**3GPP TSG-****RAN2 Meeting#110-e *draft* *R2-2006276***

**Electronic, 1 – 12 June 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **36.331** | **CR** | **4324** | **rev** | **1** | **Current version:** | **16.0.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

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|  |
| ***Title:***  | 36.331 CR for overheating in (NG)EN-DC and NR-DC |
|  |  |
| ***Source to WG:*** | Huawei, Huawei Device |
| ***Source to TSG:*** | RAN2 |
|  |  |
| ***Work item code:*** | TEI16 |  | ***Date:*** | 2020-05-22 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-16 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)Rel-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
|  |  |
| ***Reason for change:*** | When UE experiences overheating problem in case of (NG)EN-DC, UE is only allowed to report reduced UE category and reduced sCC to the MN. Currently the eNB can release the SCG for the UE to help UE to address the overheating problem. In NR SA and MR-DC with NR as MN, the UE can also report reduced maximum MIMO layer and/or reduced maximum aggregated bandwidth, and the gNB can adjust the MIMO layer and aggregated bandwidth to address the UE overheating problem. For (NG)EN-DC, it is also desired that the gNB can adjust the sCC of the SCG, the MIMO layer of the SCG serving cell and/or aggregated bandwidth of the SCG carrier for the UE, which requires that the gNB can get the UE preferred maximum number of SCell, maximum number of MIMO layer and maximum aggregated bandwidth. |
|  |  |
| ***Summary of change:*** | 1. Introduce the *overheatingAssistanceForSCG* to indicate UE's preference on reduced configuration for SCG, *overheatingAssistanceForSCG* includes the NR *OverheatingAssistance* IE as specified in TS 38.331.
2. MN can configure if the UE is allowed to report the overheating assistance information for SCG.
3. UE can indicate the capability of reporting overheating assistance information for SCG. The UE which indicates support of *overheatingIndForSCG* shall also indicate support of *overheatingInd*.
 |
|  |  |
| ***Consequences if not approved:*** | The UE could not report its preferred MIMO layer for the serving cells of SCG and aggregated bandwidth of SCG carriers when the UE is experiencing overheating problem in (NG)EN-DC, which may result in the failure to address the UE’s overheating problem. |
|  |  |
| ***Clauses affected:*** | 5.3.7.2, 5.6.10.3, 6.2.2, 6.3.6 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS 38.331 CR 1671TS 36.306 CR 1765 |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

---------------------------------------------START OF CHANGE---------------------------------------------

#### 5.3.7.2 Initiation

The UE shall only initiate the procedure either when AS security has been activated or for a NB-IoT UE supporting RRC connection re-establishment for the Control Plane CIoT EPS optimisation. The UE initiates the procedure when one of the following conditions is met:

1> upon detecting radio link failure and T316 is not configured, in accordance with 5.3.11; or

1> upon handover failure, in accordance with 5.3.5.6; or

1> upon mobility from E-UTRA failure, in accordance with 5.4.3.5; or

1> except for UP-EDT, upon integrity check failure indication from lower layers concerning SRB1 or SRB2; or

1> upon an RRC connection reconfiguration failure, in accordance with 5.3.5.5; or

1> upon an RRC connection reconfiguration failure, in accordance with TS38.331 [82], clause 5.3.5.8; or

1> upon detecting radio link failure for the SCG while MCG transmission is suspended, in accordance with TS 38.331 [82] subclause 5.3.10.3 in (NG)EN-DC; or

1> upon SCG change failure while MCG transmission is suspended, in accordance with TS 38.331 [82] subclause 5.3.5.8.3 in (NG)EN-DC; or

1> upon SCG configuration failure while MCG transmission is suspended in accordance with subclause TS 38.331 [82] subclause 5.3.5.8.2 in (NG)EN-DC; or

1> upon integrity check failure indication from SCG lower layers concerning SRB3 while MCG transmission is suspended; or

1> upon T316 expiry, in accordance with sub-clause 5.6.26.5.

NOTE: For UP-EDT, integrity check failure indication from lower layers is handled in accordance with clause 5.3.3.16.

Upon initiation of the procedure, the UE shall:

1> stop timer T310, if running;

1> stop timer T312, if running;

1> stop timer T313, if running;

1> stop timer T316, if running;

1> stop timer T307, if running;

1> start timer T311;

1> stop timer T370, if running;

1> release *uplinkDataCompression*, if configured;

1> suspend all RBs, including RBs configured with NR PDCP, except SRB0;

1> reset MAC;

1> release the MCG SCell(s), if configured, in accordance with 5.3.10.3a;

1> release the SCell group(s), if configured, in accordance with 5.3.10.3d;

1> apply the default physical channel configuration as specified in 9.2.4;

1> except for NB-IoT, for the MCG, apply the default semi-persistent scheduling configuration as specified in 9.2.3;

1> for NB-IoT, release *schedulingRequestConfig*, if configured;

1> for the MCG, apply the default MAC main configuration as specified in 9.2.2;

1> release *powerPrefIndicationConfig*, if configured and stop timer T340, if running;

1> release *reportProximityConfig*, if configured and clear any associated proximity status reporting timer;

1> release *obtainLocationConfig*, if configured;

1> release *idc-Config*, if configured;

1> release *sps-AssistanceInfoReport*, if configured;

1> release *measSubframePatternPCell*, if configured;

1> release the entire SCG configuration, if configured, except for the DRB configuration (as configured by *drb-ToAddModListSCG*);

1> if (NG)EN-DC is configured:

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

2> release *p-MaxEUTRA*, if configured;

2> release *p-MaxUE-FR1*, if configured;

2> release *tdm-PatternConfig*, if configured;

1> release *naics-Info* for the PCell, if configured;

1> if connected as an RN and configured with an RN subframe configuration:

2> release the RN subframe configuration;

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;

1> release *delayBudgetReportingConfig*, if configured and stop timer T342, if running;

1> perform cell selection in accordance with the cell selection process as specified in TS 36.304 [4];

1> release *bw-PreferenceIndicationTimer*, if configured and stop timer T341, if running;

1> release *overheatingAssistanceConfig* and *overheatingAssistanceConfigForSCG*, if configured and stop timer T345, if running;

1> release *ailc-BitConfig*, if configured;

Editor's Note: Where to capture PUR release due to RACH initiation on a new cell.

-----------------------------------------START OF NEXT CHANGE-----------------------------------------

#### 5.6.10.3 Actions related to transmission of *UEAssistanceInformation* message

The UE shall set the contents of the *UEAssistanceInformation* message for power preference indications:

1> if configured to provide power preference indication and if the UE prefers a configuration primarily optimised for power saving:

2> set *powerPrefIndication* to *lowPowerConsumption*;

1> else if configured to provide power preference indication:

2> set *powerPrefIndication* to *normal*;

The UE shall set the contents of the *UEAssistanceInformation* message for SPS assistance information:

1> if configured to provide SPS assistance information:

2> if there is any traffic for V2X sidelink communication which needs to report SPS assistance information:

3> include *trafficPatternInfoListSL* in the *UEAssistanceInformation* message;

2> if there is any traffic for uplink communication which needs to report SPS assistance information:

3> include *trafficPatternInfoListUL* in the *UEAssistanceInformation* message;

The UE shall set the contents of the *UEAssistanceInformation* message for bandwidth preference indications:

1> set *bw-Preference* to its preferred configuration;

The UE shall set the contents of the *UEAssistanceInformation* message for delay budget report:

1> if configured to provide delay budget report:

2> if the UE prefers an adjustment in the connected mode DRX cycle length:

3> set *delayBudgetReport* to *type1* according to a desired value;

2> else if the UE prefers coverage enhancement configuration change:

3> set *delayBudgetReport* to *type2* according to a desired value;

The UE shall set the contents of the *UEAssistanceInformation* message for the RLM report:

1> if configured to provide RLM report:

2> if T314 has expired:

3> set *rlm-event* to *earlyOutOfSync*;

2> if T315 has expired:

3> set *rlm-event* to *earlyInSync*;

3> if configured to report *rlmReportRep-MPDCCH*:

4> set *excessRep-MPDCCH* to the value indicated by lower layers;

The UE shall set the contents of the *UEAssistanceInformation* message for overheating assistance indication:

1> if configured to provide overheating assistance indication:

2> if the UE experiences internal overheating:

3> if the UE prefers to temporarily reduce its DL category and UL category:

4> include *reducedUE-Category* in the *OverheatingAssistance* IE;

4> set *reducedUE-CategoryDL* to the number to which the UE prefers to temporarily reduce its DL category;

4> set *reducedUE-CategoryUL* to the number to which the UE prefers to temporarily reduce its UL category;

3> if the UE prefers to temporarily reduce the number of maximum secondary component carriers:

4> include *reducedMaxCCs* in the *OverheatingAssistance* IE;

4> set *reducedCCsDL* to the number of maximum SCells the UE prefers to be temporarily configured in downlink;

4> set *reducedCCsUL* to the number of maximum SCells the UE prefers to be temporarily configured in uplink;

3> if configured to provide overheating assistance indication for NR SCG:

4> include *overheatingAssistanceForSCG* in the *OverheatingAssistance* IE;

4> set *overheatingAssistanceForSCG* in accordance with clause 5.7.4.3a as specified in TS 38.331 [82];

2> else (if the UE no longer experiences an overheating condition):

3> do not include *reducedUE-Category*, *reducedMaxCCs* and *overheatingAssistanceForSCG* (if configured to provide overheating assistance indication for NR SCG) in *OverheatingAssistance* IE;

The UE shall submit the *UEAssistanceInformation* message to lower layers for transmission.

NOTE 1: It is up to UE implementation when and how to trigger SPS assistance information.

NOTE 2: It is up to UE implementation to set the content of *trafficPatternInfoListSL* and *trafficPatternInfoListUL*.

NOTE 3: Traffic patterns for different Destination Layer 2 IDs are provided in different entries in *trafficPatternInfoListSL.*

NOTE 4: Although not recommended, UE may start or restart the following timers whenever it sends the *UEAssistanceInformation* message (i.e. even if the message was not triggered for the concerned feature): T340, T341, T342, T343, T344 and T345*.*

-----------------------------------------START OF NEXT CHANGE-----------------------------------------

### 6.2.2 Message definitions

*[Text omitted]*

*– UEAssistanceInformation*

The *UEAssistanceInformation* message is used for the indication of UE assistance information to the eNB.

Signalling radio bearer: SRB1

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to E‑UTRAN

*UEAssistanceInformation message*

-- ASN1START

UEAssistanceInformation-r11 ::= SEQUENCE {

 criticalExtensions CHOICE {

 c1 CHOICE {

 ueAssistanceInformation-r11 UEAssistanceInformation-r11-IEs,

 spare3 NULL, spare2 NULL, spare1 NULL

 },

 criticalExtensionsFuture SEQUENCE {}

 }

}

UEAssistanceInformation-r11-IEs ::= SEQUENCE {

 powerPrefIndication-r11 ENUMERATED {normal, lowPowerConsumption} OPTIONAL,

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 nonCriticalExtension UEAssistanceInformation-v1430-IEs OPTIONAL

}

UEAssistanceInformation-v1430-IEs ::= SEQUENCE {

 bw-Preference-r14 BW-Preference-r14 OPTIONAL,

 sps-AssistanceInformation-r14 SEQUENCE {

 trafficPatternInfoListSL-r14 TrafficPatternInfoList-r14 OPTIONAL,

 trafficPatternInfoListUL-r14 TrafficPatternInfoList-r14 OPTIONAL

 } OPTIONAL,

 rlm-Report-r14 SEQUENCE {

 rlm-Event-r14 ENUMERATED {earlyOutOfSync, earlyInSync},

 excessRep-MPDCCH-r14 ENUMERATED {excessRep1, excessRep2} OPTIONAL

 } OPTIONAL,

 delayBudgetReport-r14 DelayBudgetReport-r14 OPTIONAL,

 nonCriticalExtension UEAssistanceInformation-v1450-IEs OPTIONAL

}

UEAssistanceInformation-v1450-IEs ::= SEQUENCE {

 overheatingAssistance-r14 OverheatingAssistance-r14 OPTIONAL,

 nonCriticalExtension UEAssistanceInformation-v1530-IEs OPTIONAL

}

UEAssistanceInformation-v1530-IEs ::= SEQUENCE {

 sps-AssistanceInformation-v1530 SEQUENCE {

 trafficPatternInfoListSL-v1530 TrafficPatternInfoList-v1530

 } OPTIONAL,

 nonCriticalExtension UEAssistanceInformation-v16xy-IEs OPTIONAL

}

UEAssistanceInformation-v16xy-IEs ::= SEQUENCE {

 overheatingAssistance-v16xy OverheatingAssistance-v16xy OPTIONAL,

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

BW-Preference-r14 ::= SEQUENCE {

 dl-Preference-r14 ENUMERATED {mhz1dot4, mhz5, mhz20 } OPTIONAL,

 ul-Preference-r14 ENUMERATED {mhz1dot4, mhz5} OPTIONAL

}

TrafficPatternInfoList-r14 ::= SEQUENCE (SIZE (1..maxTrafficPattern-r14)) OF TrafficPatternInfo-r14

TrafficPatternInfo-r14 ::= SEQUENCE {

 trafficPeriodicity-r14 ENUMERATED {

 sf20, sf50, sf100, sf200, sf300, sf400, sf500,

 sf600, sf700, sf800, sf900, sf1000},

 timingOffset-r14 INTEGER (0..10239),

 priorityInfoSL-r14 SL-Priority-r13 OPTIONAL,

 logicalChannelIdentityUL-r14 INTEGER (3..10) OPTIONAL,

 messageSize-r14 BIT STRING (SIZE (6))

}

TrafficPatternInfoList-v1530 ::= SEQUENCE (SIZE (1..maxTrafficPattern-r14)) OF TrafficPatternInfo-v1530

TrafficPatternInfo-v1530 ::= SEQUENCE {

 trafficDestination-r15 SL-DestinationIdentity-r12 OPTIONAL,

 reliabilityInfoSL-r15 SL-Reliability-r15 OPTIONAL

}

DelayBudgetReport-r14::= CHOICE {

 type1 ENUMERATED {

 msMinus1280, msMinus640, msMinus320, msMinus160,

 msMinus80, msMinus60, msMinus40, msMinus20, ms0, ms20, ms40, ms60, ms80, ms160, ms320, ms640, ms1280},

 type2 ENUMERATED {

 msMinus192, msMinus168,msMinus144, msMinus120,

 msMinus96, msMinus72, msMinus48, msMinus24, ms0, ms24, ms48, ms72, ms96, ms120, ms144, ms168, ms192}

}

OverheatingAssistance-r14 ::= SEQUENCE {

 reducedUE-Category SEQUENCE {

 reducedUE-CategoryDL INTEGER (0..19),

 reducedUE-CategoryUL INTEGER (0..21)

 } OPTIONAL,

 reducedMaxCCs SEQUENCE {

 reducedCCsDL INTEGER (0..31),

 reducedCCsUL INTEGER (0..31)

 } OPTIONAL

}

OverheatingAssistance-v16xy ::= SEQUENCE {

 overheatingAssistanceForSCG-r16 OCTET STRING OPTIONAL

}

-- ASN1STOP

| *UEAssistanceInformation* field descriptions |
| --- |
| ***delayBudgetReport***Indicates the UE-preferred adjustment to connected mode DRX or coverage enhancement configuration. |
| ***dl-Preference***Indicates UE's preference on configuration of maximum PDSCH bandwidth. The value mhz1dot4 corresponds to CE mode usage in 1.4MHz bandwidth, mhz5 corresponds to CE mode usage in 5MHz bandwidth, and mhz20 corresponds to CE mode usage in 20MHz bandwidth or normal coverage. |
| ***excessRep-MPDCCH***Indicates the excess number of repetitions on MPDCCH. Value excessRep1 and excessRep2 indicate the excess number of repetitions defined in TS 36.133 [16]. |
| ***logicalChannelIdentityUL***Indicates the logical channel identity associated with the reported traffic pattern in the uplink logical channel. |
| ***messageSize***Indicates the maximum TB size based on the observed traffic pattern. The value refers to the index of TS 36.321 [6], table 6.1.3.1-1. |
| ***overheatingAssistanceForSCG***Includes the NR *OverheatingAssistance* IE as specified in TS 38.331 [82]. The field indicates UE's preference on reduced configuration for NR SCG to address overheating. |
| ***powerPrefIndication***Value *lowPowerConsumption* indicates the UE prefers a configuration that is primarily optimised for power saving. Otherwise the value is set to *normal*. |
| ***priorityInfoSL***Indicates the traffic priority (i.e., PPPP) associated with the reported traffic pattern for V2X sidelink communication. |
| ***reducedCCsDL***Indicates the UE's preference on reduced configuration corresponding to the maximum number of downlink SCells indicated by the field, to address overheating. This maximum number includes both SCells of E-UTRA and PSCell/SCells of NR in (NG)EN-DC. |
| ***reducedCCsUL***Indicates the UE's preference on reduced configuration corresponding to the maximum number of uplink SCells indicated by the field, to address overheating. This maximum number includes both SCells of E-UTRA and PSCell/SCells of NR in (NG)EN-DC. |
| ***reducedUE-CategoryDL, reducedUE-CategoryUL***Indicates that UE prefers a configuration corresponding to the reduced UE category, to address overheating. The reduced UE DL category and reduced UE UL category should be indicated according to supported combinations for UE UL and DL Categories, see TS 36.306 [5], Table 4.1A-6. |
| ***reliabilityInfoSL***Indicates the traffic reliability (i.e., PPPR) associated with the reported traffic pattern for V2X sidelink communication. |
| ***rlm-Event***This field provides the RLM event ("early-out-of-sync" or "early-in-sync"). |
| ***rlm-Report***This field provides the RLM report for BL UEs and UEs in CE. |
| ***sps-AssistanceInformation***Indicates the UE assistance information to assist E-UTRAN to configure SPS. |
| ***timingOffset***This field indicates the estimated timing for a packet arrival in a SL/UL logical channel. Specifically, the value indicates the timing offset with respect to subframe#0 of SFN#0 in milliseconds. |
| ***trafficDestination***Indicates the destination associated with the reported traffic pattern for V2X sidelink communication. |
| ***trafficPatternInfoListSL***This field provides the traffic characteristics of sidelink logical channel(s) that are setup for V2X sidelink communication. If *trafficPatternInfoListSL-v1530* is included*,* it includes the same number of entries, and listed in the same order, as in*trafficPatternInfoListSL-r14*. |
| ***trafficPatternInfoListUL***This field provides the traffic characteristics of uplink logical channel(s). |
| ***trafficPeriodicity***This field indicates the estimated data arrival periodicity in a SL/UL logical channel. Value sf20 corresponds to 20 ms, sf50 corresponds to 50 ms and so on. |
| ***type1***Indicates the preferred amount of increment/decrement to the connected mode DRX cycle length with respect to the current configuration. Value in number of milliseconds. Value ms40 corresponds to 40 milliseconds, msMinus40 corresponds to -40 milliseconds and so on. |
| ***type2***Indicates the preferred amount of increment/decrement to the coverage enhancement configuration with respect to the current configuration so that the Uu air interface delay changes by the indicated amount. Value in number of milliseconds. Value ms24 corresponds to 24 milliseconds, msMinus24 corresponds to -24 milliseconds and so on. |
| ***ul-Preference***Indicates UE's preference on configuration of maximum PUSCH bandwidth. The value mhz1dot4 corresponds to CE mode usage in 1.4MHz bandwidth, and mhz5 corresponds to CE mode usage in 5MHz bandwidth. |

-----------------------------------------START OF NEXT CHANGE-----------------------------------------

### 6.3.6 Other information elements

*[Text omitted]*

– *OtherConfig*

The IE *OtherConfig* contains configuration related to other configuration.

***OtherConfig* information element**

-- ASN1START

OtherConfig-r9 ::= SEQUENCE {

 reportProximityConfig-r9 ReportProximityConfig-r9 OPTIONAL, -- Need ON

 ...,

 [[ idc-Config-r11 IDC-Config-r11 OPTIONAL, -- Need ON

 powerPrefIndicationConfig-r11 PowerPrefIndicationConfig-r11 OPTIONAL, -- Need ON

 obtainLocationConfig-r11 ObtainLocationConfig-r11 OPTIONAL -- Need ON

 ]],

 [[ bw-PreferenceIndicationTimer-r14 ENUMERATED {s0, s0dot5, s1, s2, s5, s10, s20,

 s30, s60, s90, s120, s300, s600, spare3,

 spare2, spare1} OPTIONAL, -- Need OR

 sps-AssistanceInfoReport-r14 BOOLEAN OPTIONAL, -- Need ON

 delayBudgetReportingConfig-r14 CHOICE{

 release NULL,

 setup SEQUENCE{

 delayBudgetReportingProhibitTimer-r14 ENUMERATED {

 s0, s0dot4, s0dot8,

 s1dot6, s3, s6, s12, s30}

 }

 } OPTIONAL, -- Need ON

 rlm-ReportConfig-r14 CHOICE {

 release NULL,

 setup SEQUENCE{

 rlmReportTimer-r14 ENUMERATED {s0, s0dot5, s1, s2, s5, s10, s20, s30,

 s60, s90, s120, s300, s600, spare3, spare2, spare1},

 rlmReportRep-MPDCCH-r14 ENUMERATED {setup} OPTIONAL -- Need OR

 }

 } OPTIONAL -- Need ON

 ]],

 [[ overheatingAssistanceConfig-r14 CHOICE{

 release NULL,

 setup SEQUENCE{

 overheatingIndicationProhibitTimer-r14 ENUMERATED {s0, s0dot5, s1, s2, s5, s10,

 s20, s30, s60, s90, s120, s300, s600,

 spare3, spare2, spare1}

 }

 } OPTIONAL -- Need ON

 ]],

 [[ measConfigAppLayer-r15 CHOICE{

 release NULL,

 setup SEQUENCE{

 measConfigAppLayerContainer-r15 OCTET STRING (SIZE(1..1000)),

 serviceType-r15 ENUMERATED {qoe, qoemtsi, spare6, spare5, spare4, spare3, spare2, spare1}

 }

 } OPTIONAL, -- Need ON

 ailc-BitConfig-r15 BOOLEAN OPTIONAL, -- Need ON

 bt-NameListConfig-r15 BT-NameListConfig-r15 OPTIONAL, --Need ON

 wlan-NameListConfig-r15 WLAN-NameListConfig-r15 OPTIONAL --Need ON

 ]],

 [[ configurdGrantAssistanceInfoReport-r16 BOOLEAN OPTIONAL -- Need ON

 ]],

 [[ overheatingAssistanceConfigForSCG-r16 BOOLEAN OPTIONAL -- Cond overheating

 ]]}

IDC-Config-r11 ::= SEQUENCE {

 idc-Indication-r11 ENUMERATED {setup} OPTIONAL, -- Need OR

 autonomousDenialParameters-r11 SEQUENCE {

 autonomousDenialSubframes-r11 ENUMERATED {n2, n5, n10, n15,

 n20, n30, spare2, spare1},

 autonomousDenialValidity-r11 ENUMERATED {

 sf200, sf500, sf1000, sf2000,

 spare4, spare3, spare2, spare1}

 } OPTIONAL, -- Need OR

 ...,

 [[ idc-Indication-UL-CA-r11 ENUMERATED {setup} OPTIONAL -- Cond idc-Ind

 ]],

 [[ idc-HardwareSharingIndication-r13 ENUMERATED {setup} OPTIONAL -- Need OR

 ]],

 [[ idc-Indication-MRDC-r15 CHOICE{

 release NULL,

 setup CandidateServingFreqListNR-r15

 } OPTIONAL -- Cond idc-Ind

 ]]

}

ObtainLocationConfig-r11 ::= SEQUENCE {

 obtainLocation-r11 ENUMERATED {setup} OPTIONAL -- Need OR

}

PowerPrefIndicationConfig-r11 ::= CHOICE{

 release NULL,

 setup SEQUENCE{

 powerPrefIndicationTimer-r11 ENUMERATED {s0, s0dot5, s1, s2, s5, s10, s20,

 s30, s60, s90, s120, s300, s600, spare3,

 spare2, spare1}

 }

}

ReportProximityConfig-r9 ::= SEQUENCE {

 proximityIndicationEUTRA-r9 ENUMERATED {enabled} OPTIONAL, -- Need OR

 proximityIndicationUTRA-r9 ENUMERATED {enabled} OPTIONAL -- Need OR

}

CandidateServingFreqListNR-r15 ::= SEQUENCE (SIZE (1..maxFreqIDC-r11)) OF ARFCN-ValueNR-r15

-- ASN1STOP

| ***OtherConfig* field descriptions** |
| --- |
| ***ailc-BitConfig***Indicates whether the UE is allowed to provide assistance information bit for local cache. If configured, the UE shall only apply to a DRB configured with 12-bit PDCP SN format as specified in TS 36.323 [8]. |
| ***autonomousDenialSubframes***Indicates the maximum number of the UL subframes for which the UE is allowed to deny any UL transmission. Value n2 corresponds to 2 subframes, n5 to 5 subframes and so on. E-UTRAN does not configure autonomous denial for frequencies on which SCG cells are configured. |
| ***autonomousDenialValidity***Indicates the validity period over which the UL autonomous denial subframes shall be counted. Value sf200 corresponds to 200 subframes, sf500 corresponds to 500 subframes and so on. |
| ***bw-PreferenceIndicationTimer***Prohibit timer for bandwidth preference indication reporting. Value in seconds. Value s0 means prohibit timer is set to 0 second, value s0dot5 means prohibit timer is set to 0.5 second, value s1 means prohibit timer is set to 1 second and so on. |
| ***CandidateServingFreqListNR***Indicates the candidate NR serving frequencies that are subject to IDC indication for MR-DC. |
| ***configuredGrantAssistanceInfoReport***Value TRUE indicates that the UE is allowed to report configuredGrantAssistanceInfo. |
| ***delayBudgetReportingProhibitTimer***Prohibit timer for delay budget reporting. Value in seconds. Value s0 means prohibit timer is set to 0 second, value s0dot4 means prohibit timer is set to 0.4 second, and so on. |
| ***idc-HardwareSharingIndication***The field is used to indicate whether the UE is allowed indicate in *InDeviceCoexIndication* that the cause of the problems are due to hardware sharing, and whether the UE is allowed to omit the TDM assistance information. |
| ***idc-Indication***The field is used to indicate whether the UE is configured to initiate transmission of the *InDeviceCoexIndication* message to the network. |
| ***idc-Indication-MRDC***The field is used to indicate whether the UE is configured to provide IDC indications for MR-DC using the InDeviceCoexIndication message. |
| ***idc-Indication-UL-CA***The field is used to indicate whether the UE is configured to provide IDC indications for UL CA using the *InDeviceCoexIndication* message. |
| ***measConfigAppLayerContainer***The field contains configuration of application layer measurements, see Annex L (normative) in TS 26.247 [90] and clause 16.5 in TS 26.114 [99]. |
| ***serviceType***Indicates the type of application layer measurement. Value qoe indicates Quality of Experience Measurement Collection for streaming services, value qoemtsi indicates Enhanced Quality of Experience Measurement Collection for MTSI. |
| ***obtainLocation***Requests the UE to attempt to have detailed location information available using GNSS. E-UTRAN configures the field only if *includeLocationInfo* is configured for one or more measurements. |
| ***overheatingAssistanceConfig***Configuration for the UE to report assistance information to inform the eNB about UE detected internal overheating. |
| ***overheatingAssistanceConfigForSCG***The field is used to indicate whether the UE is configured to provide overheating assistance information for SCG. |
| ***overheatingIndicationProhibitTimer***Prohibit timer for overheating assistance information reporting. Value in seconds. Value s0 means prohibit timer is set to 0 seconds, value s0dot5 means prohibit timer is set to 0.5 second, value s1 means prohibit timer is set to 1 second and so on. |
| ***powerPrefIndicationTimer***Prohibit timer for Power Preference Indication reporting. Value in seconds. Value s0 means prohibit timer is set to 0 second, value s0dot5 means prohibit timer is set to 0.5 second, value s1 means prohibit timer is set to 1 second and so on. |
| ***reportProximityConfig***Indicates, for each of the applicable RATs (EUTRA, UTRA), whether or not proximity indication is enabled for CSG member cell(s) of the concerned RAT. Note. |
| ***rlmReportTimer***Prohibit timer for RLM event reporting, i.e. "early-out-of-sync" and "early-in-sync" event reporting, as specified in clause 5.6.10. Value in seconds. Value s0 means prohibit timer is set to 0 second, value s0dot5 means prohibit timer is set to 0.5 second, value s1 means prohibit timer is set to 1 second and so on. |
| ***rlmReportRep-MPDCCH***The field is used to indicate whether the UE is configured to report excess repetitions on MPDCCH.  |
| ***sps-AssistanceInfoReport***Value TRUE indicates that the UE is allowed to report SPS-AssistanceInformation. |

NOTE: Enabling/ disabling of proximity indication includes enabling/ disabling of the related functionality e.g. autonomous search in connected mode.

| **Conditional presence** | **Explanation** |
| --- | --- |
| *idc-Ind* | The field is optionally present if *idc-Indication* is present, need OR. Otherwise the field is not present. |
| *overheating* | The field is optionally present, need ON, if *overheatingAssistanceConfig* is set up; otherwise, the field is not present and the UE shall delete any existing value for this field. |

-----------------------------------------START OF NEXT CHANGE-----------------------------------------

#### – *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,

 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

}

UE-EUTRA-CapabilityAddXDD-Mode-v16xy ::= SEQUENCE {

 neighCellSI-AcquisitionParameters-v16xy NeighCellSI-AcquisitionParameters-v16xy OPTIONAL

}

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

}

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

}

IRAT-ParametersNR-r16 ::= SEQUENCE {

 nr-HO-ToEN-DC-r16 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

}

NeighCellSI-AcquisitionParameters-v16xy ::= SEQUENCE {

 eutra-SI-AcquisitionForHO-ENDC-r16 ENUMERATED {supported} OPTIONAL,

 nr-AutonomousGaps-ENDC-FR1-r16 ENUMERATED {supported} OPTIONAL,

 nr-AutonomousGaps-ENDC-FR2-r16 ENUMERATED {supported} OPTIONAL,

 nr-AutonomousGaps-FR1-r16 ENUMERATED {supported} OPTIONAL,

 nr-AutonomousGaps-FR2-r16 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

}

Other-Parameters-v16xy ::= SEQUENCE {

 ce-RRC-INACTIVE-r16 ENUMERATED {supported} OPTIONAL,

 overheatingIndForSCG-r16 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

}

MMTEL-Parameters-v16xy ::= SEQUENCE {

 recommendedBitRateMultiplier-r16 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 |
| ***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-ChannelEstMPDCCH***Indicates whether UE operating in CE mode supports using CRS for improving MPDCCH channel estimation. | - |
| ***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]. | - |
| ***ce-ModeA-CSI-RS-Feedback***Indicates whether the UE supports CSI-RS based feedback when the UE is operating in CE mode A, as specified in TS 36.213 [23]. | - |
| ***ce-ModeA-ETWS-CMAS-RxInConn, ce-ModeB-ETWS-CMAS-RxInConn***Indicates whether the UE operating in CE mode A/B supports reception of ETWS/CMAS indication in RRC\_CONNECTED mode as specified in TS 36.212 [22]. | - |
| ***ce-ModeA-PDSCH-MultiTB, ce-ModeB-PDSCH-MultiTB,******ce-ModeA-PUSCH-MultiTB, ce-ModeB-PUSCH-MultiTB***Indicates whether the UE supports multiple TB scheduling in connected mode for PDSCH/PUSCH when operating in CE mode A/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-RRC-INACTIVE***Indicates whether UE operating in CE mode supports RRC\_INACTIVE when connected to 5GC. A UE including this field also supports short eDRX cycles in RRC\_INACTIVE when connected to 5GC. | - |
| ***ce-RxInLTE-ControlRegion***Indicates whether UE operating in CE mode supports PDSCH or MPDCCH reception in LTE control channel region as specified in TS 36.211 [21]. | - |
| ***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 (350 km/h) as specified in TS 36.101 [42]. | - |
| ***demodulationEnhancements2***This field defines whether the UE supports further enhanced receiver in HST-SFN scenario (up to 500 km/h velocity) 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 | - |
| ***dl-ChannelQualityReporting***Indicates whether UE operating in CE mode supports aperiodic DL channel quality reporting in RRC\_CONNECTED. | - |
| ***dl-DedicatedMessageSegmentation***Indicates whether the UE supports reception of segmented DL RRC messages. | - |
| ***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 when connected to EPC. | - |
| ***earlyData-UP-5GC***Indicates whether the UE supports UP-EDT when connected to 5GC. | - |
| ***earlySecurityReactivation***Indicates whether the UE supports early security reactivation when resuming a suspended RRC connection. | - |
| ***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 |
| ***eutra-SI-AcquisitionForHO-ENDC***Indicates whether the UE supports, upon configuration of *si-RequestForHO* by the network, acquisition of relevant information from a neighbouring E-UTRA cell by reading the SI of the neighbouring cell using autonomous gaps and reporting the acquired information to the network. | 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-ScalingFactor0dot37, mbms-ScalingFactor2dot5***Presence of *mbms-ScalingFactor0dot37* / *mbms-ScalingFactor2dot5* indicates that UE supports subcarrier spacing of 0.37 kHz / 2.5 kHz, for MBSFN subframes as defined in TS 36.211 [21], clause 6.12. The value of the field indicates parameter A(0.37 / A(2..5, i.e., scaling factor for processing one unit of bandwidth corresponding to subcarrier spacing of 0.37 kHz / 2.5 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 *fembmsMixedCell* or *fembmsDedicatedCell* is 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 (350 km/h) as specified in TS 36.133 [16]. | - |
| ***measurementEnhancements2***This field defines whether UE supports measurement enhancements in high speed scenario (up to 500 km/h velocity) as specified in TS 36.133 [16]. | - |
| ***measurementEnhancementsSCell***This field defines whether UE supports SCell measurement enhancements in high speed scenario (350 km/h) 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 SPDCCH2. 2os CRS based SPDCCH3. 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. | - |
| ***nr-AutonomousGaps-ENDC-FR1***Indicates whether the UE supports, upon configuration of *useAutonomousGapsNR* by the network, acquisition of relevant information from a neighbouring NR cell by reading the SI of the neighbouring cell on FR1 using autonomous gaps and reporting the acquired information to the network when it is configured with (NG)EN-DC. | Yes |
| ***nr-AutonomousGaps-ENDC-FR2***Indicates whether the UE supports, upon configuration of *useAutonomousGapsNR* by the network, acquisition of relevant information from a neighbouring NR cell by reading the SI of the neighbouring cell on FR2 using autonomous gaps and reporting the acquired information to the network when it is configured with (NG)EN-DC. | Yes |
| ***nr-AutonomousGaps-FR1***Indicates whether the UE supports, upon configuration of *useAutonomousGapsNR* by the network, acquisition of relevant information from a neighbouring NR cell by reading the SI of the neighbouring cell on FR1 using autonomous gaps and reporting the acquired information to the network when it is not configured with (NG)EN-DC. | Yes |
| ***nr-AutonomousGaps-FR2***Indicates whether the UE supports, upon configuration of *useAutonomousGapsNR* by the network, acquisition of relevant information from a neighbouring NR cell by reading the SI of the neighbouring cell on FR2 using autonomous gaps and reporting the acquired information to the network when it is not configured with (NG)EN-DC. | Yes |
| ***nr-HO-ToEN-DC***Indicates whether the UE supports inter-RAT handover from NR to EN-DC while NR-DC or NE-DC is not configured. This field is mandatory present if EN-DC is supported. | - |
| ***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 [23]. This field can be included only if uplinkLAA is included. | - |
| ***overheatingInd***Indicates whether the UE supports overheating assistance information. | No |
| ***overheatingIndForSCG***Indicates whether the UE supports including NR SCG information in overheating assistance information. The UE which indicates support of *overheatingIndForSCG* shall also indicate support of *overheatingInd*. | 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 |
| ***pur-CP-EPC/ pur-CP-5GC***Indicates whether UE supports CP transmission using PUR when connected to EPC/ 5GC. | - |
| ***pur-UP-EPC/ pur-UP-5GC***Indicates whether UE supports UP transmission using PUR when connected to EPC/ 5GC. | - |
| ***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 |
| ***rai-SupportEnh***Indicates whether the UE supports 2-bit RAI when connected to EPC as specified in TS 36.321 [6]. | - |
| ***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 |
| ***recommendedBitRateMultiplier***Indicates whether the UE supports the bit rate multiplier for recommended bit rate MAC CE 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. | - |
| ***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. | - |
| ***timeSeparationSlot2, timeSeparationSlot4***Indicates whether the UE supports time staggering length of 2 slots (MBSFN reference signal pattern type 2) / 4 slots (MBSFN reference signal pattern type 1) for MBSFN-RS associated with PMCH with subcarrier spacing of 0.37 kHz for MBSFN subframes as described in TS 36.211 [21], clause 6.10.2.2.4. | - |
| ***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. | - |
| ***widebandPRG-Slot, widebandPRG-Subslot, widebandPRG-Subframe***Indicates whether the UE supports wideband precoding resource block group size for slot/subslot/subframe operation as specified in TS 36.213 [23]. | - |
| ***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.

|  |  |  |  |
| --- | --- | --- | --- |
| Nr of Band Entries: | 5 | 4 | 3 |
| Length of Bit-String: | 15 | 7 | 3 |
| Bit String Position | Cell grouping option (0= first cell group, 1= second cell group) |
| 1 | 00001 | 0001 | 001 |
| 2 | 00010 | 0010 | 010 |
| 3 | 00011 | 0011 | 011 |
| 4 | 00100 | 0100 |  |
| 5 | 00101 | 0101 |  |
| 6 | 00110 | 0110 |  |
| 7 | 00111 | 0111 |  |
| 8 | 01000 |  |  |
| 9 | 01001 |  |  |
| 10 | 01010 |  |  |
| 11 | 01011 |  |  |
| 12 | 01100 |  |  |
| 13 | 01101 |  |  |
| 14 | 01110 |  |  |
| 15 | 01111 |  |  |

NOTE 6: UE includes the *intraBandContiguousCC-InfoList-r12* also for bandwidth class A because of the presence conditions in *BandCombinationParameters-v1270*. For example, if UE supports CA\_1A\_41D band combination, if UE includes the field *intraBandContiguousCC-InfoList-r12* for band 41, the UE includes *intraBandContiguousCC-InfoList-r12* also for band 1.

NOTE 7: For a UE that indicates release X in field *accessStratumRelease* but supports a feature specified in release X+ N (i.e. early UE implementation), the ASN.1 comprehension requirement are specified in Annex F.

NOTE 8: For a UE that does not include *mimo-WeightedLayersCapabilities-r13*, or for the case with no CC configured with FD-MIMO, the FD-MIMO processing capability condition is not applicable (i.e. considered as satisfied). For a UE that includes *mimo-WeightedLayersCapabilities-r13*, the FD-MIMO processing capability condition is satisfied if the equation 4.3.28.13-1 in TS 36.306 [5] is satisfied.

---------------------------------------------END OF CHANGE---------------------------------------------