart T331 with the value of *measIdleDuration*;

2> if the *measIdleConfig* contains *measIdleCarrierListEUTRA*:

3> store the received *measIdleCarrierListEUTRA* in *VarMeasIdleConfig*;

2> if the *measIdleConfig* contains *measIdleCarrierListNR*:

3> store the received *measIdleCarrierListNR* in *VarMeasIdleConfig*;

2> if the *measIdleConfig* contains *validityAreaList*:

3> store the received *validityAreaList* in *VarMeasIdleConfig*;

2> start performing idle/inactive measurements asspecified in5.6.20;

NOTE 2: If the *measIdleConfig* does not contain *measIdleCarrierListEUTRA* or *measIdleCarrierListNR*, UE may receive *measIdleCarrierListEUTRA* or *measIdleCarrierListNR* as specified in 5.2.2.12.

1> for NB-IoT, if the *RRCConnectionRelease* message includes the *anr-MeasConfig*:

2> store the received *anr-QualityThreshold* in *VarANR-MeasConfig-NB*;

2> if the *anr-MeasConfig* contains *anr-CarrierList*:

3> store the received *anr-CarrierList* in *VarANR-MeasConfig-NB*;

2> set *plmn-IdentityList* in *VarANR-MeasReport-NB* to include the list of EPLMNs stored by the UE (i.e. includes the RPLMN);

2> set *servCellIdentity* in *VarANR-MeasReport-NB* to the global cell identity of the Pcell;

2> start performing ANR measurements as specified in 5.6.24;

1> if the *RRCConnectionRelease* message includes the *pur-Config*:

2> if *pur-Config* is set to *setup*:

3> store or replace the PUR configuration provided by the *pur-Config*;

3> configure MAC in accordance with the stored *pur-Config*;

2> else:

3> release *pur-Config*, if configured;

3> discard previously stored *pur-Config*, if any;

2> indicate to lower layers that *pur-Config* is released.

1> for NB-IoT, if the *RRCConnectionRelease* message includes the *redirectedCarrierInfo*:

2> if the *redirectedCarrierOffsetDedicated* isincluded in the *redirectedCarrierInfo*:

3> store the dedicated offsetfor the frequency in *redirectedCarrierInfo*;

3> start timer T322, with the timer value set according to the value of *T322* in *redirectedCarrierInfo*;

1> if the *releaseCause* received in the *RRCConnectionRelease* message indicates *loadBalancingTAURequired*:

2> perform the actions upon leaving RRC\_CONNECTED as specified in 5.3.12, with release cause 'load balancing TAU required';

1> else if the *releaseCause* received in the *RRCConnectionRelease* message indicates *cs-FallbackHighPriority*:

2> perform the actions upon leaving RRC\_CONNECTED as specified in 5.3.12, with release cause 'CS Fallback High Priority';

1> else:

2> if the *extendedWaitTime* is present; and

2> if the UE supports delay tolerant access or the UE is a NB-IoT UE:

3> forward the *extendedWaitTime* to upper layers;

2> if the *extendedWaitTime-CPdata* is present and the NB-IoT UE only supports the Control Plane CIoT EPS optimisation:

3> forward the *extendedWaitTime-CPdata* to upper layers;

2> if the *releaseCause* received in the *RRCConnectionRelease* message indicates *rrc-Suspend*:

3> perform the actions upon leaving RRC\_CONNECTED as specified in 5.3.12, with release cause 'RRC suspension';

2> else if *rrc-InactiveConfig* is included:

3> perform the actions upon entering RRC\_INACTIVE as specified in 5.3.8.7;

2> else:

3> perform the actions upon leaving RRC\_CONNECTED or RRC\_INACTIVE as specified in 5.3.12, with release cause 'other';

/\*Unaffected parts are omited \*/

5.3.8.7 UE actions upon entering RRC\_INACTIVE

Upon entering RRC\_INACTIVE, the UE shall:

1> reset MAC and release the default MAC configuration if any;

1> stop all timers that are running except T302, T309, T320, T325 and T3xx;

1> re-establish RLC entities for all SRBs and DRBs;

1> if the *RRCConnectionRelease* message is including the *waitTime*:

2> start timer T302, with the timer value set according to the *waitTime*;

2> inform the upper layer that access barring is applicable for all access categories except categories '0' and '2';

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> apply the received *rrc-InactiveConfig*;

1> if the *RRCConnectionRelease* message was received in response to an *RRCConnectionResumeRequest*:

2> in the stored UE Inactive AS context:

3> replace the KeNB and KRRCint keys with the current KeNB and KRRCint keys;

3> replace the C-RNTI with the temporary C-RNTI which the UE has used to receive the *RRCConnectionRelease* message;

3> replace the *cellIdentity* with the *cellIdentity* of the PCell at the time the UE has received the *RRCConnectionRelease* message;

3> replace the previously stored physical cell identitywith the physical cell identity of the PCell at the time the UE has received the *RRCConnectionRelease* message;

1> else:

2> store in the UE Inactive AS Context, the current KeNB and KRRCint keys, the ROHC state, the stored QoS flow to DRB mapping rules, the C-RNTI used in the source PCell, the *cellIdentity* and the physical cell identity of the source PCell, and all other parameters configured;

1> if the *periodic-RNAU-timer* is included:

2> start timer T380, with the timer value set to the *periodic-RNAU-timer*;

1> suspend all SRB(s) and DRB(s), except SRB0;

1> indicate PDCP suspend to lower layers of all DRBs;

1> indicate the suspension of the RRC connection to upper layers;

1> enter RRC\_INACTIVE and perform procedures as specified in TS 36.304 [4], clause 5.2.7;

Upon selecting to an inter-RAT cell or switching to another CN type, the UE shall:

1> perform the actions upon leaving RRC\_INACTIVE as specified in 5.3.12, with release cause 'other';

/\*Unaffected parts are omited \*/

5.3.8.x T3xx expiry

The UE shall:

1> if T3xx expires:

2> if stored, discard the *altFreqPriorities* provided by the *RRCConnectionRelease*;

2> apply the cell reselection priority information broadcast in the system information;

/\*Unaffected parts are omited \*/

5.3.12 UE actions upon leaving RRC\_CONNECTED or RRC\_INACTIVE

Upon leaving RRC\_CONNECTED or RRC\_INACTIVE, the UE shall:

1> reset MAC;

1> if leaving RRC\_INACTIVE was not triggered by the reception of *RRCConnectionRelease* including *idleModeMobilityControlInfo* or *altFreqPriorities*:

2> stop the timer T320 and T3xx, if running;

2> if stored, discard the cell reselection priority information provided by the *idleModeMobilityControlInfo*;

2> if stored, discard the *altFreqPriorities* provided by the *RRCConnectionRelease*;

1> if entering RRC\_IDLE was triggered by reception of the *RRCConnectionRelease* message including a *waitTime*:

2> start timer T302, with the timer value set according to the *waitTime*;

2> inform the upper layer that access barring is applicable for all access categories except categories '0' and '2';

1> else 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> if T309 is running:

2> stop timer T309 for all access categories;

2> perform the actions as specified in 5.3.16.4.

1> stop all timers that are running except T302, T320, T322, T325, T330, T331, T3xx;

1> release *crs-ChEstMPDCCH-ConfigDedicated*, if configured;

1> if leaving RRC\_CONNECTED was triggered by suspension of the RRC:

2> re-establish RLC entities for all SRBs and DRBs, including RBs configured with NR PDCP;

2> store the UE AS Context including the current RRC configuration, the current security context, the PDCP state including ROHC state, C-RNTI used in the source PCell, the *cellIdentity* and the physical cell identity of the source PCell;

2> store the following information provided by E-UTRAN:

3> the *resumeIdentity*;

3> the *nextHopChainingCount*, if present. Otherwise discard any stored *nextHopChainingCount* that does not correspond to stored key KRRCint;

3> the *drb-ContinueROHC*, if present. Otherwise discard any stored *drb-ContinueROHC*;

2> suspend all SRB(s) and DRB(s), including RBs configured with NR PDCP, except SRB0;

2> if the UE connected to 5GC is a BL UE or UE in CE, indicate PDCP suspend to lower layers of all DRBs;

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

2> configure lower layers to suspend integrity protection and ciphering;

NOTE 1: Except when resuming an RRC connection after early security reactivation in accordance with conditions in 5.3.3.18, ciphering is not applied for the subsequent *RRCConnectionResume* message used to resume the connection and an integrity check is performed by lower layers, but merely upon request from RRC.

1> else:

2> upon leaving RRC\_INACTIVE:

3> discard the UE Inactive AS context;

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

3> discard the KeNB, the KRRCenc key, the KRRCint and the KUPenc key;

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

2> remove all entries within *VarConditionalReconfiguration*, if any;

2> for each *measId*, that is part of the current UE configuration in *VarMeasConfig,* if the associated *reportConfig* has *condReconfigurationTriggerEUTRA* configured:

3> remove the entry with the matching *reportConfigId* from the *reportConfigList* within the *VarMeasConfig*;

3> if the associated *measObjectId* is only associated with *condReconfigurationTriggerEUTRA*:

4> remove the entry with the matching *measObjectId* from the *measObjectList* within the *VarMeasConfig*;

3> remove the entry with the matching *measId* from the *measIdList* within the *VarMeasConfig*;

2> release all radio resources, including release of the MAC configuration, the RLC entity and the associated PDCP entity and SDAP (if any) for all established RBs;

2> indicate the release of the RRC connection to upper layers together with the release cause;

1> if leaving RRC\_CONNECTED was triggered neither by reception of the *MobilityFromEUTRACommand* message nor by selecting an inter-RAT cell while T311 was running; or

1> if leaving RRC\_INACTIVE was not triggered by the inter-RAT cell reselection:

2> if timer T350 is configured:

3> start timer T350;

3> apply *rclwi-Configuration* if configured, otherwise apply the *wlan-Id-List* corresponding to the RPLMN included in *SystemInformationBlockType17*;

2> else:

3> release the *wlan-OffloadConfigDedicated*, if received;

3> if the *wlan-OffloadConfigCommon* corresponding to the RPLMN is broadcast by the cell:

4> apply the *wlan-OffloadConfigCommon* corresponding to the RPLMN included in *SystemInformationBlockType17*;

4> apply *steerToWLAN* if configured, otherwise apply the *wlan-Id-List* corresponding to the RPLMN included in *SystemInformationBlockType17*;

2> enter RRC\_IDLE and perform procedures as specified in TS 36.304 [4], clause 5.2.7;

1> else:

2> release the *wlan-OffloadConfigDedicated*, if received;

NOTE 2: BL UEs or UEs in CE verifies validity of SI when released to RRC\_IDLE.

1> release the LWA configuration, if configured, as described in 5.6.14.3;

1> release the LWIP configuration, if configured, as described in 5.6.17.3;

# 6 Protocol data units, formats and parameters (tabular & ASN.1)

## 6.2 RRC messages

### 6.2.2 Message definitions

– *RRCConnectionRelease*

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

Signalling radio bearer: SRB1

RLC-SAP: AM

Logical channel: DCCH

Direction: E‑UTRAN to UE

***RRCConnectionRelease message***

-- ASN1START

RRCConnectionRelease ::= SEQUENCE {

rrc-TransactionIdentifier RRC-TransactionIdentifier,

criticalExtensions CHOICE {

c1 CHOICE {

rrcConnectionRelease-r8 RRCConnectionRelease-r8-IEs,

spare3 NULL, spare2 NULL, spare1 NULL

},

criticalExtensionsFuture SEQUENCE {}

}

}

RRCConnectionRelease-r8-IEs ::= SEQUENCE {

releaseCause ReleaseCause,

redirectedCarrierInfo RedirectedCarrierInfo OPTIONAL, -- Need ON

idleModeMobilityControlInfo IdleModeMobilityControlInfo OPTIONAL, -- Need OP

nonCriticalExtension RRCConnectionRelease-v890-IEs OPTIONAL

}

RRCConnectionRelease-v890-IEs ::= SEQUENCE {

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

nonCriticalExtension RRCConnectionRelease-v920-IEs OPTIONAL

}

-- Late non critical extensions

RRCConnectionRelease-v9e0-IEs ::= SEQUENCE {

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

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

nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- Regular non critical extensions

RRCConnectionRelease-v920-IEs ::= SEQUENCE {

cellInfoList-r9 CHOICE {

geran-r9 CellInfoListGERAN-r9,

utra-FDD-r9 CellInfoListUTRA-FDD-r9,

utra-TDD-r9 CellInfoListUTRA-TDD-r9,

...,

utra-TDD-r10 CellInfoListUTRA-TDD-r10

} OPTIONAL, -- Cond Redirection

nonCriticalExtension RRCConnectionRelease-v1020-IEs OPTIONAL

}

RRCConnectionRelease-v1020-IEs ::= SEQUENCE {

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

nonCriticalExtension RRCConnectionRelease-v1320-IEs OPTIONAL

}

RRCConnectionRelease-v1320-IEs::= SEQUENCE {

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

nonCriticalExtension RRCConnectionRelease-v1530-IEs OPTIONAL

}

RRCConnectionRelease-v1530-IEs ::= SEQUENCE {

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

nextHopChainingCount-r15 NextHopChainingCount OPTIONAL, -- Cond UP-EDT

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

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

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

nonCriticalExtension RRCConnectionRelease-v1540-IEs OPTIONAL

}

RRCConnectionRelease-v1540-IEs ::= SEQUENCE {

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

nonCriticalExtension RRCConnectionRelease-v16xy-IEs OPTIONAL

}

RRCConnectionRelease-v16xy-IEs ::= SEQUENCE {

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

pur-Config-r16 CHOICE {

release NULL,

setup PUR-Config-r16

} OPTIONAL, -- Need ON

rrc-InactiveConfig-v16xy RRC-InactiveConfig-v16xy OPTIONAL, -- Cond BLCEnoIDLEeDRX

releaseIdleMeasConfig ENUMERATED {true} OPTIONAL, -- Need ON

altFreqPriorities-r16 ENUMERATED {true} OPTIONAL, -- Need ON

t3xx-r16 ENUMERATED {

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

min720} OPTIONAL, -- Need OR

nonCriticalExtension SEQUENCE {} OPTIONAL

}

ReleaseCause ::= ENUMERATED {loadBalancingTAUrequired,

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

RedirectedCarrierInfo ::= CHOICE {

eutra ARFCN-ValueEUTRA,

geran CarrierFreqsGERAN,

utra-FDD ARFCN-ValueUTRA,

utra-TDD ARFCN-ValueUTRA,

cdma2000-HRPD CarrierFreqCDMA2000,

cdma2000-1xRTT CarrierFreqCDMA2000,

...,

utra-TDD-r10 CarrierFreqListUTRA-TDD-r10,

nr-r15 CarrierInfoNR-r15

}

RedirectedCarrierInfo-v9e0 ::= SEQUENCE {

eutra-v9e0 ARFCN-ValueEUTRA-v9e0

}

RRC-InactiveConfig-r15::= SEQUENCE {

fullI-RNTI-r15 I-RNTI-r15,

shortI-RNTI-r15 ShortI-RNTI-r15,

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

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

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

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

nextHopChainingCount-r15 NextHopChainingCount OPTIONAL, --Cond INACTIVE

dummy SEQUENCE{} OPTIONAL

}

RAN-NotificationAreaInfo-r15 ::= CHOICE {

cellList-r15 PLMN-RAN-AreaCellList-r15,

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

}

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

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

plmn-Identity-r15 PLMN-Identity OPTIONAL,

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

}

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

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

plmn-Identity-r15 PLMN-Identity OPTIONAL,

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

}

RAN-AreaConfig-r15 ::= SEQUENCE {

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

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

}

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

IdleModeMobilityControlInfo ::= SEQUENCE {

freqPriorityListEUTRA FreqPriorityListEUTRA OPTIONAL, -- Need ON

freqPriorityListGERAN FreqsPriorityListGERAN OPTIONAL, -- Need ON

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

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

bandClassPriorityListHRPD BandClassPriorityListHRPD OPTIONAL, -- Need ON

bandClassPriorityList1XRTT BandClassPriorityList1XRTT OPTIONAL, -- Need ON

t320 ENUMERATED {

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

spare1} OPTIONAL, -- Need OR

...,

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

]],

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

freqPriorityListExtEUTRA-v1310 FreqPriorityListExtEUTRA-v1310 OPTIONAL -- Need ON

]],

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

]]

}

IdleModeMobilityControlInfo-v9e0 ::= SEQUENCE {

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

}

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

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

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

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

FreqPriorityEUTRA ::= SEQUENCE {

carrierFreq ARFCN-ValueEUTRA,

cellReselectionPriority CellReselectionPriority

}

FreqPriorityEUTRA-v9e0 ::= SEQUENCE {

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

}

FreqPriorityEUTRA-r12 ::= SEQUENCE {

carrierFreq-r12 ARFCN-ValueEUTRA-r9,

cellReselectionPriority-r12 CellReselectionPriority

}

FreqPriorityEUTRA-v1310 ::= SEQUENCE {

cellReselectionSubPriority-r13 CellReselectionSubPriority-r13 OPTIONAL -- Need ON

}

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

FreqPriorityNR-r15 ::= SEQUENCE {

carrierFreq-r15 ARFCN-ValueNR-r15,

cellReselectionPriority-r15 CellReselectionPriority,

cellReselectionSubPriority-r15 CellReselectionSubPriority-r13 OPTIONAL -- Need OR

}

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

FreqsPriorityGERAN ::= SEQUENCE {

carrierFreqs CarrierFreqsGERAN,

cellReselectionPriority CellReselectionPriority

}

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

FreqPriorityUTRA-FDD ::= SEQUENCE {

carrierFreq ARFCN-ValueUTRA,

cellReselectionPriority CellReselectionPriority

}

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

FreqPriorityUTRA-TDD ::= SEQUENCE {

carrierFreq ARFCN-ValueUTRA,

cellReselectionPriority CellReselectionPriority

}

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

BandClassPriorityHRPD ::= SEQUENCE {

bandClass BandclassCDMA2000,

cellReselectionPriority CellReselectionPriority

}

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

BandClassPriority1XRTT ::= SEQUENCE {

bandClass BandclassCDMA2000,

cellReselectionPriority CellReselectionPriority

}

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

CellInfoGERAN-r9 ::= SEQUENCE {

physCellId-r9 PhysCellIdGERAN,

carrierFreq-r9 CarrierFreqGERAN,

systemInformation-r9 SystemInfoListGERAN

}

CarrierInfoNR-r15 ::= SEQUENCE {

carrierFreq-r15 ARFCN-ValueNR-r15,

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

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

}

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

CellInfoUTRA-FDD-r9 ::= SEQUENCE {

physCellId-r9 PhysCellIdUTRA-FDD,

utra-BCCH-Container-r9 OCTET STRING

}

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

CellInfoUTRA-TDD-r9 ::= SEQUENCE {

physCellId-r9 PhysCellIdUTRA-TDD,

utra-BCCH-Container-r9 OCTET STRING

}

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

CellInfoUTRA-TDD-r10 ::= SEQUENCE {

physCellId-r10 PhysCellIdUTRA-TDD,

carrierFreq-r10 ARFCN-ValueUTRA,

utra-BCCH-Container-r10 OCTET STRING

}

-- ASN1STOP

| ***RRCConnectionRelease* field descriptions** |
| --- |
| ***altFreqPriorities***  Indicates that the UE shall apply the alternative cell reselectionpriorities, when available. This field is not configured together with *idleModeMobilityControlInfo.* |
| ***carrierFreq or bandClass***  The carrier frequency (UTRA, E-UTRA, and NR) and band class (HRPD and 1xRTT) for which the associated cellReselectionPriority is applied. For NR, the *ARFCN-ValueNR* corresponds to a GSCN value as specified in TS 38.101 [85]. |
| ***carrierFreqs***  The list of GERAN carrier frequencies organised into one group of GERAN carrier frequencies. |
| ***cellInfoList***  Used to provide system information of one or more cells on the redirected inter-RAT carrier frequency. The system information can be used if, upon redirection, the UE selects an inter-RAT cell indicated by the *physCellId* and *carrierFreq* (GERAN and UTRA TDD) or by the *physCellId* (other RATs). The choice shall match the *redirectedCarrierInfo*. In particular, E-UTRAN only applies value *utra-TDD-r10* in case *redirectedCarrierInfo* is set to *utra-TDD-r10*. |
| ***cellList***  Indicates a list of cells configured as RAN area. For each element, in the absence of *plmn-Identity* the UE considers the registered PLMN. Total number of cells across all PLMNs does not exceed 32. |
| ***cn-Type***  The*cn-Type* is used to indicate that the UE is redirected from 5GC to EPC or 5GC when*redirectedCarrierInfo* indicates E-UTRA frequency. |
| ***drb-ContinueROHC***  This field indicates whether to continue or reset the header compression protocol context for the DRBs configured with the header compression protocol. Presence of the field indicates that the header compression protocol context continues when UE initiates UP-EDT in the same cell, while absence indicates that the header compression protocol context is reset. |
| ***dummy***  This field is not used in the specification. If received it shall be ignored by the UE. |
| ***extendedWaitTime***  Value in seconds for the wait time for Delay Tolerant access requests. |
| ***freqPriorityListX***  Provides a cell reselection priority for each frequency, by means of separate lists for each RAT (including E-UTRA). The UE shall be able to store at least 3 occurrences of *FreqsPriorityGERAN*. If E-UTRAN includes *freqPriorityListEUTRA-v9e0* and/or *freqPriorityListEUTRA-v1310* it includes the same number of entries, and listed in the same order, as in *freqPriorityListEUTRA* (i.e. without suffix). Field *freqPriorityListExt* includes additional neighbouring inter-frequencies, i.e. extending the size of the inter-frequency carrier list using the general principles specified in 5.1.2. EUTRAN only includes *freqPriorityListExtEUTRA* if *freqPriorityListEUTRA* (i.e without suffix) includes *maxFreq* entries. If E-UTRAN includes *freqPriorityListExtEUTRA-v1310* it includes the same number of entries, and listed in the same order, as in *freqPriorityListExtEUTRA-r12.* |
| ***idleModeMobilityControlInfo***  Provides dedicated cell reselection priorities. Used for cell reselection as specified in TS 36.304 [4]. For E-UTRA and UTRA frequencies, a UE that supports multi-band cells for the concerned RAT considers the dedicated priorities to be common for all overlapping bands (i.e. regardless of the ARFCN that is used). |
| ***measIdleConfig***  Indicates a one-shot measurement configuration to be stored and used by the UE while in RRC\_IDLE or RRC\_INACTIVE. |
| ***periodic-RNAU-timer***  Refers to the timer that triggers the periodic RNAU procedure in UE. Value min5 corresponds to 5 minutes, value min10 corresponds to 10 minutes and so on. |
| ***ran-Area***  Indicates whether TA code(s) or RAN area code(s) are used for the RAN notification area. The network uses only TA code(s) or RAN area code(s) to configure a UE. Total number of TACs across all PLMNs does not exceed 16. Total number of RAN-AreaCode across all PLMNs does not exceed 32. |
| ***ran-NotificationAreaInfo***  Network ensures that the UE in RRC\_INACTIVE always has a valid *ran-NotificationAreaInfo*. |
| ***ranAreaConfigList***  Indicates a list of RAN area codes or RA code(s) as RAN area. For each element, in the absence of *plmn-Identity* the UE considers the registered PLMN. |
| ***ran-pagingCycle***  Refers to the UE specific cycle for RAN-initiated paging. Value rf32 corresponds to 32 radio frames, rf64 corresponds to 64 radio frames and so on. |
| ***redirectedCarrierInfo***  The r*edirectedCarrierInfo* indicates a carrier frequency (downlink for FDD) and is used to redirect the UE to an E‑UTRA or an inter-RAT carrier frequency, by means of the cell selection upon leaving RRC\_CONNECTED as specified in TS 36.304 [4]. The value *geran* can only be included after successful security activation when UE is connected to 5GC. |
| ***releaseCause***  The *releaseCause* is used to indicate the reason for releasing the RRC Connection. The cause value *cs-FallbackHighPriority* is only applicable when *redirectedCarrierInfo* is present with the value set to *utra-FDD,* *utra-TDD* or *utra-TDD-r10*. E-UTRAN should not set the *releaseCause* to *loadBalancingTAURequired* or to *cs-FallbackHighPriority* if the *extendedWaitTime* is present. The network should not set the *releaseCause* to *loadBalancingTAURequired* if the UE is connected to 5GC. |
| ***rrc-InactiveConfig***  Indicates configuration for the RRC\_INACTIVE state. The network does not configure this field when the UE is redirected to an inter-RAT carrier frequency. |
| ***smtc***  The SSB periodicity/offset/duration configuration of the redirected target NR frequency. It is based on the timing reference of EUTRAN PCell. If the field is absent, the UE uses the SMTC configured in the *measObjectNR* having the same SSB frequency and subcarrier spacing |
| ***subcarrierSpacingSSB***  Indicate subcarrier spacing of SSB of redirected target NR frequency. Only the values 15 or 30 (<6GHz), 120 kHz or 240 kHz (>6GHz) are applicable. |
| ***systemInformation***  Container for system information of the GERAN cell i.e. one or more System Information (SI) messages as defined in TS 44.018 [45], table 9.1.1. |
| ***t320***  Timer T320 as described in clause 7.3. Value minN corresponds to N minutes. |
| ***t3xx***  Timer T3xx as described in clause 7.3. Value minN corresponds to N minutes. |
| ***utra-BCCH-Container***  Contains System Information Container message as defined in TS 25.331 [19]. |
| ***waitTime***  Wait time value in seconds. |

/\*End of first change\*/

## 6.3 RRC information elements

### 6.3.1 System information blocks

/\*Start of second change\*/

/\*Unaffected UEs are excluded\*/

– *SystemInformationBlockType3*

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

***SystemInformationBlockType3* information element**

-- ASN1START

SystemInformationBlockType3 ::= SEQUENCE {

cellReselectionInfoCommon SEQUENCE {

q-Hyst ENUMERATED {

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

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

speedStateReselectionPars SEQUENCE {

mobilityStateParameters MobilityStateParameters,

q-HystSF SEQUENCE {

sf-Medium ENUMERATED {

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

sf-High ENUMERATED {

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

}

} OPTIONAL -- Need OP

},

cellReselectionServingFreqInfo SEQUENCE {

s-NonIntraSearch ReselectionThreshold OPTIONAL, -- Need OP

threshServingLow ReselectionThreshold,

cellReselectionPriority CellReselectionPriority

},

intraFreqCellReselectionInfo SEQUENCE {

q-RxLevMin Q-RxLevMin,

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

s-IntraSearch ReselectionThreshold OPTIONAL, -- Need OP

allowedMeasBandwidth AllowedMeasBandwidth OPTIONAL, -- Need OP

presenceAntennaPort1 PresenceAntennaPort1,

neighCellConfig NeighCellConfig,

t-ReselectionEUTRA T-Reselection,

t-ReselectionEUTRA-SF SpeedStateScaleFactors OPTIONAL -- Need OP

},

...,

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

[[ s-IntraSearch-v920 SEQUENCE {

s-IntraSearchP-r9 ReselectionThreshold,

s-IntraSearchQ-r9 ReselectionThresholdQ-r9

} OPTIONAL, -- Need OP

s-NonIntraSearch-v920 SEQUENCE {

s-NonIntraSearchP-r9 ReselectionThreshold,

s-NonIntraSearchQ-r9 ReselectionThresholdQ-r9

} OPTIONAL, -- Need OP

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

threshServingLowQ-r9 ReselectionThresholdQ-r9 OPTIONAL -- Need OP

]],

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

]],

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

]],

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

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

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

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

]],

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

]],

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

]],

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

]],

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

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

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

]],

[[ cellReselectionServingFreqInfo-v16xy       CellReselectionServingFreqInfo-v16xy       OPTIONAL    -- Need OR

]]

}

RedistributionServingInfo-r13 ::= SEQUENCE {

redistributionFactorServing-r13 INTEGER(0..10),

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

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

spare3,spare2,spare1},

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

}

CellReselectionServingFreqInfo-v1310 ::= SEQUENCE {

cellReselectionSubPriority-r13 CellReselectionSubPriority-r13

}

CellReselectionServingFreqInfo-v16xy ::= SEQUENCE {

    altCellReselectionPriority-r16             CellReselectionPriority                     OPTIONAL, -- Need OR

    altCellReselectionSubPriority-r16          CellReselectionSubPriority-r13             OPTIONAL -- Need OR

}

-- Late non critical extensions

SystemInformationBlockType3-v10j0-IEs ::= SEQUENCE {

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

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

nonCriticalExtension SystemInformationBlockType3-v10l0-IEs OPTIONAL

}

SystemInformationBlockType3-v10l0-IEs ::= SEQUENCE {

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

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

nonCriticalExtension SEQUENCE {} OPTIONAL

}

CellReselectionInfoCommon-v1460 ::= SEQUENCE {

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

}

CellReselectionInfoHSDN-r15 ::= SEQUENCE {

cellEquivalentSize-r15 INTEGER(2..16)

}

-- ASN1STOP

| ***SystemInformationBlockType3* field descriptions** |
| --- |
| ***allowedMeasBandwidth***  If absent, the value corresponding to the downlink bandwidth indicated by the *dl-Bandwidth* included in *MasterInformationBlock* applies. |
| ***altCellReselectionPriority***  Alternative cell reselection priorities to be used by the UEs for which the *altFreqPriorities* is set to *true* in the *RRCConnectionRelease* message. |
| ***altCellReselectionSubPriority***  Alternative cell reselection sub-priorities to be used by the UEs for which the *altFreqPriorities* is set to *true* in the *RRCConnectionRelease* message. |
| ***cellEquivalentSize***  The number of cell count used for mobility state estimation for this cell as specified in TS 36.304 [4]. |
| ***cellSelectionInfoCE***  Parameters included in coverage enhancement S criteria for BL UEs and UEs in CE, applicable for intra-frequency neighbour cells. If absent, coverage enhancement S criteria is not applicable. |
| ***cellSelectionInfoCE1***  Parameters included in coverage enhancement S criteria for BL UEs and UEs in CE supporting CE Mode B, applicable for intra-frequency neighbour cells. E-UTRAN includes this IE only if *cellSelectionInfoCE* in SIB3 is present. | |
| ***cellReselectionInfoCommon***  Cell re-selection information common for cells. |
| ***cellReselectionServingFreqInfo***  Information common for Cell re-selection to inter-frequency and inter-RAT cells. |
| ***crs-IntfMitigNeighCellsCE***  For BL UEs or UEs in CE supporting *ce-CRS-IntfMitig*, this field indicates CRS interference mitigation, as specified in TS 36.133 [16], clause 3.6.1.2 and 3.6.1.3, is enabled in any of the intra-frequency neibhour cells, and the UE shall perform intra-frequency neighbour cell RRM measurements in the center 6 PRBs. |
| ***freqBandInfo***  A list of *additionalPmax* and *additionalSpectrumEmission* values, as defined in TS 36.101 [42], table 6.2.4-1, for UEs neither in CE nor BL UEs and TS 36.101 [42], table 6.2.4E-1, for UEs in CE or BL UEs, applicable for the intra-frequency neighouring E-UTRA cells if the UE selects the frequency band from *freqBandIndicator* in *SystemInformationBlockType1*. If E-UTRAN includes *freqBandInfo-v10l0* it includes the same number of entries, and listed in the same order, as in *freqBandInfo-r10*. |
| ***intraFreqcellReselectionInfo***  Cell re-selection information common for intra-frequency cells. |
| ***multiBandInfoList-v10j0***  A list of *additionalPmax* and *additionalSpectrumEmission* values, as defined in TS 36.101 [42], table 6.2.4-1, for UEs neither in CE nor BL UEs and TS 36.101 [42], table 6.2.4E-1, for UEs in CE or BL UEs, applicable for the intra-frequency neighouring E-UTRA cells if the UE selects the frequency bands in *multiBandInfoList* (i.e. without suffix) or *multiBandInfoList-v9e0*. If E-UTRAN includes *multiBandInfoList-v10j0*, it includes the same number of entries, and listed in the same order, as in *multiBandInfoList* (i.e. without suffix). If E-UTRAN includes *multiBandInfoList-v10l0* it includes the same number of entries, and listed in the same order, as in *multiBandInfoList-v10j0*. |
| ***p-Max***  Value applicable for the intra-frequency neighbouring E-UTRA cells. If absent the UE applies the maximum power according to its capability as specified in TS 36.101 [42], clause 6.2.2. |
| ***redistrOnPagingOnly***  If this field is present and the UE is redistribution capable, the UE shall only wait for the paging message to trigger E-UTRAN inter-frequency redistribution procedure as specified in clause 5.2.4.10 of TS 36.304 [4]. |
| ***q-Hyst***  Parameter *Qhyst* in TS 36.304 [4], Value in dB. Value dB1 corresponds to 1 dB, dB2 corresponds to 2 dB and so on. |
| ***q-HystSF***  Parameter "Speed dependent ScalingFactor for *Qhyst*" in TS 36.304 [4]. The sf-Medium and sf-High concern the additional hysteresis to be applied, in Medium and High Mobility state respectively, to *Qhyst* as defined in TS 36.304 [4]. In dB. Value dB-6 corresponds to -6dB, dB-4 corresponds to -4dB and so on. |
| ***q-QualMin***  Parameter "Qqualmin" in TS 36.304 [4], applicable for intra-frequency neighbour cells. If the field is not present, the UE applies the (default) value of negative infinity for Qqualmin. NOTE 1. |
| ***q-QualMinRSRQ-OnAllSymbols***  If this field is present and supported by the UE, the UE shall, when performing RSRQ measurements, perform RSRQ measurement on all OFDM symbols in accordance with TS 36.214 [48]. NOTE 1. |
| ***q-QualMinWB***  If this field is present and supported by the UE, the UE shall, when performing RSRQ measurements, use a wider bandwidth in accordance with TS 36.133 [16]. NOTE 1. |
| ***q-RxLevMin***  Parameter "Qrxlevmin" in TS 36.304 [4], applicable for intra-frequency neighbour cells. |
| ***redistributionFactorCell***  If *redistributionFactorCell* is present, *redistributionFactorServing* is only applicable for the serving cell otherwise it is applicable for serving frequency |
| ***redistributionFactorServing***  Parameter *redistributionFactorServing* in TS 36.304 [4]. |
| ***s-IntraSearch***  Parameter "SIntraSearchP" in TS 36.304 [4]. If the field *s-IntraSearchP* is present, the UE applies the value of *s-IntraSearchP* instead. Otherwise if neither *s-IntraSearch* nor *s-IntraSearchP* is present, the UE applies the (default) value of infinity for SIntraSearchP. |
| ***s-IntraSearchP***  Parameter "SIntraSearchP" in TS 36.304 [4]. See descriptions under *s-IntraSearch*. |
| ***s-IntraSearchQ***  Parameter "SIntraSearchQ" in TS 36.304 [4]. If the field is not present, the UE applies the (default) value of 0 dB for SIntraSearchQ. |
| ***s-NonIntraSearch***  Parameter "SnonIntraSearchP" in TS 36.304 [4]. If the field *s-NonIntraSearchP* is present, the UE applies the value of *s-NonIntraSearchP* instead. Otherwise if neither *s-NonIntraSearch* nor *s-NonIntraSearchP* is present, the UE applies the (default) value of infinity for SnonIntraSearchP. |
| ***s-NonIntraSearchP***  Parameter "SnonIntraSearchP" in TS 36.304 [4]. See descriptions under *s-NonIntraSearch*. |
| ***s-NonIntraSearchQ***  Parameter "SnonIntraSearchQ" in TS 36.304 [4]. If the field is not present, the UE applies the (default) value of 0 dB for SnonIntraSearchQ. |
| ***s-SearchDeltaP***  Parameter "SSearchDeltaP" in TS 36.304 [4]. This parameter is only applicable for UEs supporting relaxed monitoring as specified in TS 36.306 [5]. Value dB6 corresponds to 6 dB, dB9 corresponds to 9 dB and so on. |
| ***speedStateReselectionPars***  Speed dependent reselection parameters, see TS 36.304 [4]. If this field is absent, i.e, *mobilityStateParameters* is also not present, UE behaviour is specified in TS 36.304 [4]. |
| ***t360***  Parameter "T360" in TS 36.304 [4]. Value *min4* corresponds to 4 minutes, value *min8* corresponds to 8 minutes, and so on. |
| ***threshServingLow***  Parameter "ThreshServing, LowP" in TS 36.304 [4]. |
| ***threshServingLowQ***  Parameter "ThreshServing, LowQ" in TS 36.304 [4]. |
| ***t-ReselectionEUTRA***  Parameter "TreselectionEUTRA" in TS 36.304 [4]. |
| ***t-ReselectionEUTRA-SF***  Parameter "Speed dependent ScalingFactor for TreselectionEUTRA" in TS 36.304 [4]. If the field is not present, the UE behaviour is specified in TS 36.304 [4]. |

– *SystemInformationBlockType5*

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

***SystemInformationBlockType5* information element**

-- ASN1START

SystemInformationBlockType5 ::= SEQUENCE {

interFreqCarrierFreqList InterFreqCarrierFreqList,

...,

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

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

interFreqCarrierFreqListExt-r12 InterFreqCarrierFreqListExt-r12 OPTIONAL -- Need OR

]],

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

]],

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

interFreqCarrierFreqListExt-v1310 InterFreqCarrierFreqListExt-v1310 OPTIONAL -- Need OR

]],

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

interFreqCarrierFreqListExt-v1350 InterFreqCarrierFreqListExt-v1350 OPTIONAL -- Need OR

]],

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

]],

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

]],

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

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

measIdleConfigSIB-r15 MeasIdleConfigSIB-r15 OPTIONAL -- Need OR

]],

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

interFreqCarrierFreqListExt-v16xy InterFreqCarrierFreqListExt-v16xy OPTIONAL, -- Need OR

]]

}

-- Late non critical extensions

SystemInformationBlockType5-v8h0-IEs ::= SEQUENCE {

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

nonCriticalExtension SystemInformationBlockType5-v9e0-IEs OPTIONAL

}

SystemInformationBlockType5-v9e0-IEs ::= SEQUENCE {

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

nonCriticalExtension SystemInformationBlockType5-v10j0-IEs OPTIONAL

}

SystemInformationBlockType5-v10j0-IEs ::= SEQUENCE {

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

nonCriticalExtension SystemInformationBlockType5-v10l0-IEs OPTIONAL

}

SystemInformationBlockType5-v10l0-IEs ::= SEQUENCE {

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

nonCriticalExtension SystemInformationBlockType5-v13a0-IEs OPTIONAL

}

SystemInformationBlockType5-v13a0-IEs ::= SEQUENCE {

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

lateNonCriticalExtension OCTET STRING OPTIONAL, -- Need OR

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

-- Late non critical extensions from REL-13

nonCriticalExtension SEQUENCE {} OPTIONAL

}

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

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

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

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

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

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

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

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

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

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

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

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

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

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

InterFreqCarrierFreqInfo ::= SEQUENCE {

dl-CarrierFreq ARFCN-ValueEUTRA,

q-RxLevMin Q-RxLevMin,

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

t-ReselectionEUTRA T-Reselection,

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

threshX-High ReselectionThreshold,

threshX-Low ReselectionThreshold,

allowedMeasBandwidth AllowedMeasBandwidth,

presenceAntennaPort1 PresenceAntennaPort1,

cellReselectionPriority CellReselectionPriority OPTIONAL, -- Need OP

neighCellConfig NeighCellConfig,

q-OffsetFreq Q-OffsetRange DEFAULT dB0,

interFreqNeighCellList InterFreqNeighCellList OPTIONAL, -- Need OR

interFreqBlackCellList InterFreqBlackCellList OPTIONAL, -- Need OR

...,

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

threshX-Q-r9 SEQUENCE {

threshX-HighQ-r9 ReselectionThresholdQ-r9,

threshX-LowQ-r9 ReselectionThresholdQ-r9

} OPTIONAL -- Cond RSRQ

]],

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

]]

}

InterFreqCarrierFreqInfo-v8h0 ::= SEQUENCE {

multiBandInfoList MultiBandInfoList OPTIONAL -- Need OR

}

InterFreqCarrierFreqInfo-v9e0 ::= SEQUENCE {

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

multiBandInfoList-v9e0 MultiBandInfoList-v9e0 OPTIONAL -- Need OR

}

InterFreqCarrierFreqInfo-v10j0 ::= SEQUENCE {

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

multiBandInfoList-v10j0 MultiBandInfoList-v10j0 OPTIONAL -- Need OR

}

InterFreqCarrierFreqInfo-v10l0 ::= SEQUENCE {

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

multiBandInfoList-v10l0 MultiBandInfoList-v10l0 OPTIONAL -- Need OR

}

InterFreqCarrierFreqInfo-v1250 ::= SEQUENCE {

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

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

}

InterFreqCarrierFreqInfo-r12 ::= SEQUENCE {

dl-CarrierFreq-r12 ARFCN-ValueEUTRA-r9,

q-RxLevMin-r12 Q-RxLevMin,

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

t-ReselectionEUTRA-r12 T-Reselection,

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

threshX-High-r12 ReselectionThreshold,

threshX-Low-r12 ReselectionThreshold,

allowedMeasBandwidth-r12 AllowedMeasBandwidth,

presenceAntennaPort1-r12 PresenceAntennaPort1,

cellReselectionPriority-r12 CellReselectionPriority OPTIONAL, -- Need OP

neighCellConfig-r12 NeighCellConfig,

q-OffsetFreq-r12 Q-OffsetRange DEFAULT dB0,

interFreqNeighCellList-r12 InterFreqNeighCellList OPTIONAL, -- Need OR

interFreqBlackCellList-r12 InterFreqBlackCellList OPTIONAL, -- Need OR

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

threshX-Q-r12 SEQUENCE {

threshX-HighQ-r12 ReselectionThresholdQ-r9,

threshX-LowQ-r12 ReselectionThresholdQ-r9

} OPTIONAL, -- Cond RSRQ

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

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

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

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

...

}

InterFreqCarrierFreqInfo-v1310 ::= SEQUENCE {

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

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

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

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

}

InterFreqCarrierFreqInfo-v1350 ::= SEQUENCE {

cellSelectionInfoCE1-r13 CellSelectionInfoCE1-r13 OPTIONAL -- Need OP

}

InterFreqCarrierFreqInfo-v1360 ::= SEQUENCE {

cellSelectionInfoCE1-v1360 CellSelectionInfoCE1-v1360 OPTIONAL -- Cond QrxlevminCE1

}

InterFreqCarrierFreqInfo-v1530 ::= SEQUENCE {

hsdn-Indication-r15 BOOLEAN,

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

cellSelectionInfoCE-v1530 CellSelectionInfoCE-v1530 OPTIONAL -- Need OP

}

InterFreqCarrierFreqInfo-v16xy ::= SEQUENCE {

altCellReselectionPriority-r16 CellReselectionPriority OPTIONAL, -- Need OR

altCellReselectionSubPriority-r16 CellReselectionSubPriority-r13 OPTIONAL -- Need OR

}

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

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

InterFreqNeighCellInfo ::= SEQUENCE {

physCellId PhysCellId,

q-OffsetCell Q-OffsetRange

}

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

RedistributionInterFreqInfo-r13 ::= SEQUENCE {

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

redistributionNeighCellList-r13 RedistributionNeighCellList-r13 OPTIONAL --Need OP

}

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

RedistributionNeighCell-r13 ::= SEQUENCE {

physCellId-r13 PhysCellId,

redistributionFactorCell-r13 RedistributionFactor-r13

}

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

-- ASN1STOP

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

6.3.6 Other information elements

– *UE-EUTRA-Capability*

The IE *UE-EUTRA-Capability* is used to convey the E-UTRA UE Radio Access Capability Parameters, see TS 36.306 [5], and the Feature Group Indicators for mandatory features (defined in Annexes B.1 and C.1) to the network. The IE *UE-EUTRA-Capability* is transferred in E-UTRA or in another RAT.

NOTE 0: For (UE capability specific) guidelines on the use of keyword OPTIONAL, see Annex A.3.5.

***UE-EUTRA-Capability* information element**

-- ASN1START

UE-EUTRA-Capability ::= SEQUENCE {

accessStratumRelease AccessStratumRelease,

ue-Category INTEGER (1..5),

pdcp-Parameters PDCP-Parameters,

phyLayerParameters PhyLayerParameters,

rf-Parameters RF-Parameters,

measParameters MeasParameters,

featureGroupIndicators BIT STRING (SIZE (32)) OPTIONAL,

interRAT-Parameters SEQUENCE {

utraFDD IRAT-ParametersUTRA-FDD OPTIONAL,

utraTDD128 IRAT-ParametersUTRA-TDD128 OPTIONAL,

utraTDD384 IRAT-ParametersUTRA-TDD384 OPTIONAL,

utraTDD768 IRAT-ParametersUTRA-TDD768 OPTIONAL,

geran IRAT-ParametersGERAN OPTIONAL,

cdma2000-HRPD IRAT-ParametersCDMA2000-HRPD OPTIONAL,

cdma2000-1xRTT IRAT-ParametersCDMA2000-1XRTT OPTIONAL

},

nonCriticalExtension UE-EUTRA-Capability-v920-IEs OPTIONAL

}

-- Late non critical extensions

UE-EUTRA-Capability-v9a0-IEs ::= SEQUENCE {

featureGroupIndRel9Add-r9 BIT STRING (SIZE (32)) OPTIONAL,

fdd-Add-UE-EUTRA-Capabilities-r9 UE-EUTRA-CapabilityAddXDD-Mode-r9 OPTIONAL,

tdd-Add-UE-EUTRA-Capabilities-r9 UE-EUTRA-CapabilityAddXDD-Mode-r9 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v9c0-IEs OPTIONAL

}

UE-EUTRA-Capability-v9c0-IEs ::= SEQUENCE {

interRAT-ParametersUTRA-v9c0 IRAT-ParametersUTRA-v9c0 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v9d0-IEs OPTIONAL

}

UE-EUTRA-Capability-v9d0-IEs ::= SEQUENCE {

phyLayerParameters-v9d0 PhyLayerParameters-v9d0 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v9e0-IEs OPTIONAL

}

UE-EUTRA-Capability-v9e0-IEs ::= SEQUENCE {

rf-Parameters-v9e0 RF-Parameters-v9e0 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v9h0-IEs OPTIONAL

}

UE-EUTRA-Capability-v9h0-IEs ::= SEQUENCE {

interRAT-ParametersUTRA-v9h0 IRAT-ParametersUTRA-v9h0 OPTIONAL,

-- Following field is only to be used for late REL-9 extensions

lateNonCriticalExtension OCTET STRING OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v10c0-IEs OPTIONAL

}

UE-EUTRA-Capability-v10c0-IEs ::= SEQUENCE {

otdoa-PositioningCapabilities-r10 OTDOA-PositioningCapabilities-r10 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v10f0-IEs OPTIONAL

}

UE-EUTRA-Capability-v10f0-IEs ::= SEQUENCE {

rf-Parameters-v10f0 RF-Parameters-v10f0 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v10i0-IEs OPTIONAL

}

UE-EUTRA-Capability-v10i0-IEs ::= SEQUENCE {

rf-Parameters-v10i0 RF-Parameters-v10i0 OPTIONAL,

-- Following field is only to be used for late REL-10 extensions

lateNonCriticalExtension OCTET STRING (CONTAINING UE-EUTRA-Capability-v10j0-IEs) OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v11d0-IEs OPTIONAL

}

UE-EUTRA-Capability-v10j0-IEs ::= SEQUENCE {

rf-Parameters-v10j0 RF-Parameters-v10j0 OPTIONAL,

nonCriticalExtension SEQUENCE {} OPTIONAL

}

UE-EUTRA-Capability-v11d0-IEs ::= SEQUENCE {

rf-Parameters-v11d0 RF-Parameters-v11d0 OPTIONAL,

otherParameters-v11d0 Other-Parameters-v11d0 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v11x0-IEs OPTIONAL

}

UE-EUTRA-Capability-v11x0-IEs ::= SEQUENCE {

-- Following field is only to be used for late REL-11 extensions

lateNonCriticalExtension OCTET STRING OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v12b0-IEs OPTIONAL

}

UE-EUTRA-Capability-v12b0-IEs ::= SEQUENCE {

rf-Parameters-v12b0 RF-Parameters-v12b0 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v12x0-IEs OPTIONAL

}

UE-EUTRA-Capability-v12x0-IEs ::= SEQUENCE {

-- Following field is only to be used for late REL-12 extensions

lateNonCriticalExtension OCTET STRING OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1370-IEs OPTIONAL

}

UE-EUTRA-Capability-v1370-IEs ::= SEQUENCE {

ce-Parameters-v1370 CE-Parameters-v1370 OPTIONAL,

fdd-Add-UE-EUTRA-Capabilities-v1370 UE-EUTRA-CapabilityAddXDD-Mode-v1370 OPTIONAL,

tdd-Add-UE-EUTRA-Capabilities-v1370 UE-EUTRA-CapabilityAddXDD-Mode-v1370 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1380-IEs OPTIONAL

}

UE-EUTRA-Capability-v1380-IEs ::= SEQUENCE {

rf-Parameters-v1380 RF-Parameters-v1380 OPTIONAL,

ce-Parameters-v1380 CE-Parameters-v1380,

fdd-Add-UE-EUTRA-Capabilities-v1380 UE-EUTRA-CapabilityAddXDD-Mode-v1380,

tdd-Add-UE-EUTRA-Capabilities-v1380 UE-EUTRA-CapabilityAddXDD-Mode-v1380,

nonCriticalExtension UE-EUTRA-Capability-v1390-IEs OPTIONAL

}

UE-EUTRA-Capability-v1390-IEs ::= SEQUENCE {

rf-Parameters-v1390 RF-Parameters-v1390 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v13e0a-IEs OPTIONAL

}

UE-EUTRA-Capability-v13e0a-IEs ::= SEQUENCE {

lateNonCriticalExtension OCTET STRING (CONTAINING UE-EUTRA-Capability-v13e0b-IEs) OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1470-IEs OPTIONAL

}

UE-EUTRA-Capability-v13e0b-IEs ::= SEQUENCE {

phyLayerParameters-v13e0 PhyLayerParameters-v13e0,

-- Following field is only to be used for late REL-13 extensions

nonCriticalExtension SEQUENCE {} OPTIONAL

}

UE-EUTRA-Capability-v1470-IEs ::= SEQUENCE {

mbms-Parameters-v1470 MBMS-Parameters-v1470 OPTIONAL,

phyLayerParameters-v1470 PhyLayerParameters-v1470 OPTIONAL,

rf-Parameters-v1470 RF-Parameters-v1470 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v14a0-IEs OPTIONAL

}

UE-EUTRA-Capability-v14a0-IEs ::= SEQUENCE {

phyLayerParameters-v14a0 PhyLayerParameters-v14a0,

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

nonCriticalExtension UE-EUTRA-Capability-v14b0-IEs OPTIONAL

}

UE-EUTRA-Capability-v14b0-IEs ::= SEQUENCE {

rf-Parameters-v14b0 RF-Parameters-v14b0 OPTIONAL,

nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- Regular non critical extensions

UE-EUTRA-Capability-v920-IEs ::= SEQUENCE {

phyLayerParameters-v920 PhyLayerParameters-v920,

interRAT-ParametersGERAN-v920 IRAT-ParametersGERAN-v920,

interRAT-ParametersUTRA-v920 IRAT-ParametersUTRA-v920 OPTIONAL,

interRAT-ParametersCDMA2000-v920 IRAT-ParametersCDMA2000-1XRTT-v920 OPTIONAL,

deviceType-r9 ENUMERATED {noBenFromBatConsumpOpt} OPTIONAL,

csg-ProximityIndicationParameters-r9 CSG-ProximityIndicationParameters-r9,

neighCellSI-AcquisitionParameters-r9 NeighCellSI-AcquisitionParameters-r9,

son-Parameters-r9 SON-Parameters-r9,

nonCriticalExtension UE-EUTRA-Capability-v940-IEs OPTIONAL

}

UE-EUTRA-Capability-v940-IEs ::= SEQUENCE {

lateNonCriticalExtension OCTET STRING (CONTAINING UE-EUTRA-Capability-v9a0-IEs) OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1020-IEs OPTIONAL

}

UE-EUTRA-Capability-v1020-IEs ::= SEQUENCE {

ue-Category-v1020 INTEGER (6..8) OPTIONAL,

phyLayerParameters-v1020 PhyLayerParameters-v1020 OPTIONAL,

rf-Parameters-v1020 RF-Parameters-v1020 OPTIONAL,

measParameters-v1020 MeasParameters-v1020 OPTIONAL,

featureGroupIndRel10-r10 BIT STRING (SIZE (32)) OPTIONAL,

interRAT-ParametersCDMA2000-v1020 IRAT-ParametersCDMA2000-1XRTT-v1020 OPTIONAL,

ue-BasedNetwPerfMeasParameters-r10 UE-BasedNetwPerfMeasParameters-r10 OPTIONAL,

interRAT-ParametersUTRA-TDD-v1020 IRAT-ParametersUTRA-TDD-v1020 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1060-IEs OPTIONAL

}

UE-EUTRA-Capability-v1060-IEs ::= SEQUENCE {

fdd-Add-UE-EUTRA-Capabilities-v1060 UE-EUTRA-CapabilityAddXDD-Mode-v1060 OPTIONAL,

tdd-Add-UE-EUTRA-Capabilities-v1060 UE-EUTRA-CapabilityAddXDD-Mode-v1060 OPTIONAL,

rf-Parameters-v1060 RF-Parameters-v1060 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1090-IEs OPTIONAL

}

UE-EUTRA-Capability-v1090-IEs ::= SEQUENCE {

rf-Parameters-v1090 RF-Parameters-v1090 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1130-IEs OPTIONAL

}

UE-EUTRA-Capability-v1130-IEs ::= SEQUENCE {

pdcp-Parameters-v1130 PDCP-Parameters-v1130,

phyLayerParameters-v1130 PhyLayerParameters-v1130 OPTIONAL,

rf-Parameters-v1130 RF-Parameters-v1130,

measParameters-v1130 MeasParameters-v1130,

interRAT-ParametersCDMA2000-v1130 IRAT-ParametersCDMA2000-v1130,

otherParameters-r11 Other-Parameters-r11,

fdd-Add-UE-EUTRA-Capabilities-v1130 UE-EUTRA-CapabilityAddXDD-Mode-v1130 OPTIONAL,

tdd-Add-UE-EUTRA-Capabilities-v1130 UE-EUTRA-CapabilityAddXDD-Mode-v1130 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1170-IEs OPTIONAL

}

UE-EUTRA-Capability-v1170-IEs ::= SEQUENCE {

phyLayerParameters-v1170 PhyLayerParameters-v1170 OPTIONAL,

ue-Category-v1170 INTEGER (9..10) OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1180-IEs OPTIONAL

}

UE-EUTRA-Capability-v1180-IEs ::= SEQUENCE {

rf-Parameters-v1180 RF-Parameters-v1180 OPTIONAL,

mbms-Parameters-r11 MBMS-Parameters-r11 OPTIONAL,

fdd-Add-UE-EUTRA-Capabilities-v1180 UE-EUTRA-CapabilityAddXDD-Mode-v1180 OPTIONAL,

tdd-Add-UE-EUTRA-Capabilities-v1180 UE-EUTRA-CapabilityAddXDD-Mode-v1180 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v11a0-IEs OPTIONAL

}

UE-EUTRA-Capability-v11a0-IEs ::= SEQUENCE {

ue-Category-v11a0 INTEGER (11..12) OPTIONAL,

measParameters-v11a0 MeasParameters-v11a0 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1250-IEs OPTIONAL

}

UE-EUTRA-Capability-v1250-IEs ::= SEQUENCE {

phyLayerParameters-v1250 PhyLayerParameters-v1250 OPTIONAL,

rf-Parameters-v1250 RF-Parameters-v1250 OPTIONAL,

rlc-Parameters-r12 RLC-Parameters-r12 OPTIONAL,

ue-BasedNetwPerfMeasParameters-v1250 UE-BasedNetwPerfMeasParameters-v1250 OPTIONAL,

ue-CategoryDL-r12 INTEGER (0..14) OPTIONAL,

ue-CategoryUL-r12 INTEGER (0..13) OPTIONAL,

wlan-IW-Parameters-r12 WLAN-IW-Parameters-r12 OPTIONAL,

measParameters-v1250 MeasParameters-v1250 OPTIONAL,

dc-Parameters-r12 DC-Parameters-r12 OPTIONAL,

mbms-Parameters-v1250 MBMS-Parameters-v1250 OPTIONAL,

mac-Parameters-r12 MAC-Parameters-r12 OPTIONAL,

fdd-Add-UE-EUTRA-Capabilities-v1250 UE-EUTRA-CapabilityAddXDD-Mode-v1250 OPTIONAL,

tdd-Add-UE-EUTRA-Capabilities-v1250 UE-EUTRA-CapabilityAddXDD-Mode-v1250 OPTIONAL,

sl-Parameters-r12 SL-Parameters-r12 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1260-IEs OPTIONAL

}

UE-EUTRA-Capability-v1260-IEs ::= SEQUENCE {

ue-CategoryDL-v1260 INTEGER (15..16) OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1270-IEs OPTIONAL

}

UE-EUTRA-Capability-v1270-IEs ::= SEQUENCE {

rf-Parameters-v1270 RF-Parameters-v1270 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1280-IEs OPTIONAL

}

UE-EUTRA-Capability-v1280-IEs ::= SEQUENCE {

phyLayerParameters-v1280 PhyLayerParameters-v1280 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1310-IEs OPTIONAL

}

UE-EUTRA-Capability-v1310-IEs ::= SEQUENCE {

ue-CategoryDL-v1310 ENUMERATED {n17, m1} OPTIONAL,

ue-CategoryUL-v1310 ENUMERATED {n14, m1} OPTIONAL,

pdcp-Parameters-v1310 PDCP-Parameters-v1310,

rlc-Parameters-v1310 RLC-Parameters-v1310,

mac-Parameters-v1310 MAC-Parameters-v1310 OPTIONAL,

phyLayerParameters-v1310 PhyLayerParameters-v1310 OPTIONAL,

rf-Parameters-v1310 RF-Parameters-v1310 OPTIONAL,

measParameters-v1310 MeasParameters-v1310 OPTIONAL,

dc-Parameters-v1310 DC-Parameters-v1310 OPTIONAL,

sl-Parameters-v1310 SL-Parameters-v1310 OPTIONAL,

scptm-Parameters-r13 SCPTM-Parameters-r13 OPTIONAL,

ce-Parameters-r13 CE-Parameters-r13 OPTIONAL,

interRAT-ParametersWLAN-r13IRAT-ParametersWLAN-r13,

laa-Parameters-r13 LAA-Parameters-r13 OPTIONAL,

lwa-Parameters-r13 LWA-Parameters-r13 OPTIONAL,

wlan-IW-Parameters-v1310 WLAN-IW-Parameters-v1310,

lwip-Parameters-r13 LWIP-Parameters-r13,

fdd-Add-UE-EUTRA-Capabilities-v1310 UE-EUTRA-CapabilityAddXDD-Mode-v1310 OPTIONAL,

tdd-Add-UE-EUTRA-Capabilities-v1310 UE-EUTRA-CapabilityAddXDD-Mode-v1310 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1320-IEs OPTIONAL

}

UE-EUTRA-Capability-v1320-IEs ::= SEQUENCE {

ce-Parameters-v1320 CE-Parameters-v1320 OPTIONAL,

phyLayerParameters-v1320 PhyLayerParameters-v1320 OPTIONAL,

rf-Parameters-v1320 RF-Parameters-v1320 OPTIONAL,

fdd-Add-UE-EUTRA-Capabilities-v1320 UE-EUTRA-CapabilityAddXDD-Mode-v1320 OPTIONAL,

tdd-Add-UE-EUTRA-Capabilities-v1320 UE-EUTRA-CapabilityAddXDD-Mode-v1320 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1330-IEs OPTIONAL

}

UE-EUTRA-Capability-v1330-IEs ::= SEQUENCE {

ue-CategoryDL-v1330 INTEGER (18..19) OPTIONAL,

phyLayerParameters-v1330 PhyLayerParameters-v1330 OPTIONAL,

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

nonCriticalExtension UE-EUTRA-Capability-v1340-IEs OPTIONAL

}

UE-EUTRA-Capability-v1340-IEs ::= SEQUENCE {

ue-CategoryUL-v1340 INTEGER (15) OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1350-IEs OPTIONAL

}

UE-EUTRA-Capability-v1350-IEs ::= SEQUENCE {

ue-CategoryDL-v1350 ENUMERATED {oneBis} OPTIONAL,

ue-CategoryUL-v1350 ENUMERATED {oneBis} OPTIONAL,

ce-Parameters-v1350 CE-Parameters-v1350,

nonCriticalExtension UE-EUTRA-Capability-v1360-IEs OPTIONAL

}

UE-EUTRA-Capability-v1360-IEs ::= SEQUENCE {

other-Parameters-v1360 Other-Parameters-v1360 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1430-IEs OPTIONAL

}

UE-EUTRA-Capability-v1430-IEs ::= SEQUENCE {

phyLayerParameters-v1430 PhyLayerParameters-v1430,

ue-CategoryDL-v1430 ENUMERATED {m2} OPTIONAL,

ue-CategoryUL-v1430 ENUMERATED {n16, n17, n18, n19, n20, m2} OPTIONAL,

ue-CategoryUL-v1430b ENUMERATED {n21} OPTIONAL,

mac-Parameters-v1430 MAC-Parameters-v1430 OPTIONAL,

measParameters-v1430 MeasParameters-v1430 OPTIONAL,

pdcp-Parameters-v1430 PDCP-Parameters-v1430 OPTIONAL,

rlc-Parameters-v1430 RLC-Parameters-v1430,

rf-Parameters-v1430 RF-Parameters-v1430 OPTIONAL,

laa-Parameters-v1430 LAA-Parameters-v1430 OPTIONAL,

lwa-Parameters-v1430 LWA-Parameters-v1430 OPTIONAL,

lwip-Parameters-v1430 LWIP-Parameters-v1430 OPTIONAL,

otherParameters-v1430 Other-Parameters-v1430,

mmtel-Parameters-r14 MMTEL-Parameters-r14 OPTIONAL,

mobilityParameters-r14 MobilityParameters-r14 OPTIONAL,

ce-Parameters-v1430 CE-Parameters-v1430,

fdd-Add-UE-EUTRA-Capabilities-v1430 UE-EUTRA-CapabilityAddXDD-Mode-v1430 OPTIONAL,

tdd-Add-UE-EUTRA-Capabilities-v1430 UE-EUTRA-CapabilityAddXDD-Mode-v1430 OPTIONAL,

mbms-Parameters-v1430 MBMS-Parameters-v1430 OPTIONAL,

sl-Parameters-v1430 SL-Parameters-v1430 OPTIONAL,

ue-BasedNetwPerfMeasParameters-v1430 UE-BasedNetwPerfMeasParameters-v1430 OPTIONAL,

highSpeedEnhParameters-r14 HighSpeedEnhParameters-r14 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1440-IEs OPTIONAL

}

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

lwa-Parameters-v1440 LWA-Parameters-v1440,

mac-Parameters-v1440 MAC-Parameters-v1440,

nonCriticalExtension UE-EUTRA-Capability-v1450-IEs OPTIONAL

}

UE-EUTRA-Capability-v1450-IEs ::= SEQUENCE {

phyLayerParameters-v1450 PhyLayerParameters-v1450 OPTIONAL,

rf-Parameters-v1450 RF-Parameters-v1450 OPTIONAL,

otherParameters-v1450 OtherParameters-v1450,

ue-CategoryDL-v1450 INTEGER (20) OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1460-IEs OPTIONAL

}

UE-EUTRA-Capability-v1460-IEs ::= SEQUENCE {

ue-CategoryDL-v1460 INTEGER (21) OPTIONAL,

otherParameters-v1460 Other-Parameters-v1460,

nonCriticalExtension UE-EUTRA-Capability-v1510-IEs OPTIONAL

}

UE-EUTRA-Capability-v1510-IEs ::= SEQUENCE {

irat-ParametersNR-r15 IRAT-ParametersNR-r15 OPTIONAL,

featureSetsEUTRA-r15 FeatureSetsEUTRA-r15 OPTIONAL,

pdcp-ParametersNR-r15 PDCP-ParametersNR-r15 OPTIONAL,

fdd-Add-UE-EUTRA-Capabilities-v1510 UE-EUTRA-CapabilityAddXDD-Mode-v1510 OPTIONAL,

tdd-Add-UE-EUTRA-Capabilities-v1510 UE-EUTRA-CapabilityAddXDD-Mode-v1510 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1520-IEs OPTIONAL

}

UE-EUTRA-Capability-v1520-IEs ::= SEQUENCE {

measParameters-v1520 MeasParameters-v1520,

nonCriticalExtension UE-EUTRA-Capability-v1530-IEs OPTIONAL

}

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

measParameters-v1530 MeasParameters-v1530 OPTIONAL,

otherParameters-v1530 Other-Parameters-v1530 OPTIONAL,

neighCellSI-AcquisitionParameters-v1530 NeighCellSI-AcquisitionParameters-v1530 OPTIONAL,

mac-Parameters-v1530 MAC-Parameters-v1530 OPTIONAL,

phyLayerParameters-v1530 PhyLayerParameters-v1530 OPTIONAL,

rf-Parameters-v1530 RF-Parameters-v1530 OPTIONAL,

pdcp-Parameters-v1530 PDCP-Parameters-v1530 OPTIONAL,

ue-CategoryDL-v1530 INTEGER (22..26) OPTIONAL,

ue-BasedNetwPerfMeasParameters-v1530 UE-BasedNetwPerfMeasParameters-v1530 OPTIONAL,

rlc-Parameters-v1530 RLC-Parameters-v1530 OPTIONAL,

sl-Parameters-v1530 SL-Parameters-v1530 OPTIONAL,

extendedNumberOfDRBs-r15 ENUMERATED {supported} OPTIONAL,

reducedCP-Latency-r15 ENUMERATED {supported} OPTIONAL,

laa-Parameters-v1530 LAA-Parameters-v1530 OPTIONAL,

ue-CategoryUL-v1530 INTEGER (22..26) OPTIONAL,

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

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

nonCriticalExtension UE-EUTRA-Capability-v1540-IEs OPTIONAL

}

UE-EUTRA-Capability-v1540-IEs ::= SEQUENCE {

phyLayerParameters-v1540 PhyLayerParameters-v1540 OPTIONAL,

otherParameters-v1540 Other-Parameters-v1540,

fdd-Add-UE-EUTRA-Capabilities-v1540 UE-EUTRA-CapabilityAddXDD-Mode-v1540 OPTIONAL,

tdd-Add-UE-EUTRA-Capabilities-v1540 UE-EUTRA-CapabilityAddXDD-Mode-v1540 OPTIONAL,

sl-Parameters-v1540 SL-Parameters-v1540 OPTIONAL,

irat-ParametersNR-v1540 IRAT-ParametersNR-v1540 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v1550-IEs OPTIONAL

}

UE-EUTRA-Capability-v1550-IEs ::= SEQUENCE {

neighCellSI-AcquisitionParameters-v1550 NeighCellSI-AcquisitionParameters-v1550 OPTIONAL,

phyLayerParameters-v1550 PhyLayerParameters-v1550,

mac-Parameters-v1550 MAC-Parameters-v1550,

fdd-Add-UE-EUTRA-Capabilities-v1550 UE-EUTRA-CapabilityAddXDD-Mode-v1550,

tdd-Add-UE-EUTRA-Capabilities-v1550 UE-EUTRA-CapabilityAddXDD-Mode-v1550,

nonCriticalExtension UE-EUTRA-Capability-v1560-IEs OPTIONAL

}

UE-EUTRA-Capability-v1560-IEs ::= SEQUENCE {

pdcp-ParametersNR-v1560 PDCP-ParametersNR-v1560,

irat-ParametersNR-v1560 IRAT-ParametersNR-v1560,

appliedCapabilityFilterCommon-r15 OCTET STRING OPTIONAL,

fdd-Add-UE-EUTRA-Capabilities-v1560 UE-EUTRA-CapabilityAddXDD-Mode-v1560,

tdd-Add-UE-EUTRA-Capabilities-v1560 UE-EUTRA-CapabilityAddXDD-Mode-v1560,

nonCriticalExtension UE-EUTRA-Capability-v1570-IEs OPTIONAL

}

UE-EUTRA-Capability-v1570-IEs ::= SEQUENCE {

rf-Parameters-v1570 RF-Parameters-v1570 OPTIONAL,

irat-ParametersNR-v1570 IRAT-ParametersNR-v1570 OPTIONAL,

nonCriticalExtension UE-EUTRA-Capability-v16xy-IEs OPTIONAL

}

UE-EUTRA-Capability-v16xy-IEs ::= SEQUENCE {

highSpeedEnhParameters-v16xy HighSpeedEnhParameters-v16xy OPTIONAL,

neighCellSI-AcquisitionParameters-v16xy NeighCellSI-AcquisitionParameters-v16xy OPTIONAL,

mbms-Parameters-v16xy MBMS-Parameters-v16xy OPTIONAL,

mac-Parameters-v16xy MAC-Parameters-v16xy OPTIONAL,

phyLayerParameters-v16xy PhyLayerParameters-v16xy OPTIONAL,

measParameters-v16xy MeasParameters-v16xy OPTIONAL,

otherParameters-v16xy Other-Parameters-v16xy,

dl-DedicatedMessageSegmentation-r16 ENUMERATED {supported} OPTIONAL,

mmtel-Parameters-v16xy MMTEL-Parameters-v16xy,

irat-ParametersNR-r16 IRAT-ParametersNR-r16 OPTIONAL,

fdd-Add-UE-EUTRA-Capabilities-v16xy UE-EUTRA-CapabilityAddXDD-Mode-v16xy,

tdd-Add-UE-EUTRA-Capabilities-v16xy UE-EUTRA-CapabilityAddXDD-Mode-v16xy,

nonCriticalExtension SEQUENCE {} OPTIONAL

}

UE-EUTRA-CapabilityAddXDD-Mode-r9 ::= SEQUENCE {

phyLayerParameters-r9 PhyLayerParameters OPTIONAL,

featureGroupIndicators-r9 BIT STRING (SIZE (32)) OPTIONAL,

featureGroupIndRel9Add-r9 BIT STRING (SIZE (32)) OPTIONAL,

interRAT-ParametersGERAN-r9 IRAT-ParametersGERAN OPTIONAL,

interRAT-ParametersUTRA-r9 IRAT-ParametersUTRA-v920 OPTIONAL,

interRAT-ParametersCDMA2000-r9 IRAT-ParametersCDMA2000-1XRTT-v920 OPTIONAL,

neighCellSI-AcquisitionParameters-r9 NeighCellSI-AcquisitionParameters-r9 OPTIONAL,

...

}

UE-EUTRA-CapabilityAddXDD-Mode-v1060 ::= SEQUENCE {

phyLayerParameters-v1060 PhyLayerParameters-v1020 OPTIONAL,

featureGroupIndRel10-v1060 BIT STRING (SIZE (32)) OPTIONAL,

interRAT-ParametersCDMA2000-v1060 IRAT-ParametersCDMA2000-1XRTT-v1020 OPTIONAL,

interRAT-ParametersUTRA-TDD-v1060 IRAT-ParametersUTRA-TDD-v1020 OPTIONAL,

...,

[[ otdoa-PositioningCapabilities-r10 OTDOA-PositioningCapabilities-r10 OPTIONAL

]]

}

UE-EUTRA-CapabilityAddXDD-Mode-v1130 ::= SEQUENCE {

phyLayerParameters-v1130 PhyLayerParameters-v1130 OPTIONAL,

measParameters-v1130 MeasParameters-v1130 OPTIONAL,

otherParameters-r11 Other-Parameters-r11 OPTIONAL,

...

}

UE-EUTRA-CapabilityAddXDD-Mode-v1180 ::= SEQUENCE {

mbms-Parameters-r11 MBMS-Parameters-r11

}

UE-EUTRA-CapabilityAddXDD-Mode-v1250 ::= SEQUENCE {

phyLayerParameters-v1250 PhyLayerParameters-v1250 OPTIONAL,

measParameters-v1250 MeasParameters-v1250 OPTIONAL

}

UE-EUTRA-CapabilityAddXDD-Mode-v1310 ::= SEQUENCE {

phyLayerParameters-v1310 PhyLayerParameters-v1310 OPTIONAL

}

UE-EUTRA-CapabilityAddXDD-Mode-v1320 ::= SEQUENCE {

phyLayerParameters-v1320 PhyLayerParameters-v1320 OPTIONAL,

scptm-Parameters-r13 SCPTM-Parameters-r13 OPTIONAL

}

UE-EUTRA-CapabilityAddXDD-Mode-v1370 ::= SEQUENCE {

ce-Parameters-v1370 CE-Parameters-v1370 OPTIONAL

}

UE-EUTRA-CapabilityAddXDD-Mode-v1380 ::= SEQUENCE {

ce-Parameters-v1380 CE-Parameters-v1380

}

UE-EUTRA-CapabilityAddXDD-Mode-v1430 ::= SEQUENCE {

phyLayerParameters-v1430 PhyLayerParameters-v1430 OPTIONAL,

mmtel-Parameters-r14 MMTEL-Parameters-r14 OPTIONAL

}

UE-EUTRA-CapabilityAddXDD-Mode-v1510 ::= SEQUENCE {

pdcp-ParametersNR-r15 PDCP-ParametersNR-r15 OPTIONAL

}

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

neighCellSI-AcquisitionParameters-v1530 NeighCellSI-AcquisitionParameters-v1530 OPTIONAL,

reducedCP-Latency-r15 ENUMERATED {supported} OPTIONAL

}

UE-EUTRA-CapabilityAddXDD-Mode-v1540 ::= SEQUENCE {

eutra-5GC-Parameters-r15 EUTRA-5GC-Parameters-r15 OPTIONAL,

irat-ParametersNR-v1540 IRAT-ParametersNR-v1540 OPTIONAL

}

UE-EUTRA-CapabilityAddXDD-Mode-v1550 ::= SEQUENCE {

neighCellSI-AcquisitionParameters-v1550 NeighCellSI-AcquisitionParameters-v1550 OPTIONAL

}

UE-EUTRA-CapabilityAddXDD-Mode-v1560 ::= SEQUENCE {

pdcp-ParametersNR-v1560 PDCP-ParametersNR-v1560

}

AccessStratumRelease ::= ENUMERATED {

rel8, rel9, rel10, rel11, rel12, rel13,

rel14, rel15, ...}

FeatureSetsEUTRA-r15 ::= SEQUENCE {

featureSetsDL-r15 SEQUENCE (SIZE (1..maxFeatureSets-r15)) OF FeatureSetDL-r15 OPTIONAL,

featureSetsDL-PerCC-r15 SEQUENCE (SIZE (1..maxPerCC-FeatureSets-r15)) OF FeatureSetDL-PerCC-r15 OPTIONAL,

featureSetsUL-r15 SEQUENCE (SIZE (1..maxFeatureSets-r15)) OF FeatureSetUL-r15 OPTIONAL,

featureSetsUL-PerCC-r15 SEQUENCE (SIZE (1..maxPerCC-FeatureSets-r15)) OF FeatureSetUL-PerCC-r15 OPTIONAL,

...,

[[ featureSetsDL-v1550 SEQUENCE (SIZE (1..maxFeatureSets-r15)) OF FeatureSetDL-v1550 OPTIONAL

]]

}

MobilityParameters-r14 ::= SEQUENCE {

makeBeforeBreak-r14 ENUMERATED {supported} OPTIONAL,

rach-Less-r14 ENUMERATED {supported} OPTIONAL

}

DC-Parameters-r12 ::= SEQUENCE {

drb-TypeSplit-r12 ENUMERATED {supported} OPTIONAL,

drb-TypeSCG-r12 ENUMERATED {supported} OPTIONAL

}

DC-Parameters-v1310 ::= SEQUENCE {

pdcp-TransferSplitUL-r13 ENUMERATED {supported} OPTIONAL,

ue-SSTD-Meas-r13 ENUMERATED {supported} OPTIONAL

}

MAC-Parameters-r12 ::= SEQUENCE {

logicalChannelSR-ProhibitTimer-r12 ENUMERATED {supported} OPTIONAL,

longDRX-Command-r12 ENUMERATED {supported} OPTIONAL

}

MAC-Parameters-v1310 ::= SEQUENCE {

extendedMAC-LengthField-r13 ENUMERATED {supported} OPTIONAL,

extendedLongDRX-r13 ENUMERATED {supported} OPTIONAL

}

MAC-Parameters-v1430 ::= SEQUENCE {

shortSPS-IntervalFDD-r14 ENUMERATED {supported} OPTIONAL,

shortSPS-IntervalTDD-r14 ENUMERATED {supported} OPTIONAL,

skipUplinkDynamic-r14 ENUMERATED {supported} OPTIONAL,

skipUplinkSPS-r14 ENUMERATED {supported} OPTIONAL,

multipleUplinkSPS-r14 ENUMERATED {supported} OPTIONAL,

dataInactMon-r14 ENUMERATED {supported} OPTIONAL

}

MAC-Parameters-v1440 ::= SEQUENCE {

rai-Support-r14 ENUMERATED {supported} OPTIONAL

}

MAC-Parameters-v1530 ::= SEQUENCE {

min-Proc-TimelineSubslot-r15 SEQUENCE (SIZE(1..3)) OF ProcessingTimelineSet-r15 OPTIONAL,

skipSubframeProcessing-r15 SkipSubframeProcessing-r15 OPTIONAL,

earlyData-UP-r15 ENUMERATED {supported} OPTIONAL,

dormantSCellState-r15 ENUMERATED {supported} OPTIONAL,

directSCellActivation-r15 ENUMERATED {supported} OPTIONAL,

directSCellHibernation-r15 ENUMERATED {supported} OPTIONAL,

extendedLCID-Duplication-r15 ENUMERATED {supported} OPTIONAL,

sps-ServingCell-r15 ENUMERATED {supported} OPTIONAL

}

MAC-Parameters-v1550 ::= SEQUENCE {

eLCID-Support-r15 ENUMERATED {supported} OPTIONAL

}

MAC-Parameters-v16xy ::= SEQUENCE {

earlyData-UP-5GC-r16 ENUMERATED {supported} OPTIONAL,

pur-CP-5GC-r16 ENUMERATED {supported} OPTIONAL,

pur-UP-5GC-r16 ENUMERATED {supported} OPTIONAL,

pur-CP-EPC-r16 ENUMERATED {supported} OPTIONAL,

pur-UP-EPC-r16 ENUMERATED {supported} OPTIONAL,

rai-SupportEnh-r16 ENUMERATED {supported} OPTIONAL

}

ProcessingTimelineSet-r15 ::= ENUMERATED {set1, set2}

RLC-Parameters-r12 ::= SEQUENCE {

extended-RLC-LI-Field-r12 ENUMERATED {supported}

}

RLC-Parameters-v1310 ::= SEQUENCE {

extendedRLC-SN-SO-Field-r13 ENUMERATED {supported} OPTIONAL

}

RLC-Parameters-v1430 ::= SEQUENCE {

extendedPollByte-r14 ENUMERATED {supported} OPTIONAL

}

RLC-Parameters-v1530 ::= SEQUENCE {

flexibleUM-AM-Combinations-r15 ENUMERATED {supported} OPTIONAL,

rlc-AM-Ooo-Delivery-r15 ENUMERATED {supported} OPTIONAL,

rlc-UM-Ooo-Delivery-r15 ENUMERATED {supported} OPTIONAL

}

PDCP-Parameters ::= SEQUENCE {

supportedROHC-Profiles ROHC-ProfileSupportList-r15,

maxNumberROHC-ContextSessions ENUMERATED {

cs2, cs4, cs8, cs12, cs16, cs24, cs32,

cs48, cs64, cs128, cs256, cs512, cs1024,

cs16384, spare2, spare1} DEFAULT cs16,

...

}

PDCP-Parameters-v1130 ::= SEQUENCE {

pdcp-SN-Extension-r11 ENUMERATED {supported} OPTIONAL,

supportRohcContextContinue-r11 ENUMERATED {supported} OPTIONAL

}

PDCP-Parameters-v1310 ::= SEQUENCE {

pdcp-SN-Extension-18bits-r13 ENUMERATED {supported} OPTIONAL

}

PDCP-Parameters-v1430 ::= SEQUENCE {

supportedUplinkOnlyROHC-Profiles-r14 SEQUENCE {

profile0x0006-r14 BOOLEAN

},

maxNumberROHC-ContextSessions-r14 ENUMERATED {

cs2, cs4, cs8, cs12, cs16, cs24, cs32,

cs48, cs64, cs128, cs256, cs512, cs1024,

cs16384, spare2, spare1} DEFAULT cs16

}

PDCP-Parameters-v1530 ::= SEQUENCE {

supportedUDC-r15 SupportedUDC-r15 OPTIONAL,

pdcp-Duplication-r15 ENUMERATED {supported} OPTIONAL

}

SupportedUDC-r15 ::= SEQUENCE {

supportedStandardDic-r15 ENUMERATED {supported} OPTIONAL,

supportedOperatorDic-r15 SupportedOperatorDic-r15 OPTIONAL

}

SupportedOperatorDic-r15 ::= SEQUENCE {

versionOfDictionary-r15 INTEGER (0..15),

associatedPLMN-ID-r15 PLMN-Identity

}

PhyLayerParameters ::= SEQUENCE {

ue-TxAntennaSelectionSupported BOOLEAN,

ue-SpecificRefSigsSupported BOOLEAN

}

PhyLayerParameters-v920 ::= SEQUENCE {

enhancedDualLayerFDD-r9 ENUMERATED {supported} OPTIONAL,

enhancedDualLayerTDD-r9 ENUMERATED {supported} OPTIONAL

}

PhyLayerParameters-v9d0 ::= SEQUENCE {

tm5-FDD-r9 ENUMERATED {supported} OPTIONAL,

tm5-TDD-r9 ENUMERATED {supported} OPTIONAL

}

PhyLayerParameters-v1020 ::= SEQUENCE {

twoAntennaPortsForPUCCH-r10 ENUMERATED {supported} OPTIONAL,

tm9-With-8Tx-FDD-r10 ENUMERATED {supported} OPTIONAL,

pmi-Disabling-r10 ENUMERATED {supported} OPTIONAL,

crossCarrierScheduling-r10 ENUMERATED {supported} OPTIONAL,

simultaneousPUCCH-PUSCH-r10 ENUMERATED {supported} OPTIONAL,

multiClusterPUSCH-WithinCC-r10 ENUMERATED {supported} OPTIONAL,

nonContiguousUL-RA-WithinCC-List-r10 NonContiguousUL-RA-WithinCC-List-r10 OPTIONAL

}

PhyLayerParameters-v1130 ::= SEQUENCE {

crs-InterfHandl-r11 ENUMERATED {supported} OPTIONAL,

ePDCCH-r11 ENUMERATED {supported} OPTIONAL,

multiACK-CSI-Reporting-r11 ENUMERATED {supported} OPTIONAL,

ss-CCH-InterfHandl-r11 ENUMERATED {supported} OPTIONAL,

tdd-SpecialSubframe-r11 ENUMERATED {supported} OPTIONAL,

txDiv-PUCCH1b-ChSelect-r11 ENUMERATED {supported} OPTIONAL,

ul-CoMP-r11 ENUMERATED {supported} OPTIONAL

}

PhyLayerParameters-v1170 ::= SEQUENCE {

interBandTDD-CA-WithDifferentConfig-r11 BIT STRING (SIZE (2)) OPTIONAL

}

PhyLayerParameters-v1250 ::= SEQUENCE {

e-HARQ-Pattern-FDD-r12 ENUMERATED {supported} OPTIONAL,

enhanced-4TxCodebook-r12 ENUMERATED {supported} OPTIONAL,

tdd-FDD-CA-PCellDuplex-r12 BIT STRING (SIZE (2)) OPTIONAL,

phy-TDD-ReConfig-TDD-PCell-r12 ENUMERATED {supported} OPTIONAL,

phy-TDD-ReConfig-FDD-PCell-r12 ENUMERATED {supported} OPTIONAL,

pusch-FeedbackMode-r12 ENUMERATED {supported} OPTIONAL,

pusch-SRS-PowerControl-SubframeSet-r12 ENUMERATED {supported} OPTIONAL,

csi-SubframeSet-r12 ENUMERATED {supported} OPTIONAL,

noResourceRestrictionForTTIBundling-r12 ENUMERATED {supported} OPTIONAL,

discoverySignalsInDeactSCell-r12 ENUMERATED {supported} OPTIONAL,

naics-Capability-List-r12 NAICS-Capability-List-r12 OPTIONAL

}

PhyLayerParameters-v1280 ::= SEQUENCE {

alternativeTBS-Indices-r12 ENUMERATED {supported} OPTIONAL

}

PhyLayerParameters-v1310 ::= SEQUENCE {

aperiodicCSI-Reporting-r13 BIT STRING (SIZE (2)) OPTIONAL,

codebook-HARQ-ACK-r13 BIT STRING (SIZE (2)) OPTIONAL,

crossCarrierScheduling-B5C-r13 ENUMERATED {supported} OPTIONAL,

fdd-HARQ-TimingTDD-r13 ENUMERATED {supported} OPTIONAL,

maxNumberUpdatedCSI-Proc-r13 INTEGER(5..32) OPTIONAL,

pucch-Format4-r13 ENUMERATED {supported} OPTIONAL,

pucch-Format5-r13 ENUMERATED {supported} OPTIONAL,

pucch-SCell-r13 ENUMERATED {supported} OPTIONAL,

spatialBundling-HARQ-ACK-r13 ENUMERATED {supported} OPTIONAL,

supportedBlindDecoding-r13 SEQUENCE {

maxNumberDecoding-r13 INTEGER(1..32) OPTIONAL,

pdcch-CandidateReductions-r13 ENUMERATED {supported} OPTIONAL,

skipMonitoringDCI-Format0-1A-r13 ENUMERATED {supported} OPTIONAL

} OPTIONAL,

uci-PUSCH-Ext-r13 ENUMERATED {supported} OPTIONAL,

crs-InterfMitigationTM10-r13 ENUMERATED {supported} OPTIONAL,

pdsch-CollisionHandling-r13 ENUMERATED {supported} OPTIONAL

}

PhyLayerParameters-v1320 ::= SEQUENCE {

mimo-UE-Parameters-r13 MIMO-UE-Parameters-r13 OPTIONAL

}

PhyLayerParameters-v1330 ::= SEQUENCE {

cch-InterfMitigation-RefRecTypeA-r13 ENUMERATED {supported} OPTIONAL,

cch-InterfMitigation-RefRecTypeB-r13 ENUMERATED {supported} OPTIONAL,

cch-InterfMitigation-MaxNumCCs-r13 INTEGER (1.. maxServCell-r13) OPTIONAL,

crs-InterfMitigationTM1toTM9-r13 INTEGER (1.. maxServCell-r13) OPTIONAL

}

PhyLayerParameters-v13e0 ::= SEQUENCE {

mimo-UE-Parameters-v13e0 MIMO-UE-Parameters-v13e0

}

PhyLayerParameters-v1430 ::= SEQUENCE {

ce-PUSCH-NB-MaxTBS-r14 ENUMERATED {supported} OPTIONAL,

ce-PDSCH-PUSCH-MaxBandwidth-r14 ENUMERATED {bw5, bw20} OPTIONAL,

ce-HARQ-AckBundling-r14 ENUMERATED {supported} OPTIONAL,

ce-PDSCH-TenProcesses-r14 ENUMERATED {supported} OPTIONAL,

ce-RetuningSymbols-r14 ENUMERATED {n0, n1} OPTIONAL,

ce-PDSCH-PUSCH-Enhancement-r14 ENUMERATED {supported} OPTIONAL,

ce-SchedulingEnhancement-r14 ENUMERATED {supported} OPTIONAL,

ce-SRS-Enhancement-r14 ENUMERATED {supported} OPTIONAL,

ce-PUCCH-Enhancement-r14 ENUMERATED {supported} OPTIONAL,

ce-ClosedLoopTxAntennaSelection-r14 ENUMERATED {supported} OPTIONAL,

tdd-SpecialSubframe-r14 ENUMERATED {supported} OPTIONAL,

tdd-TTI-Bundling-r14 ENUMERATED {supported} OPTIONAL,

dmrs-LessUpPTS-r14 ENUMERATED {supported} OPTIONAL,

mimo-UE-Parameters-v1430 MIMO-UE-Parameters-v1430 OPTIONAL,

alternativeTBS-Index-r14 ENUMERATED {supported} OPTIONAL,

feMBMS-Unicast-Parameters-r14 FeMBMS-Unicast-Parameters-r14 OPTIONAL

}

PhyLayerParameters-v1450 ::= SEQUENCE {

ce-SRS-EnhancementWithoutComb4-r14 ENUMERATED {supported} OPTIONAL,

crs-LessDwPTS-r14 ENUMERATED {supported} OPTIONAL}

PhyLayerParameters-v1470 ::= SEQUENCE {

mimo-UE-Parameters-v1470 MIMO-UE-Parameters-v1470 OPTIONAL,

srs-UpPTS-6sym-r14 ENUMERATED {supported} OPTIONAL

}

PhyLayerParameters-v14a0 ::= SEQUENCE {

ssp10-TDD-Only-r14 ENUMERATED {supported} OPTIONAL

}

PhyLayerParameters-v1530 ::= SEQUENCE {

stti-SPT-Capabilities-r15 SEQUENCE {

aperiodicCsi-ReportingSTTI-r15 ENUMERATED {supported} OPTIONAL,

dmrs-BasedSPDCCH-MBSFN-r15 ENUMERATED {supported} OPTIONAL,

dmrs-BasedSPDCCH-nonMBSFN-r15 ENUMERATED {supported} OPTIONAL,

dmrs-PositionPattern-r15 ENUMERATED {supported} OPTIONAL,

dmrs-SharingSubslotPDSCH-r15 ENUMERATED {supported} OPTIONAL,

dmrs-RepetitionSubslotPDSCH-r15 ENUMERATED {supported} OPTIONAL,

epdcch-SPT-differentCells-r15 ENUMERATED {supported} OPTIONAL,

epdcch-STTI-differentCells-r15 ENUMERATED {supported} OPTIONAL,

maxLayersSlotOrSubslotPUSCH-r15 ENUMERATED {oneLayer,twoLayers,fourLayers}

OPTIONAL,

maxNumberUpdatedCSI-Proc-SPT-r15 INTEGER(5..32) OPTIONAL,

maxNumberUpdatedCSI-Proc-STTI-Comb77-r15 INTEGER(1..32) OPTIONAL,

maxNumberUpdatedCSI-Proc-STTI-Comb27-r15 INTEGER(1..32) OPTIONAL,

maxNumberUpdatedCSI-Proc-STTI-Comb22-Set1-r15 INTEGER(1..32) OPTIONAL,

maxNumberUpdatedCSI-Proc-STTI-Comb22-Set2-r15 INTEGER(1..32) OPTIONAL,

mimo-UE-ParametersSTTI-r15 MIMO-UE-Parameters-r13 OPTIONAL,

mimo-UE-ParametersSTTI-v1530 MIMO-UE-Parameters-v1430 OPTIONAL,

numberOfBlindDecodesUSS-r15 INTEGER(4..32) OPTIONAL,

pdsch-SlotSubslotPDSCH-Decoding-r15 ENUMERATED {supported} OPTIONAL,

powerUCI-SlotPUSCH ENUMERATED {supported} OPTIONAL,

powerUCI-SubslotPUSCH ENUMERATED {supported} OPTIONAL,

slotPDSCH-TxDiv-TM9and10 ENUMERATED {supported} OPTIONAL,

subslotPDSCH-TxDiv-TM9and10 ENUMERATED {supported} OPTIONAL,

spdcch-differentRS-types-r15 ENUMERATED {supported} OPTIONAL,

srs-DCI7-TriggeringFS2-r15 ENUMERATED {supported} OPTIONAL,

sps-cyclicShift-r15 ENUMERATED {supported} OPTIONAL,

spdcch-Reuse-r15 ENUMERATED {supported} OPTIONAL,

sps-STTI-r15 ENUMERATED {slot, subslot, slotAndSubslot}

OPTIONAL,

tm8-slotPDSCH-r15 ENUMERATED {supported} OPTIONAL,

tm9-slotSubslot-r15 ENUMERATED {supported} OPTIONAL,

tm9-slotSubslotMBSFN-r15 ENUMERATED {supported} OPTIONAL,

tm10-slotSubslot-r15 ENUMERATED {supported} OPTIONAL,

tm10-slotSubslotMBSFN-r15 ENUMERATED {supported} OPTIONAL,

txDiv-SPUCCH-r15 ENUMERATED {supported} OPTIONAL,

ul-AsyncHarqSharingDiff-TTI-Lengths-r15 ENUMERATED {supported} OPTIONAL

} OPTIONAL,

ce-Capabilities-r15 SEQUENCE {

ce-CRS-IntfMitig-r15 ENUMERATED {supported} OPTIONAL,

ce-CQI-AlternativeTable-r15 ENUMERATED {supported} OPTIONAL,

ce-PDSCH-FlexibleStartPRB-CE-ModeA-r15 ENUMERATED {supported} OPTIONAL,

ce-PDSCH-FlexibleStartPRB-CE-ModeB-r15 ENUMERATED {supported} OPTIONAL,

ce-PDSCH-64QAM-r15 ENUMERATED {supported} OPTIONAL,

ce-PUSCH-FlexibleStartPRB-CE-ModeA-r15 ENUMERATED {supported} OPTIONAL,

ce-PUSCH-FlexibleStartPRB-CE-ModeB-r15 ENUMERATED {supported} OPTIONAL,

ce-PUSCH-SubPRB-Allocation-r15 ENUMERATED {supported} OPTIONAL,

ce-UL-HARQ-ACK-Feedback-r15 ENUMERATED {supported} OPTIONAL

} OPTIONAL,

shortCQI-ForSCellActivation-r15 ENUMERATED {supported} OPTIONAL,

mimo-CBSR-AdvancedCSI-r15 ENUMERATED {supported} OPTIONAL,

crs-IntfMitig-r15 ENUMERATED {supported} OPTIONAL,

ul-PowerControlEnhancements-r15 ENUMERATED {supported} OPTIONAL,

urllc-Capabilities-r15 SEQUENCE {

pdsch-RepSubframe-r15 ENUMERATED {supported} OPTIONAL,

pdsch-RepSlot-r15 ENUMERATED {supported} OPTIONAL,

pdsch-RepSubslot-r15 ENUMERATED {supported} OPTIONAL,

pusch-SPS-MultiConfigSubframe-r15 INTEGER (0..6) OPTIONAL,

pusch-SPS-MaxConfigSubframe-r15 INTEGER (0..31) OPTIONAL,

pusch-SPS-MultiConfigSlot-r15 INTEGER (0..6) OPTIONAL,

pusch-SPS-MaxConfigSlot-r15 INTEGER (0..31) OPTIONAL,

pusch-SPS-MultiConfigSubslot-r15 INTEGER (0..6) OPTIONAL,

pusch-SPS-MaxConfigSubslot-r15 INTEGER (0..31) OPTIONAL,

pusch-SPS-SlotRepPCell-r15 ENUMERATED {supported} OPTIONAL,

pusch-SPS-SlotRepPSCell-r15 ENUMERATED {supported} OPTIONAL,

pusch-SPS-SlotRepSCell-r15 ENUMERATED {supported} OPTIONAL,

pusch-SPS-SubframeRepPCell-r15 ENUMERATED {supported} OPTIONAL,

pusch-SPS-SubframeRepPSCell-r15 ENUMERATED {supported} OPTIONAL,

pusch-SPS-SubframeRepSCell-r15 ENUMERATED {supported} OPTIONAL,

pusch-SPS-SubslotRepPCell-r15 ENUMERATED {supported} OPTIONAL,

pusch-SPS-SubslotRepPSCell-r15 ENUMERATED {supported} OPTIONAL,

pusch-SPS-SubslotRepSCell-r15 ENUMERATED {supported} OPTIONAL,

semiStaticCFI-r15 ENUMERATED {supported} OPTIONAL,

semiStaticCFI-Pattern-r15 ENUMERATED {supported} OPTIONAL

} OPTIONAL,

altMCS-Table-r15 ENUMERATED {supported} OPTIONAL

}

PhyLayerParameters-v1540 ::= SEQUENCE {

stti-SPT-Capabilities-v1540 SEQUENCE {

slotPDSCH-TxDiv-TM8-r15 ENUMERATED {supported}

} OPTIONAL,

crs-IM-TM1-toTM9-OneRX-Port-v1540 ENUMERATED {supported} OPTIONAL,

cch-IM-RefRecTypeA-OneRX-Port-v1540 ENUMERATED {supported} OPTIONAL

}

PhyLayerParameters-v1550 ::= SEQUENCE {

dmrs-OverheadReduction-r15 ENUMERATED {supported} OPTIONAL

}

PhyLayerParameters-v16xy ::= SEQUENCE {

ce-Capabilities-v16xy SEQUENCE {

ce-CRS-ChannelEstMPDCCH-r16 ENUMERATED {supported} OPTIONAL,

ce-ModeA-CSI-RS-Feedback-r16 ENUMERATED {supported} OPTIONAL,

ce-ModeA-PDSCH-MultiTB-r16 ENUMERATED {supported} OPTIONAL,

ce-ModeA-PUSCH-MultiTB-r16 ENUMERATED {supported} OPTIONAL,

ce-ModeB-PDSCH-MultiTB-r16 ENUMERATED {supported} OPTIONAL,

ce-ModeB-PUSCH-MultiTB-r16 ENUMERATED {supported} OPTIONAL,

ce-ModeA-ETWS-CMAS-RxInConn-r16 ENUMERATED {supported} OPTIONAL,

ce-ModeB-ETWS-CMAS-RxInConn-r16 ENUMERATED {supported} OPTIONAL,

ce-RxInLTE-ControlRegion-r16 ENUMERATED {supported} OPTIONAL,

dl-ChannelQualityReporting-r16 ENUMERATED {supported} OPTIONAL

} OPTIONAL,

widebandPRG-Slot-r16 ENUMERATED {supported} OPTIONAL,

widebandPRG-Subslot-r16 ENUMERATED {supported} OPTIONAL,

widebandPRG-Subframe-r16 ENUMERATED {supported} OPTIONAL

}

MIMO-UE-Parameters-r13 ::= SEQUENCE {

parametersTM9-r13 MIMO-UE-ParametersPerTM-r13 OPTIONAL,

parametersTM10-r13 MIMO-UE-ParametersPerTM-r13 OPTIONAL,

srs-EnhancementsTDD-r13 ENUMERATED {supported} OPTIONAL,

srs-Enhancements-r13 ENUMERATED {supported} OPTIONAL,

interferenceMeasRestriction-r13 ENUMERATED {supported} OPTIONAL

}

MIMO-UE-Parameters-v13e0 ::= SEQUENCE {

mimo-WeightedLayersCapabilities-r13 MIMO-WeightedLayersCapabilities-r13 OPTIONAL

}

MIMO-UE-Parameters-v1430 ::= SEQUENCE {

parametersTM9-v1430 MIMO-UE-ParametersPerTM-v1430 OPTIONAL,

parametersTM10-v1430 MIMO-UE-ParametersPerTM-v1430 OPTIONAL

}

MIMO-UE-Parameters-v1470 ::= SEQUENCE {

parametersTM9-v1470 MIMO-UE-ParametersPerTM-v1470,

parametersTM10-v1470 MIMO-UE-ParametersPerTM-v1470

}

MIMO-UE-ParametersPerTM-r13 ::= SEQUENCE {

nonPrecoded-r13 MIMO-NonPrecodedCapabilities-r13 OPTIONAL,

beamformed-r13 MIMO-UE-BeamformedCapabilities-r13 OPTIONAL,

channelMeasRestriction-r13 ENUMERATED {supported} OPTIONAL,

dmrs-Enhancements-r13 ENUMERATED {supported} OPTIONAL,

csi-RS-EnhancementsTDD-r13 ENUMERATED {supported} OPTIONAL

}

MIMO-UE-ParametersPerTM-v1430 ::= SEQUENCE {

nzp-CSI-RS-AperiodicInfo-r14 SEQUENCE {

nMaxProc-r14 INTEGER(5..32),

nMaxResource-r14 ENUMERATED {ffs1, ffs2, ffs3, ffs4}

} OPTIONAL,

nzp-CSI-RS-PeriodicInfo-r14 SEQUENCE {

nMaxResource-r14 ENUMERATED {ffs1, ffs2, ffs3, ffs4}

} OPTIONAL,

zp-CSI-RS-AperiodicInfo-r14 ENUMERATED {supported} OPTIONAL,

ul-dmrs-Enhancements-r14 ENUMERATED {supported} OPTIONAL,

densityReductionNP-r14 ENUMERATED {supported} OPTIONAL,

densityReductionBF-r14 ENUMERATED {supported} OPTIONAL,

hybridCSI-r14 ENUMERATED {supported} OPTIONAL,

semiOL-r14 ENUMERATED {supported} OPTIONAL,

csi-ReportingNP-r14 ENUMERATED {supported} OPTIONAL,

csi-ReportingAdvanced-r14 ENUMERATED {supported} OPTIONAL

}

MIMO-UE-ParametersPerTM-v1470 ::= SEQUENCE {

csi-ReportingAdvancedMaxPorts-r14 ENUMERATED {n8, n12, n16, n20, n24, n28} OPTIONAL

}

MIMO-CA-ParametersPerBoBC-r13 ::= SEQUENCE {

parametersTM9-r13 MIMO-CA-ParametersPerBoBCPerTM-r13 OPTIONAL,

parametersTM10-r13 MIMO-CA-ParametersPerBoBCPerTM-r13 OPTIONAL

}

MIMO-CA-ParametersPerBoBC-r15 ::= SEQUENCE {

parametersTM9-r15 MIMO-CA-ParametersPerBoBCPerTM-r15 OPTIONAL,

parametersTM10-r15 MIMO-CA-ParametersPerBoBCPerTM-r15 OPTIONAL

}

MIMO-CA-ParametersPerBoBC-v1430 ::= SEQUENCE {

parametersTM9-v1430 MIMO-CA-ParametersPerBoBCPerTM-v1430 OPTIONAL,

parametersTM10-v1430 MIMO-CA-ParametersPerBoBCPerTM-v1430 OPTIONAL

}

MIMO-CA-ParametersPerBoBC-v1470 ::= SEQUENCE {

parametersTM9-v1470 MIMO-CA-ParametersPerBoBCPerTM-v1470,

parametersTM10-v1470 MIMO-CA-ParametersPerBoBCPerTM-v1470

}

MIMO-CA-ParametersPerBoBCPerTM-r13 ::= SEQUENCE {

nonPrecoded-r13 MIMO-NonPrecodedCapabilities-r13 OPTIONAL,

beamformed-r13 MIMO-BeamformedCapabilityList-r13 OPTIONAL,

dmrs-Enhancements-r13 ENUMERATED {different} OPTIONAL

}

MIMO-CA-ParametersPerBoBCPerTM-v1430 ::= SEQUENCE {

csi-ReportingNP-r14 ENUMERATED {different} OPTIONAL,

csi-ReportingAdvanced-r14 ENUMERATED {different} OPTIONAL

}

MIMO-CA-ParametersPerBoBCPerTM-v1470 ::= SEQUENCE {

csi-ReportingAdvancedMaxPorts-r14 ENUMERATED {n8, n12, n16, n20, n24, n28} OPTIONAL

}

MIMO-CA-ParametersPerBoBCPerTM-r15 ::= SEQUENCE {

nonPrecoded-r13 MIMO-NonPrecodedCapabilities-r13 OPTIONAL,

beamformed-r13 MIMO-BeamformedCapabilityList-r13 OPTIONAL,

dmrs-Enhancements-r13 ENUMERATED {different} OPTIONAL,

csi-ReportingNP-r14 ENUMERATED {different} OPTIONAL,

csi-ReportingAdvanced-r14 ENUMERATED {different} OPTIONAL

}

MIMO-NonPrecodedCapabilities-r13 ::= SEQUENCE {

config1-r13 ENUMERATED {supported} OPTIONAL,

config2-r13 ENUMERATED {supported} OPTIONAL,

config3-r13 ENUMERATED {supported} OPTIONAL,

config4-r13 ENUMERATED {supported} OPTIONAL

}

MIMO-UE-BeamformedCapabilities-r13 ::= SEQUENCE {

altCodebook-r13 ENUMERATED {supported} OPTIONAL,

mimo-BeamformedCapabilities-r13 MIMO-BeamformedCapabilityList-r13

}

MIMO-BeamformedCapabilityList-r13 ::= SEQUENCE (SIZE (1..maxCSI-Proc-r11)) OF MIMO-BeamformedCapabilities-r13

MIMO-BeamformedCapabilities-r13 ::= SEQUENCE {

k-Max-r13 INTEGER (1..8),

n-MaxList-r13 BIT STRING (SIZE (1..7)) OPTIONAL

}

MIMO-WeightedLayersCapabilities-r13 ::= SEQUENCE {

relWeightTwoLayers-r13 ENUMERATED {v1, v1dot25, v1dot5, v1dot75, v2, v2dot5, v3, v4},

relWeightFourLayers-r13 ENUMERATED {v1, v1dot25, v1dot5, v1dot75, v2, v2dot5, v3, v4} OPTIONAL,

relWeightEightLayers-r13 ENUMERATED {v1, v1dot25, v1dot5, v1dot75, v2, v2dot5, v3, v4} OPTIONAL,

totalWeightedLayers-r13 INTEGER (2..128)

}

NonContiguousUL-RA-WithinCC-List-r10 ::= SEQUENCE (SIZE (1..maxBands)) OF NonContiguousUL-RA-WithinCC-r10

NonContiguousUL-RA-WithinCC-r10 ::= SEQUENCE {

nonContiguousUL-RA-WithinCC-Info-r10 ENUMERATED {supported} OPTIONAL

}

RF-Parameters ::= SEQUENCE {

supportedBandListEUTRA SupportedBandListEUTRA

}

RF-Parameters-v9e0 ::= SEQUENCE {

supportedBandListEUTRA-v9e0 SupportedBandListEUTRA-v9e0 OPTIONAL

}

RF-Parameters-v1020 ::= SEQUENCE {

supportedBandCombination-r10 SupportedBandCombination-r10

}

RF-Parameters-v1060 ::= SEQUENCE {

supportedBandCombinationExt-r10 SupportedBandCombinationExt-r10

}

RF-Parameters-v1090 ::= SEQUENCE {

supportedBandCombination-v1090 SupportedBandCombination-v1090 OPTIONAL

}

RF-Parameters-v10f0 ::= SEQUENCE {

modifiedMPR-Behavior-r10 BIT STRING (SIZE (32)) OPTIONAL

}

RF-Parameters-v10i0 ::= SEQUENCE {

supportedBandCombination-v10i0 SupportedBandCombination-v10i0 OPTIONAL

}

RF-Parameters-v10j0 ::= SEQUENCE {

multiNS-Pmax-r10 ENUMERATED {supported} OPTIONAL

}

RF-Parameters-v1130 ::= SEQUENCE {

supportedBandCombination-v1130 SupportedBandCombination-v1130 OPTIONAL

}

RF-Parameters-v1180 ::= SEQUENCE {

freqBandRetrieval-r11 ENUMERATED {supported} OPTIONAL,

requestedBands-r11 SEQUENCE (SIZE (1.. maxBands)) OF FreqBandIndicator-r11 OPTIONAL,

supportedBandCombinationAdd-r11 SupportedBandCombinationAdd-r11 OPTIONAL

}

RF-Parameters-v11d0 ::= SEQUENCE {

supportedBandCombinationAdd-v11d0 SupportedBandCombinationAdd-v11d0 OPTIONAL

}

RF-Parameters-v1250 ::= SEQUENCE {

supportedBandListEUTRA-v1250 SupportedBandListEUTRA-v1250 OPTIONAL,

supportedBandCombination-v1250 SupportedBandCombination-v1250 OPTIONAL,

supportedBandCombinationAdd-v1250 SupportedBandCombinationAdd-v1250 OPTIONAL,

freqBandPriorityAdjustment-r12 ENUMERATED {supported} OPTIONAL

}

RF-Parameters-v1270 ::= SEQUENCE {

supportedBandCombination-v1270 SupportedBandCombination-v1270 OPTIONAL,

supportedBandCombinationAdd-v1270 SupportedBandCombinationAdd-v1270 OPTIONAL

}

RF-Parameters-v1310 ::= SEQUENCE {

eNB-RequestedParameters-r13 SEQUENCE {

reducedIntNonContCombRequested-r13 ENUMERATED {true} OPTIONAL,

requestedCCsDL-r13 INTEGER (2..32) OPTIONAL,

requestedCCsUL-r13 INTEGER (2..32) OPTIONAL,

skipFallbackCombRequested-r13 ENUMERATED {true} OPTIONAL

} OPTIONAL,

maximumCCsRetrieval-r13 ENUMERATED {supported} OPTIONAL,

skipFallbackCombinations-r13 ENUMERATED {supported} OPTIONAL,

reducedIntNonContComb-r13 ENUMERATED {supported} OPTIONAL,

supportedBandListEUTRA-v1310 SupportedBandListEUTRA-v1310 OPTIONAL,

supportedBandCombinationReduced-r13 SupportedBandCombinationReduced-r13 OPTIONAL

}

RF-Parameters-v1320 ::= SEQUENCE {

supportedBandListEUTRA-v1320 SupportedBandListEUTRA-v1320 OPTIONAL,

supportedBandCombination-v1320 SupportedBandCombination-v1320 OPTIONAL,

supportedBandCombinationAdd-v1320 SupportedBandCombinationAdd-v1320 OPTIONAL,

supportedBandCombinationReduced-v1320 SupportedBandCombinationReduced-v1320 OPTIONAL

}

RF-Parameters-v1380 ::= SEQUENCE {

supportedBandCombination-v1380 SupportedBandCombination-v1380 OPTIONAL,

supportedBandCombinationAdd-v1380 SupportedBandCombinationAdd-v1380 OPTIONAL,

supportedBandCombinationReduced-v1380 SupportedBandCombinationReduced-v1380 OPTIONAL

}

RF-Parameters-v1390 ::= SEQUENCE {

supportedBandCombination-v1390 SupportedBandCombination-v1390 OPTIONAL,

supportedBandCombinationAdd-v1390 SupportedBandCombinationAdd-v1390 OPTIONAL,

supportedBandCombinationReduced-v1390 SupportedBandCombinationReduced-v1390 OPTIONAL

}

RF-Parameters-v12b0 ::= SEQUENCE {

maxLayersMIMO-Indication-r12 ENUMERATED {supported} OPTIONAL

}

RF-Parameters-v1430 ::= SEQUENCE {

supportedBandCombination-v1430 SupportedBandCombination-v1430 OPTIONAL,

supportedBandCombinationAdd-v1430 SupportedBandCombinationAdd-v1430 OPTIONAL,

supportedBandCombinationReduced-v1430 SupportedBandCombinationReduced-v1430 OPTIONAL,

eNB-RequestedParameters-v1430 SEQUENCE {

requestedDiffFallbackCombList-r14 BandCombinationList-r14

} OPTIONAL,

diffFallbackCombReport-r14 ENUMERATED {supported} OPTIONAL

}

RF-Parameters-v1450 ::= SEQUENCE {

supportedBandCombination-v1450 SupportedBandCombination-v1450 OPTIONAL,

supportedBandCombinationAdd-v1450 SupportedBandCombinationAdd-v1450 OPTIONAL,

supportedBandCombinationReduced-v1450 SupportedBandCombinationReduced-v1450 OPTIONAL

}

RF-Parameters-v1470 ::= SEQUENCE {

supportedBandCombination-v1470 SupportedBandCombination-v1470 OPTIONAL,

supportedBandCombinationAdd-v1470 SupportedBandCombinationAdd-v1470 OPTIONAL,

supportedBandCombinationReduced-v1470 SupportedBandCombinationReduced-v1470 OPTIONAL

}

RF-Parameters-v14b0 ::= SEQUENCE {

supportedBandCombination-v14b0 SupportedBandCombination-v14b0 OPTIONAL,

supportedBandCombinationAdd-v14b0 SupportedBandCombinationAdd-v14b0 OPTIONAL,

supportedBandCombinationReduced-v14b0 SupportedBandCombinationReduced-v14b0 OPTIONAL

}

RF-Parameters-v1530 ::= SEQUENCE {

sTTI-SPT-Supported-r15 ENUMERATED {supported} OPTIONAL,

supportedBandCombination-v1530 SupportedBandCombination-v1530 OPTIONAL,

supportedBandCombinationAdd-v1530 SupportedBandCombinationAdd-v1530 OPTIONAL,

supportedBandCombinationReduced-v1530 SupportedBandCombinationReduced-v1530 OPTIONAL,

powerClass-14dBm-r15 ENUMERATED {supported} OPTIONAL

}

RF-Parameters-v1570 ::= SEQUENCE {

dl-1024QAM-ScalingFactor-r15 ENUMERATED {v1, v1dot2, v1dot25},

dl-1024QAM-TotalWeightedLayers-r15 INTEGER (0..10)

}

SkipSubframeProcessing-r15 ::= SEQUENCE {

skipProcessingDL-Slot-r15 INTEGER (0..3) OPTIONAL,

skipProcessingDL-SubSlot-r15 INTEGER (0..3) OPTIONAL,

skipProcessingUL-Slot-r15 INTEGER (0..3) OPTIONAL,

skipProcessingUL-SubSlot-r15 INTEGER (0..3) OPTIONAL

}

SPT-Parameters-r15 ::= SEQUENCE {

frameStructureType-SPT-r15 BIT STRING (SIZE (3)) OPTIONAL,

maxNumberCCs-SPT-r15 INTEGER (1..32) OPTIONAL

}

STTI-SPT-BandParameters-r15 ::= SEQUENCE {

dl-1024QAM-Slot-r15 ENUMERATED {supported} OPTIONAL,

dl-1024QAM-SubslotTA-1-r15 ENUMERATED {supported} OPTIONAL,

dl-1024QAM-SubslotTA-2-r15 ENUMERATED {supported} OPTIONAL,

simultaneousTx-differentTx-duration-r15 ENUMERATED {supported} OPTIONAL,

sTTI-CA-MIMO-ParametersDL-r15 CA-MIMO-ParametersDL-r15 OPTIONAL,

sTTI-CA-MIMO-ParametersUL-r15 CA-MIMO-ParametersUL-r15,

sTTI-FD-MIMO-Coexistence ENUMERATED {supported} OPTIONAL,

sTTI-MIMO-CA-ParametersPerBoBCs-r15 MIMO-CA-ParametersPerBoBC-r13 OPTIONAL,

sTTI-MIMO-CA-ParametersPerBoBCs-v1530 MIMO-CA-ParametersPerBoBC-v1430 OPTIONAL,

sTTI-SupportedCombinations-r15 STTI-SupportedCombinations-r15 OPTIONAL,

sTTI-SupportedCSI-Proc-r15 ENUMERATED {n1, n3, n4} OPTIONAL,

ul-256QAM-Slot-r15 ENUMERATED {supported} OPTIONAL,

ul-256QAM-Subslot-r15 ENUMERATED {supported} OPTIONAL,

...

}

STTI-SupportedCombinations-r15 ::= SEQUENCE {

combination-22-r15 DL-UL-CCs-r15 OPTIONAL,

combination-77-r15 DL-UL-CCs-r15 OPTIONAL,

combination-27-r15 DL-UL-CCs-r15 OPTIONAL,

combination-22-27-r15 SEQUENCE (SIZE (1..2)) OF DL-UL-CCs-r15 OPTIONAL,

combination-77-22-r15 SEQUENCE (SIZE (1..2)) OF DL-UL-CCs-r15 OPTIONAL,

combination-77-27-r15 SEQUENCE (SIZE (1..2)) OF DL-UL-CCs-r15 OPTIONAL

}

DL-UL-CCs-r15 ::= SEQUENCE {

maxNumberDL-CCs-r15 INTEGER (1..32) OPTIONAL,

maxNumberUL-CCs-r15 INTEGER (1..32) OPTIONAL

}

SupportedBandCombination-r10 ::= SEQUENCE (SIZE (1..maxBandComb-r10)) OF BandCombinationParameters-r10

SupportedBandCombinationExt-r10 ::= SEQUENCE (SIZE (1..maxBandComb-r10)) OF BandCombinationParametersExt-r10

SupportedBandCombination-v1090 ::= SEQUENCE (SIZE (1..maxBandComb-r10)) OF BandCombinationParameters-v1090

SupportedBandCombination-v10i0 ::= SEQUENCE (SIZE (1..maxBandComb-r10)) OF BandCombinationParameters-v10i0

SupportedBandCombination-v1130 ::= SEQUENCE (SIZE (1..maxBandComb-r10)) OF BandCombinationParameters-v1130

SupportedBandCombination-v1250 ::= SEQUENCE (SIZE (1..maxBandComb-r10)) OF BandCombinationParameters-v1250

SupportedBandCombination-v1270 ::= SEQUENCE (SIZE (1..maxBandComb-r10)) OF BandCombinationParameters-v1270

SupportedBandCombination-v1320 ::= SEQUENCE (SIZE (1..maxBandComb-r10)) OF BandCombinationParameters-v1320

SupportedBandCombination-v1380 ::= SEQUENCE (SIZE (1..maxBandComb-r10)) OF BandCombinationParameters-v1380

SupportedBandCombination-v1390 ::= SEQUENCE (SIZE (1..maxBandComb-r10)) OF BandCombinationParameters-v1390

SupportedBandCombination-v1430 ::= SEQUENCE (SIZE (1..maxBandComb-r10)) OF BandCombinationParameters-v1430

SupportedBandCombination-v1450 ::= SEQUENCE (SIZE (1..maxBandComb-r10)) OF BandCombinationParameters-v1450

SupportedBandCombination-v1470 ::= SEQUENCE (SIZE (1..maxBandComb-r10)) OF BandCombinationParameters-v1470

SupportedBandCombination-v14b0 ::= SEQUENCE (SIZE (1..maxBandComb-r10)) OF BandCombinationParameters-v14b0

SupportedBandCombination-v1530 ::= SEQUENCE (SIZE (1..maxBandComb-r10)) OF BandCombinationParameters-v1530

SupportedBandCombinationAdd-r11 ::= SEQUENCE (SIZE (1..maxBandComb-r11)) OF BandCombinationParameters-r11

SupportedBandCombinationAdd-v11d0 ::= SEQUENCE (SIZE (1..maxBandComb-r11)) OF BandCombinationParameters-v10i0

SupportedBandCombinationAdd-v1250 ::= SEQUENCE (SIZE (1..maxBandComb-r11)) OF BandCombinationParameters-v1250

SupportedBandCombinationAdd-v1270 ::= SEQUENCE (SIZE (1..maxBandComb-r11)) OF BandCombinationParameters-v1270

SupportedBandCombinationAdd-v1320 ::= SEQUENCE (SIZE (1..maxBandComb-r11)) OF BandCombinationParameters-v1320

SupportedBandCombinationAdd-v1380 ::= SEQUENCE (SIZE (1..maxBandComb-r11)) OF BandCombinationParameters-v1380

SupportedBandCombinationAdd-v1390 ::= SEQUENCE (SIZE (1..maxBandComb-r11)) OF BandCombinationParameters-v1390

SupportedBandCombinationAdd-v1430 ::= SEQUENCE (SIZE (1..maxBandComb-r11)) OF BandCombinationParameters-v1430

SupportedBandCombinationAdd-v1450 ::= SEQUENCE (SIZE (1..maxBandComb-r11)) OF BandCombinationParameters-v1450

SupportedBandCombinationAdd-v1470 ::= SEQUENCE (SIZE (1..maxBandComb-r11)) OF BandCombinationParameters-v1470

SupportedBandCombinationAdd-v14b0 ::= SEQUENCE (SIZE (1..maxBandComb-r11)) OF BandCombinationParameters-v14b0

SupportedBandCombinationAdd-v1530 ::= SEQUENCE (SIZE (1..maxBandComb-r11)) OF BandCombinationParameters-v1530

SupportedBandCombinationReduced-r13 ::= SEQUENCE (SIZE (1..maxBandComb-r13)) OF BandCombinationParameters-r13

SupportedBandCombinationReduced-v1320 ::= SEQUENCE (SIZE (1..maxBandComb-r13)) OF BandCombinationParameters-v1320

SupportedBandCombinationReduced-v1380 ::= SEQUENCE (SIZE (1..maxBandComb-r13)) OF BandCombinationParameters-v1380

SupportedBandCombinationReduced-v1390 ::= SEQUENCE (SIZE (1..maxBandComb-r13)) OF BandCombinationParameters-v1390

SupportedBandCombinationReduced-v1430 ::= SEQUENCE (SIZE (1..maxBandComb-r13)) OF BandCombinationParameters-v1430

SupportedBandCombinationReduced-v1450 ::= SEQUENCE (SIZE (1..maxBandComb-r13)) OF BandCombinationParameters-v1450

SupportedBandCombinationReduced-v1470 ::= SEQUENCE (SIZE (1..maxBandComb-r13)) OF BandCombinationParameters-v1470

SupportedBandCombinationReduced-v14b0 ::= SEQUENCE (SIZE (1..maxBandComb-r13)) OF BandCombinationParameters-v14b0

SupportedBandCombinationReduced-v1530 ::= SEQUENCE (SIZE (1..maxBandComb-r13)) OF BandCombinationParameters-v1530

BandCombinationParameters-r10 ::= SEQUENCE (SIZE (1..maxSimultaneousBands-r10)) OF BandParameters-r10

BandCombinationParametersExt-r10 ::= SEQUENCE {

supportedBandwidthCombinationSet-r10 SupportedBandwidthCombinationSet-r10 OPTIONAL

}

BandCombinationParameters-v1090 ::= SEQUENCE (SIZE (1..maxSimultaneousBands-r10)) OF BandParameters-v1090

BandCombinationParameters-v10i0::= SEQUENCE {

bandParameterList-v10i0 SEQUENCE (SIZE (1..maxSimultaneousBands-r10)) OF

BandParameters-v10i0 OPTIONAL

}

BandCombinationParameters-v1130 ::= SEQUENCE {

multipleTimingAdvance-r11 ENUMERATED {supported} OPTIONAL,

simultaneousRx-Tx-r11 ENUMERATED {supported} OPTIONAL,

bandParameterList-r11 SEQUENCE (SIZE (1..maxSimultaneousBands-r10)) OF BandParameters-v1130 OPTIONAL,

...

}

BandCombinationParameters-r11 ::= SEQUENCE {

bandParameterList-r11 SEQUENCE (SIZE (1..maxSimultaneousBands-r10)) OF

BandParameters-r11,

supportedBandwidthCombinationSet-r11 SupportedBandwidthCombinationSet-r10 OPTIONAL,

multipleTimingAdvance-r11 ENUMERATED {supported} OPTIONAL,

simultaneousRx-Tx-r11 ENUMERATED {supported} OPTIONAL,

bandInfoEUTRA-r11 BandInfoEUTRA,

...

}

BandCombinationParameters-v1250::= SEQUENCE {

dc-Support-r12 SEQUENCE {

asynchronous-r12 ENUMERATED {supported} OPTIONAL,

supportedCellGrouping-r12 CHOICE {

threeEntries-r12 BIT STRING (SIZE(3)),

fourEntries-r12 BIT STRING (SIZE(7)),

fiveEntries-r12 BIT STRING (SIZE(15))

} OPTIONAL

} OPTIONAL,

supportedNAICS-2CRS-AP-r12 BIT STRING (SIZE (1..maxNAICS-Entries-r12)) OPTIONAL,

commSupportedBandsPerBC-r12 BIT STRING (SIZE (1.. maxBands)) OPTIONAL,

...

}

BandCombinationParameters-v1270 ::= SEQUENCE {

bandParameterList-v1270 SEQUENCE (SIZE (1..maxSimultaneousBands-r10)) OF

BandParameters-v1270 OPTIONAL

}

BandCombinationParameters-r13 ::= SEQUENCE {

differentFallbackSupported-r13 ENUMERATED {true} OPTIONAL,

bandParameterList-r13 SEQUENCE (SIZE (1..maxSimultaneousBands-r10)) OF BandParameters-r13,

supportedBandwidthCombinationSet-r13 SupportedBandwidthCombinationSet-r10 OPTIONAL,

multipleTimingAdvance-r13 ENUMERATED {supported} OPTIONAL,

simultaneousRx-Tx-r13 ENUMERATED {supported} OPTIONAL,

bandInfoEUTRA-r13 BandInfoEUTRA,

dc-Support-r13 SEQUENCE {

asynchronous-r13 ENUMERATED {supported} OPTIONAL,

supportedCellGrouping-r13 CHOICE {

threeEntries-r13 BIT STRING (SIZE(3)),

fourEntries-r13 BIT STRING (SIZE(7)),

fiveEntries-r13 BIT STRING (SIZE(15))

} OPTIONAL

} OPTIONAL,

supportedNAICS-2CRS-AP-r13 BIT STRING (SIZE (1..maxNAICS-Entries-r12)) OPTIONAL,

commSupportedBandsPerBC-r13 BIT STRING (SIZE (1.. maxBands)) OPTIONAL

}

BandCombinationParameters-v1320 ::= SEQUENCE {

bandParameterList-v1320 SEQUENCE (SIZE (1..maxSimultaneousBands-r10)) OF

BandParameters-v1320 OPTIONAL,

additionalRx-Tx-PerformanceReq-r13 ENUMERATED {supported} OPTIONAL

}

BandCombinationParameters-v1380 ::= SEQUENCE {

bandParameterList-v1380 SEQUENCE (SIZE (1..maxSimultaneousBands-r10)) OF

BandParameters-v1380 OPTIONAL

}

BandCombinationParameters-v1390 ::= SEQUENCE {

ue-CA-PowerClass-N-r13 ENUMERATED {class2} OPTIONAL

}

BandCombinationParameters-v1430 ::= SEQUENCE {

bandParameterList-v1430 SEQUENCE (SIZE (1..maxSimultaneousBands-r10)) OF

BandParameters-v1430 OPTIONAL,

v2x-SupportedTxBandCombListPerBC-r14 BIT STRING (SIZE (1.. maxBandComb-r13)) OPTIONAL,

v2x-SupportedRxBandCombListPerBC-r14 BIT STRING (SIZE (1.. maxBandComb-r13)) OPTIONAL

}

BandCombinationParameters-v1450 ::= SEQUENCE {

bandParameterList-v1450 SEQUENCE (SIZE (1..maxSimultaneousBands-r10)) OF

BandParameters-v1450 OPTIONAL

}

BandCombinationParameters-v1470 ::= SEQUENCE {

bandParameterList-v1470 SEQUENCE (SIZE (1..maxSimultaneousBands-r10)) OF

BandParameters-v1470 OPTIONAL,

srs-MaxSimultaneousCCs-r14 INTEGER (1..31) OPTIONAL

}

BandCombinationParameters-v14b0 ::= SEQUENCE {

bandParameterList-v14b0 SEQUENCE (SIZE (1..maxSimultaneousBands-r10)) OF

BandParameters-v14b0 OPTIONAL

}

BandCombinationParameters-v1530 ::= SEQUENCE {

bandParameterList-v1530 SEQUENCE (SIZE (1..maxSimultaneousBands-r10)) OF BandParameters-v1530 OPTIONAL,

spt-Parameters-r15 SPT-Parameters-r15 OPTIONAL

}

-- If an additional band combination parameter is defined, which is supported for MR-DC,

-- it shall be defined in the IE CA-ParametersEUTRA in TS 38.331 [82].

SupportedBandwidthCombinationSet-r10 ::= BIT STRING (SIZE (1..maxBandwidthCombSet-r10))

BandParameters-r10 ::= SEQUENCE {

bandEUTRA-r10 FreqBandIndicator,

bandParametersUL-r10 BandParametersUL-r10 OPTIONAL,

bandParametersDL-r10 BandParametersDL-r10 OPTIONAL

}

BandParameters-v1090 ::= SEQUENCE {

bandEUTRA-v1090 FreqBandIndicator-v9e0 OPTIONAL,

...

}

BandParameters-v10i0::= SEQUENCE {

bandParametersDL-v10i0 SEQUENCE (SIZE (1..maxBandwidthClass-r10)) OF CA-MIMO-ParametersDL-v10i0

}

BandParameters-v1130 ::= SEQUENCE {

supportedCSI-Proc-r11 ENUMERATED {n1, n3, n4}

}

BandParameters-r11 ::= SEQUENCE {

bandEUTRA-r11 FreqBandIndicator-r11,

bandParametersUL-r11 BandParametersUL-r10 OPTIONAL,

bandParametersDL-r11 BandParametersDL-r10 OPTIONAL,

supportedCSI-Proc-r11 ENUMERATED {n1, n3, n4} OPTIONAL

}

BandParameters-v1270 ::= SEQUENCE {

bandParametersDL-v1270 SEQUENCE (SIZE (1..maxBandwidthClass-r10)) OF CA-MIMO-ParametersDL-v1270

}

BandParameters-r13 ::= SEQUENCE {

bandEUTRA-r13 FreqBandIndicator-r11,

bandParametersUL-r13 BandParametersUL-r13 OPTIONAL,

bandParametersDL-r13 BandParametersDL-r13 OPTIONAL,

supportedCSI-Proc-r13 ENUMERATED {n1, n3, n4} OPTIONAL

}

BandParameters-v1320 ::= SEQUENCE {

bandParametersDL-v1320 MIMO-CA-ParametersPerBoBC-r13

}

BandParameters-v1380 ::= SEQUENCE {

txAntennaSwitchDL-r13 INTEGER (1..32) OPTIONAL,

txAntennaSwitchUL-r13 INTEGER (1..32) OPTIONAL

}

BandParameters-v1430 ::= SEQUENCE {

bandParametersDL-v1430 MIMO-CA-ParametersPerBoBC-v1430 OPTIONAL,

ul-256QAM-r14 ENUMERATED {supported} OPTIONAL,

ul-256QAM-perCC-InfoList-r14 SEQUENCE (SIZE (2..maxServCell-r13)) OF UL-256QAM-perCC-Info-r14 OPTIONAL,

srs-CapabilityPerBandPairList-r14 SEQUENCE (SIZE (1..maxSimultaneousBands-r10)) OF

SRS-CapabilityPerBandPair-r14 OPTIONAL

}

BandParameters-v1450 ::= SEQUENCE {

must-CapabilityPerBand-r14 MUST-Parameters-r14 OPTIONAL

}

BandParameters-v1470 ::= SEQUENCE {

bandParametersDL-v1470 MIMO-CA-ParametersPerBoBC-v1470 OPTIONAL

}

BandParameters-v14b0 ::= SEQUENCE {

srs-CapabilityPerBandPairList-v14b0 SEQUENCE (SIZE (1..maxSimultaneousBands-r10)) OF SRS-CapabilityPerBandPair-v14b0 OPTIONAL

}

BandParameters-v1530 ::= SEQUENCE {

ue-TxAntennaSelection-SRS-1T4R-r15 ENUMERATED {supported} OPTIONAL,

ue-TxAntennaSelection-SRS-2T4R-2Pairs-r15 ENUMERATED {supported} OPTIONAL,

ue-TxAntennaSelection-SRS-2T4R-3Pairs-r15 ENUMERATED {supported} OPTIONAL,

dl-1024QAM-r15 ENUMERATED {supported} OPTIONAL,

qcl-TypeC-Operation-r15 ENUMERATED {supported} OPTIONAL,

qcl-CRI-BasedCSI-Reporting-r15 ENUMERATED {supported} OPTIONAL,

stti-SPT-BandParameters-r15 STTI-SPT-BandParameters-r15 OPTIONAL

}

V2X-BandParameters-r14 ::= SEQUENCE {

v2x-FreqBandEUTRA-r14 FreqBandIndicator-r11,

bandParametersTxSL-r14 BandParametersTxSL-r14 OPTIONAL,

bandParametersRxSL-r14 BandParametersRxSL-r14 OPTIONAL

}

V2X-BandParameters-v1530 ::= SEQUENCE {

v2x-EnhancedHighReception-r15 ENUMERATED {supported} OPTIONAL

}

BandParametersTxSL-r14 ::= SEQUENCE {

v2x-BandwidthClassTxSL-r14 V2X-BandwidthClassSL-r14,

v2x-eNB-Scheduled-r14 ENUMERATED {supported} OPTIONAL,

v2x-HighPower-r14 ENUMERATED {supported} OPTIONAL

}

BandParametersRxSL-r14 ::= SEQUENCE {

v2x-BandwidthClassRxSL-r14 V2X-BandwidthClassSL-r14,

v2x-HighReception-r14 ENUMERATED {supported} OPTIONAL

}

V2X-BandwidthClassSL-r14 ::= SEQUENCE (SIZE (1..maxBandwidthClass-r10)) OF V2X-BandwidthClass-r14

UL-256QAM-perCC-Info-r14 ::= SEQUENCE {

ul-256QAM-perCC-r14 ENUMERATED {supported} OPTIONAL

}

FeatureSetDL-r15 ::= SEQUENCE {

mimo-CA-ParametersPerBoBC-r15 MIMO-CA-ParametersPerBoBC-r15 OPTIONAL,

featureSetPerCC-ListDL-r15 SEQUENCE (SIZE (1..maxServCell-r13)) OF FeatureSetDL-PerCC-Id-r15

}

FeatureSetDL-v1550 ::= SEQUENCE {

dl-1024QAM-r15 ENUMERATED {supported} OPTIONAL

}

FeatureSetDL-PerCC-r15 ::= SEQUENCE {

fourLayerTM3-TM4-r15 ENUMERATED {supported} OPTIONAL,

supportedMIMO-CapabilityDL-MRDC-r15 MIMO-CapabilityDL-r10 OPTIONAL,

supportedCSI-Proc-r15 ENUMERATED {n1, n3, n4} OPTIONAL

}

FeatureSetUL-r15 ::= SEQUENCE {

featureSetPerCC-ListUL-r15 SEQUENCE (SIZE(1..maxServCell-r13)) OF FeatureSetUL-PerCC-Id-r15

}

FeatureSetUL-PerCC-r15 ::= SEQUENCE {

supportedMIMO-CapabilityUL-r15 MIMO-CapabilityUL-r10 OPTIONAL,

ul-256QAM-r15 ENUMERATED {supported} OPTIONAL

}

FeatureSetDL-PerCC-Id-r15 ::= INTEGER (0..maxPerCC-FeatureSets-r15)

FeatureSetUL-PerCC-Id-r15 ::= INTEGER (0..maxPerCC-FeatureSets-r15)

BandParametersUL-r10 ::= SEQUENCE (SIZE (1..maxBandwidthClass-r10)) OF CA-MIMO-ParametersUL-r10

BandParametersUL-r13 ::= CA-MIMO-ParametersUL-r10

CA-MIMO-ParametersUL-r10 ::= SEQUENCE {

ca-BandwidthClassUL-r10 CA-BandwidthClass-r10,

supportedMIMO-CapabilityUL-r10 MIMO-CapabilityUL-r10 OPTIONAL

}

CA-MIMO-ParametersUL-r15 ::= SEQUENCE {

supportedMIMO-CapabilityUL-r15 MIMO-CapabilityUL-r10 OPTIONAL

}

BandParametersDL-r10 ::= SEQUENCE (SIZE (1..maxBandwidthClass-r10)) OF CA-MIMO-ParametersDL-r10

BandParametersDL-r13 ::= CA-MIMO-ParametersDL-r13

CA-MIMO-ParametersDL-r10 ::= SEQUENCE {

ca-BandwidthClassDL-r10 CA-BandwidthClass-r10,

supportedMIMO-CapabilityDL-r10 MIMO-CapabilityDL-r10 OPTIONAL

}

CA-MIMO-ParametersDL-v10i0 ::= SEQUENCE {

fourLayerTM3-TM4-r10 ENUMERATED {supported} OPTIONAL

}

CA-MIMO-ParametersDL-v1270 ::= SEQUENCE {

intraBandContiguousCC-InfoList-r12 SEQUENCE (SIZE (1..maxServCell-r10)) OF IntraBandContiguousCC-Info-r12

}

CA-MIMO-ParametersDL-r13 ::= SEQUENCE {

ca-BandwidthClassDL-r13 CA-BandwidthClass-r10,

supportedMIMO-CapabilityDL-r13 MIMO-CapabilityDL-r10 OPTIONAL,

fourLayerTM3-TM4-r13 ENUMERATED {supported} OPTIONAL,

intraBandContiguousCC-InfoList-r13 SEQUENCE (SIZE (1..maxServCell-r13)) OF IntraBandContiguousCC-Info-r12

}

CA-MIMO-ParametersDL-r15 ::= SEQUENCE {

supportedMIMO-CapabilityDL-r15 MIMO-CapabilityDL-r10 OPTIONAL,

fourLayerTM3-TM4-r15 ENUMERATED {supported} OPTIONAL,

intraBandContiguousCC-InfoList-r15 SEQUENCE (SIZE (1..maxServCell-r13)) OF

IntraBandContiguousCC-Info-r12 OPTIONAL

}

IntraBandContiguousCC-Info-r12 ::= SEQUENCE {

fourLayerTM3-TM4-perCC-r12 ENUMERATED {supported} OPTIONAL,

supportedMIMO-CapabilityDL-r12 MIMO-CapabilityDL-r10 OPTIONAL,

supportedCSI-Proc-r12 ENUMERATED {n1, n3, n4} OPTIONAL

}

CA-BandwidthClass-r10 ::= ENUMERATED {a, b, c, d, e, f, ...}

V2X-BandwidthClass-r14 ::= ENUMERATED {a, b, c, d, e, f, ..., c1-v1530}

MIMO-CapabilityUL-r10 ::= ENUMERATED {twoLayers, fourLayers}

MIMO-CapabilityDL-r10 ::= ENUMERATED {twoLayers, fourLayers, eightLayers}

MUST-Parameters-r14 ::= SEQUENCE {

must-TM234-UpTo2Tx-r14 ENUMERATED {supported} OPTIONAL,

must-TM89-UpToOneInterferingLayer-r14 ENUMERATED {supported} OPTIONAL,

must-TM10-UpToOneInterferingLayer-r14 ENUMERATED {supported} OPTIONAL,

must-TM89-UpToThreeInterferingLayers-r14 ENUMERATED {supported} OPTIONAL,

must-TM10-UpToThreeInterferingLayers-r14 ENUMERATED {supported} OPTIONAL

}

SupportedBandListEUTRA ::= SEQUENCE (SIZE (1..maxBands)) OF SupportedBandEUTRA

SupportedBandListEUTRA-v9e0::= SEQUENCE (SIZE (1..maxBands)) OF SupportedBandEUTRA-v9e0

SupportedBandListEUTRA-v1250 ::= SEQUENCE (SIZE (1..maxBands)) OF SupportedBandEUTRA-v1250

SupportedBandListEUTRA-v1310 ::= SEQUENCE (SIZE (1..maxBands)) OF SupportedBandEUTRA-v1310

SupportedBandListEUTRA-v1320 ::= SEQUENCE (SIZE (1..maxBands)) OF SupportedBandEUTRA-v1320

SupportedBandEUTRA ::= SEQUENCE {

bandEUTRA FreqBandIndicator,

halfDuplex BOOLEAN

}

SupportedBandEUTRA-v9e0 ::= SEQUENCE {

bandEUTRA-v9e0 FreqBandIndicator-v9e0 OPTIONAL

}

SupportedBandEUTRA-v1250 ::= SEQUENCE {

dl-256QAM-r12 ENUMERATED {supported} OPTIONAL,

ul-64QAM-r12 ENUMERATED {supported} OPTIONAL

}

SupportedBandEUTRA-v1310 ::= SEQUENCE {

ue-PowerClass-5-r13 ENUMERATED {supported} OPTIONAL

}

SupportedBandEUTRA-v1320 ::= SEQUENCE {

intraFreq-CE-NeedForGaps-r13 ENUMERATED {supported} OPTIONAL,

ue-PowerClass-N-r13 ENUMERATED {class1, class2, class4} OPTIONAL

}

MeasParameters ::= SEQUENCE {

bandListEUTRA BandListEUTRA

}

MeasParameters-v1020 ::= SEQUENCE {

bandCombinationListEUTRA-r10 BandCombinationListEUTRA-r10

}

MeasParameters-v1130 ::= SEQUENCE {

rsrqMeasWideband-r11 ENUMERATED {supported} OPTIONAL

}

MeasParameters-v11a0 ::= SEQUENCE {

benefitsFromInterruption-r11 ENUMERATED {true} OPTIONAL

}

MeasParameters-v1250 ::= SEQUENCE {

timerT312-r12 ENUMERATED {supported} OPTIONAL,

alternativeTimeToTrigger-r12 ENUMERATED {supported} OPTIONAL,

incMonEUTRA-r12 ENUMERATED {supported} OPTIONAL,

incMonUTRA-r12 ENUMERATED {supported} OPTIONAL,

extendedMaxMeasId-r12 ENUMERATED {supported} OPTIONAL,

extendedRSRQ-LowerRange-r12 ENUMERATED {supported} OPTIONAL,

rsrq-OnAllSymbols-r12 ENUMERATED {supported} OPTIONAL,

crs-DiscoverySignalsMeas-r12 ENUMERATED {supported} OPTIONAL,

csi-RS-DiscoverySignalsMeas-r12 ENUMERATED {supported} OPTIONAL

}

MeasParameters-v1310 ::= SEQUENCE {

rs-SINR-Meas-r13 ENUMERATED {supported} OPTIONAL,

whiteCellList-r13 ENUMERATED {supported} OPTIONAL,

extendedMaxObjectId-r13 ENUMERATED {supported} OPTIONAL,

ul-PDCP-Delay-r13 ENUMERATED {supported} OPTIONAL,

extendedFreqPriorities-r13 ENUMERATED {supported} OPTIONAL,

multiBandInfoReport-r13 ENUMERATED {supported} OPTIONAL,

rssi-AndChannelOccupancyReporting-r13 ENUMERATED {supported} OPTIONAL

}

MeasParameters-v1430 ::= SEQUENCE {

ceMeasurements-r14 ENUMERATED {supported} OPTIONAL,

ncsg-r14 ENUMERATED {supported} OPTIONAL,

shortMeasurementGap-r14 ENUMERATED {supported} OPTIONAL,

perServingCellMeasurementGap-r14 ENUMERATED {supported} OPTIONAL,

nonUniformGap-r14 ENUMERATED {supported} OPTIONAL

}

MeasParameters-v1520 ::= SEQUENCE {

measGapPatterns-r15 BIT STRING (SIZE (8)) OPTIONAL

}

MeasParameters-v1530 ::= SEQUENCE {

qoe-MeasReport-r15 ENUMERATED {supported} OPTIONAL,

qoe-MTSI-MeasReport-r15 ENUMERATED {supported} OPTIONAL,

ca-IdleModeMeasurements-r15 ENUMERATED {supported} OPTIONAL,

ca-IdleModeValidityArea-r15 ENUMERATED {supported} OPTIONAL,

heightMeas-r15 ENUMERATED {supported} OPTIONAL,

multipleCellsMeasExtension-r15 ENUMERATED {supported} OPTIONAL

}

MeasParameters-v16xy ::= SEQUENCE {

altFreqPriority-r16 ENUMERATED {supported} OPTIONAL

}

BandListEUTRA ::= SEQUENCE (SIZE (1..maxBands)) OF BandInfoEUTRA

BandCombinationListEUTRA-r10 ::= SEQUENCE (SIZE (1..maxBandComb-r10)) OF BandInfoEUTRA

BandInfoEUTRA ::= SEQUENCE {

interFreqBandList InterFreqBandList,

interRAT-BandList InterRAT-BandList OPTIONAL

}

InterFreqBandList ::= SEQUENCE (SIZE (1..maxBands)) OF InterFreqBandInfo

InterFreqBandInfo ::= SEQUENCE {

interFreqNeedForGaps BOOLEAN

}

InterRAT-BandList ::= SEQUENCE (SIZE (1..maxBands)) OF InterRAT-BandInfo

InterRAT-BandInfo ::= SEQUENCE {

interRAT-NeedForGaps BOOLEAN

}

IRAT-ParametersNR-r15 ::= SEQUENCE {

en-DC-r15 ENUMERATED {supported} OPTIONAL,

eventB2-r15 ENUMERATED {supported} OPTIONAL,

supportedBandListEN-DC-r15 SupportedBandListNR-r15 OPTIONAL

}

IRAT-ParametersNR-v1540 ::= SEQUENCE {

eutra-5GC-HO-ToNR-FDD-FR1-r15 ENUMERATED {supported} OPTIONAL,

eutra-5GC-HO-ToNR-TDD-FR1-r15 ENUMERATED {supported} OPTIONAL,

eutra-5GC-HO-ToNR-FDD-FR2-r15 ENUMERATED {supported} OPTIONAL,

eutra-5GC-HO-ToNR-TDD-FR2-r15 ENUMERATED {supported} OPTIONAL,

eutra-EPC-HO-ToNR-FDD-FR1-r15 ENUMERATED {supported} OPTIONAL,

eutra-EPC-HO-ToNR-TDD-FR1-r15 ENUMERATED {supported} OPTIONAL,

eutra-EPC-HO-ToNR-FDD-FR2-r15 ENUMERATED {supported} OPTIONAL,

eutra-EPC-HO-ToNR-TDD-FR2-r15 ENUMERATED {supported} OPTIONAL,

ims-VoiceOverNR-FR1-r15 ENUMERATED {supported} OPTIONAL,

ims-VoiceOverNR-FR2-r15 ENUMERATED {supported} OPTIONAL,

sa-NR-r15 ENUMERATED {supported} OPTIONAL,

supportedBandListNR-SA-r15 SupportedBandListNR-r15 OPTIONAL

}

IRAT-ParametersNR-v1560 ::= SEQUENCE {

ng-EN-DC-r15 ENUMERATED {supported} OPTIONAL

}

IRAT-ParametersNR-v1570 ::= SEQUENCE {

ss-SINR-Meas-NR-FR1-r15 ENUMERATED {supported} OPTIONAL,

ss-SINR-Meas-NR-FR2-r15 ENUMERATED {supported} OPTIONAL

}

EUTRA-5GC-Parameters-r15 ::= SEQUENCE {

eutra-5GC-r15 ENUMERATED {supported} OPTIONAL,

eutra-EPC-HO-EUTRA-5GC-r15 ENUMERATED {supported} OPTIONAL,

ho-EUTRA-5GC-FDD-TDD-r15 ENUMERATED {supported} OPTIONAL,

ho-InterfreqEUTRA-5GC-r15 ENUMERATED {supported} OPTIONAL,

ims-VoiceOverMCG-BearerEUTRA-5GC-r15 ENUMERATED {supported} OPTIONAL,

inactiveState-r15 ENUMERATED {supported} OPTIONAL,

reflectiveQoS-r15 ENUMERATED {supported} OPTIONAL

}

PDCP-ParametersNR-r15 ::= SEQUENCE {

rohc-Profiles-r15 ROHC-ProfileSupportList-r15,

rohc-ContextMaxSessions-r15 ENUMERATED {

cs2, cs4, cs8, cs12, cs16, cs24, cs32,

cs48, cs64, cs128, cs256, cs512, cs1024,

cs16384, spare2, spare1} DEFAULT cs16,

rohc-ProfilesUL-Only-r15 SEQUENCE {

profile0x0006-r15 BOOLEAN

},

rohc-ContextContinue-r15 ENUMERATED {supported} OPTIONAL,

outOfOrderDelivery-r15 ENUMERATED {supported} OPTIONAL,

sn-SizeLo-r15 ENUMERATED {supported} OPTIONAL,

ims-VoiceOverNR-PDCP-MCG-Bearer-r15 ENUMERATED {supported} OPTIONAL,

ims-VoiceOverNR-PDCP-SCG-Bearer-r15 ENUMERATED {supported} OPTIONAL

}

PDCP-ParametersNR-v1560 ::= SEQUENCE {

ims-VoNR-PDCP-SCG-NGENDC-r15 ENUMERATED {supported} OPTIONAL

}

ROHC-ProfileSupportList-r15 ::= SEQUENCE {

profile0x0001-r15 BOOLEAN,

profile0x0002-r15 BOOLEAN,

profile0x0003-r15 BOOLEAN,

profile0x0004-r15 BOOLEAN,

profile0x0006-r15 BOOLEAN,

profile0x0101-r15 BOOLEAN,

profile0x0102-r15 BOOLEAN,

profile0x0103-r15 BOOLEAN,

profile0x0104-r15 BOOLEAN

}

SupportedBandListNR-r15 ::= SEQUENCE (SIZE (1..maxBandsNR-r15)) OF SupportedBandNR-r15

SupportedBandNR-r15 ::= SEQUENCE {

bandNR-r15 FreqBandIndicatorNR-r15

}

IRAT-ParametersUTRA-FDD ::= SEQUENCE {

supportedBandListUTRA-FDD SupportedBandListUTRA-FDD

}

IRAT-ParametersUTRA-v920 ::= SEQUENCE {

e-RedirectionUTRA-r9 ENUMERATED {supported}

}

IRAT-ParametersUTRA-v9c0 ::= SEQUENCE {

voiceOverPS-HS-UTRA-FDD-r9 ENUMERATED {supported} OPTIONAL,

voiceOverPS-HS-UTRA-TDD128-r9 ENUMERATED {supported} OPTIONAL,

srvcc-FromUTRA-FDD-ToUTRA-FDD-r9 ENUMERATED {supported} OPTIONAL,

srvcc-FromUTRA-FDD-ToGERAN-r9 ENUMERATED {supported} OPTIONAL,

srvcc-FromUTRA-TDD128-ToUTRA-TDD128-r9 ENUMERATED {supported} OPTIONAL,

srvcc-FromUTRA-TDD128-ToGERAN-r9 ENUMERATED {supported} OPTIONAL

}

IRAT-ParametersUTRA-v9h0 ::= SEQUENCE {

mfbi-UTRA-r9 ENUMERATED {supported}

}

SupportedBandListUTRA-FDD ::= SEQUENCE (SIZE (1..maxBands)) OF SupportedBandUTRA-FDD

SupportedBandUTRA-FDD ::= ENUMERATED {

bandI, bandII, bandIII, bandIV, bandV, bandVI,

bandVII, bandVIII, bandIX, bandX, bandXI,

bandXII, bandXIII, bandXIV, bandXV, bandXVI, ...,

bandXVII-8a0, bandXVIII-8a0, bandXIX-8a0, bandXX-8a0,

bandXXI-8a0, bandXXII-8a0, bandXXIII-8a0, bandXXIV-8a0,

bandXXV-8a0, bandXXVI-8a0, bandXXVII-8a0, bandXXVIII-8a0,

bandXXIX-8a0, bandXXX-8a0, bandXXXI-8a0, bandXXXII-8a0}

IRAT-ParametersUTRA-TDD128 ::= SEQUENCE {

supportedBandListUTRA-TDD128 SupportedBandListUTRA-TDD128

}

SupportedBandListUTRA-TDD128 ::= SEQUENCE (SIZE (1..maxBands)) OF SupportedBandUTRA-TDD128

SupportedBandUTRA-TDD128 ::= ENUMERATED {

a, b, c, d, e, f, g, h, i, j, k, l, m, n,

o, p, ...}

IRAT-ParametersUTRA-TDD384 ::= SEQUENCE {

supportedBandListUTRA-TDD384 SupportedBandListUTRA-TDD384

}

SupportedBandListUTRA-TDD384 ::= SEQUENCE (SIZE (1..maxBands)) OF SupportedBandUTRA-TDD384

SupportedBandUTRA-TDD384 ::= ENUMERATED {

a, b, c, d, e, f, g, h, i, j, k, l, m, n,

o, p, ...}

IRAT-ParametersUTRA-TDD768 ::= SEQUENCE {

supportedBandListUTRA-TDD768 SupportedBandListUTRA-TDD768

}

SupportedBandListUTRA-TDD768 ::= SEQUENCE (SIZE (1..maxBands)) OF SupportedBandUTRA-TDD768

SupportedBandUTRA-TDD768 ::= ENUMERATED {

a, b, c, d, e, f, g, h, i, j, k, l, m, n,

o, p, ...}

IRAT-ParametersUTRA-TDD-v1020 ::= SEQUENCE {

e-RedirectionUTRA-TDD-r10 ENUMERATED {supported}

}

IRAT-ParametersGERAN ::= SEQUENCE {

supportedBandListGERAN SupportedBandListGERAN,

interRAT-PS-HO-ToGERAN BOOLEAN

}

IRAT-ParametersGERAN-v920 ::= SEQUENCE {

dtm-r9 ENUMERATED {supported} OPTIONAL,

e-RedirectionGERAN-r9 ENUMERATED {supported} OPTIONAL

}

SupportedBandListGERAN ::= SEQUENCE (SIZE (1..maxBands)) OF SupportedBandGERAN

SupportedBandGERAN ::= ENUMERATED {

gsm450, gsm480, gsm710, gsm750, gsm810, gsm850,

gsm900P, gsm900E, gsm900R, gsm1800, gsm1900,

spare5, spare4, spare3, spare2, spare1, ...}

IRAT-ParametersCDMA2000-HRPD ::= SEQUENCE {

supportedBandListHRPD SupportedBandListHRPD,

tx-ConfigHRPD ENUMERATED {single, dual},

rx-ConfigHRPD ENUMERATED {single, dual}

}

SupportedBandListHRPD ::= SEQUENCE (SIZE (1..maxCDMA-BandClass)) OF BandclassCDMA2000

IRAT-ParametersCDMA2000-1XRTT ::= SEQUENCE {

supportedBandList1XRTT SupportedBandList1XRTT,

tx-Config1XRTT ENUMERATED {single, dual},

rx-Config1XRTT ENUMERATED {single, dual}

}

IRAT-ParametersCDMA2000-1XRTT-v920 ::= SEQUENCE {

e-CSFB-1XRTT-r9 ENUMERATED {supported},

e-CSFB-ConcPS-Mob1XRTT-r9 ENUMERATED {supported} OPTIONAL

}

IRAT-ParametersCDMA2000-1XRTT-v1020 ::= SEQUENCE {

e-CSFB-dual-1XRTT-r10 ENUMERATED {supported}

}

IRAT-ParametersCDMA2000-v1130 ::= SEQUENCE {

cdma2000-NW-Sharing-r11 ENUMERATED {supported} OPTIONAL

}

SupportedBandList1XRTT ::= SEQUENCE (SIZE (1..maxCDMA-BandClass)) OF BandclassCDMA2000

IRAT-ParametersWLAN-r13 ::= SEQUENCE {

supportedBandListWLAN-r13 SEQUENCE (SIZE (1..maxWLAN-Bands-r13)) OF WLAN-BandIndicator-r13 OPTIONAL

}

CSG-ProximityIndicationParameters-r9 ::= SEQUENCE {

intraFreqProximityIndication-r9 ENUMERATED {supported} OPTIONAL,

interFreqProximityIndication-r9 ENUMERATED {supported} OPTIONAL,

utran-ProximityIndication-r9 ENUMERATED {supported} OPTIONAL

}

NeighCellSI-AcquisitionParameters-r9 ::= SEQUENCE {

intraFreqSI-AcquisitionForHO-r9 ENUMERATED {supported} OPTIONAL,

interFreqSI-AcquisitionForHO-r9 ENUMERATED {supported} OPTIONAL,

utran-SI-AcquisitionForHO-r9 ENUMERATED {supported} OPTIONAL

}

NeighCellSI-AcquisitionParameters-v1530 ::= SEQUENCE {

reportCGI-NR-EN-DC-r15 ENUMERATED {supported} OPTIONAL,

reportCGI-NR-NoEN-DC-r15 ENUMERATED {supported} OPTIONAL

}

NeighCellSI-AcquisitionParameters-v1550 ::= SEQUENCE {

eutra-CGI-Reporting-ENDC-r15 ENUMERATED {supported} OPTIONAL,

utra-GERAN-CGI-Reporting-ENDC-r15 ENUMERATED {supported} OPTIONAL

}

SON-Parameters-r9 ::= SEQUENCE {

rach-Report-r9 ENUMERATED {supported} OPTIONAL

}

UE-BasedNetwPerfMeasParameters-r10 ::= SEQUENCE {

loggedMeasurementsIdle-r10 ENUMERATED {supported} OPTIONAL,

standaloneGNSS-Location-r10 ENUMERATED {supported} OPTIONAL

}

UE-BasedNetwPerfMeasParameters-v1250 ::= SEQUENCE {

loggedMBSFNMeasurements-r12 ENUMERATED {supported}

}

UE-BasedNetwPerfMeasParameters-v1430 ::= SEQUENCE {

locationReport-r14 ENUMERATED {supported} OPTIONAL

}

UE-BasedNetwPerfMeasParameters-v1530 ::= SEQUENCE {

loggedMeasBT-r15 ENUMERATED {supported} OPTIONAL,

loggedMeasWLAN-r15 ENUMERATED {supported} OPTIONAL,

immMeasBT-r15 ENUMERATED {supported} OPTIONAL,

immMeasWLAN-r15 ENUMERATED {supported} OPTIONAL

}

OTDOA-PositioningCapabilities-r10 ::= SEQUENCE {

otdoa-UE-Assisted-r10 ENUMERATED {supported},

interFreqRSTD-Measurement-r10 ENUMERATED {supported} OPTIONAL

}

Other-Parameters-r11 ::= SEQUENCE {

inDeviceCoexInd-r11 ENUMERATED {supported} OPTIONAL,

powerPrefInd-r11 ENUMERATED {supported} OPTIONAL,

ue-Rx-TxTimeDiffMeasurements-r11 ENUMERATED {supported} OPTIONAL

}

Other-Parameters-v11d0 ::= SEQUENCE {

inDeviceCoexInd-UL-CA-r11 ENUMERATED {supported} OPTIONAL

}

Other-Parameters-v1360 ::= SEQUENCE {

inDeviceCoexInd-HardwareSharingInd-r13 ENUMERATED {supported} OPTIONAL

}

Other-Parameters-v1430 ::= SEQUENCE {

bwPrefInd-r14 ENUMERATED {supported} OPTIONAL,

rlm-ReportSupport-r14 ENUMERATED {supported} OPTIONAL

}

OtherParameters-v1450 ::= SEQUENCE {

overheatingInd-r14 ENUMERATED {supported} OPTIONAL

}

Other-Parameters-v1460 ::= SEQUENCE {

nonCSG-SI-Reporting-r14 ENUMERATED {supported} OPTIONAL

}

Other-Parameters-v1530 ::= SEQUENCE {

assistInfoBitForLC-r15 ENUMERATED {supported} OPTIONAL,

timeReferenceProvision-r15 ENUMERATED {supported} OPTIONAL,

flightPathPlan-r15 ENUMERATED {supported} OPTIONAL

}

Other-Parameters-v1540 ::= SEQUENCE {

inDeviceCoexInd-ENDC-r15 ENUMERATED {supported} OPTIONAL

}

MBMS-Parameters-r11 ::= SEQUENCE {

mbms-SCell-r11 ENUMERATED {supported} OPTIONAL,

mbms-NonServingCell-r11 ENUMERATED {supported} OPTIONAL

}

MBMS-Parameters-v1250 ::= SEQUENCE {

mbms-AsyncDC-r12 ENUMERATED {supported} OPTIONAL

}

MBMS-Parameters-v1430 ::= SEQUENCE {

fembmsDedicatedCell-r14 ENUMERATED {supported} OPTIONAL,

fembmsMixedCell-r14 ENUMERATED {supported} OPTIONAL,

subcarrierSpacingMBMS-khz7dot5-r14 ENUMERATED {supported} OPTIONAL,

subcarrierSpacingMBMS-khz1dot25-r14 ENUMERATED {supported} OPTIONAL

}

MBMS-Parameters-v1470 ::= SEQUENCE {

mbms-MaxBW-r14 CHOICE {

implicitValue NULL,

explicitValue INTEGER(2..20)

},

mbms-ScalingFactor1dot25-r14 ENUMERATED {n3, n6, n9, n12} OPTIONAL,

mbms-ScalingFactor7dot5-r14 ENUMERATED {n1, n2, n3, n4} OPTIONAL

}

FeMBMS-Unicast-Parameters-r14 ::= SEQUENCE {

unicast-fembmsMixedSCell-r14 ENUMERATED {supported} OPTIONAL,

emptyUnicastRegion-r14 ENUMERATED {supported} OPTIONAL

}

SCPTM-Parameters-r13 ::= SEQUENCE {

scptm-ParallelReception-r13 ENUMERATED {supported} OPTIONAL,

scptm-SCell-r13 ENUMERATED {supported} OPTIONAL,

scptm-NonServingCell-r13 ENUMERATED {supported} OPTIONAL,

scptm-AsyncDC-r13 ENUMERATED {supported} OPTIONAL

}

CE-Parameters-r13 ::= SEQUENCE {

ce-ModeA-r13 ENUMERATED {supported} OPTIONAL,

ce-ModeB-r13 ENUMERATED {supported} OPTIONAL

}

CE-Parameters-v1320 ::= SEQUENCE {

intraFreqA3-CE-ModeA-r13 ENUMERATED {supported} OPTIONAL,

intraFreqA3-CE-ModeB-r13 ENUMERATED {supported} OPTIONAL,

intraFreqHO-CE-ModeA-r13 ENUMERATED {supported} OPTIONAL,

intraFreqHO-CE-ModeB-r13 ENUMERATED {supported} OPTIONAL

}

CE-Parameters-v1350 ::= SEQUENCE {

unicastFrequencyHopping-r13 ENUMERATED {supported} OPTIONAL

}

CE-Parameters-v1370 ::= SEQUENCE {

tm9-CE-ModeA-r13 ENUMERATED {supported} OPTIONAL,

tm9-CE-ModeB-r13 ENUMERATED {supported} OPTIONAL

}

CE-Parameters-v1380 ::= SEQUENCE {

tm6-CE-ModeA-r13 ENUMERATED {supported} OPTIONAL

}

CE-Parameters-v1430 ::= SEQUENCE {

ce-SwitchWithoutHO-r14 ENUMERATED {supported} OPTIONAL

}

LAA-Parameters-r13 ::= SEQUENCE {

crossCarrierSchedulingLAA-DL-r13 ENUMERATED {supported} OPTIONAL,

csi-RS-DRS-RRM-MeasurementsLAA-r13 ENUMERATED {supported} OPTIONAL,

downlinkLAA-r13 ENUMERATED {supported} OPTIONAL,

endingDwPTS-r13 ENUMERATED {supported} OPTIONAL,

secondSlotStartingPosition-r13 ENUMERATED {supported} OPTIONAL,

tm9-LAA-r13 ENUMERATED {supported} OPTIONAL,

tm10-LAA-r13 ENUMERATED {supported} OPTIONAL

}

LAA-Parameters-v1430 ::= SEQUENCE {

crossCarrierSchedulingLAA-UL-r14 ENUMERATED {supported} OPTIONAL,

uplinkLAA-r14 ENUMERATED {supported} OPTIONAL,

twoStepSchedulingTimingInfo-r14 ENUMERATED {nPlus1, nPlus2, nPlus3} OPTIONAL,

uss-BlindDecodingAdjustment-r14 ENUMERATED {supported} OPTIONAL,

uss-BlindDecodingReduction-r14 ENUMERATED {supported} OPTIONAL,

outOfSequenceGrantHandling-r14 ENUMERATED {supported} OPTIONAL

}

LAA-Parameters-v1530 ::= SEQUENCE {

aul-r15 ENUMERATED {supported} OPTIONAL,

laa-PUSCH-Mode1-r15 ENUMERATED {supported} OPTIONAL,

laa-PUSCH-Mode2-r15 ENUMERATED {supported} OPTIONAL,

laa-PUSCH-Mode3-r15 ENUMERATED {supported} OPTIONAL

}

WLAN-IW-Parameters-r12 ::= SEQUENCE {

wlan-IW-RAN-Rules-r12 ENUMERATED {supported} OPTIONAL,

wlan-IW-ANDSF-Policies-r12 ENUMERATED {supported} OPTIONAL

}

LWA-Parameters-r13 ::= SEQUENCE {

lwa-r13 ENUMERATED {supported} OPTIONAL,

lwa-SplitBearer-r13 ENUMERATED {supported} OPTIONAL,

wlan-MAC-Address-r13 OCTET STRING (SIZE (6)) OPTIONAL,

lwa-BufferSize-r13 ENUMERATED {supported} OPTIONAL

}

LWA-Parameters-v1430 ::= SEQUENCE {

lwa-HO-WithoutWT-Change-r14 ENUMERATED {supported} OPTIONAL,

lwa-UL-r14 ENUMERATED {supported} OPTIONAL,

wlan-PeriodicMeas-r14 ENUMERATED {supported} OPTIONAL,

wlan-ReportAnyWLAN-r14 ENUMERATED {supported} OPTIONAL,

wlan-SupportedDataRate-r14 INTEGER (1..2048) OPTIONAL

}

LWA-Parameters-v1440 ::= SEQUENCE {

lwa-RLC-UM-r14 ENUMERATED {supported} OPTIONAL

}

WLAN-IW-Parameters-v1310 ::= SEQUENCE {

rclwi-r13 ENUMERATED {supported} OPTIONAL

}

LWIP-Parameters-r13 ::= SEQUENCE {

lwip-r13 ENUMERATED {supported} OPTIONAL

}

LWIP-Parameters-v1430 ::= SEQUENCE {

lwip-Aggregation-DL-r14 ENUMERATED {supported} OPTIONAL,

lwip-Aggregation-UL-r14 ENUMERATED {supported} OPTIONAL

}

NAICS-Capability-List-r12 ::= SEQUENCE (SIZE (1..maxNAICS-Entries-r12)) OF NAICS-Capability-Entry-r12

NAICS-Capability-Entry-r12 ::= SEQUENCE {

numberOfNAICS-CapableCC-r12 INTEGER(1..5),

numberOfAggregatedPRB-r12 ENUMERATED {

n50, n75, n100, n125, n150, n175,

n200, n225, n250, n275, n300, n350,

n400, n450, n500, spare},

...

}

SL-Parameters-r12 ::= SEQUENCE {

commSimultaneousTx-r12 ENUMERATED {supported} OPTIONAL,

commSupportedBands-r12 FreqBandIndicatorListEUTRA-r12 OPTIONAL,

discSupportedBands-r12 SupportedBandInfoList-r12 OPTIONAL,

discScheduledResourceAlloc-r12 ENUMERATED {supported} OPTIONAL,

disc-UE-SelectedResourceAlloc-r12 ENUMERATED {supported} OPTIONAL,

disc-SLSS-r12 ENUMERATED {supported} OPTIONAL,

discSupportedProc-r12 ENUMERATED {n50, n400} OPTIONAL

}

SL-Parameters-v1310 ::= SEQUENCE {

discSysInfoReporting-r13 ENUMERATED {supported} OPTIONAL,

commMultipleTx-r13 ENUMERATED {supported} OPTIONAL,

discInterFreqTx-r13 ENUMERATED {supported} OPTIONAL,

discPeriodicSLSS-r13 ENUMERATED {supported} OPTIONAL

}

SL-Parameters-v1430 ::= SEQUENCE {

zoneBasedPoolSelection-r14 ENUMERATED {supported} OPTIONAL,

ue-AutonomousWithFullSensing-r14 ENUMERATED {supported} OPTIONAL,

ue-AutonomousWithPartialSensing-r14 ENUMERATED {supported} OPTIONAL,

sl-CongestionControl-r14 ENUMERATED {supported} OPTIONAL,

v2x-TxWithShortResvInterval-r14 ENUMERATED {supported} OPTIONAL,

v2x-numberTxRxTiming-r14 INTEGER(1..16) OPTIONAL,

v2x-nonAdjacentPSCCH-PSSCH-r14 ENUMERATED {supported} OPTIONAL,

slss-TxRx-r14 ENUMERATED {supported} OPTIONAL,

v2x-SupportedBandCombinationList-r14 V2X-SupportedBandCombination-r14 OPTIONAL

}

SL-Parameters-v1530 ::= SEQUENCE {

slss-SupportedTxFreq-r15 ENUMERATED {single, multiple} OPTIONAL,

sl-64QAM-Tx-r15 ENUMERATED {supported} OPTIONAL,

sl-TxDiversity-r15 ENUMERATED {supported} OPTIONAL,

ue-CategorySL-r15 UE-CategorySL-r15 OPTIONAL,

v2x-SupportedBandCombinationList-v1530 V2X-SupportedBandCombination-v1530 OPTIONAL

}

SL-Parameters-v1540 ::= SEQUENCE {

sl-64QAM-Rx-r15 ENUMERATED {supported} OPTIONAL,

sl-RateMatchingTBSScaling-r15 ENUMERATED {supported} OPTIONAL,

sl-LowT2min-r15 ENUMERATED {supported} OPTIONAL,

v2x-SensingReportingMode3-r15 ENUMERATED {supported} OPTIONAL

}

UE-CategorySL-r15 ::= SEQUENCE {

ue-CategorySL-C-TX-r15 INTEGER(1..5),

ue-CategorySL-C-RX-r15 INTEGER(1..4)

}

V2X-SupportedBandCombination-r14 ::= SEQUENCE (SIZE (1..maxBandComb-r13)) OF V2X-BandCombinationParameters-r14

V2X-SupportedBandCombination-v1530 ::= SEQUENCE (SIZE (1..maxBandComb-r13)) OF V2X-BandCombinationParameters-v1530

V2X-BandCombinationParameters-r14 ::= SEQUENCE (SIZE (1.. maxSimultaneousBands-r10)) OF V2X-BandParameters-r14

V2X-BandCombinationParameters-v1530 ::= SEQUENCE (SIZE (1.. maxSimultaneousBands-r10)) OF V2X-BandParameters-v1530

SupportedBandInfoList-r12 ::= SEQUENCE (SIZE (1..maxBands)) OF SupportedBandInfo-r12

SupportedBandInfo-r12 ::= SEQUENCE {

support-r12 ENUMERATED {supported} OPTIONAL

}

FreqBandIndicatorListEUTRA-r12 ::= SEQUENCE (SIZE (1..maxBands)) OF FreqBandIndicator-r11

MMTEL-Parameters-r14 ::= SEQUENCE {

delayBudgetReporting-r14 ENUMERATED {supported} OPTIONAL,

pusch-Enhancements-r14 ENUMERATED {supported} OPTIONAL,

recommendedBitRate-r14 ENUMERATED {supported} OPTIONAL,

recommendedBitRateQuery-r14 ENUMERATED {supported} OPTIONAL

}

SRS-CapabilityPerBandPair-r14 ::= SEQUENCE {

retuningInfo SEQUENCE {

rf-RetuningTimeDL-r14 ENUMERATED {n0, n0dot5, n1, n1dot5, n2, n2dot5, n3,

n3dot5, n4, n4dot5, n5, n5dot5, n6, n6dot5,

n7, spare1} OPTIONAL,

rf-RetuningTimeUL-r14 ENUMERATED {n0, n0dot5, n1, n1dot5, n2, n2dot5, n3,

n3dot5, n4, n4dot5, n5, n5dot5, n6, n6dot5,

n7, spare1} OPTIONAL

}

}

SRS-CapabilityPerBandPair-v14b0 ::= SEQUENCE {

srs-FlexibleTiming-r14 ENUMERATED {supported} OPTIONAL,

srs-HARQ-ReferenceConfig-r14 ENUMERATED {supported} OPTIONAL

}

HighSpeedEnhParameters-r14 ::= SEQUENCE {

measurementEnhancements-r14 ENUMERATED {supported} OPTIONAL,

demodulationEnhancements-r14 ENUMERATED {supported} OPTIONAL,

prach-Enhancements-r14 ENUMERATED {supported} OPTIONAL

}

-- ASN1STOP

| ***UE-EUTRA-Capability* field descriptions** | | ***FDD/ TDD diff*** | |
| --- | --- | --- | --- |
| ***accessStratumRelease***  Set to rel15 in this version of the specification. NOTE 7. | | - | |
| ***additionalRx-Tx-PerformanceReq***  Indicates whether the UE supports the additional Rx and Tx performance requirement for a given band combination as specified in TS 36.101 [42]. | | - | |
| ***alternativeTBS-Indices***  Indicates whether the UE supports alternative TBS indices *I*TBS 26A and 33A as specified in TS 36.213 [23]. | | - | |
| ***alternativeTBS-Index***  Indicates whether the UE supports alternative TBS index ITBS 33B as specified in TS 36.213 [23]. | | No | |
| ***alternativeTimeToTrigger***  Indicates whether the UE supports alternativeTimeToTrigger. | | No | |
| ***altFreqPriority***  Indicates whether the UE supports alternative cell reselection priority. | | - | |
| ***altMCS-Table***  Indicates whether the UE supports the 6-bit MCS table as specified in TS 36.212 [22] and TS 36.213 [23]. | | - | |
| ***aperiodicCSI-Reporting***  Indicates whether the UE supports aperiodic CSI reporting with 3 bits of the CSI request field size as specified in TS 36.213 [23], clause 7.2.1 and/or aperiodic CSI reporting mode 1-0 and mode 1-1 as specified in TS 36.213 [23], clause 7.2.1. The first bit is set to "1" if the UE supports the aperiodic CSI reporting with 3 bits of the CSI request field size. The second bit is set to "1" if the UE supports the aperiodic CSI reporting mode 1-0 and mode 1-1. | | No | |
| ***aperiodicCsi-ReportingSTTI***  Indicates whether the UE supports aperiodic CSI reporting for short TTI as specified in TS 36.213 [23], clause 7.2.1. | | No | |
| ***appliedCapabilityFilterCommon***  Contains the filter, applied by the UE, common for all MR-DC related capability containers that are requested and as defined by *UE-CapabilityRequestFilterCommon* IE in TS 38.331 [82]. | | - | |
| ***assistInfoBitForLC***  Indicates whether the UE supports assistance information bit for local cache. | | - | |
| ***aul***  Indicates whether the UE supports AUL as specified n TS 36.321 [6]. | | - | |
| ***bandCombinationListEUTRA***  One entry corresponding to each supported band combination listed in the same order as in *supportedBandCombination.* | | - | |
| ***BandCombinationParameters-v1090, BandCombinationParameters-v10i0, BandCombinationParameters-v1270***  If included, the UE shall include the same number of entries, and listed in the same order, as in *BandCombinationParameters-r10*. | | - | |
| ***BandCombinationParameters-v1130***  The field is applicable to each supported CA bandwidth class combination (i.e. CA configuration in TS 36.101 [42], clause 5.6A.1) indicated in the corresponding band combination. If included, the UE shall include the same number of entries, and listed in the same order, as in *BandCombinationParameters-r10*. | | - | |
| ***bandEUTRA***  E‑UTRA band as defined in TS 36.101 [42]. In case the UE includes *bandEUTRA-v9e0* or *bandEUTRA-v1090*, the UE shall set the corresponding entry of *bandEUTRA* (i.e. without suffix) or *bandEUTRA-r10* respectively to *maxFBI*. | | - | |
| ***bandListEUTRA***  One entry corresponding to each supported E‑UTRA band listed in the same order as in *supportedBandListEUTRA*. | | - | |
| ***bandParameterList-v1380***  If included, the UE shall include the same number of entries listed in the same order as the band entries in the corresponding band combination. | | - | |
| ***bandParametersUL, bandParametersDL***  Indicates the supported parameters for the band. Each of *CA-MIMO-ParametersUL* and *CA-MIMO-ParametersDL* can be included only once for one band in a single band combination entry. | | - | |
| ***beamformed (in MIMO-CA-ParametersPerBoBCPerTM)***  If signalled, the field indicates for a particular transmission mode, the UE capabilities concerning beamformed EBF/ FD-MIMO operation (class B) applicable for the concerned band combination. | | - | |
| ***beamformed (in MIMO-UE-ParametersPerTM)***  Indicates for a particular transmission mode, the UE capabilities concerning beamformed EBF/ FD-MIMO operation (class B) applicable for band combinations for which the concerned capabilities are not signalled. | | TBD | |
| ***benefitsFromInterruption***  Indicates whether the UE power consumption would benefit from being allowed to cause interruptions to serving cells when performing measurements of deactivated SCell carriers for *measCycleSCell* of less than 640ms, as specified in TS 36.133 [16]. | | No | |
| ***bwPrefInd***  Indicates whether the UE supports maximum PDSCH/PUSCH bandwidth preference indication. | | - | |
| ***ca-BandwidthClass***  The CA bandwidth class supported by the UE as defined in TS 36.101 [42], Table 5.6A-1.  The UE explicitly includes all the supported CA bandwidth class combinations in the band combination signalling. Support for one CA bandwidth class does not implicitly indicate support for another CA bandwidth class. | | - | |
| ***ca-IdleModeMeasurements***  Indicates whether UE supports reporting measurements performed during RRC\_IDLE. | | | - |
| ***ca-IdleModeValidityArea***  Indicates whether UE supports validity area for IDLE measurements during RRC\_IDLE. | | | - |
| ***cch-IM-RefRecTypeA-OneRX-Port***  This field defines whether the DL Category 1bis or the DL Category M2 UE supports Type A downlink control channel interference mitigation (CCH-IM) receiver "LMMSE-IRC + CRS-IC" for PDCCH/PCFICH/PHICH/EPDCCH receive processing (Enhanced downlink control channel performance requirements Type A in TS 36.101 [6]). | | - | |
| ***cch-InterfMitigation-RefRecTypeA, cch-InterfMitigation-RefRecTypeB, cch-InterfMitigation-MaxNumCCs***  The field *cch-InterfMitigation-RefRecTypeA* defines whether the UE supports Type A downlink control channel interference mitigation (CCH-IM) receiver "LMMSE-IRC + CRS-IC" for PDCCH/PCFICH/PHICH/EPDCCH receive processing (Enhanced downlink control channel performance requirements Type A in the TS 36.101 [6]). The field *cch-InterfMitigation-RefRecTypeB* defines whether the UE supports Type B downlink CCH-IM receiver "E-LMMSE-IRC + CRS-IC" for PDCCH/PCFICH/PHICH receive processing in synchronous networks (Enhanced downlink control channel performance requirements Type B in the TS 36.101 [6]). The UE supporting the capability defined by *cch-InterfMitigation-RefRecTypeB-r13* shall also support the capability defined by *cch-InterfMitigation-RefRecTypeA-r13*.  If the UE sets one or more of the fields *cch-InterfMitigation-RefRecTypeA* and *cch-InterfMitigation-RefRecTypeB* to "supported", the UE shall include the parameter *cch-InterfMitigation-MaxNumCCs* to indicate that the UE supports CCH-IM on at least one arbitrary downlink CC for up to *cch-InterfMitigation-MaxNumCCs* downlink CC CA configuration. The UE shall not include the parameter *cch-InterfMitigation-MaxNumCCs* if neither *cch-InterfMitigation-RefRecTypeA* nor *cch-InterfMitigation-RefRecTypeB* is present. The UE may not perform CCH-IM on more than 1 DL CCs. For example, the UE sets "*cch-InterfMitigation-MaxNumCCs* = 3"to indicate that UE supports CCH-IM on at least one DL CC for supported non-CA, 2DL CA and 3DL CA configurations. For CA scenarios, the CCH-IM is guaranteed to be supported on at least one arbitrary component carrier. | | - | |
| ***cdma2000-NW-Sharing***  Indicates whether the UE supports network sharing for CDMA2000. | | - | |
| ***ce-ClosedLoopTxAntennaSelection***  Indicates whether the UE supports UL closed-loop Tx antenna selection in CE mode A, as specified in TS 36.212 [22]. | | Yes | |
| ***ce-CQI-AlternativeTable***  Indicates whether the UE supports alternative CQI table in CE mode A. See TS 36.213 [22]. | | - | |
| ***ce-CRS-IntfMitig***  Indicates whether UE supports CRS interference mitigation, i.e., value *supported* indicates UE does not rely on the CRS outside certain PRBs and subframes as defined in TS 36.133 [16], clauses 3.6.1.2 and 3.6.1.3, and TS 36.213 [23] when operating in coverage enhancement mode. | | - | |
| ***ce-HARQ-AckBundling***  Indicates whether the UE supports HARQ-ACK bundling in half duplex FDD in CE mode A, as specified in TS 36.212 [22] and TS 36.213 [23]. | | Yes | |
| ***ce-ModeA, ce-ModeB***  Indicates whether the UE supports operation in CE mode A and/or B, as specified in TS 36.211 [21] and TS 36.213 [23]. | | - | |
| ***ceMeasurements***  Indicates whether the UE supports intra-frequency RSRQ measurements and inter-frequency RSRP and RSRQ measurements in RRC\_CONNECTED, as specified in TS 36.133 [16] and TS 36.304 [4]. | | - | |
| ***ce-PDSCH-64QAM***  Indicates whether the UE supports 64QAM for non-repeated unicast PDSCH in CE mode A. | | | - |
| ***ce-PDSCH-FlexibleStartPRB-CE-ModeA*, *ce-PDSCH-FlexibleStartPRB-CE-ModeB*,**  ***ce-PUSCH-FlexibleStartPRB-CE-ModeA*, *ce-PUSCH-FlexibleStartPRB-CE-ModeB***  This field indicates whether UE supports flexible starting PRB for PDSCH/PUSCH when operating in coverage enhancement mode A/B, as specified in TS 36.211 [21] and TS 36.213 [22]. | | - | |
| ***ce-PDSCH-PUSCH-Enhancement***  Indicates whether the UE supports new numbers of repetitions for PUSCH and modulation restrictions for PDSCH/PUSCH in CE mode A as specified in TS 36.212 [22] and TS 36.213 [23]. | | No | |
| ***ce-PDSCH-PUSCH-MaxBandwidth***  Indicates the maximum supported PDSCH/PUSCH channel bandwidth in CE mode A and B, as specified in TS 36.212 [22] and TS 36.213 [23]. Value bw5 corresponds to 5 MHz and value bw20 corresponds to 20 MHz. If the field is absent the maximum PDSCH/PUSCH channel bandwidth in CE mode A and B is 1.4 MHz. If the setting of this parameter is 20 MHz, the max supported PUSCH channel bandwidth in CE mode A is 5 MHz. The maximum PUSCH channel bandwidth in CE mode B is 1.4 MHz regardless of the setting of this parameter. Parameter: transmission bandwidth configuration, see TS 36.101 [42], table 5.6-1. | | Yes | |
| ***ce-PDSCH-TenProcesses***  Indicates whether the UE supports 10 DL HARQ processes in FDD in CE mode A. | | Yes | |
| ***ce-PUCCH-Enhancement***  Indicates whether the UE supports repetition levels 64 and 128 for PUCCH in CE Mode B, as specified in TS 36.211 [21] and in TS 36.213 [23]. | | No | |
| ***ce-PUSCH-NB-MaxTBS***  Indicates whether the UE supports 2984 bits max UL TBS in 1.4 MHz in CE mode A operation, as specified in TS 36.212 [22] and TS 36.213 [23]. | | Yes | |
| ***ce-PUSCH-SubPRB-Allocation***  Indicates whether the UE supports sub-PRB resource allocation for PUSCH in CE mode A or B, as specified in TS 36.211 [21], TS 36.212 [22] and TS 36.213 [23]. | | - | |
| ***ce-RetuningSymbols***  Indicates the number of retuning symbols in CE mode A and B as specified in TS 36.211 [21]. Value n0 corresponds to 0 retuning symbols and value n1 corresponds to 1 retuning symbol. If the field is absent the number of retuning symbols in CE mode A and B is 2. | | No | |
| ***ce-SchedulingEnhancement***  Indicates whether the UE supports dynamic HARQ-ACK delay for HD-FDD in CE mode A as specified in TS 36.212 [22] and TS 36.213 [23]. | | No | |
| ***ce-SRS-Enhancement***  Indicates whether the UE supports SRS coverage enhancement in TDD with support of SRS combs 2 and 4 as specified in TS 36.213 [23]. This field can be included only if *ce-SRS-EnhancementWithoutComb4* is not included. | | Yes | |
| ***ce-SRS-EnhancementWithoutComb4***  Indicates whether the UE supports SRS coverage enhancement in TDD with support of SRS comb 2 but without support of SRS comb 4 as specified in TS 36.213 [23]. This field can be included only if *ce-SRS-Enhancement* is not included. | | - | |
| ***ce-SwitchWithoutHO***  Indicates whether the UE supports switching between normal mode and enhanced coverage mode without handover. | | - | |
| ***ce-UL-HARQ-ACK-Feedback***  This field indicates whether UE supports uplink HARQ ACK feedback when operating in coverage enhancement, as specified in TS36.213 [22]. | | - | |
| ***channelMeasRestriction***  Indicates for a particular transmission mode whether the UE supports channel measurement restriction. | | TBD | |
| ***codebook-HARQ-ACK***  Indicates whether the UE supports determining HARQ ACK codebook size based on the DAI-ased solution and/or the number of configured CCs. The first bit is set to "1" if the UE supports the DAI-based codebook size determination. The second bit is set to "1" if the UE supports the codebook determination based on the number of configured CCs. | | No | |
| ***commMultipleTx***  Indicates whether the UE supports multiple transmissions of sidelink communication to different destinations in one SC period. If *commMultipleTx-r13* is set to supported then the UE support 8 transmitting sidelink processes. | | - | |
| ***commSimultaneousTx***  Indicates whether the UE supports simultaneous transmission of EUTRA and sidelink communication (on different carriers) in all bands for which the UE indicated sidelink support in a band combination (using *commSupportedBandsPerBC*). | | - | |
| ***commSupportedBands***  Indicates the bands on which the UE supports sidelink communication, by an independent list of bands i.e. separate from the list of supported E-UTRA band, as indicated in *supportedBandListEUTRA*. | | - | |
| ***commSupportedBandsPerBC***  Indicates, for a particular band combination, the bands on which the UE supports simultaneous reception of EUTRA and sidelink communication. If the UE indicates support simultaneous transmission (using *commSimultaneousTx*), it also indicates, for a particular band combination, the bands on which the UE supports simultaneous transmission of EUTRA and sidelink communication. The first bit refers to the first band included in *commSupportedBands*, with value 1 indicating sidelink is supported. | | - | |
| ***configN (in MIMO-CA-ParametersPerBoBCPerTM)***  If signalled, the field indicates for a particular transmission mode whether the UE supports non-precoded EBF/ FD-MIMO (class A) related configuration N for the concerned band combination. | | - | |
| ***configN (in MIMO-UE-ParametersPerTM)***  Indicates for a particular transmission mode whether the UE supports non-precoded EBF/ FD-MIMO (class A) related configuration N for band combinations for which the concerned capabilities are not signalled. | | TBD | |
| ***crossCarrierScheduling*** | | Yes | |
| ***crossCarrierScheduling-B5C***  Indicates whether the UE supports cross carrier scheduling beyond 5 DL CCs. | | No | |
| ***crossCarrierSchedulingLAA-DL***  Indicates whether the UE supports cross-carrier scheduling from a licensed carrier for LAA cell(s) for downlink. This field can be included only if *downlinkLAA* is included. | | - | |
| ***crossCarrierSchedulingLAA-UL***  Indicates whether the UE supports cross-carrier scheduling from a licensed carrier for LAA cell(s) for uplink. This field can be included only if *uplinkLAA* is included. | | - | |
| ***crs-DiscoverySignalsMeas***  Indicates whether the UE supports CRS based discovery signals measurement, and PDSCH/EPDCCH RE mapping with zero power CSI-RS configured for discovery signals. | | FFS | |
| ***crs-IM-TM1-toTM9-OneRX-Port***  Indicates whether the DL Cateogry 1bis UE ot the DL Category M2 UE supports CRS interference mitigation (IM) while operating in the following transmission modes (TM): TM 1, TM 2, …, TM 8 and TM 9. | | | - |
| ***crs-InterfHandl***  Indicates whether the UE supports CRS interference handling. | | Yes | |
| ***crs-InterfMitigationTM10***  The field defines whether the UE supports CRS interference mitigation in transmission mode 10. The UE supporting the *crs-InterfMitigationTM10* capability shall also support the *crs-InterfHandl* capability. | | No | |
| ***crs-InterfMitigationTM1toTM9***  Indicates whether the UE supports CRS interference mitigation (IM) while operating in the following transmission modes (TM): TM 1, TM 2, …, TM 8 and TM 9. The UE shall not include the field if it does not support CRS IM in TMs 1-9. If the field is present, the UE supports CRS-IM on at least one arbitrary downlink CC for up to *crs-InterfMitigationTM1toTM9-r13* downlink CC CA configuration. The UE signals *crs-InterfMitigationTM1toTM9-r13* value to indicate the maximum *crs-InterfMitigationTM1toTM9-r13* downlink CC CA configuration where UE may apply CRS IM. For example, the UE sets "*crs-InterfMitigationTM1toTM9-r13* = 3" to indicate that the UE supports CRS-IM on at least one DL CC for supported non-CA, 2DL CA and 3DL CA configurations. The UE supporting the *crs-InterfMitigationTM1toTM9-r13* capability shall also support the *crs-InterfHandl-r11* capability. | | - | |
| ***crs-IntfMitig***  Indicate whether the UE supports CRS interference mitigation as specified in TS 36.133 [16], clause 3.6.1.1. | | | - |
| ***crs-LessDwPTS***  Indicates whether the UE supports TDD special subframe configuration 10 without CRS transmission on the 5th symbol of DwPTS, i.e. *ssp10-CRS-LessDwPTS*, as specified in TS 36.211 [17]*.* | | - | |
| ***csi-ReportingAdvanced, csi-ReportingAdvancedMaxPorts (in MIMO-CA-ParametersPerBoBCPerTM)***  If signalled, the field indicates that for a particular transmission mode, the maximum number of CSI-RS ports supported by the UE for advanced CSI reporting is different in the concerned band of band combination than the value indicated by the field *csi-ReportingAdvanced* or *csi-ReportingAdvancedMaxPorts* in *MIMO-UE-ParametersPerTM*. The UE shall not include both *csi-ReportingAdvanced* and *csi-ReportingAdvancedMaxPorts* for a particular transmission mode in the concerned band of band combination. | | - | |
| ***csi-ReportingAdvanced*, *csi-ReportingAdvancedMaxPorts (in MIMO-UE-ParametersPerTM)***  Indicates for a particular transmission mode the maximum number of CSI-RS ports supported by the UE for advanced CSI reporting. The field *csi-ReportingAdvanced* indicates 32 CSI-RS ports whereas *csi-ReportingAdvancedMaxPorts* indicates 8, 12, 16, 20, 24 or 28 CSI-RS ports. The UE shall not include both *csi-ReportingAdvanced* and *csi-ReportingAdvancedMaxPorts* for a particular transmission mode. | FFS | | |
| ***csi-ReportingNP (in MIMO-CA-ParametersPerBoBCPerTM)***  If signalled, value *different* indicates that for a particular transmission mode, the CSI reporting on non-precoded CSI-RS with 20, 24, 28 or 32 antenna ports for the concerned band of band combination is different than the value indicated by field *csi-ReportingNP* in *MIMO-UE-ParametersPerTM*. | - | | |
| ***csi-ReportingNP (in MIMO-UE-ParametersPerTM)***  Indicates for a particular transmission mode whether the UE supports CSI reporting on non-precoded CSI-RS with 20, 24, 28, or 32 antenna ports for band combinations for which the concerned capabilities are not signalled in *MIMO-CA-ParametersPerBoBCPerTM*, and the FD-MIMO processing capability condition as described in NOTE 8 is satisfied. | FFS | | |
| ***csi-RS-DiscoverySignalsMeas***  Indicates whether the UE supports CSI-RS based discovery signals measurement. If this field is included, the UE shall also include *crs-DiscoverySignalsMeas*. | | FFS | |
| ***csi-RS-DRS-RRM-MeasurementsLAA***  Indicates whether the UE supports performing RRM measurements on LAA cell(s) based on CSI-RS-based DRS. This field can be included only if *downlinkLAA* is included. | | - | |
| ***csi-RS-EnhancementsTDD***  Indicates for a particular transmission mode whether the UE supports CSI-RS enhancements applicable for TDD. | | Yes | |
| ***csi-SubframeSet***  Indicates whether the UE supports REL-12 DL CSI subframe set configuration, REL-12 DL CSI subframe set dependent CSI measurement/feedback, configuration of up to 2 CSI-IM resources for a CSI process with no more than 4 CSI-IM resources for all CSI processes of one frequency if the UE supports tm10, configuration of two ZP-CSI-RS for tm1 to tm9, PDSCH RE mapping with two ZP-CSI-RS configurations, and EPDCCH RE mapping with two ZP-CSI-RS configurations if the UE supports EPDCCH. This field is only applicable for UEs supporting TDD. | | Yes | |
| ***dataInactMon***  Indicates whether the UE supports the data inactivity monitoring as specified in TS 36.321 [6]. | | - | |
| ***dc-Support***  Including this field indicates that the UE supports synchronous DC and power control mode 1. Including this field for a band combination entry comprising of single band entry indicates that the UE supports intra-band contiguous DC. Including this field for a band combination entry comprising of two or more band entries, indicates that the UE supports DC for these bands and that the serving cells corresponding to a band entry shall belong to one cell group (i.e. MCG or SCG). Including field *asynchronous* indicates that the UE supports asynchronous DC and power control mode 2. Including this field for a TDD/FDD band combination indicates that the UE supports TDD/FDD DC for this band combination. | | - | |
| ***delayBudgetReporting***  Indicates whether the UE supports delay budget reporting. | | No | |
| ***demodulationEnhancements***  This field defines whether the UE supports advanced receiver in SFN scenario as specified in TS 36.101 [42]. | | - | |
| ***densityReductionNP, densityReductionBF***  Indicates whether the UE supports CSI-RS density reduction with values 1, 1/2 and 1/3 for non-precoded CSI-RS and beamformed CSI-RS respectively. | | FFS | |
| ***deviceType***  UE may set the value to "*noBenFromBatConsumpOpt*" when it does not foresee to particularly benefit from NW-based battery consumption optimisation. Absence of this value means that the device does benefit from NW-based battery consumption optimisation. | | - | |
| ***diffFallbackCombReport***  Indicates that the UE supports reporting of UE radio access capabilities for the CA band combinations asked by the eNB as well as, if any, reporting of different UE radio access capabilities for their fallback band combination as specified in TS 36.306 [5]. The UE does not report fallback combinations if their UE radio access capabilities are the same as the ones for the CA band combination asked by the eNB. | | - | |
| ***differentFallbackSupported***  Indicates that the UE supports different capabilities for at least one fallback case of this band combination. | | - | |
| ***directSCellActivation***  Indicates whether the UE supports having an SCell configured in activated SCell state. | | | - |
| ***directSCellHibernation***  Indicates whether the UE supports having an SCell configured in dormant SCell state. | | | - |
| ***discInterFreqTx***  Indicates whether the UE support sidelink discovery announcements either a) on the primary frequency only or b) on other frequencies also, regardless of the UE configuration (e.g. CA, DC). The UE may set discInterFreqTx to supported when having a separate transmitter or if it can request sidelink discovery transmission gaps. | | - | |
| ***discoverySignalsInDeactSCell***  Indicates whether the UE supports the behaviour on DL signals and physical channels when SCell is deactivated and discovery signals measurement is configured as specified in TS 36.211 [21], clause 6.11A. This field is included only if UE supports carrier aggregation and includes *crs-DiscoverySignalsMeas*. | | FFS | |
| ***discPeriodicSLSS***  Indicates whether the UE supports periodic (i.e. not just one time before sidelink discovery announcement) Sidelink Synchronization Signal (SLSS) transmission and reception for sidelink discovery. | | - | |
| ***discScheduledResourceAlloc***  Indicates whether the UE supports transmission of discovery announcements based on network scheduled resource allocation. | | - | |
| ***disc-UE-SelectedResourceAlloc***  Indicates whether the UE supports transmission of discovery announcements based on UE autonomous resource selection. | | - | |
| ***disc***-***SLSS***  Indicates whether the UE supports Sidelink Synchronization Signal (SLSS) transmission and reception for sidelink discovery. | | - | |
| ***discSupportedBands***  Indicates the bands on which the UE supports sidelink discovery. One entry corresponding to each supported E-UTRA band, listed in the same order as in *supportedBandListEUTRA*. | | - | |
| ***discSupportedProc***  Indicates the number of processes supported by the UE for sidelink discovery. | | - | |
| ***discSysInfoReporting***  Indicates whether the UE supports reporting of system information for inter-frequency/PLMN sidelink discovery. | | - | |
| ***dl-256QAM***  Indicates whether the UE supports 256QAM in DL on the band. | | - | |
| ***dl-1024QAM***  Indicates whether the UE supports 1024QAM in DL on the band or on the band within the band combination. When *dl-1024QAM-ScalingFactor* and *dl-1024QAM-TotalWeightedLayers* are included, the UE supports 1024QAM in a set of CCs in a band combination if the CCs belong to bands indicated to support 1024QAM in that band combination and the 1024QAM processing capability condition as specified in equation 4.3.5.31-1 in TS 36.306 [5] is satisfied. | | - | |
| ***dl-1024QAM-ScalingFactor***  Indicates scaling factor for processing a CC configured with 1024QAM with respect to a CC not configured with 1024QAM as described in 4.3.5.31 in TS 36.306 [5]. Value *v1* indicates 1, value *v1dot2* indicates 1.2 and value *v1dot25* indicates 1.25. | | - | |
| ***dl-1024QAM-TotalWeightedLayers***  Indicates total number of weighted layers the UE can process for 1024QAM as described in 4.3.5.31 in TS 36.306 [5]. Actual value = (10 + indicated value x 2), i.e., value 0 indicates 10 layers, value 1 indicates 12 layers and so on. | | - | |
| ***dl-1024QAM-Slot***  Indicates whether the UE supports 1024QAM in DL on the band for slot TTI operation. | | - | |
| ***dl-1024QAM-SubslotTA-1***  Indicates whether the UE supports 1024QAM in DL on the band for subslot TTI operation with TA set 1. | | - | |
| ***dl-1024QAM-SubslotTA-2***  Indicates whether the UE supports 1024QAM in DL on the band for subslot TTI operation with TA set 2, dmrsBasedSPDCCH-nonMBSFN | | - | |
| ***dmrs-BasedSPDCCH-MBSFN***  Indicates whether the UE supports sDCI monitoring in DMRS based SPDCCH for MBSFN subframe. If UE supports this, it also provides the corresponding DMRS based SPDCCH capability in *min-Proc-TimelineSubslot.* | | - | |
| ***dmrs-BasedSPDCCH-nonMBSFN***  Indicates whether the UE supports sDCI monitoring in DMRS based SPDCCH for non-MBSFN subframe. If UE supports this, it also provides the corresponding DMRS based SPDCCH capability in *min-Proc-TimelineSubslot.* | | - | |
| ***dmrs-Enhancements (in MIMO-CA-ParametersPerBoBCPerTM)***  If signalled, the field indicates for a particular transmission mode, that for the concerned band combination the DMRS enhancements are different than the value indicated by field *dmrs-Enhancements* in *MIMO-UE-ParametersPerTM*. | | - | |
| ***dmrs-Enhancements (in MIMO-UE-ParametersPerTM)***  Indicates for a particular transmission mode whether the UE supports DMRS enhancements for the indicated transmission mode. | | TBD | |
| ***dmrs-LessUpPTS***  Indicates whether the UE supports not to transmit DMRS for PUSCH in UpPTS. | | No | |
| ***dmrs-OverheadReduction***  Indicates whether the UE supports OCC4 for rank 3 and 4 transmission as specified in clause 5.3.3.1.5C of TS 36.212 [22]. | | - | |
| ***dmrs-PositionPattern***  Indicates whether the UE supports uplink DMRS position pattern 'D D D' in subslot #5 with application of the 1/6 as the TBS scaling factor. | | - | |
| ***dmrs-RepetitionSubslotPDSCH***  Indicates whether the UE supports back-to-back 3/4-layer DMRS reception in two consecutive subslots across subframe boundary for subslot-PDSCH. | | - | |
| ***dmrs-SharingSubslotPDSCH***  Indicates whether the UE supports DMRS sharing in two consecutive subslots across subframe boundary for subslot-PDSCH. | | - | |
| ***dormantSCellState***  Indicates whether UE supports Dormant SCell state (i.e. SCell state with CQI and RRM measurement reporting but no PDCCH monitoring). | | | - |
| ***downlinkLAA***  Presence of the field indicates that the UE supports downlink LAA operation including identification of downlink transmissions on LAA cell(s) for full downlink subframes, decoding of common downlink control signalling on LAA cell(s), CSI feedback for LAA cell(s), RRM measurements on LAA cell(s) based on CRS-based DRS. | | - | |
| ***drb-TypeSCG***  Indicates whether the UE supports SCG bearer. | | - | |
| ***drb-TypeSplit***  Indicates whether the UE supports split bearer except for PDCP data transfer in UL. | | - | |
| ***dtm***  Indicates whether the UE supports DTM in GERAN. | | - | |
| ***earlyData-UP***  Indicates whether the UE supports UP-EDT. | | | - |
| ***e-CSFB-1XRTT***  Indicates whether the UE supports enhanced CS fallback to CDMA2000 1xRTT or not. | | Yes | |
| ***e-CSFB-ConcPS-Mob1XRTT***  Indicates whether the UE supports concurrent enhanced CS fallback to CDMA2000 1xRTT and PS handover/ redirection to CDMA2000 HRPD. | | Yes | |
| ***e-CSFB-dual-1XRTT***  Indicates whether the UE supports enhanced CS fallback to CDMA2000 1xRTT for dual Rx/Tx configuration. This bit can only be set to supported if *tx-Config1XRTT* and *rx-Config1XRTT* are both set to dual. | | Yes | |
| ***e-HARQ-Pattern-FDD***  Indicates whether the UE supports enhanced HARQ pattern for TTI bundling operation for FDD. | | Yes | |
| ***eLCID-Support***  Indicates whether the UE supports LCID "10000" and MAC PDU subheader containing the eLCID field as described in TS 36.321 [6]. | | - | |
| ***emptyUnicastRegion***  Indicates whether the UE supports unicast reception in subframes with empty unicast control region as described in TS 36.213 [23] clause 12. This field can be included only if *unicast-fembmsMixedSCell* and *crossCarrierScheduling* are included. | | No | |
| ***en-DC***  Indicates whether the UE supports EN-DC. | | - | |
| ***endingDwPTS***  Indicates whether the UE supports reception ending with a subframe occupied for a DwPTS-duration as described in TS 36.211 [21] and TS 36.213 [23]. This field can be included only if *downlinkLAA* is included. | | - | |
| ***Enhanced-4TxCodebook***  Indicates whether the UE supports enhanced 4Tx codebook*.* | | No | |
| ***enhancedDualLayerTDD***  Indicates whether the UE supports enhanced dual layer (PDSCH transmission mode 8) for TDD or not. | | - | |
| ***ePDCCH***  Indicates whether the UE can receive DCI on UE specific search space on Enhanced PDCCH. | | Yes | |
| ***epdcch-SPT-differentCells***  Indicates whether the UE supports EPDCCH and short processing time on different serving cells. | | - | |
| ***epdcch-STTI-differentCells***  Indicates whether the UE supports EPDCCH and sTTI on different serving cells. | | - | |
| ***e-RedirectionUTRA*** | | Yes | |
| ***e-RedirectionUTRA-TDD***  Indicates whether the UE supports enhanced redirection to UTRA TDD to multiple carrier frequencies both with and without using related SIB provided by *RRCConnectionRelease* or not. | | Yes | |
| ***eutra-5GC***  Indicates whether the UE supports E-UTRA/5GC. | | Yes | |
| ***eutra-5GC-HO-ToNR-FDD-FR1***  Indicates whether the UE supports handover from E-UTRA/5GC to NR FDD FR1. | | Yes | |
| ***eutra-5GC-HO-ToNR-TDD-FR1***  Indicates whether the UE supports handover from E-UTRA/5GC to NR TDD FR1. | | Yes | |
| ***eutra-5GC-HO-ToNR-FDD-FR2***  Indicates whether the UE supports handover from E-UTRA/5GC to NR FDD FR2. | | Yes | |
| ***eutra-5GC-HO-ToNR-TDD-FR2***  Indicates whether the UE supports handover from E-UTRA/5GC to NR TDD FR2. | | Yes | |
| ***eutra-CGI-Reporting-ENDC***  Indicates whether the UE supports Intra-RAT report CGI procedure when it is configured with (NG) EN-DC wherein either MN and SN have different DRX cycles, or on-duration configured by MN does not contain on-duration configured by SN if their DRX cycles are same. | | | Yes |
| ***eutra-EPC-HO-ToNR-FDD-FR1***  Indicates whether the UE supports handover from E-UTRA/EPC to NR FDD FR1. | | Yes | |
| ***eutra-EPC-HO-ToNR-TDD-FR1***  Indicates whether the UE supports handover from E-UTRA/EPC to NR TDD FR1. | | Yes | |
| ***eutra-EPC-HO-ToNR-FDD-FR2***  Indicates whether the UE supports handover from E-UTRA/EPC to NR FDD FR2. | | Yes | |
| ***eutra-EPC-HO-ToNR-TDD-FR2***  Indicates whether the UE supports handover from E-UTRA/EPC to NR TDD FR2. | | Yes | |
| ***eutra-EPC-HO-EUTRA-5GC***  Indicates whether the UE supports handover between E-UTRA/EPC and E-UTRA/5GC. | | Yes | |
| ***eventB2***  Indicates whether the UE supports event B2. A UE supporting NR SA operation shall set this bit to *supported*. | | - | |
| ***extendedFreqPriorities***  Indicates whether the UE supports extended E-UTRA frequency priorities indicated by *cellReselectionSubPriority* field. A UE supporting NR SA operation shall set this bit to *supported*. | | - | |
| ***extendedLCID-Duplication***  Indicates whether the UE supports use of extended LCIDs 32-38 for PDCP duplication. | | - | |
| ***extendedLongDRX***  Indicates whether the UE supports extended long DRX cycle values of 5.12s and 10.24s in RRC\_CONNECTED. | | - | |
| ***extendedMAC-LengthField***  Indicates whether the UE supports the MAC header with L field of size 16 bits as specified in TS 36.321 [6], clause 6.2.1. | | - | |
| ***extendedMaxMeasId***  Indicates whether the UE supports extended number of measurement identies as defined by *maxMeasId-r12*. | | No | |
| ***extendedMaxObjectId***  Indicates whether the UE supports extended number of measurement object identies as defined by *maxObjectId-r13*. | | No | |
| ***extendedNumberOfDRBs***  Indicates whether the UE supports up to 15 DRBs. The UE shall support any combination of RLC AM and RLC UM entities for the configured DRBs. | | | - |
| ***extendedPollByte***  Indicates whether the UE supports extended pollByte values as defined by *pollByte-r14*. | | - | |
| ***extended-RLC-LI-Field***  Indicates whether the UE supports 15 bit RLC length indicator. | | - | |
| ***extendedRLC-SN-SO-Field***  Indicates whether the UE supports 16 bits of RLC sequence number and segmentation offset. | | - | |
| ***extendedRSRQ-LowerRange***  Indicates whether the UE supports the extended RSRQ lower value range from -34dB to -19.5dB in measurement configuration and reporting as specified in TS 36.133 [16]. | | No | |
| ***fdd-HARQ-TimingTDD***  Indicates whether UE supports FDD HARQ timing for TDD SCell when configured with TDD PCell. | | Yes | |
| ***featureGroupIndicators, featureGroupIndRel9Add, featureGroupIndRel10***  The definitions of the bits in the bit string are described in Annex B.1 (for *featureGroupIndicators* and *featureGroupIndRel9Add*) and in Annex C.1 (for *featureGroupIndRel10*). | | Yes | |
| ***featureSetsDL-PerCC***  In MR-DC, indicates a set of features that the UE supports on one component carrier in a bandwidth class for a band in a given band combination. The UE shall hence include at least as many *FeatureSetDL-PerCC-Id* in this list as the number of carriers it supports according to the *ca-bandwidthClassDL*, except if indicating additional functionality by reducing the number of *FeatureSetDownlinkPerCC-Id* in the feature set. The order of the elements in this list is not relevant, i.e., the network may configure any of the carriers in accordance with any of the *FeatureSetDL-PerCC-Id* in this list. | | - | |
| ***FeatureSetDL-PerCC-Id***  In MR-DC, indicates the index position of the *FeatureSetDL-PerCC-r15* in the *featureSetsDL-PerCC-r15* list. Value 0 corresponds to the first element in the list, value 1 corresponds to the second element in the list, and so on. Value 32 is not used. | | - | |
| ***featureSetsUL-PerCC***  In MR-DC, indicates a set of features that the UE supports on one component carrier in a bandwidth class for a band in a given band combination. The UE shall hence include at least as many *FeatureSetUL-PerCC-Id* in this list as the number of carriers it supports according to the *ca-bandwidthClassUL*, except if indicating additional functionality by reducing the number of *FeatureSetDownlinkPerCC-Id* in the feature set. The order of the elements in this list is not relevant, i.e., the network may configure any of the carriers in accordance with any of the *FeatureSetUL-PerCC-Id* in this list. | | - | |
| ***FeatureSetUL-PerCC-Id***  In MR-DC, indicates the index position of the *FeatureSetUL-PerCC-r15* in the *featureSetsUL-PerCC-r15* list. Value 0 corresponds to the first element in the list, value 1 corresponds to the second element in the list, and so on. Value 32 is not used. | | - | |
| ***fembmsMixedCell***  Indicates whether the UE in RRC\_CONNECTED supports MBMS reception with 15 kHz subcarrier spacings via MBSFN from FeMBMS/Unicast mixed cells on a frequency indicated in an *MBMSInterestIndication* message. | |  | |
| ***fembmsDedicatedCell***  Indicates whether the UE in RRC\_CONNECTED supports MBMS reception with 15 kHz subcarrier spacings via MBSFN from MBMS-dedicated cells on a frequency indicated in an *MBMSInterestIndication* message. | |  | |
| ***flexibleUM-AM-Combinations***  Indicates whether the UE supports any combination of RLC UM and RLC AM bearers as long as the total number of bearers is at most 8, regardless of what FGI20 indicates. | | | - |
| ***flightPathPlan***  Indicates whether UE supports reporting of flight path plan information. | | | - |
| ***fourLayerTM3-TM4***  Indicates whether the UE supports 4-layer spatial multiplexing for TM3 and TM4. | | - | |
| ***fourLayerTM3-TM4 (in FeatureSetDL-PerCC)***  Indicates whether the UE supports 4-layer spatial multiplexing for TM3 and TM4 for MR-DC within the indicated feature set. If this field is absent, UE supports two layer MIMO for TM3/TM4. | | - | |
| ***fourLayerTM3-TM4-perCC***  Indicates whether the UE supports 4-layer spatial multiplexing for TM3 and TM4 for the component carrier. | | - | |
| ***frameStructureType-SPT***  This field indicates the supported FS-type(s) for short processing time. The UE capability is reported per band combination. The reported FS-type(s) apply to the reported *maxNumberCCs-SPT-r15* for the given band combination. | | - | |
| ***freqBandPriorityAdjustment***  Indicates whether the UE supports the prioritization of frequency bands in *multiBandInfoList* over the band in *freqBandIndicator* as defined by *freqBandIndicatorPriority-r12*. | | - | |
| ***freqBandRetrieval***  Indicates whether the UE supports reception of *requestedFrequencyBands.* | | - | |
| ***halfDuplex***  If *halfDuplex* is set to true, only half duplex operation is supported for the band, otherwise full duplex operation is supported. | | - | |
| ***heightMeas***  Indicates whether UE supports the measurement events H1/H2. | | - | |
| ***ho-EUTRA-5GC-FDD-TDD***  Indicates whether the UE supports handover between E-UTRA/5GC FDD and E-UTRA/5GC TDD. | | No | |
| ***ho-InterfreqEUTRA-5GC***  Indicates whether the UE supports inter frequency handover within E-UTRA/5GC. | | Yes | |
| ***hybridCSI***  Indicates whether the UE supports hybrid CSI transmission as described in TS 36.213 [23]. | | FFS | |
| ***immMeasBT***  Indicates whether the UE supports Bluetooth measurements in RRC connected mode. | | - | |
| ***immMeasWLAN***  Indicates whether the UE supports WLAN measurements in RRC connected mode. | | - | |
| ***ims-VoiceOverMCG-BearerEUTRA-5GC***  Indicates whether the UE supports IMS voice over NR PDCP for MCG bearer for E-UTRA/5GC. | | No | |
| ***ims-VoiceOverNR-FR1***  Indicates whether the UE supports IMS voice over NR FR1. | | No | |
| ***ims-VoiceOverNR-FR2***  Indicates whether the UE supports IMS voice over NR FR2. | | No | |
| ***inactiveState***  Indicates whether the UE supports RRC\_INACTIVE. | | No | |
| ***incMonEUTRA***  Indicates whether the UE supports increased number of E-UTRA carrier monitoring in RRC\_IDLE and RRC\_CONNECTED, as specified in TS 36.133 [16]. | | No | |
| ***incMonUTRA***  Indicates whether the UE supports increased number of UTRA carrier monitoring in RRC\_IDLE and RRC\_CONNECTED, as specified in TS 36.133 [16]. | | No | |
| ***inDeviceCoexInd***  Indicates whether the UE supports in-device coexistence indication as well as autonomous denial functionality. | | Yes | |
| ***inDeviceCoexInd-ENDC***  Indicates whether the UE supports in-device coexistence indication for (NG)EN-DC operation. This field can be included only if *inDeviceCoexInd* is included. The UE supports *inDeviceCoexInd-ENDC* in the same duplexing modes as it supports *inDeviceCoexInd*. | | - | |
| ***inDeviceCoexInd-HardwareSharingInd***  Indicates whether the UE supports indicating hardware sharing problems when sending the *InDeviceCoexIndication*, as well as omitting the TDM assistance information. A UE that supports hardware sharing indication shall also indicate support of LAA operation. | | - | |
| ***inDeviceCoexInd-UL-CA***  Indicates whether the UE supports UL CA related in-device coexistence indication. This field can be included only if *inDeviceCoexInd* is included. The UE supports *inDeviceCoexInd-UL-CA* in the same duplexing modes as it supports *inDeviceCoexInd*. | | - | |
| ***interBandTDD-CA-WithDifferentConfig***  Indicates whether the UE supports inter-band TDD carrier aggregation with different UL/DL configuration combinations. The first bit indicates UE supports the configuration combination of SCell DL subframes are a subset of PCell and PSCell by SIB1 configuration and the configuration combination of SCell DL subframes are a superset of PCell and PSCell by SIB1 configuration; the second bit indicates UE supports the configuration combination of SCell DL subframes are neither superset nor subset of PCell and PSCell by SIB1 configuration. This field is included only if UE supports inter-band TDD carrier aggregation. | | - | |
| ***interferenceMeasRestriction***  Indicates whether the UE supports interference measurement restriction. | | TBD | |
| ***interFreqBandList***  One entry corresponding to each supported E‑UTRA band listed in the same order as in *supportedBandListEUTRA*. | | - | |
| ***interFreqNeedForGaps***  Indicates need for measurement gaps when operating on the E‑UTRA band given by the entry in *bandListEUTRA* or on the E-UTRA band combination given by the entry in *bandCombinationListEUTRA* and measuring on the E‑UTRA band given by the entry in *interFreqBandList*. | | - | |
| ***interFreqProximityIndication***  Indicates whether the UE supports proximity indication for inter-frequency E-UTRAN CSG member cells*.* | | - | |
| ***interFreqRSTD-Measurement***  Indicates whether the UE supports inter-frequency RSTD measurements for OTDOA positioning, as specified in TS 36.355 [54]. | | Yes | |
| ***interFreqSI-AcquisitionForHO***  Indicates whether the UE supports, upon configuration of si-RequestForHO by the network, acquisition and reporting of relevant information using autonomous gaps by reading the SI from a neighbouring inter-frequency cell. | | Yes | |
| ***interRAT-BandList***  One entry corresponding to each supported band of another RAT listed in the same order as in the *interRAT-Parameters*. The NR bands reported in *SupportedBandListNR* are excluded from this list. | | - | |
| ***interRAT-NeedForGaps***  Indicates need for DL measurement gaps when operating on the E‑UTRA band given by the entry in *bandListEUTRA or on the E-UTRA band combination given by the entry in bandCombinationListEUTRA* and measuring on the inter-RAT band given by the entry in the *interRAT-BandList*. | | - | |
| ***interRAT-ParametersWLAN***  Indicates whether the UE supports WLAN measurements configured by *MeasObjectWLAN* with corresponding quantity and report configuration in the supported WLAN bands. | | - | |
| ***interRAT-PS-HO-ToGERAN***  Indicates whether the UE supports inter-RAT PS handover to GERAN or not. | | Yes | |
| ***intraBandContiguousCC-InfoList***  Indicates, per serving carrier of which the corresponding bandwidth class includes multiple serving carriers (i.e. bandwidth class B, C, D and so on), the maximum number of supported layers for spatial multiplexing in DL and the maximum number of CSI processes supported. The number of entries is equal to the number of component carriers in the corresponding bandwidth class. The UE shall support the setting indicated in each entry of the list regardless of the order of entries in the list.The UE shall include the field only if it supports 4-layer spatial multiplexing in transmission mode3/4 for a subset of component carriers in the corresponding bandwidth class, or if the maximum number of supported layers for at least one component carrier is higher than *supportedMIMO-CapabilityDL-r10* in the corresponding bandwidth class, or if the number of CSI processes for at least one component carrier is higher than *supportedCSI-Proc-r11* in the corresponding band.  This field may also be included for bandwidth class A but in such a case without including any sub-fields in *IntraBandContiguousCC-Info-r12* (see NOTE 6). | | - | |
| ***intraFreqA3-CE-ModeA***  Indicates whether the UE when operating in CE Mode A supports *eventA3* for intra-frequency neighbouring cells. | | - | |
| ***intraFreqA3-CE-ModeB***  Indicates whether the UE when operating in CE Mode B supports *eventA3* for intra-frequency neighbouring cells. | | - | |
| ***intraFreq-CE-NeedForGaps***  Indicates need for measurement gaps when operating in CE on the E‑UTRA band given by the entry in *supportedBandListEUTRA.* | |  | |
| ***intraFreqHO-CE-ModeA***  Indicates whether the UE when operating in CE Mode A supports intra-frequency handover. | | - | |
| ***intraFreqHO-CE-ModeB***  Indicates whether the UE when operating in CE Mode B supports intra-frequency handover. | | - | |
| ***intraFreqProximityIndication***  Indicates whether the UE supports proximity indication for intra-frequency E-UTRAN CSG member cells. | | - | |
| ***intraFreqSI-AcquisitionForHO***  Indicates whether the UE supports, upon configuration of si-RequestForHO by the network, acquisition and reporting of relevant information using autonomous gaps by reading the SI from a neighbouring intra-frequency cell. | | Yes | |
| ***k-Max (in MIMO-CA-ParametersPerBoBCPerTM)***  If signalled, the field indicates for a particular transmission mode the maximum number of NZP CSI RS resource configurations supported within a CSI process applicable for the concerned band combination. | | No | |
| ***k-Max (in MIMO-UE-ParametersPerTM)***  Indicates for a particular transmission mode the maximum number of NZP CSI RS resource configurations supported within a CSI process applicable for band combinations for which the concerned capabilities are not signalled. | | TBD | |
| ***laa-PUSCH-Mode1***  Indicates whether the UE supports LAA PUSCH mode 1as defined in TS 36.213 [23]. | | - | |
| ***laa-PUSCH-Mode2***  Indicates whether the UE supports LAA PUSCH mode 2as defined in TS 36.213 [23]*.* | | - | |
| ***laa-PUSCH-Mode3***  Indicates whether the UE supports LAA PUSCH mode 3as defined in TS 36.213 [23]*.* | | - | |
| ***locationReport***  Indicates whether the UE supports reporting of its geographical location information to eNB. | | - | |
| ***loggedMBSFNMeasurements***  Indicates whether the UE supports logged measurements for MBSFN. A UE indicating support for logged measurements for MBSFN shall also indicate support for logged measurements in Idle mode. | | - | |
| ***loggedMeasBT***  Indicates whether the UE supports Bluetooth measurements in RRC idle mode. | | - | |
| ***loggedMeasurementsIdle***  Indicates whether the UE supports logged measurements in Idle mode. | | - | |
| ***loggedMeasWLAN***  Indicates whether the UE supports WLAN measurements in RRC idle mode. | | - | |
| ***logicalChannelSR-ProhibitTimer***  Indicates whether the UE supports the *logicalChannelSR-ProhibitTimer* as defined in TS 36.321 [6]. | | - | |
| ***longDRX-Command***  Indicates whether the UE supports Long DRX Command MAC Control Element. | | - | |
| ***lwa***  Indicates whether the UE supports LTE-WLAN Aggregation (LWA). The UE which supports LWA shall also indicate support of *interRAT-ParametersWLAN-r13*. | | - | |
| ***lwa-BufferSize***  Indicates whether the UE supports the layer 2 buffer sizes for "with support for split bearers" as defined in Table 4.1-3 and 4.1A-3 of TS 36.306 [5] for LWA. | | - | |
| ***lwa-HO-WithoutWT-Change***  Indicates whether the UE supports handover where LWA configuration is retained without WT change and using LWA end-marker for PDCP key change indication for LWA operation. | | - | |
| ***lwa-RLC-UM***  Indicates whether the UE supports RLC UM for LWA bearer. | | - | |
| ***lwa-SplitBearer***  Indicates whether the UE supports the split LWA bearer (as defined in TS 36.300 [9]). | | - | |
| ***lwa-UL***  Indicates whether the UE supports UL transmission over WLAN for LWA bearer. | | - | |
| ***lwip***  Indicates whether the UE supports LTE/WLAN Radio Level Integration with IPsec Tunnel (LWIP). The UE which supports LWIP shall also indicate support of *interRAT-ParametersWLAN-r13*. | | - | |
| ***lwip-Aggregation-DL, lwip-Aggregation-UL***  Indicates whether the UE supports aggregation of LTE and WLAN over DL/UL LWIP. The UE that indicates support of LWIP aggregation over DL or UL shall also indicate support of *lwip*. | | - | |
| ***makeBeforeBreak***  Indicates whether the UE supports intra-frequency Make-Before-Break handover, and whether the UE which indicates *dc-Parameters* supports intra-frequency Make-Before-Break SeNB change, as defined in TS 36.300 [9]. | | - | |
| ***maximumCCsRetrieval***  Indicates whether UE supports reception of *requestedMaxCCsDL* and *requestedMaxCCsUL*. | | - | |
| ***maxLayersMIMO-Indication***  Indicates whether the UE supports the network configuration of *maxLayersMIMO*. If the UE supports *fourLayerTM3-TM4* or *intraBandContiguousCC-InfoList* or *FeatureSetDL-PerCC* for MR-DC, UE supports the configuration of *maxLayersMIMO* for these cases regardless of indicating *maxLayersMIMO-Indication*. | | - | |
| ***maxLayersSlotOrSubslotPUSCH***  Indicates the maxiumum number of layers for slot-PUSCH or subslot-PUSCH transmission. | | - | |
| ***maxNumberCCs-SPT***  Indicates the maximum number of supported CCs for short processing time. The UE capability is reported per band combination. The reported number of carriers applies to all the FS-type(s) *frameStructureType-SPT-r15* supported in a given band combination. Absence of the field indicates that 0 number of CCs are supported for short processing time. | | - | |
| ***maxNumberDL-CCs, maxNumberUL-CCs***  Indicates for each TTI combination "sTTI-SupportedCombinations", the maximum number of supported DL CCs/UL CCs for short TTI. Absence of the field indicates that 0 number of CCs are supported for short TTI. | | - | |
| ***maxNumberDecoding***  Indicates the maximum number of blind decodes in UE-specific search space per UE in one subframe for CA with more than 5 CCs as defined in TS 36.213 [23] which is supported by the UE. The number of blind decodes supported by the UE is the field value \* 32. Only values 5 to 32 can be used in this version of the specification. | | No | |
| ***maxNumberROHC-ContextSessions***  Set to the maximum number of concurrently active ROHC contexts supported by the UE, excluding context sessions that leave all headers uncompressed. cs2 corresponds with 2 (context sessions), cs4 corresponds with 4 and so on. The network ignores this field if the UE supports none of the ROHC profiles in *supportedROHC-Profiles*. If the UE indicates both *maxNumberROHC-ContextSessions* and *maxNumberROHC-ContextSessions-r14*, same value shall be indicated. | | - | |
| ***maxNumberUpdatedCSI-Proc, maxNumberUpdatedCSI-Proc-SPT***  Indicates the maximum number of CSI processes to be updated across CCs. | | No | |
| ***maxNumberUpdatedCSI-Proc-STTI-Comb77, maxNumberUpdatedCSI-Proc-STTI-Comb27, maxNumberUpdatedCSI-Proc-STTI-Comb22-Set1, maxNumberUpdatedCSI-Proc-STTI-Comb22-Set2***  Indicates the maximum number of CSI processes to be updated across CCs. Comb77 is applicable for {slot, slot}, Comb27 for {subslot, slot}, Comb22-Set1 for  {subslot, subslot} processing timeline set 1 and the Comb22-Set2 for {subslot, subslot} processing timeline set 2. | |  | |
| ***mbms-AsyncDC***  Indicates whether the UE in RRC\_CONNECTED supports MBMS reception via MRB on a frequency indicated in an *MBMSInterestIndication* message, where (according to *supportedBandCombination*) the carriers that are or can be configured as serving cells in the MCG and the SCG are not synchronized. If this field is included, the UE shall also include *mbms-SCell* and *mbms-NonServingCell*. The field indicates that the UE supports the feature for xDD if *mbms-SCell* and *mbms-NonServingCell* are supported for xDD. | | - | |
| ***mbms-MaxBW***  Indicates maximum supported bandwidth (T) for MBMS reception, see TS 36.213 [23]. clause 11.1. If the value is set to *implicitValue*, the corresponding value of T is calculated as specified in TS 36.213 [23], clause 11.1. If the value is set to *explicitValue*, the actual value of T = *explicitValue* \* 40 MHz. | | - | |
| ***mbms-NonServingCell***  Indicates whether the UE in RRC\_CONNECTED supports MBMS reception via MRB on a frequency indicated in an *MBMSInterestIndication* message, where (according to *supportedBandCombination* and to network synchronization properties) a serving cell may be additionally configured. If this field is included, the UE shall also include the *mbms-SCell* field. | | Yes | |
| ***mbms-ScalingFactor1dot25, mbms-ScalingFactor7dot5***  Indicates parameter A(1.25 / A(7.5, i.e., scaling factor for processing one unit of bandwidth corresponding to subcarrier spacing of 1.25 kHz / 7.5 kHz, with respect to one unit of bandwidth corresponding to subcarrier spacing of 15 kHz. See TS 36.213 [23], clause 11.1. This field is included only if *subcarrierSpacingMBMS-khz1dot25 / subcarrierSpacingMBMS-khz7dot5* is included. This field shall be included if *mbms-MaxBW* and *subcarrierSpacingMBMS-khz1dot25 / subcarrierSpacingMBMS-khz7dot5* are included. | | - | |
| ***mbms-SCell***  Indicates whether the UE in RRC\_CONNECTED supports MBMS reception via MRB on a frequency indicated in an *MBMSInterestIndication* message, when an SCell is configured on that frequency (regardless of whether the SCell is activated or deactivated). | | Yes | |
| ***measurementEnhancements***  This field defines whether UE supports measurement enhancements in high speed scenario as specified in TS 36.133 [16]. | | - | |
| ***measGapPatterns***  Indicates whether the UE that supports NR supports gap patterns 4 to 11 in LTE standalone as specified in TS 36.133 [16], and for independent measurement gap configuration on FR1 and per-UE gap in (NG)EN-DC as specified in TS 38.133 [84]. The first/ leftmost bit covers pattern 4, and so on. Value 1 indicates that the UE supports the concerned gap pattern. | | - | |
| ***mfbi-UTRA***  It indicates if the UE supports the signalling requirements of multiple radio frequency bands in a UTRA FDD cell, as defined in TS 25.307 [65]. | | - | |
| ***MIMO-BeamformedCapabilityList***  A list of pairs of {k-Max, n-MaxList} values with the nth entry indicating the values that the UE supports for each CSI process in case n CSI processes would be configured. | | No | |
| ***MIMO-CapabilityDL***  The number of supported layers for spatial multiplexing in DL. The field may be absent for category 0 and category 1 UE in which case the number of supported layers is 1. | | - | |
| ***MIMO-CapabilityUL***  The number of supported layers for spatial multiplexing in UL. Absence of the field means that the number of supported layers is 1. | | - | |
| ***MIMO-CA-ParametersPerBoBC***  A set of MIMO parameters provided per band of a band combination. In case a subfield is absent, the concerned capabilities are the same as indicated at the per UE level (i.e. by MIMO-UE-ParametersPerTM). | | - | |
| ***mimo-CBSR-AdvancedCSI***  Indicates whether UE supports CBSR for advanced CSI reporting with and without amplitude restriction as defined in TS 36.213 [23], clause 7.2. | | | - |
| ***min-Proc-TimelineSubslot***  Minimum processing timeline for subslot operation. The minimum processing timeline can belong to one of two sets of associated processing and maximum TA operation. The sets supported can be different for 1os CRS-based SPDCCH, 2os CRS-based SPDCCH and DMRS-based SPDCCH. The sequence applies to:  1. 1os CRS based SPDCCH  2. 2os CRS based SPDCCH  3. DMRS based SPDCCH | | - | |
| ***modifiedMPR-Behavior***  Field encoded as a bit map, where at least one bit N is set to "1" if UE supports modified MPR/A-MPR behaviour N, see TS 36.101 [42]. All remaining bits of the field are set to "0". The leading / leftmost bit (bit 0) corresponds to modified MPR/A-MPR behaviour 0, the next bit corresponds to modified MPR/A-MPR behaviour 1 and so on.  Absence of this field means that UE does not support any modified MPR/A-MPR behaviour. | | - | |
| ***multiACK-CSI-reporting***  Indicates whether the UE supports multi-cell HARQ ACK and periodic CSI reporting and SR on PUCCH format 3. | | Yes | |
| ***multiBandInfoReport***  Indicates whether the UE supports the acquisition and reporting of multi band information for *reportCGI*. | | - | |
| ***multiClusterPUSCH-WithinCC*** | | Yes | |
| ***multiNS-Pmax***  Indicates whether the UE supports the mechanisms defined for cells broadcasting *NS-PmaxList*. | | - | |
| ***multipleCellsMeasExtension***  Indicates whether the UE supports numberOfTriggeringCells in the report configuration. | | | - |
| ***multipleTimingAdvance***  Indicates whether the UE supports multiple timing advances for each band combination listed in *supportedBandCombination*. If the band combination comprised of more than one band entry (i.e., inter-band or intra-band non-contiguous band combination), the field indicates that the same or different timing advances on different band entries are supported. If the band combination comprised of one band entry (i.e., intra-band contiguous band combination), the field indicates that the same or different timing advances across component carriers of the band entry are supported. | | - | |
| ***multipleUplinkSPS***  Indicates whether the UE supports multiple uplink SPS and reporting SPS assistance information. A UE indicating *multipleUplinkSPS* shall also support V2X communication via Uu, as defined in TS 36.300 [9]. | | - | |
| ***must-CapabilityPerBand***  Indicates that UE supports MUST, as specified in 36.212 [22], clause 5.3.3.1, on the band in the band combination. | | - | |
| ***must-TM234-UpTo2Tx-r14***  Indicates that the UE supports MUST operation for TM2/3/4 using up to 2Tx. | | - | |
| ***must-TM89-UpToOneInterferingLayer-r14***  Indicates that the UE supports MUST operation for TM8/9 with assistance information for up to 1 interfering layer. | | - | |
| ***must-TM89-UpToThreeInterferingLayers-r14***  Indicates that the UE supports MUST operation for TM8/9 with assistance information for up to 3 interfering layers. | | - | |
| ***must-TM10-UpToOneInterferingLayer-r14***  Indicates that the UE supports MUST operation for TM10 with assistance information for up to 1 interfering layer. | | - | |
| ***must-TM10-UpToThreeInterferingLayers-r14***  Indicates that the UE supports MUST operation for TM10 with assistance information for up to 3 interfering layers. | | - | |
| ***naics-Capability-List***  Indicates that UE supports NAICS, i.e. receiving assistance information from serving cell and using it to cancel or suppress interference of neighbouring cell(s) for at least one band combination. If not present, UE does not support NAICS for any band combination. The field *numberOfNAICS-CapableCC* indicates the number of component carriers where the NAICS processing is supported and the field *numberOfAggregatedPRB* indicates the maximum aggregated bandwidth across these of component carriers (expressed as a number of PRBs) with the restriction that NAICS is only supported over the full carrier bandwidth. The UE shall indicate the combination of {*numberOfNAICS-CapableCC, numberOfNAICS-CapableCC*} for every supported *numberOfNAICS-CapableCC*, e.g. if a UE supports {x CC, y PRBs} and {x-n CC, y-m PRBs} where n>=1 and m>=0, the UE shall indicate both.  - For *numberOfNAICS-CapableCC* = 1, UE signals one value for *numberOfAggregatedPRB* from the range {50, 75, 100};  - For *numberOfNAICS-CapableCC* = 2, UE signals one value for *numberOfAggregatedPRB* from the range {50, 75, 100, 125, 150, 175, 200};  - For *numberOfNAICS-CapableCC* = 3, UE signals one value for *numberOfAggregatedPRB* from the range {50, 75, 100, 125, 150, 175, 200, 225, 250, 275, 300};  - For *numberOfNAICS-CapableCC* = 4, UE signals one value for *numberOfAggregatedPRB* from the range {50, 100, 150, 200, 250, 300, 350, 400};  - For *numberOfNAICS-CapableCC* = 5, UE signals one value for *numberOfAggregatedPRB* from the range {50, 100, 150, 200, 250, 300, 350, 400, 450, 500}. | | No | |
| ***ncsg***  Indicates whether the UE supports measurement NCSG Pattern Id 0, 1, 2 and 3, as specified in TS 36.133 [16]. If this field is included and the UE supports asynchronous DC, the UE shall support NCSG Pattern Id 0, 1, 2 and 3. If this field is included but the UE does not support asynchronous DC, only NCSG Pattern Id 0 and 1 shall be supported | | No | |
| ***ng-EN-DC***  Indicates whether the UE supports NGEN-DC. | | - | |
| ***n-MaxList (in MIMO-UE-ParametersPerTM)***  Indicates for a particular transmission mode the maximum number of NZP CSI RS ports supported within a CSI process applicable for band combinations for which the concerned capabilities are not signalled. For *k-Max* values exceeding 1, the UE shall include the field and signal *k-Max* minus 1 bits. The first bit indicates *n-Max2*, with value 0 indicating 8 and value 1 indicating 16. The second bit indicates *n-Max3*, with value 0 indicating 8 and value 1 indicating 16. The third bit indicates *n-Max4*, with value 0 indicating 8 and value 1 indicating 32. The fourth bit indicates *n-Max5*, with value 0 indicating 16 and value 1 indicating 32. The fifth bit indicates *n-Max6*, with value 0 indicating 16 and value 1 indicating 32. The sixt bit indicates *n-Max7*, with value 0 indicating 16 and value 1 indicating 32. The seventh bit indicates *n-Max8*, with value 0 indicating 16 and value 1 indicating 64. | | TBD | |
| ***n-MaxList (in MIMO-CA-ParametersPerBoBCPerTM)***  If signalled, the field indicates for a particular transmission mode the maximum number of NZP CSI RS ports supported within a CSI process applicable for band the concerned combination. Further details are as indicated for *n-MaxList* in *MIMO-UE-ParametersPerTM*. | | No | |
| ***NonContiguousUL-RA-WithinCC-List***  One entry corresponding to each supported E-UTRA band listed in the same order as in *supportedBandListEUTRA*. | | No | |
| ***nonPrecoded (in MIMO-UE-ParametersPerTM)***  Indicates for a particular transmission mode the UE capabilities concerning non-precoded EBF/ FD-MIMO operation (class A) for band combinations for which the concerned capabilities are not signalled in *MIMO-CA-ParametersPerBoBCPerTM*, and the FD-MIMO processing capability condition as described in NOTE 8 is satisfied. | | TBD | |
| ***nonPrecoded (in MIMO-CA-ParametersPerBoBCPerTM)***  If signalled, the field indicates for a particular transmission mode, the UE capabilities concerning non-precoded EBF/ FD-MIMO operation (class A) applicable for the concerned band combination. | | - | |
| ***nonUniformGap***  Indicates whether the UE supports measurement non uniform Pattern Id 1, 2, 3 and 4 in LTE standalone as specified in TS 36.133 [16]. | | No | |
| ***noResourceRestrictionForTTIBundling***  Indicate whether the UE supports TTI bundling operation without resource allocation restriction. | | No | |
| ***nonCSG-SI-Reporting***  Indicates whether UE will report PLMN list from non-CSG cells. | | - | |
| ***numberOfBlindDecodesUSS***  Indicates the maximum number of blind decodes in UE specific search space in one subframe for CCs configured with sTTI operation supported by the UE. The number of blind decodes supported by the UE is the field value X\*68. Field value ranges from 4 to 32. | | - | |
| ***otdoa-UE-Assisted***  Indicates whether the UE supports UE-assisted OTDOA positioning, as specified in TS 36.355 [54]. | | Yes | |
| ***outOfOrderDelivery***  Same as "*outOfOrderDelivery*" defined in TS 38.306 [87]. | | No | |
| ***outOfSequenceGrantHandling***  Indicates whether the UE supports PUSCH transmissions with out of sequence UL grants as defined in TS 36.213 [22]. This field can be included only if uplinkLAA is included. | | - | |
| ***overheatingInd***  Indicates whether the UE supports overheating assistance information. | | No | |
| ***pdcch-CandidateReductions***  Indicates whether the UE supports PDCCH candidate reduction on UE specific search space as specified in TS 36.213 [23], clause 9.1.1. | | No | |
| ***pdcp-Duplication***  Indicates whether the UE supports PDCP duplication. | | - | |
| ***pdcp-SN-Extension***  Indicates whether the UE supports 15 bit length of PDCP sequence number. | | - | |
| ***pdcp-SN-Extension-18bits***  Indicates whether the UE supports 18 bit length of PDCP sequence number. | | - | |
| ***pdcp-TransferSplitUL***  Indicates whether the UE supports PDCP data transfer split in UL for the *drb-TypeSplit* as specified in TS 36.323 [8]. | | - | |
| ***pdsch-CollisionHandling***  Indicates whether the UE supports PDSCH collision handling as specified in TS 36.213 [23]. | | No | |
| ***pdsch-RepSubframe***  Indicates whether the UE supports subframe PDSCH repetition. | | - | |
| ***pdsch-RepSlot***  Indicates whether the UE supports slot PDSCH repetition. | | - | |
| ***pdsch-RepSubslot***  Indicates whether the UE supports subslot PDSCH repetition. This field is only applicable for UEs supporting FDD. | | - | |
| ***pdsch-SlotSubslotPDSCH-Decoding***  Indicates whether the UE supports decoding of PDSCH and slot-PDSCH/subslot-PDSCH assigned with C-RNTI/SPS C-RNTI in the same subframe for a given carrier. | | - | |
| ***perServingCellMeasurementGap***  Indicates whether the UE supports per serving cell measurement gap indication, as specified in TS 36.133 [16]. | | - | |
| ***phy-TDD-ReConfig-FDD-PCell***  Indicates whether the UE supports TDD UL/DL reconfiguration for TDD serving cell(s) via monitoring PDCCH with eIMTA-RNTI on a FDD PCell, and HARQ feedback according to UL and DL HARQ reference configurations. This bit can only be set to supported only if the UE supports FDD PCell and *phy-TDD-ReConfig-TDD-PCell* is set to supported. | | No | |
| ***phy-TDD-ReConfig-TDD-PCell***  Indicates whether the UE supports TDD UL/DL reconfiguration for TDD serving cell(s) via monitoring PDCCH with eIMTA-RNTI on a TDD PCell, and HARQ feedback according to UL and DL HARQ reference configurations, and PUCCH format 3. | | Yes | |
| ***pmi-Disabling*** | | Yes | |
| ***powerClass-14dBm***  Indicates whether the UE supports power class 14 dBm when operating in CE mode A or B for all the bands that are supported by the UE, as specified in TS 36.101 [42]. | | | - |
| ***powerPrefInd***  Indicates whether the UE supports power preference indication. | | No | |
| ***powerUCI-SlotPUSCH, powerUCI-SubslotPUSCH***  Indicates whether the UE supports BPRE derivation based on the actual derived O\_CQI. The parameter *uplinkPower-CSIPayload* configures the UE to derive BPRE based on either the actual value of O\_CQI or the largest value of O\_CQI across all RI values. If the UE does not support the capability, the UE will derive BPRE based on the largest value of O\_CQI across all RI values. | | - | |
| ***prach-Enhancements***  This field defines whether the UE supports random access preambles generated from restricted set type B in high speed scenoario as specified in TS 36.211 [21]. | | - | |
| ***processingTimelineSet***  Indicates, for each SPDCCH configuration, support for a set of TA values. Each set consists of two different processing timelines and associated maximum TA. Set 1 indicates support for n+4 and n+6 and set 2 indicates support for n+6 and n+8, see TS 36.211 [21], clause 8.1, The minimum processing timeline to use, out of the two options for a given set is configured by parameter *proc-Timeline*. Support of Set 1 implicitly means support of Set 2. | | - | |
| ***pucch-Format4***  Indicates whether the UE supports PUCCH format 4. | | Yes | |
| ***pucch-Format5***  Indicates whether the UE supports PUCCH format 5. | | Yes | |
| ***pucch-SCell***  Indicates whether the UE supports PUCCH on SCell. | | No | |
| ***pusch-Enhancements***  Indicates whether the UE supports the PUSCH enhancement mode as specified in TS 36.211 [21] and TS 36.213 [23]. | | Yes | |
| ***pusch-FeedbackMode***  Indicates whether the UE supports PUSCH feedback mode 3-2. | | No | |
| ***pusch-SPS-MaxConfigSlot***  Indicates the max number of SPS configurations across all cells for slot PUSCH. | | - | |
| ***pusch-SPS-MultiConfigSlot***  Indicates the number of multiple SPS configurations of slot PUSCH for each serving cell. | | - | |
| ***pusch-SPS-MaxConfigSubframe***  Indicates the max number of SPS configurations across all cells for subframe PUSCH. | | - | |
| ***pusch-SPS-MultiConfigSubframe***  Indicates the number of multiple SPS configurations of subframe PUSCH for each serving cell. | | - | |
| ***pusch-SPS-MaxConfigSubslot***  Indicates the max number of SPS configurations across all cells for subslot PUSCH. | | - | |
| ***pusch-SPS-MultiConfigSubslot***  Indicates the number of multiple SPS configurations of subslot PUSCH for each serving cell. This field is only applicable for UEs supporting FDD. | | - | |
| ***pusch-SPS-SlotRepPCell***  Indicates whether the UE supports SPS repetition for slot PUSCH for PCell. | | - | |
| ***pusch-SPS-SlotRepPSCell***  Indicates whether the UE supports SPS repetition for slot PUSCH for PSCell. | | - | |
| ***pusch-SPS-SlotRepSCell***  Indicates whether the UE supports SPS repetition for slot PUSCH for serving cells other than SpCell. | | - | |
| ***pusch-SPS-SubframeRepPCell***  Indicates whether the UE supports SPS repetition for subframe PUSCH for PCell. | | - | |
| ***pusch-SPS-SubframeRepPSCell***  Indicates whether the UE supports SPS repetition for subframe PUSCH for PSCell. | | - | |
| ***pusch-SPS-SubframeRepSCell***  Indicates whether the UE supports SPS repetition for subframe PUSCH for serving cells other than SpCell. | | - | |
| ***pusch-SPS-SubslotRepPCell***  Indicates whether the UE supports SPS repetition for subslot PUSCH for PCell. This field is only applicable for UEs supporting FDD. | | - | |
| ***pusch-SPS-SubslotRepPSCell***  Indicates whether the UE supports SPS repetition for subslot PUSCH for PSCell. This field is only applicable for UEs supporting FDD. | | - | |
| ***pusch-SPS-SubslotRepSCell***  Indicates whether the UE supports SPS repetition for subslot PUSCH for serving cells other than SpCell. This field is only applicable for UEs supporting FDD. | | - | |
| ***pusch-SRS-PowerControl-SubframeSet***  Indicates whether the UE supports subframe set dependent UL power control for PUSCH and SRS. This field is only applicable for UEs supporting TDD. | | Yes | |
| ***qcl-CRI-BasedCSI-Reporting***  Indicates whether the UE supports CRI based CSI feedback for the FeCoMP feature as specified in TS 36.213 [23], clause 7.1.10. | | - | |
| ***qcl-TypeC-Operation***  The UE uses this field to indicate the support of all of the following three features: QCL Type-C operation for FeCoMP, the capability to support separate PDSCH RE mapping for different PDSCH CWs in non-coherent joint transmission and the capability to support handling new DMRS port to MIMO layer mapping for the CWs, as specified in TS 36.213 [23], clause 7.1.10. | | - | |
| ***qoe-MeasReport***  Indicates whether the UE supports QoE Measurement Collection for streaming services. | | - | |
| ***qoe-MTSI-MeasReport***  Indicates whether the UE supports QoE Measurement Collection for MTSI services. | |  | |
| ***rach-Less***  Indicates whether the UE supports RACH-less handover, and whether the UE which indicates *dc-Parameters* supports RACH-less SeNB change, as defined in TS 36.300 [9]. | | - | |
| ***rach-Report***  Indicates whether the UE supports delivery of rachReport*.* | | - | |
| ***rai-Support***  Defines whether the UE supports release assistance indication (RAI) as specified in TS 36.321 [6] for BL UEs. | | No | |
| ***rclwi***  Indicates whether the UE supports RCLWI, i.e. reception of *rclwi-Configuration*. The UE which supports RLCWI shall also indicate support of *interRAT-ParametersWLAN-r13*. The UE which supports RCLWI and *wlan-IW-RAN-Rules* shall also support applying WLAN identifiers received in *rclwi-Configuration* for the access network selection and traffic steering rules when in RRC\_IDLE. | | - | |
| ***recommendedBitRate***  Indicates whether the UE supports the bit rate recommendation message from the eNB to the UE as specified in TS 36.321 [6], clause 6.1.3.13*.* | | No | |
| ***recommendedBitRateQuery***  Indicates whether the UE supports the bit rate recommendation query message from the UE to the eNB as specified in TS 36.321 [6], clause 6.1.3.13. If this field is included, the UE shall also include the *recommendedBitRate* field. | | No | |
| ***reducedCP-Latency***  Indicates whether the UE supports reduced CP latency. | | Yes | |
| ***reducedIntNonContComb***  Indicates whether the UE supports receiving *requestReducedIntNonContComb* that requests the UE to exclude supported intra-band non-contiguous CA band combinations other than included in capability signalling as specified in TS 36.306 [5], clause 4.3.5.21. | | - | |
| ***reducedIntNonContCombRequested***  Indicates that the UE excluded supported intra-band non-contiguous CA band combinations other than included in capability signalling as specified in TS 36.306 [5,] clause 4.3.5.21. | | - | |
| ***reflectiveQoS***  Indicates whether the UE supports AS reflective QoS. | | No | |
| ***relWeightTwoLayers/ relWeightFourLayers/ relWeightEightLayers***  Indicates relative weight of processing FD-MIMO with 2/ 4/ 8 layers with respect to non-FD-MIMO with the same number of layers, see NOTE 8. Value v1 corresponds to relative weight of 1, value v1dot25 corresponds to relative weight of 1.25 and so on. This field can be included only if the UE supports the corresponding number of layers (i.e., 2/ 4/ 8 layers). | | - | |
| ***reportCGI-NR-EN-DC***  Indicates whether the UE supports Inter-RAT report CGI procedure towards NR cell when it is configured with (NG)EN-DC. | | | Yes |
| ***reportCGI-NR-NoEN-DC***  Indicates whether the UE supports Inter-RAT report CGI procedure towards NR cell when it is not configured with (NG)EN-DC. | | | Yes |
| ***srs-CapabilityPerBandPairList***  Indicates, for a particular pair of bands, the SRS carrier switching parameters when switching between the band pair to transmit SRS on a PUSCH-less SCell as specified in TS 36.212 [22] and TS 36.213 [23]. If included, the UE shall include a number of entries as indicated in the following, and listed in the same order, as in *bandParameterList* for the concerned band combination:  - For the first band, the UE shall include the same number of entries as in *bandParameterList* i.e. first entry corresponds to first band in *bandParameterList* and so on,  - For the second band, the UE shall include one entry less i.e. first entry corresponds to the second band in *bandParameterList* and so on  - And so on. | | - | |
| ***requestedBands***  Indicates the frequency bands requested by E-UTRAN. | | - | |
| ***requestedCCsDL, requestedCCsUL***  Indicates the maximum number of CCs requested by E-UTRAN. | | - | |
| ***requestedDiffFallbackCombList***  Indicates the CA band combinations for which report of different UE capabilities is requested by E-UTRAN. | | - | |
| ***rf-RetuningTimeDL***  Indicates the interruption time on DL reception within a band pair during the RF retuning for switching between the band pair to transmit SRS on a PUSCH-less SCell. n0 represents 0 OFDM symbols, n0dot5 represents 0.5 OFDM symbols, n1 represents 1 OFDM symbol and so on. This field is mandatory present if switching between the band pair is supported. | | - | |
| ***rf-RetuningTimeUL***  Indicates the interruption time on UL transmission within a band pair during the RF retuning for switching between the band pair to transmit SRS on a PUSCH-less SCell. n0 represents 0 OFDM symbols, n0dot5 represents 0.5 OFDM symbols, n1 represents 1 OFDM symbol and so on. This field is mandatory present if switching between the band pair is supported. | | - | |
| ***rlc-AM-Ooo-Delivery***  Indicates whether the UE supports out-of-order delivery from RLC to PDCP for RLC AM*.* | | - | |
| ***rlc-UM-Ooo-Delivery***  Indicates whether the UE supports out-of-order delivery from RLC to PDCP for RLC UM*.* | | - | |
| ***rlm-ReportSupport***  Indicates whether the UE supports RLM event and information reporting. | | - | |
| ***rohc-ContextContinue***  Same as "*continueROHC-Context*" defined in TS 38.306 [87]. | | No | |
| ***rohc-ContextMaxSessions***  Same as "*maxNumberROHC-ContextSessions*" defined in TS 38.306 [87]. | | No | |
| ***rohc-Profiles***  Same as "*supportedROHC-Profiles*" defined in TS 38.306 [87]. | | No | |
| ***rohc-ProfilesUL-Only***  Same as "*uplinkOnlyROHC-Profiles*" defined in TS 38.306 [87]. | | No | |
| ***rsrqMeasWideband***  Indicates whether the UE can perform RSRQ measurements with wider bandwidth. | | Yes | |
| ***rsrq-OnAllSymbols***  Indicates whether the UE can perform RSRQ measurement on all OFDM symbols and also support the extended RSRQ upper value range from -3dB to 2.5dB in measurement configuration and reporting as specified in TS 36.133 [16]. | | No | |
| ***rs-SINR-Meas***  Indicates whether the UE can perform RS-SINR measurements in RRC\_CONNECTED as specified in TS 36.214 [48]. | | - | |
| ***rssi-AndChannelOccupancyReporting***  Indicates whether the UE supports performing measurements and reporting of RSSI and channel occupancy. This field can be included only if *downlinkLAA* is included. | | - | |
| ***sa-NR***  Indicates whether the UE supports standalone NR as specified in TS 38.331 [82]. | | No | |
| ***scptm-AsyncDC***  Indicates whether the UE in RRC\_CONNECTED supports MBMS reception via SC-MRB on a frequency indicated in an *MBMSInterestIndication* message, where (according to *supportedBandCombination*) the carriers that are or can be configured as serving cells in the MCG and the SCG are not synchronized. If this field is included, the UE shall also include *scptm-SCell* and *scptm-NonServingCell*. | | Yes | |
| ***scptm-NonServingCell***  Indicates whether the UE in RRC\_CONNECTED supports MBMS reception via SC-MRB on a frequency indicated in an *MBMSInterestIndication* message, where (according to *supportedBandCombination* and to network synchronization properties) a serving cell may be additionally configured. If this field is included, the UE shall also include the *scptm-SCell* field. | | Yes | |
| ***scptm-Parameters***  Presence of the field indicates that the UE supports SC-PTM reception as specified in TS 36.306 [5]. | | Yes | |
| ***scptm-SCell***  Indicates whether the UE in RRC\_CONNECTED supports MBMS reception via SC-MRB on a frequency indicated in an *MBMSInterestIndication* message, when an SCell is configured on that frequency (regardless of whether the SCell is activated or deactivated). | | Yes | |
| ***scptm-ParallelReception***  Indicates whether the UE in RRC\_CONNECTED supports parallel reception in the same subframe of DL-SCH transport blocks transmitted using C-RNTI/Semi-Persistent Scheduling C-RNTI and using SC-RNTI/G-RNTI as specified in TS 36.306 [5]. | | Yes | |
| ***secondSlotStartingPosition***  Indicates whether the UE supports reception of subframes with second slot starting position as described in TS 36.211 [21] and TS 36.213 [23]. This field can be included only if *downlinkLAA* is included. | | - | |
| ***semiOL***  Indicates whether the UE supports semi-open-loop transmission for the indicated transmission mode. | | FFS | |
| ***semiStaticCFI***  Indicates whether the UE supports the semi-static configuration of CFI for subframe/slot/sub-slot operation. | | - | |
| ***semiStaticCFI-Pattern***  Indicates whether the UE supports the semi-static configuration of CFI pattern for subframe/slot/sub-slot operation. This field is only applicable for UEs supporting TDD. | | - | |
| ***shortCQI-ForSCellActivation***  Indicates whether the UE supports additional CQI reporting periodicity after SCell activation. | | - | |
| ***shortMeasurementGap*** Indicates whether the UE supports shorter measurement gap length (i.e. *gp2* and *gp3*) in LTE standalone as specified in TS 36.133 [16], and for independent measurement gap configuration on FR1 and per-UE gap in (NG)EN-DC as specified in TS38.133 [84]. | | No | |
| ***shortSPS-IntervalFDD***  Indicates whether the UE supports uplink SPS intervals shorter than 10 subframes in FDD mode. | | - | |
| ***shortSPS-IntervalTDD***  Indicates whether the UE supports uplink SPS intervals shorter than 10 subframes in TDD mode. | | - | |
| ***simultaneousPUCCH-PUSCH***  Indicates whether the UE supports simultaneous transmission of PUSCH/PUCCH and SlotOrSubslotPUSCH/SPUCCH (if supported). | | Yes | |
| ***simultaneousRx-Tx***  Indicates whether the UE supports simultaneous reception and transmission on different bands for each band combination listed in *supportedBandCombination*. This field is only applicable for inter-band TDD band combinations. A UE indicating support of *simultaneousRx-Tx* and *dc-Support-r12* shall support different UL/DL configurations between PCell and PSCell. | | - | |
| ***simultaneousTx-DifferentTx-Duration***  Indicates whether the UE supports simultaneous transmission of different transmission durations over different carriers. The different transmission durations can be of subframe, slot or subslot duration. | | - | |
| ***skipFallbackCombinations***  Indicates whether UE supports receiving reception of *requestSkipFallbackComb* that requests UE to exclude fallback band combinations from capability signalling. | | - | |
| ***skipFallbackCombRequested***  Indicates whether *requestSkipFallbackComb* is requested by E-UTRAN. | | - | |
| ***skipMonitoringDCI-Format0-1A***  Indicates whether UE supports blind decoding reduction on UE specific search space by not monitoring DCI Format 0 and 1A as specified in TS 36.213 [23], clause 9.1.1. | | No | |
| ***skipSubframeProcessing***  This fields defines whether the UE supports aborting reception of PDSCH if the UE receives slot-PDSCH/subslot-PDSCH during an ongoing PDSCH reception and instead starts receiving the slot-PDSCH/subslot-PDSCH, as well as whether the UE supports aborting a PUSCH transmission if the UE gets a grant for a slot-PUSCH/ subslot-PUSCH transmission that overlaps with a grant received for a PUSCH transmission. The capability indicates the number of subframes that the UE may drop prior to the subframe in which it prioritizes the processing of slot/subslot PDSCH/PUSCH as described in TS 36.213 [23], clauses 7.1 and 8.0. Separate capability for UL and DL and per sTTI length in each direction*: skipProcessingDL-Slot, skipProcessingDL-Subslot, skipProcessingUL-Slot* and *skipProcessingUL-Subslot.* | | - | |
| ***skipUplinkDynamic***  Indicates whether the UE supports skipping of UL transmission for an uplink grant indicated on PDCCH if no data is available for transmission as described in TS 36.321 [6]. | | - | |
| ***skipUplinkSPS***  Indicates whether the UE supports skipping of UL transmission for a configured uplink grant if no data is available for transmission as described in TS 36.321 [6]. | | - | |
| ***sl-64QAM-Rx***  Indicates whether the UE supports 64QAM for the reception of V2X sidelink communication. | | | - |
| ***sl-64QAM-Tx***  Indicates whether the UE supports 64QAM for the transmission of V2X sidelink communication. | | | - |
| ***sl-CongestionControl***  Indicates whether the UE supports Channel Busy Ratio measurement and reporting of Channel Busy Ratio measurement results to eNB for V2X sidelink communication. | | - | |
| ***sl-LowT2min***  Indicates whether the UE supports 10ms as minimum value of T2 for resource selection procedure of V2X sidelink communication. | | - | |
| ***sl-RateMatchingTBSScaling***  Indicates whether the UE supports rate matching and TBS scalling for V2X sidelink communication. | | - | |
| ***slotPDSCH-TxDiv-TM8***  Indicates whether the UE supports TX diversity transmission using ports 7 and 8 for TM8 for slot PDSCH. | |  | |
| ***slotPDSCH-TxDiv-TM9and10***  Indicates whether the UE supports TX diversity transmission using ports 7 and 8 for TM9/10 for slot PDSCH. | |  | |
| ***slss-SupportedTxFreq***  Indicates whether the UE supports the SLSS transmission on single carrier or on multiple carriers in the case of sidelink carrier aggregation. | | | - |
| ***slss-TxRx***  Indicates whether the UE supports SLSS/PSBCH transmission and reception in UE autonomous resource selection mode and eNB scheduled mode in a band for V2X sidelink communication. | | - | |
| ***sl-TxDiversity***  Indicates whether the UE supports transmit diversity for V2X sidelink communication. See TS 36.101 [42]. | | | - |
| ***sn-SizeLo***  Same as "*shortSN*" defined in TS 38.306 [87]. | | No | |
| ***spatialBundling-HARQ-ACK***  Indicates whether UE supports HARQ-ACK spatial bundling on PUCCH or PUSCH as specified in TS 36.213 [23], clauses 7.3.1 and 7.3.2. | | No | |
| ***spdcch-differentRS-types***  Indicates whether the UE supports monitoring of sPDCCH on RB sets with different RS types within a TTI. | | - | |
| ***spdcch-Reuse***  Indicates whether the UE supports L1 based SPDCCH reuse. | | - | |
| ***sps-CyclicShift***  Indicates whether the UE supports RRC configuration of cyclic shift for DMRS for UL SPS using 1ms TTI. | | - | |
| ***sps-ServingCell***  Indicates whether the UE supports multiple UL/DL SPS configurations simultaneously active on different serving cells as specified in TS 36.321 [6]. | | - | |
| ***sps-STTI***  Indicates whether the UE supports SPS in DL and/or UL for slot or subslot based PDSCH and PUSCH, respectively. | | - | |
| ***srs-DCI7-TriggeringFS2***  Indicates whether the UE supports SRS triggerring via DCI format 7 for FS2. | | - | |
| ***srs-Enhancements***  Indicates whether the UE supports SRS enhancements. | | TBD | |
| ***srs-EnhancementsTDD***  Indicates whether the UE supports TDD specific SRS enhancements. | | Yes | |
| ***srs-FlexibleTiming***  Indicates whether the UE supports configuration of *soundingRS-FlexibleTiming-r14* for the corresponding band pair. For a TDD-TDD band pair, UE shall include at least one of *srs-FlexibleTiming* and/or *srs-HARQ-ReferenceConfig* when *rf-RetuningTimeDL* or *rf-RetuningTimeUL* corresponding to the band pair is larger than 1 OFDM symbol. | | - | |
| ***srs-HARQ-ReferenceConfig***  Indicates whether the UE supports configuration of *harq-ReferenceConfig-r14* for the corresponding band pair. For a TDD-TDD band pair, UE shall include at least one of *srs-FlexibleTiming* and/or *srs-HARQ-ReferenceConfig* when *rf-RetuningTimeDL* or *rf-RetuningTimeUL* corresponding to the band pair is larger than 1 OFDM symbol. | | - | |
| ***srs-MaxSimultaneousCCs***  Indicates the maximum number of simultaneously configurable target CCs for SRS switching (i.e., CCs for which srs-SwitchFromServCellIndex is configured) supported by the UE. | | - | |
| ***srs-UpPTS-6sym***  Indicates whether the UE supports up to 6-symbol SRS in UpPTS. | | - | |
| ***srvcc-FromUTRA-FDD-ToGERAN***  Indicates whether UE supports SRVCC handover from UTRA FDD PS HS to GERAN CS. | | - | |
| ***srvcc-FromUTRA-FDD-ToUTRA-FDD***  Indicates whether UE supports SRVCC handover from UTRA FDD PS HS to UTRA FDD CS. | | - | |
| ***srvcc-FromUTRA-TDD128-ToGERAN***  Indicates whether UE supports SRVCC handover from UTRA TDD 1.28Mcps PS HS to GERAN CS. | | - | |
| ***srvcc-FromUTRA-TDD128-ToUTRA-TDD128***  Indicates whether UE supports SRVCC handover from UTRA TDD 1.28Mcps PS HS to UTRA TDD 1.28Mcps CS. | | - | |
| ***ss-CCH-InterfHandl***  Indicates whether the UE supports synchronisation signal and common channel interference handling. | | Yes | |
| ***ss-SINR-Meas-NR-FR1, ss-SINR-Meas-NR-FR2***  Indicates whether the UE can perform NR SS-SINR measurement for a frequency range (i.e. FR1 or FR2) as specified in TS 38.215 [89]. | | - | |
| ***ssp10-TDD-Only***  Indicates the UE supports special subframe configuration 10 when operating only in TDD carriers (i.e., not in TDD/FDD CA or TDD/FS3 CA). A UE including this field shall not include *tdd-SpecialSubframe-r14*. | | - | |
| ***standaloneGNSS-Location***  Indicates whether the UE is equipped with a standalone GNSS receiver that may be used to provide detailed location information in RRC measurement report and logged measurements. | | - | |
| ***sTTI-SPT-Supported***  Indicates whether the UE supports the features STTI and/or SPT. If the UE supports STTI and/or SPT features, the UE shall report the field *sTTI-SPT-Supported* set to *supported* in capability signalling, irrespective of whether *requestSTTI-SPT-Capability* field is present or not. | | - | |
| ***sTTI-FD-MIMO-Coexistence***  Indicates whether the UE supports CSI feedback for more than 8 NZP CSI-RS ports on subframe based PUSCH in any serving cell and supporting STTI in any serving cell. | | - | |
| ***sTTI-SupportedCombinations***  Indicates the different combinations of short TTI lengths, see field description for *dl-STTI-Length* and *ul-STTI-Length*, that the UE supports in a single PUCCH group or in two PUCCH groups. A short TTI length combination is reported for DL first followed by UL. In case of two PUCCH groups the support for the primary PUCCH group is indicated first. | | - | |
| ***subcarrierSpacingMBMS-khz7dot5, subcarrierSpacingMBMS-khz1dot25***  Indicates the supported subcarrier spacings for MBSFN subframes in addition to 15 kHz subcarrier spacing. *subcarrierSpacingMBMS-khz1dot25* and *subcarrierSpacingMBMS-khz7dot5* indicates that the UE supports 1.25 and 7.5 kHz respectively for MBSFN subframes as described in TS 36.211 [21], clause 6.12. This field is included only if *fembmsMixedCell* or *fembmsDedicatedCell* is included. | | - | |
| ***subslotPDSCH-TxDiv-TM9and10***  Indicates whether the UE supports TX diversity transmission using ports 7 and 8 for TM9/10 for subslot PDSCH. | |  | |
| ***supportedBandCombination***  Includes the supported CA band combinations, if any, and may include all the supported non-CA bands. | | - | |
| ***supportedBandCombinationAdd-r11***  Includes additional supported CA band combinations in case maximum number of CA band combinations of *supportedBandCombination* is exceeded. | | - | |
| ***SupportedBandCombinationAdd-v11d0,*** ***SupportedBandCombinationAdd-v1250,*** ***SupportedBandCombinationAdd-v1270, SupportedBandCombinationAdd-v1320, SupportedBandCombinationAdd-v1380, SupportedBandCombinationAdd-v1390, SupportedBandCombinationAdd-v1430, SupportedBandCombinationAdd-v1450, SupportedBandCombinationAdd-v1470, SupportedBandCombinationAdd-v14b0, SupportedBandCombinationAdd-v1530***  If included, the UE shall include the same number of entries, and listed in the same order, as in *SupportedBandCombinationAdd-r11*. | | - | |
| ***SupportedBandCombinationExt, SupportedBandCombination-v1090, SupportedBandCombination-v10i0, SupportedBandCombination-v1130, SupportedBandCombination-v1250, SupportedBandCombination-v1270, SupportedBandCombination-v1320, SupportedBandCombination-v1380, SupportedBandCombination-v1390, SupportedBandCombination-v1430, SupportedBandCombination-v1450, SupportedBandCombination-v1470, SupportedBandCombination-v14b0, SupportedBandCombination-v1530***  If included, the UE shall include the same number of entries, and listed in the same order, as in *supportedBandCombination-r10*. | | - | |
| ***supportedBandCombinationReduced***  Includes the supported CA band combinations, and may include the fallback CA combinations specified in TS 36.101 [42], clause 4.3A. This field also indicates whether the UE supports reception of *requestReducedFormat*. | | - | |
| ***SupportedBandCombinationReduced-v1320, SupportedBandCombinationReduced-v1380, SupportedBandCombinationReduced-v1390, SupportedBandCombinationReduced-v1430, SupportedBandCombinationReduced-v1450, SupportedBandCombinationReduced-v1470, SupportedBandCombinationReduced-v14b0, SupportedBandCombinationReduced-v1530***  If included, the UE shall include the same number of entries, and listed in the same order, as in *supportedBandCombinationReduced-r13*. | | - | |
| ***SupportedBandGERAN***  GERAN band as defined in TS 45.005 [20]. | | No | |
| ***SupportedBandList1XRTT***  One entry corresponding to each supported CDMA2000 1xRTT band class. | | - | |
| ***SupportedBandListEUTRA***  Includes the supported E-UTRA bands. This field shall include all bands which are indicated in *BandCombinationParameters*. | | - | |
| ***SupportedBandListEUTRA-v9e0, SupportedBandListEUTRA-v1250, SupportedBandListEUTRA-v1310, SupportedBandListEUTRA-v1320***  If included, the UE shall include the same number of entries, and listed in the same order, as in *supportedBandListEUTRA* (i.e. without suffix). | | - | |
| ***SupportedBandListGERAN*** | | No | |
| ***SupportedBandListHRPD***  One entry corresponding to each supported CDMA2000 HRPD band class. | | - | |
| ***SupportedBandListNR-SA***  Includes the NR bands supported by the UE in NR-SA (for handover and redirection). The field is included in case the UE supports NR SA as specified in TS 38.331 [32] and not otherwise. The presence of this field also indicates that the UE can perform both NR SS-RSRP and SS-RSRQ measurement in the included NR band(s) as specified in TS 38.215 [89]. | | No | |
| ***supportedBandListEN-DC***  Includes the NR bands supported by the UE in (NG)EN-DC. The field is included in case the parameter *en-DC* or *ng-EN-DC* is present and set to *supported* and not otherwise. The presence of this field also indicates that the UE can perform both NR SS-RSRP and SS-RSRQ measurement in the included NR band(s) as specified in TS 38.215 [89]. | | - | |
| ***supportedBandListWLAN***  Indicates the supported WLAN bands by the UE. | | - | |
| ***SupportedBandUTRA-FDD***  UTRA band as defined in TS 25.101 [17]. | | - | |
| ***SupportedBandUTRA-TDD128***  UTRA band as defined in TS 25.102 [18]. | | - | |
| ***SupportedBandUTRA-TDD384***  UTRA band as defined in TS 25.102 [18]. | | - | |
| ***SupportedBandUTRA-TDD768***  UTRA band as defined in TS 25.102 [18]. | | - | |
| ***supportedBandwidthCombinationSet***  The *supportedBandwidthCombinationSet* indicated for a band combination is applicable to all bandwidth classes indicated by the UE in this band combination.  Field encoded as a bit map, where bit N is set to "1" if UE support Bandwidth Combination Set N for this band combination, see 36.101 [42]. The leading / leftmost bit (bit 0) corresponds to the Bandwidth Combination Set 0, the next bit corresponds to the Bandwidth Combination Set 1 and so on. The UE shall neither include the field for a non-CA band combination, nor for a CA band combination for which the UE only supports Bandwidth Combination Set 0. | | - | |
| ***supportedCellGrouping***  This field indicates for which mapping of serving cells to cell groups (i.e. MCG or SCG) the UE supports asynchronous DC. This field is only present for a band combination with more than two but less than six band entries where the UE supports asynchronous DC. If this field is not present but asynchronous operation is supported, the UE supports all possible mappings of serving cells to cell groups for the band combination. The bitmap size is selected based on the number of entries in the combinations, i.e., in case of three entries, the bitmap corresponding to *threeEntries* is selected and so on.  A bit in the bit string set to 1 indicates that the UE supports asynchronous DC for the cell grouping option represented by the concerned bit position. Each bit position represents a different cell grouping option, as illustrated by a table, see NOTE 5. A cell grouping option is represented by a number of bits, each representing a particular band entry in the band combination with the left-most bit referring to the band listed first in the band combination, etc. Value 0 indicates that the carriers of the corresponding band entry are mapped to a first cell group, while value 1 indicates that the carriers of the corresponding band entry are mapped to a second cell group.  It is noted that the mapping table does not include entries with all bits set to the same value (0 or 1) as this does not represent a DC scenario (i.e. indicating that the UE supports that all carriers of the corresponding band entry are in one cell group). | | - | |
| ***supportedCSI-Proc, sTTI-SupportedCSI-Proc***  Indicates the maximum number of CSI processes supported on a component carrier within a band. Value n1 corresponds to 1 CSI process, value n3 corresponds to 3 CSI processes, and value n4 corresponds to 4 CSI processes. If this field is included, the UE shall include the same number of entries listed in the same order as in *BandParameters/STTI-SPT-BandParameters*. If the UE supports at least 1 CSI process on any component carrier, then the UE shall include this field in all bands in all band combinations. | | - | |
| ***supportedCSI-Proc (in FeatureSetDL-PerCC)***  In MR-DC, indicates the number of CSI processes for the component carrier in the corresponding bandwidth class. If the UE supports at least 1 CSI process, then the UE shall include this field. | | - | |
| ***supportedMIMO-CapabilityDL-MRDC (in FeatureSetDL-PerCC)***  In MR-DC, indicates the maximum number of supported layers in TM9/10 for the component carrier in the corresponding bandwidth class. | | - | |
| ***supportedNAICS-2CRS-AP***  If included, the UE supports NAICS for the band combination. The UE shall include a bitmap of the same length, and in the same order, as in *naics-Capability-List,* to indicate 2 CRS AP NAICS capability of the band combination. The first/ leftmost bit points to the first entry of *naics-Capability-List*, the second bit points to the second entry of *naics-Capability-List*, and so on.  For band combinations with a single component carrier, UE is only allowed to indicate {*numberOfNAICS-CapableCC*, *numberOfAggregatedPRB*} = {1, 100} if NAICS is supported. | | - | |
| ***supportedOperatorDic***  Indicates whether the UE supports operator defined dictionary. If UE supports operator defined dictionary, the UE shall report *versionOfDictionary* and *associatedPLMN-ID* of the stored operator defined dictionary. This parameter is not required to be present if the UE is in VPLMN. In this release of the specification, UE can only support one operator defined dictionary. The *associatedPLMN-ID* is only associated to the operator defined dictionary which has no relationship with UE's HPLMN ID. | | - | |
| ***supportRohcContextContinue***  Indicates whether the UE supports ROHC context continuation operation where the UE does not reset the current ROHC context upon handover. | | - | |
| ***supportedROHC-Profiles***  Indicates the ROHC profiles that UE supports in both uplink and downlink. | | - | |
| ***supportedUplinkOnlyROHC-Profiles***  Indicates the ROHC profiles that UE supports in uplink and not in downlink, see TS 36.323 [8] | | - | |
| ***supportedStandardDic***  Indicates whether the UE supports standard dictionary for SIP and SDP as specified in TS 36.323 [8]. | | - | |
| ***supportedUDC***  Indicates whether the UE supports UL data compression, see TS 36.323 [8]. | | - | |
| ***tdd-SpecialSubframe***  Indicates whether the UE supports TDD special subframe defined in TS 36.211 [21]. A UE shall indicate *tdd-SpecialSubframe-r11* if it supports the TDD special subframes ssp7 and ssp9. A UE shall indicate *tdd-SpecialSubframe-r14* if it supports the TDD special subframe ssp10, except when *ssp10-TDD-Only-r14* is included. | | Yes | |
| ***tdd-FDD-CA-PCellDuplex***  The presence of this field indicates that the UE supports TDD/FDD CA in any supported band combination including at least one FDD band with *bandParametersUL* and at least one TDD band with *bandParametersUL*. The first bit is set to "1" if UE supports the TDD PCell. The second bit is set to "1" if UE supports FDD PCell. This field is included only if the UE supports band combination including at least one FDD band with *bandParametersUL* and at least one TDD band with *bandParametersUL*. If this field is included, the UE shall set at least one of the bits as "1". If this field is included with DC, then it is applicable within a CG, and the presence of this field indicates the capability of the UE to support TDD/FDD CA with at least one FDD band and at least one TDD band in the same CG, with the value indicating the support for TDD/FDD PCell (PSCell). | | No | |
| ***tdd-TTI-Bundling***  The presence of this field indicates whether the UE supporting TDD special subframe configuration 10 also supports TTI bundling for TDD configuration 2 and 3 when PUSCH transimission in UpPTS is configured, see TS 36.213 [23], clause 8.0. If this field is present, the *tdd-SpecialSubframe-r14* or *ssp10-TDD-Only-r14* shall be present. | | Yes | |
| ***timeReferenceProvision***  Indicates whether the UE supports provision of time reference in *DLInformationTransfer* message. | | - | |
| ***timerT312***  Indicates whether the UE supports T312. | | No | |
| ***tm5-FDD***  Indicates whether the UE supports the PDSCH transmission mode 5 in FDD. | - | | |
| ***tm5-TDD***  Indicates whether the UE supports the PDSCH transmission mode 5 in TDD. | - | | |
| ***tm6-CE-ModeA***  Indicates whether the UE supports tm6 operation in CE mode A, see TS 36.213 [23], clause 7.2.3. This field can be included only if *ce-ModeA* is included. | | Yes | |
| ***tm8-slotPDSCH***  Indicates whether the UE supports configuration and decoding of TM8 for slot PDSCH in TDD. | | - | |
| ***tm9-CE-ModeA***  Indicates whether the UE supports tm9 operation in CE mode A, see TS 36.213 [23], clause 7.2.3. This field can be included only if *ce-ModeA* is included. | | Yes | |
| ***tm9-CE-ModeB***  Indicates whether the UE supports tm9 operation in CE mode B, see TS 36.213 [23], clause 7.2.3. This field can be included only if *ce-ModeB* is included. | | Yes | |
| ***tm9-LAA***  Indicates whether the UE supports tm9 operation on LAA cell(s). This field can be included only if *downlinkLAA* is included. | | - | |
| ***tm9-slotSubslot***  Indicates whether the UE supports configuration and decoding of TM9 for slot and/or subslot PDSCH for non-MBSFN. | | - | |
| ***tm9-slotSubslotMBSFN***  Indicates whether the UE supports configuration and decoding of TM9 for slot and/or subslot PDSCH for MBSFN. | | - | |
| ***tm9-With-8Tx-FDD***  Indicates whether the UE supports PDSCH transmission mode 9 with 8 CSI reference signal ports for FDD when not operating in CE mode. | | Yes | |
| ***tm10-LAA***  Indicates whether the UE supports tm10 operation on LAA cell(s). This field can be included only if *downlinkLAA* is included. | | - | |
| ***tm10-slotSubslot***  Indicates whether the UE supports configuration and decoding of TM10 for slot and/or subslot PDSCH for non-MBSFN. | | - | |
| ***tm10-slotSubslotMBSFN***  Indicates whether the UE supports configuration and decoding of TM10 for slot and/or subslot PDSCH for MBSFN. | | - | |
| ***totalWeightedLayers***  Indicates total number of weighted layers the UE can process for FD-MIMO. See NOTE 8. | | - | |
| ***twoAntennaPortsForPUCCH*** | | No | |
| ***twoStepSchedulingTimingInfo***  Presence of this field indicates that the UE supports uplink scheduling using PUSCH trigger A and PUSCH trigger B (as defined in TS 36.213 [23]).  This field also indicates the timing between the PUSCH trigger B and the earliest time the UE supports performing the associated UL transmission. For reception of PUSCH trigger B in subframe N, value *nPlus1* indicates that the UE supports performing the UL transmission in subframe N+1, value *nPlus2* indicates that the UE supports performing the UL transmission in subframe N+2, and so on.  This field can be included only if *uplinkLAA* is included. | | - | |
| ***txAntennaSwitchDL, txAntennaSwitchUL***  The presence of *txAntennaSwitchUL* indicates the UE supports transmit antenna selection for this UL band in the band combination as described in TS 36.213 [23], clauses 8.2 and 8.7.  The field *txAntennaSwitchDL* indicates the entry number of the first-listed band with UL in the band combination that affects this DL. The field *txAntennaSwitchUL* indicates the entry number of the first-listed band with UL in the band combination that switches together with this UL. Value 1 means first entry, value 2 means second entry and so on. All DL and UL that switch together indicate the same entry number.  For the case of carrier switching, the antenna switching capability for the target carrier configuration is indicated as follows:  For UE configured with a set of component carriers belonging to a band combination Cbaseline = {b1(1),…,bx(1),…,by(0),…}, where "1/0" denotes whether the corresponding band has an uplink, if a component carrier in bx is to be switched to a component carrier in by (according to *srs-SwitchFromServCellIndex*), the antenna switching capability is derived based on band combination Ctarget = {b1(1),…,bx(0),…,by(1),…}. | | - | |
| ***txDiv-PUCCH1b-ChSelect***  Indicates whether the UE supports transmit diversity for PUCCH format 1b with channel selection. | | Yes | |
| ***txDiv-SPUCCH***  Indicates whether the UE supports Tx diversity on SPUCCH format 1/1a/1b/3. | | - | |
| ***uci-PUSCH-Ext***  Indicates whether the UE supports an extension of UCI delivering more than 22 HARQ-ACK bits on PUSCH as specified in TS 36.212 [22], clause 5.2.2.6 and TS 36.213 [23], clause 8.6.3. | | No | |
| ***ue-AutonomousWithFullSensing***  Indicates whether the UE supports transmitting PSCCH/PSSCH using UE autonomous resource selection mode with full sensing (i.e., continuous channel monitoring) for V2X sidelink communication and the UE supports maximum transmit power associated with Power class 3 V2X UE, see TS 36.101 [42]. | | - | |
| ***ue-AutonomousWithPartialSensing***  Indicates whether the UE supports transmitting PSCCH/PSSCH using UE autonomous resource selection mode with partial sensing (i.e., channel monitoring in a limited set of subframes) for V2X sidelink communication and the UE supports maximum transmit power associated with Power class 3 V2X UE, see TS 36.101 [42]. | | - | |
| ***ue-Category***  UE category as defined in TS 36.306 [5]. Set to values 1 to 12 in this version of the specification. | | - | |
| ***ue-CategoryDL***  UE DL category as defined in TS 36.306 [5]. Value *n17* corresponds to UE category 17, value *m1* corresponds to UE category M1, value *oneBis* corresponds to UE category 1bis, value m2 corresponds to UE category M2. For ASN.1 compatibility, a UE indicating DL category 0, m1 or m2 shall also indicate any of the categories (1..5) in *ue-Category* (without suffix), which is ignored by the eNB, a UE indicating UE category oneBis shall also indicate UE category 1 in *ue-Category* (without suffix), and a UE indicating UE category m2 shall also indicate UE category m1. The field *ue-CategoryDL* is set to values 0, m1, oneBis, m2, 4, 6, 7, 9 to 16, n17, 18, 19, 20, 21, 22, 23, 24, 25, 26 in this version of the specification. | | - | |
| ***ue-CategorySL-C-TX***  UE SL category for V2X transmission as defined in TS 36.306 [5]. Set to values 1 to 5 in this version of the specification. | | | - |
| ***ue-CategorySL-C-RX***  UE SL category for V2X reception as defined in TS 36.306 [5]. Set to values 1 to 4 in this version of the specification. | | | - |
| ***ue-CategoryUL***  UE UL category as defined in TS 36.306 [5]. Value *n14* corresponds to UE category 14, value *n16* corresponds to UE category 16 and so on. Value *m1* corresponds to UE category M1, value *m2* corresponds to UE category M2, value *oneBis* corresponds to UE category 1bis. The field *ue-CategoryUL* is set to values m1, m2, 0, oneBis, 3, 5, 7, 8, 13, n14, 15, n16 to n21 or 22 to 26 in this version of the specification. | | - | |
| ***ue-CA-PowerClass-N***  Indicates whether the UE supports UE power class N in the E-UTRA band combination, see TS 36.101 [42] and TS 36.307 [78]. If *ue-CA-PowerClass-N* is not included, UE supports the default UE power class in the E-UTRA band combination, see TS 36.101 [42]. | | - | |
| ***ue-CE-NeedULGaps***  Indicates whether the UE needs uplink gaps during continuous uplink transmission in FDD as specified in TS 36.211 [21] and TS 36.306 [5]. | | - | |
| ***ue-PowerClass-N, ue-PowerClass-5***  Indicates whether the UE supports UE power class 1, 2, 4 or 5 in the E-UTRA band, see TS 36.101 [42] and TS 36.307 [79]. UE includes either *ue-PowerClass-N* or *ue-PowerClass-5*. If neither *ue-PowerClass-N* nor *ue-PowerClass-5* is included, UE supports the default UE power class in the E-UTRA band, see TS 36.101 [42]. | | - | |
| ***ue-Rx-TxTimeDiffMeasurements***  Indicates whether the UE supports Rx - Tx time difference measurements. | | No | |
| ***ue-SpecificRefSigsSupported*** | | No | |
| ***ue-SSTD-Meas***  Indicates whether the UE supports SSTD measurements between the PCell and the PSCell as specified in TS 36.214 [48] and TS 36.133 [16]. | | - | |
| ***ue-TxAntennaSelectionSupported***  Except for the supported band combinations for which *bandParameterList-v1380* is included, TRUE indicates that the UE is capable of supporting UE transmit antenna selection such that all the supported bands in the band combination are affected by transmit antenna switching, as described in TS 36.213 [23], clause 8.7. E-UTRAN ignores this field for band combinations for which *bandParameterList-v1380* is included. | | Yes | |
| ***ue-TxAntennaSelection-SRS-1T4R***  Indicates whether the UE supports selecting one antenna among four antennas to transmit SRS for the corresponding band of the band combination as described in TS 36.213 [23]. | | - | |
| ***ue-TxAntennaSelection-SRS-2T4R-2Pairs***  Indicates whether the UE supports selecting one antenna pair between two antenna pairs to transmit SRS simultaneously for the corresponding band of the band combination as described in TS 36.213 [23]. | | - | |
| ***ue-TxAntennaSelection-SRS-2T4R-3Pairs***  Indicates whether the UE supports selecting one antenna pair among three antenna pairs to transmit SRS simultaneously for the corresponding band of the band combination as described in TS 36.213 [23]. | | - | |
| ***ul-64QAM***  Indicates whether the UE supports 64QAM in UL on the band. This field is only present when the field ue*-CategoryUL* indicates UL UE category that supports UL 64QAM, see TS 36.306 [5], Table 4.1A-2. If the field is present for one band, the field shall be present for all bands including downlink only bands. | | - | |
| ***ul-256QAM***  Indicates whether the UE supports 256QAM in UL on the band in the band combination. This field is only present when the field ue*-CategoryUL* indicates UL UE category that supports 256QAM in UL, see TS 36.306 [5], Table 4.1A-2. The UE includes this field only if the field *ul-256QAM-perCC-InfoLis*t is not included. | | - | |
| ***ul-256QAM-perCC-InfoList***  Indicates, per serving carrier of which the corresponding bandwidth class includes multiple serving carriers (i.e. bandwidth class B, C, D and so on), whether the UE supports 256QAM in the band combination. The number of entries is equal to the number of component carriers in the corresponding bandwidth class. The UE shall support the setting indicated in each entry of the list regardless of the order of entries in the list. This field is only present when the field *ue-CategoryUL* indicates UL UE category that supports 256QAM in UL, see TS 36.306 [5], Table 4.1A-2. The UE includes this field only if the field *ul-256QAM* is not included. | | - | |
| ***ul-256QAM-Slot***  Indicates whether the UE supports 256QAM in UL for slot TTI operation on the band. | | - | |
| ***ul-256QAM-Subslot***  Indicates whether the UE supports 256QAM in UL for subslot TTI operation on the band. | | - | |
| ***ul-AsyncHarqSharingDiff-TTI-Lengths***  Indicates whether the UE supports UL asynchronous HARQ sharing between different TTI lengths for an UL serving cell. | | - | |
| ***ul-CoMP***  Indicates whether the UE supports UL Coordinated Multi-Point operation. | | No | |
| ***ul-dmrs-Enhancements***  Indicates whether the UE supports UL DMRS enhancements as defined in TS 36.211 [21], clause 6.10.3A. | | FFS | |
| ***ul-PDCP-Delay***  Indicates whether the UE supports UL PDCP Packet Delay per QCI measurement as specified in TS 36.314 [71]. | | - | |
| ***ul-powerControlEnhancements***  Indicates whether UE supports UplinkPowerControlDedicated. | | - | |
| ***uplinkLAA***  Presence of the field indicates that the UE supports uplink LAA operation. | | - | |
| ***uss-BlindDecodingAdjustment***  Indicates whether the UEsupports blind decoding adjustment on UE specific search space as defined in TS 36.213 [22]. This field can be included only if uplinkLAA is included. | | - | |
| ***uss-BlindDecodingReduction***  Indicates whether the UE supports blind decoding reduction on UE specific search space by not monitoring DCI format 0A/0B/4A/4B as defined in TS 36.213 [22]. This field can be included only if uplinkLAA is included. | | - | |
| ***unicastFrequencyHopping***  Indicates whether the UE supports frequency hopping for unicast MPDCCH/PDSCH (configured by *mpdcch-pdsch-HoppingConfig*) and unicast PUSCH (configured by *pusch-HoppingConfig*). | | - | |
| ***unicast-fembmsMixedSCell***  Indicates whether the UE supports unicast reception from FeMBMS/Unicast mixed cell. This field is included only if UE supports carrier aggregation. | | No | |
| ***utra-GERAN-CGI-Reporting-ENDC***  Indicates whether the UE supports Inter-RAT report CGI procedure towards GERAN/UTRA cell when it is configured with (NG)EN-DC wherein either MN and SN have different DRX cycles, or on-duration configured by MN does not contain on-duration configured by SN if their DRX cycles are same. | | | Yes |
| ***utran-ProximityIndication***  Indicates whether the UE supports proximity indication for UTRAN CSG member cells. | | - | |
| ***utran-SI-AcquisitionForHO***  Indicates whether the UE supports, upon configuration of si-RequestForHO by the network, acquisition and reporting of relevant information using autonomous gaps by reading the SI from a neighbouring UMTS cell. | | Yes | |
| ***v2x-BandwidthClassTxSL, v2x-BandwidthClassRxSL***  The bandwidth class for V2X sidelink transmission and reception supported by the UE as defined in TS 36.101 [42], Table 5.6G.1-3.  The UE explicitly includes all the supported bandwidth class combinations for V2X sidelink transmission or reception in the band combination signalling. Support for one bandwidth class does not implicitly indicate support for another bandwidth class. | | - | |
| ***v2x-eNB-Scheduled***  Indicates whether the UE supports transmitting PSCCH/PSSCH using dynamic scheduling, SPS in eNB scheduled mode for V2X sidelink communication, reporting SPS assistance information and the UE supports maximum transmit power associated with Power class 3 V2X UE, see TS 36.101 [42] in a band. | | - | |
| ***v2x-EnhancedHighReception***  Indicates whether the UE supports reception of 30 PSCCH in a subframe and decoding of 204 RBs per subframe counting both PSCCH and PSSCH in a band for V2X sidelink communication. | | | - |
| ***v2x-HighPower***  Indicates whether the UE supports maximum transmit power associated with Power class 2 V2X UE for V2X sidelink transmission in a band, see TS 36.101 [42]. | | - | |
| ***v2x-HighReception***  Indicates whether the UE supports reception of 20 PSCCH in a subframe and decoding of 136 RBs per subframe counting both PSCCH and PSSCH in a band for V2X sidelink communication. | | - | |
| ***v2x-nonAdjacentPSCCH-PSSCH***  Indicates whether the UE supports transmission and reception in the configuration of non-adjacent PSCCH and PSSCH for V2X sidelink communication. | | - | |
| ***v2x-numberTxRxTiming***  Indicates the number of multiple reference TX/RX timings counted over all the configured sidelink carriers for V2X sidelink communication. | | - | |
| ***v2x-SensingReportingMode3***  Indicates whether the UE supports sensing measurements and reporting of measurement results in eNB scheduled mode for V2X sidelink communication. | | - | |
| ***v2x-SupportedBandCombinationList***  Indicates the supported band combination list on which the UE supports simultaneous transmission and/or reception of V2X sidelink communication. | |  | |
| ***v2x-SupportedTxBandCombListPerBC, v2x-SupportedRxBandCombListPerBC***  Indicates, for a particular band combination of EUTRA, the supported band combination list among *v2x-SupportedBandCombinationList* on which the UE supports simultaneous transmission or reception of EUTRA and V2X sidelink communication respectively. The first bit refers to the first entry of *v2x-SupportedBandCombinationList*, with value 1 indicating V2X sidelink transmission/reception is supported. | | - | |
| ***v2x-TxWithShortResvInterval***  Indicates whether the UE supports 20 ms and 50 ms resource reservation periods for UE autonomous resource selection and eNB scheduled resource allocation for V2X sidelink communication. | | - | |
| ***voiceOverPS-HS-UTRA-FDD***  Indicates whether UE supports IMS voice according to GSMA IR.58 profile in UTRA FDD. | | - | |
| ***voiceOverPS-HS-UTRA-TDD128***  Indicates whether UE supports IMS voice in UTRA TDD 1.28Mcps. | | - | |
| ***ims-VoiceOverNR-PDCP-MCG-Bearer***  Indicates whether the UE supports IMS voice over NR PDCP with only MCG RLC bearer. | | Yes | |
| ***ims-VoiceOverNR-PDCP-SCG-Bearer***  Indicates whether the UE supports IMS voice over NR PDCP with only SCG RLC bearer when configured with EN-DC. | | Yes | |
| ***ims-VoNR-PDCP-SCG-NGENDC***  Indicates whether the UE supports IMS voice over NR PDCP with only SCG RLC bearer when configured with NGEN-DC. | | Yes | |
| ***whiteCellList***  Indicates whether the UE supports EUTRA white cell listing to limit the set of cells applicable for measurements. | | - | |
| ***wlan-IW-RAN-Rules***  Indicates whether the UE supports RAN-assisted WLAN interworking based on access network selection and traffic steering rules. | | - | |
| ***wlan-IW-ANDSF-Policies***  Indicates whether the UE supports RAN-assisted WLAN interworking based on ANDSF policies. | | - | |
| ***wlan-MAC-Address***  Indicates the WLAN MAC address of this UE. | | - | |
| ***wlan-PeriodicMeas***  Indicates whether the UE supports periodic reporting of WLAN measurements. | | - | |
| ***wlan-ReportAnyWLAN***  Indicates whether the UE supports reporting of WLANs not listed in the *measObjectWLAN*. | | - | |
| ***wlan-SupportedDataRate***  Indicates the maximum WLAN data rate supported by the UE over all LWA bearers. Actual value of supported data rate is field value \* 10 Mbps (i.e., value 1 corresponds to 10 Mbps, value 2 corresponds to 20 Mbps and so on). | | - | |
| ***zp-CSI-RS-AperiodicInfo***  Indicates whether the UE supports aperiodic ZP-CSI-RS transmission for the indicated transmission mode. | | FFS | |

NOTE 1: The IE *UE-EUTRA-Capability* does not include AS security capability information, since these are the same as the security capabilities that are signalled by NAS. Consequently, AS need not provide "man-in-the-middle" protection for the security capabilities.

NOTE 2: The column FDD/ TDD diff indicates if the UE is allowed to signal, as part of the additional capabilities for an XDD mode i.e. within *UE-EUTRA-CapabilityAddXDD-Mode-xNM*, a different value compared to the value signalled elsewhere within *UE-EUTRA-Capability* (i.e. the common value, supported for both XDD modes). A '-' is used to indicate that it is not possible to signal different values (used for fields for which the field description is provided for other reasons). Annex E specifies for which TDD and FDD serving cells a UE supporting TDD/FDD CA shall support a capability for which it indicates support within the capability signalling.

NOTE 2a: From REL-15 onwards, the UE is not allowed to signal different values for FDD and TDD unless yes is indicated in column FDD/ TDD diff (i.e. no need to introduce field description solely for the purpose of indicate no).

NOTE 3: The *BandCombinationParameters* for the same band combination can be included more than once.

NOTE 4: UE CA and measurement capabilities indicate the combinations of frequencies that can be configured as serving frequencies.

NOTE 5: The grouping of the cells to the first and second cell group, as indicated by *supportedCellGrouping*, is shown in the table below. The leading / leftmost bit of *supportedCellGrouping* corresponds to the Bit String Position 1.

7.3 Timers

7.3.1 Timers (Informative)

| **Timer** | **Start** | **Stop** | **At expiry** |
| --- | --- | --- | --- |
| T300  NOTE1 | Transmission of *RRCConnectionRequest* or *RRCConnectionResumeRequest* or *RRCEarlyDataRequest* | Reception of *RRCConnectionSetup*, *RRCConnectionReject* or *RRCConnectionResume* or *RRCEarlyDataComplete* or *RRCConnectionRelease* for UP-EDT, cell re-selection and upon abortion of connection establishment by upper layers | Perform the actions as specified in 5.3.3.6 |
| T301  NOTE1 | Transmission of *RRCConnectionReestabilshmentRequest* | Reception of *RRCConnectionReestablishment* or *RRCConnectionReestablishmentReject* message as well as when the selected cell becomes unsuitable | Go to RRC\_IDLE |
| T302 | Reception of *RRCConnectionReject* while performing RRC connection establishment or reception of *RRCConnectionRelease* including *waitTime* | Upon entering RRC\_CONNECTED and upon cell re-selection, or upon reception of *RRCEarlyDataComplete* or *RRCConnectionRelease* for UP-EDT or upon reception of *RRCConnectionReject* message for E-UTRA/5GC. | Inform upper layers about barring alleviation as specified in 5.3.3.7 |
| T303 | Access barred while performing RRC connection establishment for mobile originating calls | Upon entering RRC\_CONNECTED and upon cell re-selection, or upon reception of *RRCEarlyDataComplete* or *RRCConnectionRelease* for UP-EDT | Inform upper layers about barring alleviation as specified in 5.3.3.7 |
| T304 | Reception of *RRCConnectionReconfiguration* message including the *MobilityControl Info* or  reception of *MobilityFromEUTRACommand* message including *CellChangeOrder* | Criterion for successful completion of handover within E-UTRA, handover to E-UTRA or cell change order is met (the criterion is specified in the target RAT in case of inter-RAT) | In case of cell change order from E-UTRA or intra E-UTRA handover, initiate the RRC connection re-establishment procedure; In case of handover to E-UTRA, perform the actions defined in the specifications applicable for the source RAT. |
| T305 | Access barred while performing RRC connection establishment for mobile originating signalling | Upon entering RRC\_CONNECTED and upon cell re-selection, or upon reception of *RRCEarlyDataComplete* or *RRCConnectionRelease* for UP-EDT | Inform upper layers about barring alleviation as specified in 5.3.3.7 |
| T306 | Access barred while performing RRC connection establishment for mobile originating CS fallback. | Upon entering RRC\_CONNECTED and upon cell re-selection, or upon reception of *RRCEarlyDataComplete* or *RRCConnectionRelease* for UP-EDT | Inform upper layers about barring alleviation as specified in 5.3.3.7 |
| T307 | Reception of *RRCConnectionReconfiguration* message including *MobilityControlInfoSCG* | Successful completion of random access on the PSCell, upon initiating re-establishment and upon SCG release | Initiate the SCG failure information procedure as specified in 5.6.13. |
| T308 | Access barred due to ACDC while performing RRC connection establishment subject to ACDC | Upon entering RRC\_CONNECTED and upon cell re-selection, or upon reception of *RRCEarlyDataComplete* or *RRCConnectionRelease* for UP-EDT | Inform upper layers about barring alleviation for ACDC as specified in 5.3.3.7 |
| T309  NOTE1 | When access attempt is barred at access barring check for an Access Category. The UE shall maintain one instance of this timer per Access Category. | Upon entering RRC\_CONNECTED, upon cell (re)selection, upon reception of *RRCConnectionRelease,* upon change of PCell while in RRC\_CONNECTED, or upon reception of *MobilityFromEUTRACommand*. | Perform the actions as specified in 5.3.16.4. |
| T310  NOTE1  NOTE2 | Upon detecting physical layer problems for the PCell i.e. upon receiving N310 consecutive out-of-sync indications from lower layers | Upon receiving N311 consecutive in-sync indications from lower layers for the PCell, upon triggering the handover procedure and upon initiating the connection re-establishment procedure | If security is not activated and the UE is not a NB-IoT UE that supports RRC connection re-establishment for the Control Plane CIoT EPS optimisation: go to RRC\_IDLE else: initiate the MCG failure information procedure as specified in 5.6.26 or the connection re-establishment procedure as specified in 5.3.7. |
| T311  NOTE1 | Upon initiating the RRC connection re-establishment procedure | Selection of a suitable E-UTRA cell or a cell using another RAT. | Enter RRC\_IDLE |
| T312  NOTE2 | Upon triggering a measurement report for a measurement identity for which T312 has been configured, while T310 is running | Upon receiving N311 consecutive in-sync indications from lower layers, upon triggering the handover procedure, upon initiating the connection re-establishment procedure, and upon the expiry of T310 | If security is not activated: go to RRC\_IDLE else: initiate the MCG failure information procedure as specified in 5.6.26 or the connection re-establishment procedure as specified in 5.3.7. |
| T313  NOTE2 | Upon detecting physical layer problems for the PSCell i.e. upon receiving N313 consecutive out-of-sync indications from lower layers | Upon receiving N314 consecutive in-sync indications from lower layers for the PSCell, upon initiating the connection re-establishment procedure, upon SCG release and upon receiving *RRCConnectionReconfiguration* including *MobilityControlInfoSCG* | Inform E-UTRAN about the SCG radio link failure by initiating the SCG failure information procedure as specified in 5.6.13. |
| T316 | Upon transmission of the *MCGFailureInformation* message | Upon resumption of MCG transmission, upon reception of *RRCConnectionRelease*, or upon initiaitng the re-establishment procedure, | Perform the actions as specified in 5.6.26.5. |
| T320 | Upon receiving *t320* or upon cell (re)selection to E-UTRA from another RAT with validity time configured for dedicated priorities (in which case the remaining validity time is applied). | Upon entering RRC\_CONNECTED, when PLMN selection is performed on request by NAS, when the UE enters RRC\_IDLE from RRC\_INACTIVE, or upon cell (re)selection to another RAT (in which case the timer is carried on to the other RAT) , or upon reception of *RRCEarlyDataComplete* or *RRCConnectionRelease* for UP-EDT | Discard the cell reselection priority information provided by dedicated signalling. |
| T321 | Upon receiving *measConfig* including a *reportConfig* with the *purpose* set to *reportCGI* | Upon acquiring the information needed to set all fields of *cellGlobalId* for the requested cell, upon receiving *measConfig* that includes removal of the *reportConfig* with the *purpose* set to *reportCGI* and upon detecting that a cell is not broadcasting SIB1. | Initiate the measurement reporting procedure, stop performing the related measurements and remove the corresponding *measId* |
| T322  NOTE1 | Upon receiving *redirectedCarrierOffsetDedicated* included in *RedirectedCarrierInfo* | Upon entering RRC\_CONNECTED, when PLMN selection is performed on request by NAS, or upon cell (re)selection to another frequency or RAT, or upon reception of *RRCEarlyDataComplete* or *RRCConnectionRelease* for UP-EDT | Release *redirectedCarrierOffsetDedicated*. |
| T325 | Timer (re)started upon receiving *RRCConnectionReject* message with *deprioritisationTimer*. |  | Stop deprioritisation of all frequencies or E-UTRA signalled by *RRCConnectionReject.* |
| T330 | Upon receiving *LoggedMeasurementConfiguration* message | Upon log volume exceeding the suitable UE memory, upon initiating the release of *LoggedMeasurementConfiguration* procedure | Perform the actions specified in 5.6.6.4 |
| T331 | Upon receiving *RRCConnectionRelease* message including *measIdleConfig.* | Upon receiving *RRCConnectionSetup, RRCConnectionResume, RRCConnectionRelease* with an idle/inactive measurement configuration or indication to release the configuration, if *validityArea* is configured, upon reselecting to cell that does not belong to *validityArea* (if configured)*,* or upon reselecting to an inter-RAT cell.. | Release the stored *VarMeasIdleConfig.* |
| T340  NOTE2 | Upon transmitting *UEAssistanceInformation* message with *powerPrefIndication* set to *normal* | Upon initiating the connection re-establishment procedure | No action. |
| T341  NOTE2 | Upon transmitting *UEAssistanceInformation* message with *bw-Preference.* | Upon resuming an RRC connection or upon initiating the connection re-establishment procedure | No action. |
| T342  NOTE2 | Upon transmitting *DelayBudgetReport* message. | Upon initiating the connection re-establishment and connection resume procedures | No action. |
| T350 | Upon entering RRC\_IDLE if *t350* has been received in wlan-OffloadInfo. | Upon entering RRC\_CONNECTED, or upon cell reselection. | Perform the actions specified in 5.6.12.4. |
| T351 | Reception of *RRCConnectionReconfiguration* message including the association*Timer* in *WLAN-MobilityConfig*. | Upon successful connection to WLAN, upon WLAN connection failure, upon leaving RRC\_CONNECTED, upon triggering the handover procedure, or upon initiating the connection re-establishment procedure. | Perform WLAN Connection Status Reporting specified in 5.6.15.2. |
| T360 | Upon performing the redistribution target selection as specified in TS 36.304 [4]. | Upon entering RRC\_CONNECTED, upon receiving a Paging message including *redistributionIndication*; upon reselecting a cell not belonging to the redistribution target. | Stop considering a frequency or cell to be redistribution target, and perform the redistribution target selection if the condition specified in TS 36.304 [4] is met. |
| T370 | Upon receiving *SL-DiscConfig* including a *discSysInfoToReportConfig* set to *setup.* | Upon initiating the transmission of *SidelinkUEInformation* including *discSysInfoReportFreqList*, upon receiving *SL-DiscConfig* including *discSysInfoToReportConfig* set to *release*, upon handover and re-establishment*.* | Release *discSysInfoToReportConfig*. |
| T314  NOTE2 | Upon early detecting physical layer problems for the PCell i.e. upon receiving N310 consecutive "early-out-of-sync" indications from lower layers. | Upon receiving N311 consecutive in-sync indications from lower layers for the PCell, upon triggering the handover procedure and upon initiating the connection re-establishment procedure | Initiate the UE Assistance Information procedure to report early detection of physical layer problems in accordance with 5.6.10. |
| T315  NOTE2 | Upon detecting physical layer improvements of the PCell i.e. upon receiving N311 consecutive "early-in-sync" indications from lower layers. | Upon receiving N310 consecutive "early-out-of-sync" indications from lower layers for the PCell. | Initiate the UE Assistance Information procedure to report detection of physical layer improvements in accordance with 5.6.10. |
| T343  NOTE2 | Upon transmitting *UEAssistanceInformation* message with *RLM-Report* including *earlyOutOfSync*. | Upon initiating the connection re-establishment procedure | No action. |
| T344  NOTE2 | Upon transmitting *UEAssistanceInformation* message with *RLM-Report* including *earlyInSync*. | Upon initiating the connection re-establishment procedure | No action. |
| T345 | Upon transmitting *UEAssistanceInformation* message with *overheatingAssistance* | Upon initiating the connection re-establishment procedure | No action. |
| T380 | Upon reception of *periodic-RNAU-timer* in RRCConnectionRelease. | Upon reception of *RRCConnectionResume*, *RRCConnectionRelease* or *RRCConnectionSetup*. | Initiate the RAN notification area update procedure |
| T3xx | Upon receiving *t3xx*. | Upon entering RRC\_CONNECTED, when PLMN selection is performed on request by NAS, when the UE enters RRC\_IDLE from RRC\_INACTIVE, or upon cell (re)selection to another RAT, or upon reception of *RRCEarlyDataComplete* or *RRCConnectionRelease* for UP-EDT | Discard the *altFreqPriorities* provided by dedicated signalling. |
| NOTE1: Only the timers marked with "NOTE1" are applicable to NB-IoT.  NOTE2: The behaviour as specified in 7.3.2 applies. | | | |

/\*End of second change\*/