**3GPP TSG-RAN WG2 #129**

**Athens, Greece, 17 – 21 February 2025**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** | **6** | **rev** | **1** | **Current version:** |  |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
|  |

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

|  |
| --- |
|  |
| ***Title:***  | Miscellaneous non-controversial corrections Set XXIV |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** | NR\_newRAT-Core, TEI18 |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** |  |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | Correction of miscellaneous non-controversial errors (typos etc). |
|  |  |
| ***Summary of change:*** | 1. In SIB1, “-“ is added to field names for cellBarred-eRedCap, to align with RRC guidelines and other places in the specification.
2. In MIB field description for ssb-SubcarrierOffset, added “kssb” that has accidentally been lost.
3. In procedure text for RRC release (5.3.8.2), added missing “for RNA update” to the list of reasons for a UE to “try to resume”. This makes the list more complete (and aligns to what is already specified in other parts of the specification).
4. 5.2.2.4.13: Deleted redundant word “for“.
5. 5.3.13.3, 5.3.13.4: Deleted redundant word “field“.
6. 6.3.1, SIB19: in the description of numberOfMsg4HARQ-ACK-Repetitions, added “the”.
7. 6.3.1, SIB23 field descriptions: Changed “A“ to “a”.
8. 6.3.2, IE ServingCellConfig, UplinkConfig field descriptions: in the description of srs-PosTx-Hopping, changed typo to “RRC\_CONNECTED“.
9. 6.3.2, IE ServingCellConfig: in the description of tag2, added missing “is used”.
10. 6.3.4, IE OtherConfig: Added missing suffix “-r18” for field pdu-SessionID.
11. 6.3.5, IE SL-BWP-PRS-PoolConfig: Added a dash between “PRS“ and “Pool“.
12. 6.3.5, IE SL-PosBWP-ConfigCommon: Addded missing tags “START“ and “STOP“, removed redundant space.
13. 6.3.5, SL-PRS-ResourcePool field descriptions: Changed “C“ to “c”.
14. In 5.3.10.5, editorial change of intendation from 4> to 3> inside if-stmt.

**CRs agreed to be merged at RAN2#129:**1. R2-2501207 Correction on the CSI-AperiodicTriggerStateList for aperiodic enhanced group-based beam reporting in R18In the field description of qcl-info and qcl-info2, modified the text to more clearly describe and cover also qcl-info2.Added “resourceSet2” to the field description of resourceSet.

Some other errors and typos are also corrected.**Impact analysis**Impacted 5G architecture options: NR SA, (NG)EN-DC, NE-DC, NR-DCImpacted functionality: MiscellaneousInter-operability:There are no interoperability issues. |
|  |  |
| ***Consequences if not approved:*** | Miscellaneous typos and editorials will remain in the specification. |
|  |  |
| ***Clauses affected:*** | 5.2.2.4.13 5.3.8.2, 5.3.10.5, 5.3.13.3, 5.3.13.4, 6.2.2, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

#### 5.3.8.2 Initiation

##### 5.2.2.4.13 Actions upon reception of *SIB12*

Upon receiving *SIB12*, the UE shall:

1> if the UE has stored at least one segment of *SIB12* and the value tag of *SIB12* has changed since a previous segment was stored:

2> discard all stored segments;

1> store the segment;

1> if all segments have been received:

2> assemble *SIB12-IEs* from the received segments;

2> if *sl-FreqInfoList*/*sl-FreqInfoListSizeExt* is included in *SIB12-IEs*:

3> if configured to receive NR sidelink communication:

4> use the resource pool(s) indicated by *sl-RxPool* for NR sidelink communication reception, as specified in 5.8.7;

3> if configured to transmit NR sidelink communication:

4> use the resource pool(s) indicated by *sl-TxPoolSelectedNormal*, or *sl-TxPoolExceptional* for NR sidelink communication transmission, as specified in 5.8.8;

4> perform CBR measurement on the transmission resource pool(s) indicated by *sl-TxPoolSelectedNormal* or *sl-TxPoolExceptional* for NR sidelink communication transmission, as specified in 5.5.3.1;

4> use the synchronization configuration parameters for NR sidelink communication on frequencies included in *sl-FreqInfoList*/*sl-FreqInfoListSizeExt*, as specified in 5.8.5;

3> if configured to perform SL-PRS measurement:

4> use the resource pool(s) indicated by *sl-RxPool* for SL-PRS measurement, as specified in 5.8.18.2;

3> if configured to transmit SL-PRS:

4> use the resource pool(s) indicated by *sl-TxPoolSelectedNormal*, or *sl-TxPoolExceptional* for SL-PRS transmission, as specified in 5.8.18.3;

4> perform CBR measurement on the transmission resource pool(s) indicated by *sl-TxPoolSelectedNormal* or *sl-TxPoolExceptional* for SL-PRS, as specified in 5.5.3.1;

4> use the synchronization configuration parameters for NR sidelink positioning on frequencies included in *sl-FreqInfoList*/*sl-FreqInfoListSizeExt*, as specified in 5.8.5;

3> if configured to receive NR sidelink discovery:

4> use the resource pool(s) indicated by *sl-DiscRxPool* or *sl-RxPool* for NR sidelink discovery reception, as specified in 5.8.13.2;

3> if configured to transmit NR sidelink discovery:

4> if the UE is configured by upper layers to transmit NR sidelink L2 U2N relay discovery messages and *sl-L2U2N-Relay* is included in SIB12; or

4>if the UE is configured by upper layers to transmit NR sidelink L3 U2N relay discovery messages and *sl-L3U2N-RelayDiscovery* is included in SIB12; or

4>if the UE is configured by upper layers to transmit NR sidelink non-relay discovery messages and *sl-NonRelayDiscovery* is included in SIB12; or

4> if the UE is configured by upper layers to transmit NR sidelink L2 U2U relay discovery messages and *sl-L2-U2U-Relay* is included in *SIB12*; or

4>if the UE is configured by upper layers to transmit NR sidelink L3 U2U relay discovery messages and *sl-L3-U2U-RelayDiscovery* is included in *SIB12*:

5> use the resource pool(s) indicated by *sl-DiscTxPoolSelected*, *sl-TxPoolExceptional* or *sl-TxPoolSelectedNormal* for NR sidelink discovery transmission, as specified in 5.8.13.3;

5> perform CBR measurement on the transmission resource pool(s) indicated by *sl-TxPoolSelectedNormal*, *sl-DiscTxPoolSelected* or *sl-TxPoolExceptional* for NR sidelink discovery transmission, as specified in 5.5.3.1;

5> use the synchronization configuration parameters for NR sidelink discovery on frequencies included in *sl-FreqInfoList*, as specified in 5.8.5;

2> if *sl-RadioBearerConfigList* or *sl-RLC-BearerConfigList* is included in *sl-ConfigCommonNR*:

3> perform sidelink DRB addition/modification/release as specified in 5.8.9.1a.1/5.8.9.1a.2;

3> if *sl-RLC-BearerConfigListSizeExt* is included in *SIB12-IEs*:

4> perform additional sidelink RLC bearer addition/modification/release as specified in 5.8.9.1a.5/5.8.9.1a.6;

2> if *sl-MeasConfigCommon* is included in *sl-ConfigCommonNR*:

3> store the NR sidelink measurement configuration;

2> if *sl-DRX-ConfigCommonGC-BC* is included in *SIB12-IEs*:

3> store the NR sidelink DRX configuration and configure lower layers to perform sidelink DRX operation for groupcast and broadcast as specified in TS 38.321 [3];

1> if the UE is acting as L2 U2N Remote UE:

2> if the *sl-TimersAndConstantsRemoteUE* is included in *SIB12*:

3> use values for timers T300, T301 and T319 as included in the *sl-TimersAndConstantsRemoteUE* received in *SIB12*;

2> else:

3> use values for timers T300, T301 and T319 as included in the *ue-TimersAndConstants* received in *SIB1*;

The UE should discard any stored segments for *SIB12* if the complete *SIB12* has not been assembled within a period of 3 hours. The UE shall discard any stored segments for *SIB12* upon cell (re-)selection.

NOTE: The L2 U2U UE is allowed to use previous configuration based on SIB12 before receiving dedicated configuration during and immediately after state transition from idle/inactive to connected.

#### 5.3.8.2 Initiation

The network initiates the RRC connection release procedure to transit a UE in RRC\_CONNECTED to RRC\_IDLE; or to transit a UE in RRC\_CONNECTED to RRC\_INACTIVE only if SRB2 and at least one DRB or multicast MRB or, for IAB and NCR, SRB2, is setup in RRC\_CONNECTED; or to transit a UE in RRC\_INACTIVE back to RRC\_INACTIVE when the UE tries to resume (for resuming a suspended RRC connection, for RNA Update or for initiating SDT); or to transit a UE in RRC\_INACTIVE to RRC\_IDLE when the UE tries to resume (for resuming of a suspended RRC connection, for RNA Update or for initiating SDT). The procedure can also be used to release and redirect a UE to another frequency.

#### 5.3.10.5 RLF report content determination

The UE shall determine the content in the *VarRLF-Report* as follows:

1> clear the information included in *VarRLF-Report*, if any;

1> if the UE is not in SNPN access mode, set the *plmn-IdentityList* to include the list of EPLMNs stored by the UE (i.e. including the RPLMN);

1> else if the UE is in SNPN access mode, set the *snpn-IdentityList* to include the list of equivalent SNPNs stored by the UE (i.e., including the registered SNPN identity);

1> set the *measResultLastServCell* to include the cell level RSRP, RSRQ and the available SINR, of the source PCell (in case HO failure) or PCell (in case RLF) based on the available SSB and CSI-RS measurements collected up to the moment the UE detected failure;

1> if *measRSSI-ReportConfig* is configured for the *measObject* indicated as the *servingCellMO* of the source PCell (in case HO failure) or PCell (in case of RLF), set the *measResultLastServCellRSSI* to the linear average of the available RSSI sample value(s) provided by lower layers for the frequency of the source PCell (in case HO failure) or PCell (in case of RLF) up to the moment the UE detected the failure;

1> if the SS/PBCH block-based measurement quantities are available:

2> set the *rsIndexResults* in *measResultLastServCell* to include all the available measurement quantities of the source PCell (in case HO failure) or PCell (in case RLF), ordered such that the highest SS/PBCH block RSRP is listed first if SS/PBCH block RSRP measurement results are available, otherwise the highest SS/PBCH block RSRQ is listed first if SS/PBCH block RSRQ measurement results are available, otherwise the highest SS/PBCH block SINR is listed first, based on the available SS/PBCH block based measurements collected up to the moment the UE detected failure;

1> if the CSI-RS based measurement quantities are available:

2> set the *rsIndexResults* in *measResultLastServCell* to include all the available measurement quantities of the source PCell (in case HO failure) or PCell (in case RLF), ordered such that the highest CSI-RS RSRP is listed first if CSI-RS RSRP measurement results are available, otherwise the highest CSI-RS RSRQ is listed first if CSI-RS RSRQ measurement results are available, otherwise the highest CSI-RS SINR is listed first, based on the available CSI-RS based measurements collected up to the moment the UE detected failure;

1> for each of the configured *measObjectNR* in which measurements are available:

2> if the SS/PBCH block-based measurement quantities are available:

3> set the *measResultListNR* in *measResultNeighCells* to include all the available measurement quantities of the best measured cells, other than the source PCell (in case HO failure) or PCell (in case RLF), ordered such that the cell with highest SS/PBCH block RSRP is listed first if SS/PBCH block RSRP measurement results are available, otherwise the cell with highest SS/PBCH block RSRQ is listed first if SS/PBCH block RSRQ measurement results are available, otherwise the cell with highest SS/PBCH block SINR is listed first, based on the available SS/PBCH block based measurements collected up to the moment the UE detected failure;

3> for each neighbour cell included, include the optional fields that are available;

NOTE 0a: For the neighboring cells included in *measResultListNR* in *measResultNeighCells* ordered based on the SS/PBCH block measurement quantities, UE also includes the CSI-RS based measurement quantities, if available.

2> if the CSI-RS based measurement quantities are available:

3> set the *measResultListNR* in *measResultNeighCells* to include all the available measurement quantities of the best measured cells, other than the source PCell (in case HO failure) or PCell (in case RLF), ordered such that the cell with highest CSI-RS RSRP is listed first if CSI-RS RSRP measurement results are available, otherwise the cell with highest CSI-RS RSRQ is listed first if CSI-RS RSRQ measurement results are available, otherwise the cell with highest CSI-RS SINR is listed first, based on the available CSI-RS based measurements collected up to the moment the UE detected radio link failure;

3> for each neighbour cell included, include the optional fields that are available;

NOTE 0b: For ordering the neighboring cells based on the CSI-RS measurement quantities, UE includes measurements only for the cells not yet included in *measResultListNR* in *measResultNeighCells* to avoid overriding SS/PBCH block-based ordered measurements.

2> for each neighbour cell, if any, included in *measResultListNR* in *measResultNeighCells*:

3> if the UE supports RLF-Report for conditional handover and if the neighbour cell is one of the candidate cells for which the *reconfigurationWithSync* is included in the *masterCellGroup* in the MCG *VarConditionalReconfig* at the moment of the detected failure:

4> set *choConfig* in *MeasResult2NR* to the execution condition for each *measId* within *condTriggerConfig* associated to the neighbour cell within the MCG *VarConditionalReconfig*;

4> if the first entry of *choConfig* corresponds to a fulfilled execution condition at the moment of handover failure, or radio link failure; or

4> if the second entry of *choConfig*, if available, corresponds to a fulfilled execution condition at the moment of handover failure, or radio link failure:

5> set *firstTriggeredEvent* to the execution condition *condFirstEvent* corresponding to the first entry of *choConfig* or to the execution condition *condSecondEvent* corresponding to the second entry of *choConfig*, whichever execution condition was fulfilled first in time;

5> set *timeBetweenEvents* to the elapsed time between the point in time of fulfilling the condition in *choConfig* that was fulfilled first in time, and the point in time of fulfilling the condition in *choConfig* that was fulfilled second in time, if both the first execution condition corresponding to the first entry and the second execution condition corresponding to the second entry in the *choConfig* were fulfilled;

1> for each of the configured *measObjectNR* associated with neighboring cellsif the associated *reportConfigNR* includes *measRSSI-ReportConfig*:

2> set the *measResultNeighFreqRSSI* in the *measResultNeighFreqListRSSI* to the linear average of the available RSSI sample value(s) provided by lower layers for the frequencies other than the frequency of the source PCell (in case HO failure) or of the PCell (in case RLF), up to the moment the UE detected failure:

3> for each neighbour frequency included, include the optional fields that are available;

1> for each of the configured EUTRA frequencies in which measurements are available;

2> set the *measResultListEUTRA* in *measResultNeighCells* to include the best measured cells ordered such that the cell with highest RSRP is listed first if RSRP measurement results are available, otherwise the cell with highest RSRQ is listed first, and based on measurements collected up to the moment the UE detected failure;

3> for each neighbour cell included, include the optional fields that are available;

NOTE 1: The measured quantities are filtered by the L3 filter as configured in the mobility measurement configuration. The measurements are based on the time domain measurement resource restriction, if configured. Exclude-listed cells are not required to be reported.

1> set the *c-RNTI* to the C-RNTI used in the source PCell (in case HO failure) or PCell (in case RLF);

1> if the failure is detected due to reconfiguration with sync failure as described in 5.3.5.8.3, set the fields in *VarRLF-report* as follows:

2> set the *connectionFailureType* to *hof*;

2> if the UE supports RLF-Report for DAPS handover and if any DAPS bearer was configured while T304 was running:

3> set *lastHO-Type* to *daps*;

3> if radio link failure was detected in the source PCell, according to clause 5.3.10.3:

4> set *timeConnSourceDAPS-Failure* to the time between the initiation of the DAPS handover execution and the radio link failure detected in the source PCell while T304 was running;

4> set the *rlf-Cause* to the trigger for detecting the source radio link failure in accordance with clause 5.3.10.4;

2> if the UE supports RLF-Report for conditional handover and if configuration of the conditional handover is available in the MCG *VarConditionalReconfig* at the moment of the handover failure:

3> if the UE executed a conditional handover toward target PCell according to the *condRRCReconfig* of the target PCell:

4> set *timeSinceCHO-Reconfig* to the time elapsed between the execution of the last *RRCReconfiguration* message including *reconfigurationWithSync* for the target PCell of the failed conditional handover, and the reception in the source PCell of the last *conditionalReconfiguration* including the *condRRCReconfig* of the target PCell of the failed conditional handover;

3> else:

4> set *timeSinceCHO-Reconfig* to the time elapsed between the execution of the last *RRCReconfiguration* message including *reconfigurationWithSync* for the target PCell of the failed handover, and the reception in the source PCell of the last *conditionalReconfiguration* including the *condRRCReconfig*;

3> set *choCandidateCellList* to include the global cell identity, if available, and otherwise to the physical cell identity and carrier frequency of each of the candidate target cells for conditional handover included in *condRRCReconfig* within the MCG *VarConditionalReconfig* at the time of the failed handover, excluding the candidate target cells included in *measResultNeighCells*;

2> if the UE supports RLF-Report for conditional handover and if the last executed *RRCReconfiguration* message including *reconfigurationWithSync* was concerning a conditional handover:

3> set *lastHO-Type* to *cho*;

2> set the *nrFailedPCellId* in *failedPCellId* to the global cell identity and tracking area code, if available, and otherwise to the physical cell identity and carrier frequency of the target PCell of the failed handover;

2> include *nrPreviousCell* in *previousPCellId* and set it to the global cell identity and tracking area code of the PCell where the last *RRCReconfiguration* message including *reconfigurationWithSync* was received;

2> set the *timeConnFailure* to the elapsed time since the execution of the last *RRCReconfiguration* message including the *reconfigurationWithSync*;

1> else if the failure is detected due to Mobility from NR failure as described in 5.4.3.5, set the fields in *VarRLF-report* as follows:

2> set the *connectionFailureType* to *hof*;

2> if last *MobilityFromNRCommand* concerned a failed inter-RAT handover from NR to E-UTRA and if the UE supports Radio Link Failure Report for Inter-RAT MRO EUTRA (NR to EUTRA):

3> set the *eutraFailedPCellId* in *failedPCellId* to the global cell identity and tracking area code, if available, and otherwise to the physical cell identity and carrier frequency of the target PCell of the failed handover;

2> include *nrPreviousCell* in *previousPCellId* and set it to the global cell identity and tracking area code of the PCell where the last *MobilityFromNRCommand* message was received;

2> set the *timeConnFailure* to the elapsed time since the initialization of the handover associated to the last *MobilityFromNRCommand* message;

2> if the UE supports RLF report for inter-system handover for voice fallback and if *voiceFallbackIndication* is included in the last *MobilityFromNRCommand*:

3> include the v*oiceFallbackHO;*

1> else if the failure is detected due to radio link failure as described in 5.3.10.3, set the fields in *VarRLF-report* as follows:

2> set the *connectionFailureType* to *rlf*;

2> set the *rlf-Cause* to the trigger for detecting radio link failure in accordance with clause 5.3.10.4;

2> set the *nrFailedPCellId* in *failedPCellId* to the global cell identity and the tracking area code, if available, and otherwise to the physical cell identity and carrier frequency of the PCell where radio link failure is detected;

2> if an *RRCReconfiguration* message including the *reconfigurationWithSync* was received before the connection failure:

3> if the last successfully executed *RRCReconfiguration* message including the *reconfigurationWithSync* concerned an intra NR handover and it was received while connected to the previous PCell to which the UE was connected before connecting to the PCell where radio link failure is detected; and

3> if T316 was not running before entering the PCell in which the radio link failure was detected; and

3> if T311 was not running before entering the PCell in which the radio link failure was detected:

4> include the *nrPreviousCell* in *previousPCellId* and set it to the global cell identity and the tracking area code of the PCell where the last executed *RRCReconfiguration* message including *reconfigurationWithSync* was received;

4> if the last executed *RRCReconfiguration* message including *reconfigurationWithSync* was concerning a DAPS handover:

5> set *lastHO-Type* to *daps*;

4> else if the last executed *RRCReconfiguration* message including *reconfigurationWithSync* was concerning a conditional handover:

5> set *lastHO-Type* to *cho*;

4> set the *timeConnFailure* to the elapsed time since the execution of the last *RRCReconfiguration* message including the *reconfigurationWithSync*;

3> else if the last *RRCReconfiguration* message including the *reconfigurationWithSync* concerned a handover to NR from E-UTRA and if the UE supports Radio Link Failure Report for Inter-RAT MRO EUTRA:

4> include the *eutraPreviousCell* in *previousPCellId* and set it to the global cell identity and the tracking area code of the E-UTRA PCell where the last *RRCReconfiguration* message including *reconfigurationWithSync* was received embedded in E-UTRA RRC message *MobilityFromEUTRACommand* message as specified in TS 36.331 [10] clause 5.4.3.3;

4> set the *timeConnFailure* to the elapsed time since reception of the last *RRCReconfiguration* message including the *reconfigurationWithSync* embedded in E-UTRA RRC message *MobilityFromEUTRACommand* message as specified in TS 36.331 [10] clause 5.4.3.3;

2> if configuration of the conditional handover is available in the MCG *VarConditionalReconfig* at the moment of declaring the radio link failure:

3> set *timeSinceCHO-Reconfig* to the time elapsed between the detection of the radio link failure, and the reception, in the source PCell, of the last *conditionalReconfiguration* including the *condRRCReconfig* message;

3> set *choCandidateCellList* to include the global cell identity if available, and otherwise to the physical cell identity and carrier frequency of each of all the candidate target cells for conditional handover included in *condRRCReconfig* within the MCG *VarConditionalReconfig* at the time of radio link failure, excluding the candidate target cells included in *measResultNeighCells*;

1> if *connectionFailureType* is *rlf* and the *rlf-Cause* is set to *randomAccessProblem* or *beamFailureRecoveryFailure*; or

1> if *connectionFailureType* is *rlf* and the *rlf-Cause* is set to *lbtFailure* and the radio link failure is detected during the random access procedure; or

1> if *connectionFailureType* is *hof* and if the failed handover is an intra-RAT handover:

2> set the *ra-InformationCommon* to include the random-access related information as described in clause 5.7.10.5;

1> if *connectionFailureType* is *rlf* and the *rlf-Cause* is set to *lbtFailure*, and the radio link failure is not detected during the random access procedure:

2> set the *locationAndBandwidth* and *subcarrierSpacing* in *bwp-Info* associated to the UL BWP in which the consistent uplink LBT failure was detected;

1> if the *rlf-Cause* is set to *t310-Expiry* or *t312-Expiry*:

2> set the *ssbRLMConfigBitmap* and/or *csi-rsRLMConfigBitmap* in *measResultLastServCell* to include the radio link monitoring configuration of the last serving cell, if available;

1> if available, set the *locationInfo* as in 5.3.3.7.

The UE may discard the radio link failure information or handover failure information, i.e. release the UE variable *VarRLF-Report*, 48 hours after the radio link failure/handover failure is detected.

NOTE 2: In this clause, the term 'handover failure' has been used to refer to 'reconfiguration with sync failure'.

<Skipped>

#### 5.3.13.3 Actions related to transmission of *RRCResumeRequest* or *RRCResumeRequest1* message

The UE shall set the contents of *RRCResumeRequest* or *RRCResumeRequest1* message as follows:

1> if *useFullResumeID* is signalled in *SIB1*:

2> select *RRCResumeRequest1* as the message to use;

2> set the *resumeIdentity* to the stored *fullI-RNTI* value;

1> else:

2> select *RRCResumeRequest* as the message to use;

2> set the *resumeIdentity* to the stored *shortI-RNTI* value;

1> restore the RRC configuration, RoHC state, the EHC context(s), the UDC state, the stored QoS flow to DRB mapping rules and the KgNB and KRRCint keys from the stored UE Inactive AS context except for the following:

- masterCellGroup;

- mrdc-SecondaryCellGroup, if stored; and

- pdcp-Config;

1> set the *resumeMAC-I* to the 16 least significant bits of the MAC-I calculated:

2> over the ASN.1 encoded as per clause 8 (i.e., a multiple of 8 bits) *VarResumeMAC-Input*;

2> with the KRRCint key in the UE Inactive AS Context and the previously configured integrity protection algorithm; and

2> with all input bits for COUNT, BEARER and DIRECTION set to binary ones;

1> derive the KgNB key based on the current KgNB key or the NH, using the *nextHopChainingCount* value received in the previous *RRCRelease* message and stored in the UE Inactive AS Context, as specified in TS 33.501 [11];

1> derive the KRRCenc key, the KRRCint key, the KUPint key and the KUPenc key;

1> configure lower layers to apply integrity protection for all radio bearers except SRB0 and MRBs using the configured algorithm and the KRRCint key and KUPint key derived in this clause immediately, i.e., integrity protection shall be applied to all subsequent messages received and sent by the UE;

NOTE 1: Only DRBs with previously configured UP integrity protection shall resume integrity protection.

1> configure lower layers to apply ciphering for all radio bearers except SRB0 and MRBs and to apply the configured ciphering algorithm, the KRRCenc key and the KUPenc key derived in this clause, i.e. the ciphering configuration shall be applied to all subsequent messages received and sent by the UE;

1> re-establish PDCP entities for SRB1;

1> resume SRB1;

1> if the resume procedure is initiated for SDT:

2> for each radio bearer that is configured for SDT and for SRB1:

3> restore the *RLC-BearerConfig* associated with the RLC bearers of *masterCellGroup* and *pdcp-Config* from the UE Inactive AS context;

3> if the radio bearer is a DRB configured with Ethernet Header Compression:

4> indicate to lower layer that *ethernetHeaderCompression* is not configured;

3> if the radio bearer is a DRB configured with UDC:

4> indicate to lower layer that *uplinkDataCompression* is not configured;

3> if the radio bearer is a DRB configured with ROHC function:

4> if *sdt-DRB-ContinueROHC* is set to *cell* and the resume procedure is initiated in a cell that is the same as the PCell in which the UE received the previous *RRCRelease* message; or

4> if *sdt-DRB-ContinueROHC* is set to *rna* and the resume procedure is initiated in a cell belonging to the same RNA as the PCell in which the UE received the previous *RRCRelease* message:

5> indicate to lower layer that *drb-continueROHC* is configured;

4> else:

5> indicate to lower layer that *drb-continueROHC* is not configured;

3> re-establish PDCP entity for the radio bearer that is configured for SDT without triggering PDCP status report;

2> resume all the radio bearers that are configured for SDT;

1> submit the selected message *RRCResumeRequest* or *RRCResumeRequest1* for transmission to lower layers.

NOTE 2: Only DRBs with previously configured UP ciphering shall resume ciphering.

NOTE 2a: Before the lower layers first transmit the *RRCResumeRequest* or *RRCResumeRequest1*, the UE may initiate a new resume procedure if other conditions for initiation of the resume procedure as specified in 5.3.13.2 are satisfied.

If lower layers indicate an integrity check failure while T319 is running or SDT procedure is ongoing, perform actions specified in 5.3.13.5.

If the UE is an (e)RedCap UE and the RedCap-specific initial downlink BWP is not associated with CD-SSB, the UE may continue cell re-selection related measurements as well as cell re-selection evaluation, otherwise the UE shall continue cell re-selection related measurements as well as cell re-selection evaluation. If the conditions for cell re-selection are fulfilled, the UE shall perform cell re-selection as specified in 5.3.13.6.

NOTE 3: For L2 U2N Remote UE in RRC\_INACTIVE, the cell (re)selection procedure as specified in TS 38.304 [20] and relay (re)selection procedure as specified in 5.8.15.3 are performed independently and it is up to UE implementation to select either a cell or a L2 U2N Relay UE.

#### 5.3.13.4 Reception of the *RRCResume* by the UE

The UE shall:

1> stop timer T319, if running;

1> stop timer T319a, if running and consider SDT procedure is not ongoing;

1> stop timer T380, if running;

1> if T331 is running:

2> stop timer T331;

2> perform the actions as specified in 5.7.8.3;

1> if the *RRCResume* includes the *fullConfig*:

2> perform the full configuration procedure as specified in 5.3.5.11;

1> else:

2> if the *RRCResume* does not include the *restoreMCG-SCells*:

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

2> if the *RRCResume* does not include the *restoreSCG*:

3> release the MR-DC related configurations (i.e., as specified in 5.3.5.10) from the UE Inactive AS context, if stored;

2> restore the *masterCellGroup, mrdc-SecondaryCellGroup*, if stored, and *pdcp-Config* from the UE Inactive AS context;

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

1> discard the UE Inactive AS context;

1> store the used *nextHopChainingCount* value associated to the current KgNB;

1> if the UE is configured to receive MBS multicast in RRC\_INACTIVE:

2> reset MAC;

1> if *sdt-MAC-PHY-CG-Config* is configured:

2> instruct the MAC entity to stop the *cg-SDT-TimeAlignmentTimer*, if it is running;

2> instruct the MAC entity to start the *timeAlignmentTimer* associated with the PTAG indicated by *tag-Id,* if it is not running;

1> if *srs-PosRRC-Inactive* is configured:

2> instruct the MAC entity to stop *inactivePosSRS-TimeAlignmentTimer*, if it is running;

1> if *srs-PosRRC-InactiveValidityAreaNonPreConfig* is configured; or

1> if *srs-PosRRC-InactiveValidityAreaPreConfigList* is configured and if the cell is not listed in *srs-PosConfigValidityArea*:

2> instruct the MAC entity to stop *inactivePosSRS-ValidityAreaTAT*, if it is running;

1> release the *suspendConfig* except the *ran-NotificationAreaInfo*;

1> if the *RRCResume* includes the *masterCellGroup*:

2> perform the cell group configuration for the received *masterCellGroup* according to 5.3.5.5;

1> if the *RRCResume* includes the *mrdc-SecondaryCellGroup:*

2> if the received *mrdc-SecondaryCellGroup* is set to *nr-SCG*:

3> perform the RRC reconfiguration according to 5.3.5.3 for the *RRCReconfiguration* message included in *nr-SCG*;

2> if the received *mrdc-SecondaryCellGroup* is set to *eutra-SCG*:

3> perform the RRC connection reconfiguration as specified in TS 36.331 [10], clause 5.3.5.3 for the *RRCConnectionReconfiguration* message included in *eutra-SCG*;

1> if the *RRCResume* includes the *radioBearerConfig*:

2> perform the radio bearer configuration according to 5.3.5.6;

1> if the *RRCResume* message includes the *sk-Counter*:

2> perform security key update procedure as specified in 5.3.5.7;

1> if the *RRCResume* message includes the *radioBearerConfig2*:

2> perform the radio bearer configuration according to 5.3.5.6;

1> if the *RRCResume* message includes the *needForGapsConfigNR*:

2> if *needForGapsConfigNR* is set to *setup*:

3> consider itself to be configured to provide the measurement gap requirement information of NR target bands;

2> else:

3> consider itself not to be configured to provide the measurement gap requirement information of NR target bands;

1> if the *RRCResume* message includes the *needForGapNCSG-ConfigNR*:

2> if *needForGapNCSG-ConfigNR* is set to *setup*:

3> consider itself to be configured to provide the measurement gap and NCSG requirement information of NR target bands;

2> else:

3> consider itself not to be configured to provide the measurement gap and NCSG requirement information of NR target bands;

1> if the *RRCResume* message includes the *needForGapNCSG-ConfigEUTRA*:

2> if *needForGapNCSG-ConfigEUTRA* is set to *setup*:

3> consider itself to be configured to provide the measurement gap and NCSG requirement information of E‑UTRA target bands;

2> else:

3> consider itself not to be configured to provide the measurement gap and NCSG requirement information of E‑UTRA target bands;

1> for each application layer measurement configuration with *appLayerIdleInactiveConfig* configured:

2> if the RPLMN is not included in *plmn-IdentityList* in *VarAppLayerPLMN-ListConfig*:

3> forward the *measConfigAppLayerId* and inform upper layers about the release of the application layer measurement configuration;

3> release the application layer measurement configuration including its fields in the UE variables *VarAppLayerIdleConfig* and *VarAppLayerPLMN-ListConfig*;

3> discard any application layer measurement reports which were not yet fully submitted to lower layers for transmission;

3> consider itself not to be configured to send application layer measurement reports for the *measConfigAppLayerId*;

1> if the *RRCResume* message includes the *appLayerMeasConfig*:

2> if *idleInactiveReportAllowed* is included in the *RRCResume* message:

3> if the UE is configured with at least one application layer measurement configuration with *appLayerIdleInactiveConfig* configured:

4> initiate the procedure in 5.7.16.2 after the *RRCResumeComplete* has been transmitted;

2> else:

3> for each application layer measurement configuration with *appLayerIdleInactiveConfig* configured:

4> forward the *measConfigAppLayerId* and inform upper layers about the release of the application layer measurement configuration;

4> release the application layer measurement configuration including its fields in the UE variables *VarAppLayerIdleConfig* and *VarAppLayerPLMN-ListConfig*, if stored;

4> discard any application layer measurement reports which were not yet fully submitted to lower layers for transmission;

4> consider itself not to be configured to send application layer measurement reports for the *measConfigAppLayerId*;

2> perform the application layer measurement configuration procedure as specified in 5.3.5.13d;

1> if the *RRCResume* message includes the *sl-L2RemoteUE-Config* (i.e. the UE is a L2 U2N Remote UE):

2> perform the L2 U2N Remote UE configuration procedure as specified in 5.3.5.16;

1> if the *RRCResume* message includes the *sl-ConfigDedicatedNR*:

2> perform the sidelink dedicated configuration procedure as specified in 5.3.5.14;

1> resume SRB2 (if suspended), SRB3 (if configured), SRB4 (if configured), SRB5 (if configured), all DRBs (that are suspended) and multicast MRBs (that are suspended);

NOTE 1: If the SCG is deactivated, resuming SRB3 and all DRBs does not imply that PDCP or RRC PDUs can be transmitted or received on SCG RLC bearers.

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

1> stop timer T320, if running;

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

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

1> resume measurements if suspended;

1> if T390 is running:

2> stop timer T390 for all access categories;

2> perform the actions as specified in 5.3.14.4;

1> if T302 is running:

2> stop timer T302;

2> perform the actions as specified in 5.3.14.4;

1> enter RRC\_CONNECTED;

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

1> stop the cell re-selection procedure;

1> stop relay reselection procedure if any for L2 U2N Remote UE;

1> consider the current cell to be the PCell;

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

2> if the upper layer provides NAS PDU, set the *dedicatedNAS-Message* to include the information received from upper layers;

2> if upper layers provides a PLMN:

3> if the UE is either allowed or instructed to access the PLMN via a cell for which at least one CAG ID is broadcast:

4> set the *selectedPLMN-Identity* from the *npn-IdentityInfoList*;

3> else:

4> set the *selectedPLMN-Identity* to the PLMN selected by upper layers from the *plmn-IdentityInfoList*;

2> if the *masterCellGroup* contains the *reportUplinkTxDirectCurrent*:

3> include the *uplinkTxDirectCurrentList* for each MCG serving cell with UL;

3> include *uplinkDirectCurrentBWP-SUL* for each MCG serving cell configured with SUL carrier, if any, within the *uplinkTxDirectCurrentList*;

2> if the *masterCellGroup* contains the *reportUplinkTxDirectCurrentTwoCarrier*:

3> include in the *uplinkTxDirectCurrentTwoCarrierList* the list of uplink Tx DC locations for the configured uplink carrier aggregation in the MCG;

2> if the *masterCellGroup* contains the *reportUplinkTxDirectCurrentMoreCarrier*:

3> include in the *uplinkTxDirectCurrentMoreCarrierList* the list of uplink Tx DC locations for the configured uplink carrier aggregation in the MCG;

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

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

4> if *validatedMeasurementsReq* is included in the *RRCResume* and *measIdleValidityDuration* is included in *VarEnhMeasIdleConfig*;

5> set the *measResultIdleEUTRA* in the *RRCResumeComplete* message to the value of *measReportIdleEUTRA* in the *VarMeasIdleReport* for any valid measurement results*,* if available, and set *validityStatus* to the value of *measIdleValidityDuration* in *VarEnhMeasIdleConfig*;

5> set the *measResultIdleNR* in the *RRCResumeComplete* message to the value of *measReportIdleNR* in the *VarMeasIdleReport* for any valid measurement results, if available, and set *validityStatus* to the value of *measIdleValidityDuration* in *VarEnhMeasIdleConfig*;

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

4> else:

5> set the *measResultIdleEUTRA* in the *RRCResumeComplete* message to the value of measReportIdleEUTRA in the *VarMeasIdleReport*, if available;

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

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

3> else:

4> if the SIB1 contains *idleModeMeasurementsNR* and the UE has NR idle/inactive measurement information concerning cells other than the PCell available in *VarMeasIdleReport*; or

4> if the SIB1 contains *idleModeMeasurementsEUTRA* and the UE has E-UTRA idle/inactive measurement information available in *VarMeasIdleReport*:

5> include the *idleMeasAvailable*;

2> if the *reselectionMeasurementReq* is included in the *RRCResume* message:

3> if *validatedMeasurementsReq* is included in the *RRCResume* and *measReselectionValidityDuration* is included in *VarMeasReselectionConfig*:

4> if *measReselectionCarrierListNR* is present in *VarMeasReselectionConfig*:

5> if the UE has valid cell reselection measurements results for any frequency listed in *measReselectionCarrierListNR* in *VarMeasRelectionConfig*:

6> set the *measResultReselectionNR* in the *RRCResumeComplete* message to the valid NR measurement results, if available for any frequency listed in *measReselectionCarrierListNR* in *VarMeasReselectionConfig* and set *validityStatus* to the value of *measReselectionValidityDuration* in *VarMeasReselectionConfig*;

4> else:

5> if the UE has valid NR cell reselection measurements results:

6> set the *measResultReselectionNR* in the *RRCResumeComplete* message to any available valid NR measurement results, if available;

3> else:

4> if *measReselectionCarrierListNR* is present in *VarMeasReselectionConfig*:

5> if the UE has cell reselection measurements results for any frequency listed in *measReselectionCarrierListNR* in *VarMeasRelectionConfig*:

6> set the *measResultReselectionNR* in the *RRCResumeComplete* message to the NR measurement results, if available for any frequency listed in *measReselectionCarrierListNR* in *VarMeasReselectionConfig*;

4> else:

5> if the UE has NR cell reselection measurements results:

6> set the *measResultReselectionNR* in the *RRCResumeComplete* message to any available NR measurement results, if available;

3> else:

4> if the SIB1 contains *reselectionMeasurementsNR*:

5> if *measReselectionCarrierListNR* is present in *VarMeasReselectionConfig* and the UE has NR reselection measurements available for any frequency listed in *measReselectionCarrierListNR* in *VarMeasReselectionConfig*; or

5> if *measReselectionCarrierListNR* is not present in *VarMeasReselectionConfig* and if the UE has NR reselection measurements available:

6> include the *reselectionMeasAvailable*;

2> if the *RRCResume* message includes *mrdc-SecondaryCellGroup* set to *eutra-SCG*:

3> include in the *eutra-SCG-Response* the E-UTRA *RRCConnectionReconfigurationComplete* message in accordance with TS 36.331 [10] clause 5.3.5.3;

2> if the *RRCResume* message includes *mrdc-SecondaryCellGroup* set to *nr-SCG*:

3> include in the *nr-SCG-Response* the SCG *RRCReconfigurationComplete* message;

2> if the UE has logged measurements available for NR and if the RPLMN is included in *plmn-IdentityList* stored in *VarLogMeasReport*; or

2> if the UE has logged measurements available for NR and if the current registered SNPN identity is included in *snpn-ConfigID-List* stored in *VarLogMeasReport*:

3> include the *logMeasAvailable* in the *RRCResumeComplete* message*;*

3> if Bluetooth measurement results are included in the logged measurements the UE has available for NR:

4> include the *logMeasAvailableBT* in the *RRCResumeComplete* message;

3> if WLAN measurement results are included in the logged measurements the UE has available for NR:

4> include the *logMeasAvailableWLAN* in the *RRCResumeComplete* message;

2> if the *sigLoggedMeasType* in *VarLogMeasReport* is included; or

2> if the UE supports the override protection of the signalling based logged MDT for inter-RAT (i.e. LTE to NR), and if the *sigLoggedMeasType* in *VarLogMeasReport* of TS 36.331 [10] is included:

3> if T330 timer is running (associated to the logged measurement configuration for NR or for LTE):

4> set *sigLogMeasConfigAvailable* to *true* in the *RRCResumeComplete* message;

3> else:

4> if the UE has logged measurements in *VarLogMeasReport* or in *VarLogMeasReport* of TS 36.331 [10]:

5> set *sigLogMeasConfigAvailable* to *false* in the *RRCResumeComplete* message;

2> if the UE has connection establishment failure or connection resume failure information available in *VarConnEstFailReport* or *VarConnEstFailReportList* and if the RPLMN is equal to *plmn-Identity* stored in *VarConnEstFailReport* orin at least one of the entries of *VarConnEstFailReportList*; or

2> if the UE has connection establishment failure information or connection resume failure information available in *VarConnEstFailReport* or *VarConnEstFailReportList* and if the registered SNPN identity is equal to *snpn-Identity* in *networkIdentity* stored in *VarConnEstFailReport* or any entry of *VarConnEstFailReportList*:

3> include *connEstFailInfoAvailable* in the *RRCResumeComplete* message;

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

2> if the UE has radio link failure or handover failure information available in *VarRLF-Report* of TS 36.331 [10] and if the UE is capable of cross-RAT RLF reporting and if the RPLMN is included in *plmn-IdentityList* stored in *VarRLF-Report* of TS 36.331 [10]; or

2> if the UE has radio link failure or handover failure information available in *VarRLF-Report* and if the current registered SNPN identity are included in *snpn-IdentityList* stored in *VarRLF-Report*; or

3> include *rlf-InfoAvailable* in the *RRCResumeComplete* message;

2> if the UE has successful PSCell change or addition related information available in *VarSuccessPSCell-Report* and if the RPLMN is included in *plmn-IdentityList* stored in *VarSuccessPSCell-Report*; or

2> if the UE has successful PSCell change or addition information available in *VarSuccessPSCell-Report* and if the current registered SNPN identity is included in *snpn-IdentityList* stored in the *VarSuccessPSCell-Report*:

3> include *successPSCell-InfoAvailable* in the *RRCResumeComplete* message;

2> if the UE has successful handover information available in *VarSuccessHO-Report* and if the RPLMN is included in *plmn-IdentityList* stored in *VarSuccessHO-Report*; or

2> if the UE has successful handover information available in *VarSuccessHO-Report* and if the current registered SNPN identity is included in *snpn-IdentityList* stored in the *VarSuccessHO-Report*:

3> include *successHO-InfoAvailable* in the *RRCResumeComplete* message;

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

3> include the *mobilityHistoryAvail* in the *RRCResumeComplete* message;

2> if *speedStateReselectionPars* is configured in the *SIB2*:

3> include the *mobilityState* in the *RRCResumeComplete* message and set it to the mobility state (as specified in TS 38.304 [20]) of the UE just prior to entering RRC\_CONNECTED state;

2> if the UE has at least one stored application layer measurement configuration with *appLayerIdleInactiveConfig* configured:

3> include *measConfigReportAppLayerAvailable* in the *RRCResumeComplete* message;

2> if the UE is configured to provide the measurement gap requirement information of NR target bands:

3> include the *NeedForGapsInfoNR* and set the contents as follows:

4> include *intraFreq-needForGap* and set the gap requirement information of intra-frequency measurement for each NR serving cell;

4> if *requestedTargetBandFilterNR* is configured, for each supported NR band that is also included in *requestedTargetBandFilterNR*, include an entry in *interFreq-needForGap* and set the gap requirement information for that band; otherwise, include an entry in *interFreq-needForGap* and set the corresponding gap requirement information for each supported NR band;

3> if the *needForInterruptionConfigNR* is enabled:

4> include the *needForInterruptionInfoNR* and set the contents as follows:

5> include *intraFreq-needForInterruption* with the same number of entries, and listed in the same order, as in *intraFreq-needForGap*;

5> for each entry in *intraFreq-needForInterruption*:

6> include *interruptionIndication* and set the interruption requirement information if the corresponding entry in *intraFreq-needForGap* is set to *no-gap;*

5> include *interFreq-needForInterruption* with the same number of entries, and listed in the same order, as in *interFreq-needForGap*;

5> for each entry in *interFreq-needForInterruption*:

6> include *interruptionIndication* and set the interruption requirement information if the corresponding entry in *interFreq-needForGap* is set to *no-gap*;

2> if the UE is configured to provide the measurement gap and NCSG requirement information of NR target bands:

3> include the *NeedForGapNCSG-InfoNR* and set the contents as follows:

4> include *intraFreq-needForNCSG* and set the gap and NCSG requirement information of intra-frequency measurement for each NR serving cell;

4> if *requestedTargetBandFilterNCSG-NR* is configured:

5> for each supported NR band included in *requestedTargetBandFilterNCSG-NR*, include an entry in *interFreq-needForNCSG* and set the NCSG requirement information for that band;

4> else:

5> include an entry for each supported NR band in *interFreq-needForNCSG* and set the corresponding NCSG requirement information;

2> if the UE is configured to provide the measurement gap and NCSG requirement information of E‑UTRA target bands:

3> include the *NeedForGapNCSG-InfoEUTRA* and set the contents as follows:

4> if *requestedTargetBandFilterNCSG-EUTRA* is configured:

5> for each supported E-UTRA band included in *requestedTargetBandFilterNCSG-EUTRA*, include an entry in *needForNCSG-EUTRA* and set the NCSG requirement information for that band;

4> else:

5> include an entry for each supported E-UTRA band in *needForNCSG-EUTRA* and set the corresponding NCSG requirement information;

2> if *SIB1* contains *musim-CapRestrictionAllowed*:

3> if supported, include the *musim-CapRestrictionInd* in the *RRCResumeComplete* message upon determining it has temporary capability restriction;

2> if the UE has flight path information available:

3> include *flightPathInfoAvailable*;

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

1> the procedure ends.

NOTE 2: Network only configures at most one of *reportUplinkTxDirectCurrent, reportUplinkTxDirectCurrentTwoCarrier* or *reportUplinkTxDirectCurrentMoreCarrier* in one RRC message*.*

NOTE 3: Upon reception of *musim-CapRestrictionInd* in *RRCResumeComplete*, it is up to network implementation to configure the UE with a limited configuration that is used until network sends *RRCReconfiguration* based on the actual restricted UE capabilities included in *UEAssistanceInformation*.

### 6.2.2 Message definitions

<skipped>

#### – *MIB*

The *MIB* includes the system information transmitted on BCH.

Signalling radio bearer: N/A

RLC-SAP: TM

Logical channel: BCCH

Direction: Network to UE

*MIB*

-- ASN1START

-- TAG-MIB-START

MIB ::= SEQUENCE {

 systemFrameNumber BIT STRING (SIZE (6)),

 subCarrierSpacingCommon ENUMERATED {scs15or60, scs30or120},

 ssb-SubcarrierOffset INTEGER (0..15),

 dmrs-TypeA-Position ENUMERATED {pos2, pos3},

 pdcch-ConfigSIB1 PDCCH-ConfigSIB1,

 cellBarred ENUMERATED {barred, notBarred},

 intraFreqReselection ENUMERATED {allowed, notAllowed},

 spare BIT STRING (SIZE (1))

}

-- TAG-MIB-STOP

-- ASN1STOP

|  |
| --- |
| *MIB* field descriptions |
| ***cellBarred***Value *barred* means that the cell is barred, as defined in TS 38.304 [20]. This field is ignored by IAB-MT and NCR-MT. This field is ignored for connectivity to NTN or ATG. |
| ***dmrs-TypeA-Position***Position of (first) DM-RS for downlink (see TS 38.211 [16], clause 7.4.1.1.2) and uplink (see TS 38.211 [16], clause 6.4.1.1.3). |
| ***intraFreqReselection***Controls cell selection/reselection to intra-frequency cells when the highest ranked cell is barred, or treated as barred by the UE, as specified in TS 38.304 [20]. This field is ignored by IAB-MT, NCR-MT and (e)RedCap UE. |
| ***pdcch-ConfigSIB1***Determines a common *ControlResourceSet* (CORESET), a common search space and necessary PDCCH parameters. If the field *ssb-SubcarrierOffset* indicates that *SIB1* is absent, the field *pdcch-ConfigSIB1* indicates the frequency positions where the UE may find SS/PBCH block with *SIB1* or the frequency range where the network does not provide SS/PBCH block with *SIB1* (see TS 38.213 [13], clause 13). |
| ***ssb-SubcarrierOffset***Corresponds to kSSB (see TS 38.213 [13]), which is the frequency domain offset between SSB and the overall resource block grid in number of subcarriers. (See TS 38.211 [16], clause 7.4.3.1). For operation with shared spectrum channel access in FR1 (see 37.213 [48]), this field corresponds to , and kSSB is obtained from (see TS 38.211 [16], clause 7.4.3.1); the LSB of this field is used also for deriving the QCL relation between SS/PBCH blocks as specified in TS 38.213 [13], clause 4.1.The value range of this field may be extended by an additional most significant bit encoded within PBCH as specified in TS 38.213 [13].This field may indicate that this cell does not provide *SIB1* and that there is hence no CORESET#0 configured in *MIB* (see TS 38.213 [13], clause 13). In this case, the field *pdcch-ConfigSIB1* may indicate the frequency positions where the UE may (not) find a SS/PBCH with a control resource set and search space for *SIB1* (see TS 38.213 [13], clause 13). |
| ***subCarrierSpacingCommon***Subcarrier spacing for *SIB1*, Msg.2/4 and MsgB for initial access, paging and broadcast SI-messages. If the UE acquires this *MIB* on an FR1 carrier frequency, the value *scs15or60* corresponds to 15 kHz and the value *scs30or120* corresponds to 30 kHz. If the UE acquires this *MIB* on an FR2 carrier frequency, the value *scs15or60* corresponds to 60 kHz and the value *scs30or120* corresponds to 120 kHz. For operation with shared spectrum channel access in FR1 (see 37.213 [48]) and for operation in FR2-2, the subcarrier spacing for *SIB1*, Msg.2/4 and MsgB for initial access, paging and broadcast SI-messages is same as that for the corresponding SSB. For operation with shared spectrum channel access, this field instead is used for deriving the QCL relation between SS/PBCH blocks as specified in TS 38.213 [13], clause 4.1. |
| ***systemFrameNumber***The 6 most significant bits (MSB) of the 10-bit System Frame Number (SFN). The 4 LSB of the SFN are conveyed in the PBCH transport block as part of channel coding (i.e. outside the *MIB* encoding), as defined in clause 7.1 in TS 38.212 [17]. |

#### – *SIB1*

*SIB1* contains information relevant when evaluating if a UE is allowed to access a cell and defines the scheduling of other system information.It also contains radio resource configuration information that is common for all UEs and barring information applied to the unified access control.

Signalling radio bearer: N/A

RLC-SAP: TM

Logical channels: BCCH

Direction: Network to UE

*SIB1* message

-- ASN1START

-- TAG-SIB1-START

SIB1 ::= SEQUENCE {

 cellSelectionInfo SEQUENCE {

 q-RxLevMin Q-RxLevMin,

 q-RxLevMinOffset INTEGER (1..8) OPTIONAL, -- Need S

 q-RxLevMinSUL Q-RxLevMin OPTIONAL, -- Need R

 q-QualMin Q-QualMin OPTIONAL, -- Need S

 q-QualMinOffset INTEGER (1..8) OPTIONAL -- Need S

 } OPTIONAL, -- Cond Standalone

 cellAccessRelatedInfo CellAccessRelatedInfo,

 connEstFailureControl ConnEstFailureControl OPTIONAL, -- Need R

 si-SchedulingInfo SI-SchedulingInfo OPTIONAL, -- Need R

 servingCellConfigCommon ServingCellConfigCommonSIB OPTIONAL, -- Need R

 ims-EmergencySupport ENUMERATED {true} OPTIONAL, -- Need R

 eCallOverIMS-Support ENUMERATED {true} OPTIONAL, -- Need R

 ue-TimersAndConstants UE-TimersAndConstants OPTIONAL, -- Need R

 uac-BarringInfo SEQUENCE {

 uac-BarringForCommon UAC-BarringPerCatList OPTIONAL, -- Need S

 uac-BarringPerPLMN-List UAC-BarringPerPLMN-List OPTIONAL, -- Need S

 uac-BarringInfoSetList UAC-BarringInfoSetList,

 uac-AccessCategory1-SelectionAssistanceInfo CHOICE {

 plmnCommon UAC-AccessCategory1-SelectionAssistanceInfo,

 individualPLMNList SEQUENCE (SIZE (2..maxPLMN)) OF UAC-AccessCategory1-SelectionAssistanceInfo

 } OPTIONAL -- Need S

 } OPTIONAL, -- Need R

 useFullResumeID ENUMERATED {true} OPTIONAL, -- Need R

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 nonCriticalExtension SIB1-v1610-IEs OPTIONAL

}

SIB1-v1610-IEs ::= SEQUENCE {

 idleModeMeasurementsEUTRA-r16 ENUMERATED{true} OPTIONAL, -- Need R

 idleModeMeasurementsNR-r16 ENUMERATED{true} OPTIONAL, -- Need R

 posSI-SchedulingInfo-r16 PosSI-SchedulingInfo-r16 OPTIONAL, -- Need R

 nonCriticalExtension SIB1-v1630-IEs OPTIONAL

}

SIB1-v1630-IEs ::= SEQUENCE {

 uac-BarringInfo-v1630 SEQUENCE {

 uac-AC1-SelectAssistInfo-r16 SEQUENCE (SIZE (2..maxPLMN)) OF UAC-AC1-SelectAssistInfo-r16

 } OPTIONAL, -- Need R

 nonCriticalExtension SIB1-v1700-IEs OPTIONAL

}

SIB1-v1700-IEs ::= SEQUENCE {

 hsdn-Cell-r17 ENUMERATED {true} OPTIONAL, -- Need R

 uac-BarringInfo-v1700 SEQUENCE {

 uac-BarringInfoSetList-v1700 UAC-BarringInfoSetList-v1700

 } OPTIONAL, -- Cond MINT

 sdt-ConfigCommon-r17 SDT-ConfigCommonSIB-r17 OPTIONAL, -- Need R

 redCap-ConfigCommon-r17 RedCap-ConfigCommonSIB-r17 OPTIONAL, -- Need R

 featurePriorities-r17 SEQUENCE {

 redCapPriority-r17 FeaturePriority-r17 OPTIONAL, -- Need R

 slicingPriority-r17 FeaturePriority-r17 OPTIONAL, -- Need R

 msg3-Repetitions-Priority-r17 FeaturePriority-r17 OPTIONAL, -- Need R

 sdt-Priority-r17 FeaturePriority-r17 OPTIONAL -- Need R

 } OPTIONAL, -- Need R

 si-SchedulingInfo-v1700 SI-SchedulingInfo-v1700 OPTIONAL, -- Need R

 hyperSFN-r17 BIT STRING (SIZE (10)) OPTIONAL, -- Need R

 eDRX-AllowedIdle-r17 ENUMERATED {true} OPTIONAL, -- Need R

 eDRX-AllowedInactive-r17 ENUMERATED {true} OPTIONAL, -- Cond EDRX-RC

 intraFreqReselectionRedCap-r17 ENUMERATED {allowed, notAllowed} OPTIONAL, -- Need S

 cellBarredNTN-r17 ENUMERATED {barred, notBarred} OPTIONAL, -- Need S

 nonCriticalExtension SIB1-v1740-IEs OPTIONAL

}

SIB1-v1740-IEs ::= SEQUENCE {

 si-SchedulingInfo-v1740 SI-SchedulingInfo-v1740 OPTIONAL, -- Need R

 nonCriticalExtension SIB1-v1800-IEs OPTIONAL

}

SIB1-v1800-IEs ::= SEQUENCE {

 ncr-Support-r18 ENUMERATED {true} OPTIONAL, -- Need S

 mt-SDT-ConfigCommonSIB-r18 MT-SDT-ConfigCommonSIB-r18 OPTIONAL, -- Need R

 musim-CapRestrictionAllowed-r18 ENUMERATED {true} OPTIONAL, -- Need R

 featurePriorities-v1800 SEQUENCE {

 msg1-Repetitions-Priority-r18 FeaturePriority-r17 OPTIONAL, -- Need R

 eRedCapPriority-r18 FeaturePriority-r17 OPTIONAL -- Need R

 } OPTIONAL, -- Need R

 si-SchedulingInfo-v1800 SI-SchedulingInfo-v1800 OPTIONAL, -- Need R

 cellBarredATG-r18 ENUMERATED {barred, notBarred} OPTIONAL, -- Need S

 cellBarredNES-r18 ENUMERATED {notBarred} OPTIONAL, -- Need R

 mobileIAB-Cell-r18 ENUMERATED {true} OPTIONAL, -- Need R

 eDRX-AllowedInactive-r18 ENUMERATED {true} OPTIONAL, -- Cond EDRX-RC

 intraFreqReselection-eRedCap-r18 ENUMERATED {allowed, notAllowed} OPTIONAL, -- Need S

 nonServingCellMII-r18 ENUMERATED {true} OPTIONAL, -- Need R

 sdt-BeamFailureRecoveryProhibitTimer-r18 ENUMERATED {ms50, ms100, ms200, ms500, ms1000, ms1500, ms2000, ms3000}

 OPTIONAL, -- Need R

 eRedCap-ConfigCommon-r18 ERedCap-ConfigCommonSIB-r18 OPTIONAL, -- Need R

 cellBarredFixedVSAT-r18 ENUMERATED {barred, notBarred} OPTIONAL, -- Cond NTN

 cellBarredMobileVSAT-r18 ENUMERATED {barred, notBarred} OPTIONAL, -- Cond NTN

 reselectionMeasurementsNR-r18 ENUMERATED{true} OPTIONAL, -- Need R

 cellBarred2RxXR-r18 ENUMERATED {barred} OPTIONAL, -- Need R

 intraFreqReselection2RxXR-r18 ENUMERATED {allowed, notAllowed} OPTIONAL, -- Cond 2RxXR

 barringExemptEmergencyCall-r18 ENUMERATED {true} OPTIONAL, -- Cond EM-Barring

 n3c-Support-r18 ENUMERATED {true} OPTIONAL, -- Need R

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

UAC-AccessCategory1-SelectionAssistanceInfo ::= ENUMERATED {a, b, c}

UAC-AC1-SelectAssistInfo-r16 ::= ENUMERATED {a, b, c, notConfigured}

SDT-ConfigCommonSIB-r17 ::= SEQUENCE {

 sdt-RSRP-Threshold-r17 RSRP-Range OPTIONAL, -- Need R

 sdt-LogicalChannelSR-DelayTimer-r17 ENUMERATED { sf20, sf40, sf64, sf128, sf512, sf1024, sf2560, spare1} OPTIONAL, -- Need R

 sdt-DataVolumeThreshold-r17 ENUMERATED {byte32, byte100, byte200, byte400, byte600, byte800, byte1000, byte2000, byte4000,

 byte8000, byte9000, byte10000, byte12000, byte24000, byte48000, byte96000},

 t319a-r17 ENUMERATED { ms100, ms200, ms300, ms400, ms600, ms1000, ms2000,

 ms3000, ms4000, spare7, spare6, spare5, spare4, spare3, spare2, spare1}

}

RedCap-ConfigCommonSIB-r17 ::= SEQUENCE {

 halfDuplexRedCapAllowed-r17 ENUMERATED {true} OPTIONAL, -- Need R

 cellBarredRedCap-r17 SEQUENCE {

 cellBarredRedCap1Rx-r17 ENUMERATED {barred, notBarred},

 cellBarredRedCap2Rx-r17 ENUMERATED {barred, notBarred}

 } OPTIONAL, -- Need R

 ...

}

ERedCap-ConfigCommonSIB-r18 ::= SEQUENCE {

 cellBarred-eRedCap-r18 SEQUENCE {

 cellBarred-eRedCap1Rx-r18 ENUMERATED {barred, notBarred},

 cellBarred-eRedCap2Rx-r18 ENUMERATED {barred, notBarred}

 }

}

FeaturePriority-r17 ::= INTEGER (0..7)

MT-SDT-ConfigCommonSIB-r18 ::= SEQUENCE {

 mt-SDT-RSRP-Threshold-r18 RSRP-Range OPTIONAL, -- Need S

 sdt-LogicalChannelSR-DelayTimer-r18 ENUMERATED { sf20, sf40, sf64, sf128, sf512, sf1024, sf2560, spare1} OPTIONAL, -- Cond MT-SDT1

 t319a-r18 ENUMERATED { ms100, ms200, ms300, ms400, ms600, ms1000, ms2000,

 ms3000, ms4000, spare7, spare6, spare5, spare4,

 spare3, spare2, spare1} OPTIONAL -- Cond MT-SDT2

}

-- TAG-SIB1-STOP

-- ASN1STOP

|  |
| --- |
| *SIB1* field descriptions |
| ***barringExemptEmergencyCall***Indicates whether the cell allows emergency bearer services for UEs who would otherwise consider the cell as barred as specified in TS 38.304 [20]. |
| ***cellBarred2RxXR***Value *barred* means that the cell is barred for a 2Rx XR UE indicating *supportOf2RxXR* for the selected frequency band as specified in clause 5.2.2.4.2. This field is ignored by all UEs not indicating *supportOf2RxXR* for the selected frequency band. This field may be configured only if the cell operates in a frequency band where 4Rx antenna ports are mandated as specified in TS 38.101-1 [15]. If this field is absent on a cell operating in a frequency band where 4RX antenna ports are mandated, a 2RX XR UE shall treat the cell as not barred, as specified in TS 38.304 [20]. |
| ***cellBarredATG***Value *barred* means that the cell is barred for connectivity to ATG, as defined in TS 38.304 [20]. Value *notBarred* means that the cell is allowed for connectivity to ATG. If not present, the UE considers the cell is not allowed for connectivity to ATG, as defined in TS 38.304 [20]. This field is only applicable to ATG-capable UEs. |
| ***cellBarred-eRedCap1Rx***Value *barred* means that the cell is barred for an eRedCap UE supporting 1 Rx branch on the selected frequency band as specified in clause 5.2.2.4.2, as defined in TS 38.304 [20]. This field is ignored by non-eRedCap UEs. An eRedCap UE supporting 2 Rx on the selected frequency band as specified in clause 5.2.2.4.2 shall ignore this field when *cellBarred-eRedCap2Rx* is set to *notBarred*. |
| ***cellBarred-eRedCap2Rx***Value *barred* means that the cell is barred for an eRedCap UE supporting 2 Rx branches on the selected frequency band as specified in clause 5.2.2.4.2, as defined in TS 38.304 [20]. This field is ignored by non-eRedCap UEs. An eRedCap UE supporting 1 Rx on the selected frequency band as specified in clause 5.2.2.4.2 shall ignore this field when *cellBarred-eRedCap1Rx* is set to *notBarred*. |
| ***cellBarredFixedVSAT***Value *barred* means that the cell is barred for fixed VSAT UEs, as defined in TS 38.304 [20]. If not present, the cell is not allowed for fixed VSAT UEs. This field is ignored by non-VSAT UEs. |
| ***cellBarredMobileVSAT***Value *barred* means that the cell is barred for mobile VSAT UEs, as defined in TS 38.304 [20]. If not present, the cell is not allowed for mobile VSAT UEs. This field is ignored by non-VSAT UEs. |
| ***cellBarredNES***This field indicates the cell barring status for UEs supporting *nes-CellDTX-DRX* as described in 5.2.2.4.2. |
| ***cellBarredNTN***Value *barred* means that the cell is barred for connectivity to NTN, as defined in TS 38.304 [20]. Value *notBarred* means that the cell is allowed for connectivity to NTN. If not present, the UE considers the cell is not allowed for connectivity to NTN, as defined in TS 38.304 [20]. This field is only applicable to NTN-capable UEs. |
| ***cellBarredRedCap1Rx***Value *barred* means that the cell is barred for a RedCap UE supporting 1 Rx branch on the selected frequency band as specified in clause 5.2.2.4.2, as defined in TS 38.304 [20]. This field is ignored by non-RedCap UEs. A RedCap UE supporting 2 Rx on the selected frequency band as specified in clause 5.2.2.4.2 shall ignore this field when *cellBarredRedCap2Rx* is set to *notBarred*. |
| ***cellBarredRedCap2Rx***Value *barred* means that the cell is barred for a RedCap UE supporting 2 Rx branches on the selected frequency band as specified in clause 5.2.2.4.2, as defined in TS 38.304 [20]. This field is ignored by non-RedCap UEs. A RedCap UE supporting 1 Rx on the selected frequency band as specified in clause 5.2.2.4.2 shall ignore this field when *cellBarredRedCap1Rx* is set to *notBarred*. |
| ***cellSelectionInfo***Parameters for cell selection related to the serving cell. |
| ***eCallOverIMS-Support***Indicates whether the cell supports eCall over IMS services as defined in TS 23.501 [32]. If absent, eCall over IMS is not supported by the network in the cell. |
| ***eDRX-AllowedIdle***The presence of this field indicates that extended DRX for CN paging is allowed in the cell for UEs in RRC\_IDLE or RRC\_INACTIVE. The UE shall stop using extended DRX for CN paging in RRC\_IDLE or RRC\_INACTIVE if *eDRX-AllowedIdle* is not present. |
| ***eDRX-AllowedInactive***The presence of *eDRX-AllowedInactive-r17* indicates that extended DRX cycle equal to or shorter than 10.24 s for RAN paging is allowed in the cell for UEs in RRC\_INACTIVE. The UE shall stop using extended DRX cycle equal to or shorter than 10.24 s for RAN paging in RRC\_INACTIVE if *eDRX-AllowedInactive-r17* is not present. The presence of *eDRX-AllowedInactive-r18* indicates that extended DRX cycle longer than 10.24 s for RAN paging is allowed in the cell for UEs in RRC\_INACTIVE. The UE shall stop using extended DRX cycle longer than 10.24 s for RAN paging in RRC\_INACTIVE if *eDRX-AllowedInactive-r18* is not present. |
| ***featurePriorities***Indicates priorities for features, such as (e)RedCap, Slicing, SDT, MSG1-Repetitions and MSG3-Repetitions for Coverage Enhancements. These priorities are used to determine which *FeatureCombinationPreambles* the UE shall use when a feature maps to more than one *FeatureCombinationPreambles*, as specified in TS 38.321 [3]. A lower value means a higher priority. The network does not signal the same priority for more than one feature. The network signals a priority for all feature that map to at least one *FeatureCombinationPreambles*. |
| ***halfDuplexRedCap-Allowed***The presence of this field indicates that the cell supports half-duplex FDD (e)RedCap UEs. |
| ***hsdn-Cell***This field indicates this is a HSDN cell as specified in TS 38.304 [20]. |
| ***hyperSFN***Indicates hyper SFN which increments by one when the SFN wraps around. This field is excluded when determining changes in system information, i.e. changes of hyper SFN should not result in system information change notifications. |
| ***idleModeMeasurementsEUTRA***This field indicates that a UE that is configured for EUTRA idle/inactive measurements shall perform the measurements while camping in this cell and report availability of these measurements when establishing or resuming a connection in this cell. If absent, a UE is not required to perform EUTRA idle/inactive measurements. |
| ***idleModeMeasurementsNR***This field indicates that a UE that is configured for NR idle/inactive measurements shall perform the measurements while camping in this cell and report availability of these measurements when establishing or resuming a connection in this cell. If absent, a UE is not required to perform NR idle/inactive measurements. |
| ***ims-EmergencySupport***Indicates whether the cell supports IMS emergency bearer services for UEs in limited service mode. If absent, IMS emergency call is not supported by the network in the cell for UEs in limited service mode. |
| ***intraFreqReselection2RxXR***This field controls cell selection/reselection to intra-frequency cells for 2Rx XR UEs when this cell is barred or treated as barred by the 2Rx XR UE, as specified in TS 38.304 [20]. This field is ignored by all UEs that are not 2Rx XR UEs. This field may be configured only if the cell operates in a frequency band where 4Rx antenna ports are mandated, as specified in TS 38.101-1 [15]. |
| ***intraFreqReselection-eRedCap***Controls cell selection/reselection to intra-frequency cells for eRedCap UEs when this cell is barred, or treated as barred by the eRedCap UE, as specified in TS 38.304 [20]. If not present, an eRedCap UE treats the cell as barred, i.e., the UE considers that the cell does not support eRedCap. |
| ***intraFreqReselectionRedCap***Controls cell selection/reselection to intra-frequency cells for RedCap UEs when this cell is barred, or treated as barred by the RedCap UE, as specified in TS 38.304 [20]. If not present, a RedCap UE treats the cell as barred, i.e.,the UE considers that the cell does not support RedCap. |
| ***mobileIAB-Cell***The presence of this field indicates that this is a mobile IAB cell. |
| ***mt-SDT-RSRP-Threshold***RSRP threshold used to determine whether MT-SDT procedure can be initiated, as specified in TS 38.321 [3]. If the field is absent, and the field *sdt-RSRP-Threshold* is present, the UE applies the value in the field *sdt-RSRP-Threshold*. |
| ***musim-CapRestrictionAllowed***Indicates the UE is allowed to send the *musim-CapRestrictionInd* in *RRCSetupComplete*, *RRCResumeComplete* and *RRCReestablishmentComplete* messages. |
| ***n3c-Support***This field indicates the support of N3C MP. If the field is present, the UE can perform early detection of candidate N3C relay UEs. If absent, a UE is not required to perform early detection of candidate N3C relay UEs. |
| ***ncr-Support***This field combines both the support of NCR and the cell status for NCR. If the field is present, the cell supports NCR and the cell is also considered as a candidate for cell (re)selection for NCR-node; if the field is absent, the cell does not support NCR and/or the cell is barred for NCR-node. |
| ***nonServingCellMII***Indicates whether the *MBSInterestIndication* message for MBS broadcast reception on a non-serving cell is allowed to be transmitted to the serving gNB. |
| ***q-QualMin***Parameter "Qqualmin" in TS 38.304 [20], applicable for serving cell. If the field is absent, the UE applies the (default) value of negative infinity for Qqualmin.  |
| ***q-QualMinOffset***Parameter "Qqualminoffset" in TS 38.304 [20]. Actual value Qqualminoffset = field value [dB]. If the field is absent, the UE applies the (default) value of 0 dB for Qqualminoffset.Affects the minimum required quality level in the cell. |
| ***q-RxLevMin***Parameter "Qrxlevmin" in TS 38.304 [20], applicable for serving cell. |
| ***q-RxLevMinOffset***Parameter "Qrxlevminoffset" in TS 38.304 [20]. Actual value Qrxlevminoffset = field value \* 2 [dB]. If absent, the UE applies the (default) value of 0 dB for Qrxlevminoffset*.* Affects the minimum required Rx level in the cell. |
| ***q-RxLevMinSUL***Parameter "Qrxlevmin" in TS 38.304 [20], applicable for serving cell. |
| ***reselectionMeasurementsNR***This field indicates that a UE that is configured for NR reselection measurements shall report availability of these measurements when establishing or resuming a connection in this cell. |
| ***sdt-BeamFailureRecoveryProhibitTimer***The value of the prohibit timer used for RACH for beam failure indication during SDT as specified in TS 38.321 [3]. Value *ms50* corresponds to 50 milliseconds, value *ms100* corresponds to 100 milliseconds and so on. |
| ***sdt-DataVolumeThreshold***Data volume threshold used to determine whether SDT can be initiated, as specified in TS 38.321 [3]. Value *byte32* corresponds to 32 bytes, value *byte100* corresponds to 100 bytes, and so on. |
| ***sdt-LogicalChannelSR-DelayTimer***The value of *logicalChannelSR-DelayTimer* applied during SDT for logical channels configured with SDT, as specified in TS 38.321 [3]. Value in number of subframes. Value *sf20* corresponds to 20 subframes, *sf40* corresponds to 40 subframes, and so on. If *sdt-LogicalChannelSR-DelayTimer-r18* is absent and *sdt-LogicalChannelSR-DelayTimer-r17* is present then, the UE applies the value configured in *sdt-LogicalChannelSR-DelayTimer-r17* for this field. If this field is not configured, then logicalChannelSR-DelayTimer is not applied for SDT logical channels. |
| ***sdt-RSRP-Threshold***RSRP threshold used to determine whether SDT procedure can be initiated, as specified in TS 38.321 [3]. |
| ***servingCellConfigCommon***Configuration of the serving cell. |
| ***t319a***Initial value of the timer T319a used for detection of SDT failure. Value *ms100* corresponds to 100 milliseconds, value *ms200* corresponds to 200 milliseconds and so on. If *t319a-r18* is absent, the UE applies the value configured in *t319a-r17.* |
| ***uac-AccessCategory1-SelectionAssistanceInfo***Information used to determine whether Access Category 1 applies to the UE, as defined in TS 22.261 [25]. If *plmnCommon* is chosen, the *UAC-AccessCategory1-SelectionAssistanceInfo* is applicable to all the PLMNs and SNPNs in *plmn-IdentityInfoList* and *npn-IdentityInfoList*. If *individualPLMNList* is chosen, the 1st entry in the list corresponds to the first network within all of the PLMNs and SNPNs across the *plmn-IdentityList* and the *npn-IdentityInfoList*, the 2nd entry in the list corresponds to the second network within all of the PLMNs and SNPNs across the *plmn-IdentityList* and the *npn-IdentityInfoList* and so on. If *uac-AC1-SelectAssistInfo-r16* is present, the UE shall ignore the *uac-AccessCategory1-SelectionAssistanceInfo*. |
| ***uac-AC1-SelectAssistInfo***Information used to determine whether Access Category 1 applies to the UE, as defined in TS 22.261 [25]. The 1st entry in the list corresponds to the first network within all of the PLMNs and SNPNs across the *plmn-IdentityList* and *npn-IdentityInfoList*, the 2nd entry in the list corresponds to the second network within all of the PLMNs and SNPNs across the *plmn-IdentityList* and the *npn-IdentityInfoList* and so on. Value *notConfigured* indicates that Access Category1 is not configured for the corresponding PLMN/SNPN. |
| ***uac-BarringForCommon***Common access control parameters for each access category. Common values are used for all PLMNs/SNPNs, unless overwritten by the PLMN/SNPN specific configuration provided in *uac-BarringPerPLMN-List*. The parameters are specified by providing an index to the set of configurations (*uac-BarringInfoSetList*). UE behaviour upon absence of this field is specified in clause 5.3.14.2. |
| ***ue-TimersAndConstants***Timer and constant values to be used by the UE. The cell operating as PCell always provides this field. |
| ***useFullResumeID***Indicates which resume identifier and Resume request message should be used. UE uses *fullI-RNTI* and *RRCResumeRequest1* if the field is present, or *shortI-RNTI* and *RRCResumeRequest* if the field is absent. |

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *2RxXR* | This field is mandatory present if *cellBarred2RxXR* is present, otherwise it is absent, Need R. |
| *EDRX-RC* | The field is optionally present, Need R, in a cell that enables *eDRX-AllowedIdle*, otherwise it is absent. |
| *EM-Barring* | The field is optionally present, Need R, in a cell that supports (e)RedCap or 2Rx XR UEs, otherwise it is absent. |
| *MINT* | The field is optionally present, Need R, in a cell that provides a configuration for disaster roaming, otherwise it is absent, Need R. |
| *MT-SDT1* | This field is optionally present, Need S, in a cell that supports MT-SDT if *sdt-ConfigCommon-r17* is not present, otherwise it is absent. |
| *MT-SDT2* | This field is mandatory present in a cell that supports MT-SDT if *sdt-ConfigCommon-r17* is not present, otherwise it is absent. |
| *NTN* | The field is optionally present, Need S, in a cell where *cellBarredNTN* is included with value *notBarred*, otherwise it is absent. |
| *Standalone* | The field is mandatory present in a cell that supports standalone operation, otherwise it is absent. |

#### – *UEAssistanceInformation*

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

Signalling radio bearer: SRB1, SRB3

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to Network

*UEAssistanceInformation message*

-- ASN1START

-- TAG-UEASSISTANCEINFORMATION-START

UEAssistanceInformation ::= SEQUENCE {

 criticalExtensions CHOICE {

 ueAssistanceInformation UEAssistanceInformation-IEs,

 criticalExtensionsFuture SEQUENCE {}

 }

}

UEAssistanceInformation-IEs ::= SEQUENCE {

 delayBudgetReport DelayBudgetReport OPTIONAL,

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 nonCriticalExtension UEAssistanceInformation-v1540-IEs OPTIONAL

}

DelayBudgetReport::= CHOICE {

 type1 ENUMERATED {

 msMinus1280, msMinus640, msMinus320, msMinus160,msMinus80, msMinus60, msMinus40,

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

 ...

}

UEAssistanceInformation-v1540-IEs ::= SEQUENCE {

 overheatingAssistance OverheatingAssistance OPTIONAL,

 nonCriticalExtension UEAssistanceInformation-v1610-IEs OPTIONAL

}

OverheatingAssistance ::= SEQUENCE {

 reducedMaxCCs ReducedMaxCCs-r16 OPTIONAL,

 reducedMaxBW-FR1 ReducedMaxBW-FRx-r16 OPTIONAL,

 reducedMaxBW-FR2 ReducedMaxBW-FRx-r16 OPTIONAL,

 reducedMaxMIMO-LayersFR1 SEQUENCE {

 reducedMIMO-LayersFR1-DL MIMO-LayersDL,

 reducedMIMO-LayersFR1-UL MIMO-LayersUL

 } OPTIONAL,

 reducedMaxMIMO-LayersFR2 SEQUENCE {

 reducedMIMO-LayersFR2-DL MIMO-LayersDL,

 reducedMIMO-LayersFR2-UL MIMO-LayersUL

 } OPTIONAL

}

OverheatingAssistance-r17 ::= SEQUENCE {

 reducedMaxBW-FR2-2-r17 SEQUENCE {

 reducedBW-FR2-2-DL-r17 ReducedAggregatedBandwidth-r17,

 reducedBW-FR2-2-UL-r17 ReducedAggregatedBandwidth-r17

 } OPTIONAL,

 reducedMaxMIMO-LayersFR2-2 SEQUENCE {

 reducedMIMO-LayersFR2-2-DL MIMO-LayersDL,

 reducedMIMO-LayersFR2-2-UL MIMO-LayersUL

 } OPTIONAL

}

ReducedAggregatedBandwidth ::= ENUMERATED {mhz0, mhz10, mhz20, mhz30, mhz40, mhz50, mhz60, mhz80, mhz100, mhz200, mhz300, mhz400}

ReducedAggregatedBandwidth-r17 ::= ENUMERATED {mhz0, mhz100, mhz200, mhz400, mhz800, mhz1200, mhz1600, mhz2000}

UEAssistanceInformation-v1610-IEs ::= SEQUENCE {

 idc-Assistance-r16 IDC-Assistance-r16 OPTIONAL,

 drx-Preference-r16 DRX-Preference-r16 OPTIONAL,

 maxBW-Preference-r16 MaxBW-Preference-r16 OPTIONAL,

 maxCC-Preference-r16 MaxCC-Preference-r16 OPTIONAL,

 maxMIMO-LayerPreference-r16 MaxMIMO-LayerPreference-r16 OPTIONAL,

 minSchedulingOffsetPreference-r16 MinSchedulingOffsetPreference-r16 OPTIONAL,

 releasePreference-r16 ReleasePreference-r16 OPTIONAL,

 sl-UE-AssistanceInformationNR-r16 SL-UE-AssistanceInformationNR-r16 OPTIONAL,

 referenceTimeInfoPreference-r16 BOOLEAN OPTIONAL,

 nonCriticalExtension UEAssistanceInformation-v1700-IEs OPTIONAL

}

UEAssistanceInformation-v1700-IEs ::= SEQUENCE {

 ul-GapFR2-Preference-r17 UL-GapFR2-Preference-r17 OPTIONAL,

 musim-Assistance-r17 MUSIM-Assistance-r17 OPTIONAL,

 overheatingAssistance-r17 OverheatingAssistance-r17 OPTIONAL,

 maxBW-PreferenceFR2-2-r17 MaxBW-PreferenceFR2-2-r17 OPTIONAL,

 maxMIMO-LayerPreferenceFR2-2-r17 MaxMIMO-LayerPreferenceFR2-2-r17 OPTIONAL,

 minSchedulingOffsetPreferenceExt-r17 MinSchedulingOffsetPreferenceExt-r17 OPTIONAL,

 rlm-MeasRelaxationState-r17 BOOLEAN OPTIONAL,

 bfd-MeasRelaxationState-r17 BIT STRING (SIZE (1..maxNrofServingCells)) OPTIONAL,

 nonSDT-DataIndication-r17 SEQUENCE {

 resumeCause-r17 ResumeCause OPTIONAL

 } OPTIONAL,

 scg-DeactivationPreference-r17 ENUMERATED { scg-DeactivationPreferred, noPreference } OPTIONAL,

 uplinkData-r17 ENUMERATED { true } OPTIONAL,

 rrm-MeasRelaxationFulfilment-r17 BOOLEAN OPTIONAL,

 propagationDelayDifference-r17 PropagationDelayDifference-r17 OPTIONAL,

 nonCriticalExtension UEAssistanceInformation-v1800-IEs OPTIONAL

}

UEAssistanceInformation-v1800-IEs ::= SEQUENCE {

 idc-FDM-Assistance-r18 IDC-FDM-Assistance-r18 OPTIONAL,

 idc-TDM-Assistance-r18 IDC-TDM-Assistance-r18 OPTIONAL,

 multiRx-PreferenceFR2-r18 ENUMERATED {single, multiple } OPTIONAL,

 musim-Assistance-v1800 MUSIM-Assistance-v1800 OPTIONAL,

 flightPathInfoAvailable-r18 ENUMERATED {true} OPTIONAL,

 ul-TrafficInfo-r18 UL-TrafficInfo-r18 OPTIONAL,

 n3c-RelayUE-InfoList-r18 SEQUENCE (SIZE (0..8)) OF N3C-RelayUE-Info-r18 OPTIONAL,

 sl-PRS-UE-AssistanceInformationNR-r18 SL-PRS-UE-AssistanceInformationNR-r18 OPTIONAL,

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

IDC-Assistance-r16 ::= SEQUENCE {

 affectedCarrierFreqList-r16 AffectedCarrierFreqList-r16 OPTIONAL,

 affectedCarrierFreqCombList-r16 AffectedCarrierFreqCombList-r16 OPTIONAL,

 ...

}

AffectedCarrierFreqList-r16 ::= SEQUENCE (SIZE (1.. maxFreqIDC-r16)) OF AffectedCarrierFreq-r16

AffectedCarrierFreq-r16 ::= SEQUENCE {

 carrierFreq-r16 ARFCN-ValueNR,

 interferenceDirection-r16 ENUMERATED {nr, other, both, spare}

}

AffectedCarrierFreqCombList-r16 ::= SEQUENCE (SIZE (1..maxCombIDC-r16)) OF AffectedCarrierFreqComb-r16

AffectedCarrierFreqComb-r16 ::= SEQUENCE {

 affectedCarrierFreqComb-r16 SEQUENCE (SIZE (2..maxNrofServingCells)) OF ARFCN-ValueNR OPTIONAL,

 victimSystemType-r16 VictimSystemType-r16

}

VictimSystemType-r16 ::= SEQUENCE {

 gps-r16 ENUMERATED {true} OPTIONAL,

 glonass-r16 ENUMERATED {true} OPTIONAL,

 bds-r16 ENUMERATED {true} OPTIONAL,

 galileo-r16 ENUMERATED {true} OPTIONAL,

 navIC-r16 ENUMERATED {true} OPTIONAL,

 wlan-r16 ENUMERATED {true} OPTIONAL,

 bluetooth-r16 ENUMERATED {true} OPTIONAL,

 ...,

 [[

 uwb-r18 ENUMERATED {true} OPTIONAL

 ]]

}

DRX-Preference-r16 ::= SEQUENCE {

 preferredDRX-InactivityTimer-r16 ENUMERATED {

 ms0, ms1, ms2, ms3, ms4, ms5, ms6, ms8, ms10, ms20, ms30, ms40, ms50, ms60, ms80,

 ms100, ms200, ms300, ms500, ms750, ms1280, ms1920, ms2560, spare9, spare8,

 spare7, spare6, spare5, spare4, spare3, spare2, spare1} OPTIONAL,

 preferredDRX-LongCycle-r16 ENUMERATED {

 ms10, ms20, ms32, ms40, ms60, ms64, ms70, ms80, ms128, ms160, ms256, ms320, ms512,

 ms640, ms1024, ms1280, ms2048, ms2560, ms5120, ms10240, spare12, spare11, spare10,

 spare9, spare8, spare7, spare6, spare5, spare4, spare3, spare2, spare1 } OPTIONAL,

 preferredDRX-ShortCycle-r16 ENUMERATED {

 ms2, ms3, ms4, ms5, ms6, ms7, ms8, ms10, ms14, ms16, ms20, ms30, ms32,

 ms35, ms40, ms64, ms80, ms128, ms160, ms256, ms320, ms512, ms640, spare9,

 spare8, spare7, spare6, spare5, spare4, spare3, spare2, spare1 } OPTIONAL,

 preferredDRX-ShortCycleTimer-r16 INTEGER (1..16) OPTIONAL

}

MaxBW-Preference-r16 ::= SEQUENCE {

 reducedMaxBW-FR1-r16 ReducedMaxBW-FRx-r16 OPTIONAL,

 reducedMaxBW-FR2-r16 ReducedMaxBW-FRx-r16 OPTIONAL

}

MaxBW-PreferenceFR2-2-r17 ::= SEQUENCE {

 reducedMaxBW-FR2-2-r17 SEQUENCE {

 reducedBW-FR2-2-DL-r17 ReducedAggregatedBandwidth-r17 OPTIONAL,

 reducedBW-FR2-2-UL-r17 ReducedAggregatedBandwidth-r17 OPTIONAL

 } OPTIONAL

}

MaxCC-Preference-r16 ::= SEQUENCE {

 reducedMaxCCs-r16 ReducedMaxCCs-r16 OPTIONAL

}

MaxMIMO-LayerPreference-r16 ::= SEQUENCE {

 reducedMaxMIMO-LayersFR1-r16 SEQUENCE {

 reducedMIMO-LayersFR1-DL-r16 INTEGER (1..8),

 reducedMIMO-LayersFR1-UL-r16 INTEGER (1..4)

 } OPTIONAL,

 reducedMaxMIMO-LayersFR2-r16 SEQUENCE {

 reducedMIMO-LayersFR2-DL-r16 INTEGER (1..8),

 reducedMIMO-LayersFR2-UL-r16 INTEGER (1..4)

 } OPTIONAL

}

MaxMIMO-LayerPreferenceFR2-2-r17 ::= SEQUENCE {

 reducedMaxMIMO-LayersFR2-2-r17 SEQUENCE {

 reducedMIMO-LayersFR2-2-DL-r17 INTEGER (1..8),

 reducedMIMO-LayersFR2-2-UL-r17 INTEGER (1..4)

 } OPTIONAL

}

MinSchedulingOffsetPreference-r16 ::= SEQUENCE {

 preferredK0-r16 SEQUENCE {

 preferredK0-SCS-15kHz-r16 ENUMERATED {sl1, sl2, sl4, sl6} OPTIONAL,

 preferredK0-SCS-30kHz-r16 ENUMERATED {sl1, sl2, sl4, sl6} OPTIONAL,

 preferredK0-SCS-60kHz-r16 ENUMERATED {sl2, sl4, sl8, sl12} OPTIONAL,

 preferredK0-SCS-120kHz-r16 ENUMERATED {sl2, sl4, sl8, sl12} OPTIONAL

 } OPTIONAL,

 preferredK2-r16 SEQUENCE {

 preferredK2-SCS-15kHz-r16 ENUMERATED {sl1, sl2, sl4, sl6} OPTIONAL,

 preferredK2-SCS-30kHz-r16 ENUMERATED {sl1, sl2, sl4, sl6} OPTIONAL,

 preferredK2-SCS-60kHz-r16 ENUMERATED {sl2, sl4, sl8, sl12} OPTIONAL,

 preferredK2-SCS-120kHz-r16 ENUMERATED {sl2, sl4, sl8, sl12} OPTIONAL

 } OPTIONAL

}

MinSchedulingOffsetPreferenceExt-r17 ::= SEQUENCE {

 preferredK0-r17 SEQUENCE {

 preferredK0-SCS-480kHz-r17 ENUMERATED {sl8, sl16, sl32, sl48} OPTIONAL,

 preferredK0-SCS-960kHz-r17 ENUMERATED {sl8, sl16, sl32, sl48} OPTIONAL

 } OPTIONAL,

 preferredK2-r17 SEQUENCE {

 preferredK2-SCS-480kHz-r17 ENUMERATED {sl8, sl16, sl32, sl48} OPTIONAL,

 preferredK2-SCS-960kHz-r17 ENUMERATED {sl8, sl16, sl32, sl48} OPTIONAL

 } OPTIONAL

}

MUSIM-Assistance-r17 ::= SEQUENCE {

 musim-PreferredRRC-State-r17 ENUMERATED {idle, inactive, outOfConnected} OPTIONAL,

 musim-GapPreferenceList-r17 MUSIM-GapPreferenceList-r17 OPTIONAL

}

MUSIM-GapPreferenceList-r17 ::= SEQUENCE (SIZE (1..4)) OF MUSIM-GapInfo-r17

MUSIM-Assistance-v1800 ::= SEQUENCE {

 musim-GapPriorityPreferenceList-r18 MUSIM-GapPriorityPreferenceList-r18 OPTIONAL,

 musim-GapKeepPreference-r18 ENUMERATED {true} OPTIONAL,

 musim-CapRestriction-r18 MUSIM-CapRestriction-r18 OPTIONAL,

 musim-NeedForGapsInfoNR-r18 NeedForGapsInfoNR-r16 OPTIONAL,

 ...

}

MUSIM-GapPriorityPreferenceList-r18 ::= SEQUENCE (SIZE (1..3)) OF GapPriority-r17

MUSIM-CapRestriction-r18 ::= SEQUENCE {

 musim-Cell-SCG-ToRelease-r18 MUSIM-Cell-SCG-ToRelease-r18 OPTIONAL,

 musim-CellToAffectList-r18 MUSIM-CellToAffectList-r18 OPTIONAL,

 musim-AffectedBandsList-r18 MUSIM-AffectedBandsList-r18 OPTIONAL,

 musim-AvoidedBandsList-r18 MUSIM-AvoidedBandsList-r18 OPTIONAL,

 musim-MaxCC-r18 MUSIM-MaxCC-r18 OPTIONAL

}

MUSIM-Cell-SCG-ToRelease-r18 ::= SEQUENCE {

 musim-CellToRelease-r18 MUSIM-CellToRelease-r18 OPTIONAL,

 scg-ReleasePreference-r18 ENUMERATED {true} OPTIONAL

}

MUSIM-CellToRelease-r18 ::= SEQUENCE (SIZE (1..maxNrofServingCells)) OF ServCellIndex

MUSIM-CellToAffectList-r18::= SEQUENCE (SIZE (1..maxNrofServingCells)) OF MUSIM-CellToAffect-r18

MUSIM-CellToAffect-r18 ::= SEQUENCE {

 musim-ServCellIndex-r18 ServCellIndex,

 musim-MIMO-Layers-DL-r18 INTEGER (1..8) OPTIONAL,

 musim-MIMO-Layers-UL-r18 INTEGER (1..4) OPTIONAL,

 musim-SupportedBandwidth-DL-r18 SupportedBandwidth-v1700 OPTIONAL,

 musim-SupportedBandwidth-UL-r18 SupportedBandwidth-v1700 OPTIONAL

}

MUSIM-AffectedBandsList-r18 ::= SEQUENCE (SIZE (1..maxBandComb-MUSIM-r18)) OF MUSIM-AffectedBands-r18

MUSIM-AffectedBands-r18 ::= SEQUENCE (SIZE (1..maxCandidateBandIndex-r18)) OF MUSIM-CapabilityRestrictedBandParameters-r18

MUSIM-CapabilityRestrictedBandParameters-r18 ::= SEQUENCE {

 musim-bandEntryIndex-r18 MUSIM-BandEntryIndex-r18,

 musim-CapabilityRestricted-r18 SEQUENCE {

 musim-MIMO-Layers-DL-r18 INTEGER (1..8) OPTIONAL,

 musim-MIMO-Layers-UL-r18 INTEGER (1..4) OPTIONAL,

 musim-SupportedBandwidth-DL-r18 SupportedBandwidth-v1700 OPTIONAL,

 musim-SupportedBandwidth-UL-r18 SupportedBandwidth-v1700 OPTIONAL

 }

}

MUSIM-AvoidedBandsList-r18 ::= SEQUENCE (SIZE (1..maxBandComb-MUSIM-r18)) OF MUSIM-AvoidedBands-r18

MUSIM-AvoidedBands-r18 ::= SEQUENCE (SIZE (1..maxCandidateBandIndex-r18)) OF MUSIM-BandEntryIndex-r18

MUSIM-BandEntryIndex-r18 ::= INTEGER(1.. maxCandidateBandIndex-r18)

MUSIM-MaxCC-r18 ::= SEQUENCE {

 musim-MaxCC-TotalDL-r18 INTEGER (1..32) OPTIONAL,

 musim-MaxCC-TotalUL-r18 INTEGER (1..32) OPTIONAL,

 musim-MaxCC-FR1-DL-r18 INTEGER (1..32) OPTIONAL,

 musim-MaxCC-FR1-UL-r18 INTEGER (1..32) OPTIONAL,

 musim-MaxCC-FR2-1-DL-r18 INTEGER (1..32) OPTIONAL,

 musim-MaxCC-FR2-1-UL-r18 INTEGER (1..32) OPTIONAL,

 musim-MaxCC-FR2-2-DL-r18 INTEGER (1..32) OPTIONAL,

 musim-MaxCC-FR2-2-UL-r18 INTEGER (1..32) OPTIONAL

}

ReleasePreference-r16 ::= SEQUENCE {

 preferredRRC-State-r16 ENUMERATED {idle, inactive, connected, outOfConnected}

}

ReducedMaxBW-FRx-r16 ::= SEQUENCE {

 reducedBW-DL-r16 ReducedAggregatedBandwidth,

 reducedBW-UL-r16 ReducedAggregatedBandwidth

}

ReducedMaxCCs-r16 ::= SEQUENCE {

 reducedCCsDL-r16 INTEGER (0..31),

 reducedCCsUL-r16 INTEGER (0..31)

}

SL-UE-AssistanceInformationNR-r16 ::= SEQUENCE (SIZE (1..maxNrofTrafficPattern-r16)) OF SL-TrafficPatternInfo-r16

SL-TrafficPatternInfo-r16::= SEQUENCE {

 trafficPeriodicity-r16 ENUMERATED {ms20, ms50, ms100, ms200, ms300, ms400, ms500, ms600, ms700, ms800, ms900, ms1000},

 timingOffset-r16 INTEGER (0..10239),

 messageSize-r16 BIT STRING (SIZE (8)),

 sl-QoS-FlowIdentity-r16 SL-QoS-FlowIdentity-r16

}

UL-GapFR2-Preference-r17::= SEQUENCE {

 ul-GapFR2-PatternPreference-r17 INTEGER (0..3) OPTIONAL

}

PropagationDelayDifference-r17 ::= SEQUENCE (SIZE (1..4)) OF INTEGER (-270..270)

IDC-FDM-Assistance-r18 ::= SEQUENCE {

 affectedCarrierFreqRangeList-r18 AffectedCarrierFreqRangeList-r18 OPTIONAL,

 affectedCarrierFreqRangeCombList-r18 AffectedCarrierFreqRangeCombList-r18 OPTIONAL,

 ...

}

IDC-TDM-Assistance-r18 ::= SEQUENCE {

 cycleLength-r18 ENUMERATED {ms2, ms3, ms4, ms5, ms6, ms7, ms8, ms10, ms14, ms16, ms20, ms30,

 ms32, ms35, ms40, ms60, ms64, ms70, ms80, ms96, ms100, ms128, ms160,

 ms256, ms320, ms512, ms640, ms1024, ms1280, ms2048, ms2560, ms5120, ms10240},

 startOffset-r18 INTEGER (0..10239),

 slotOffset-r18 INTEGER (0..31),

 activeDuration-r18 CHOICE {

 subMilliSeconds-r18 INTEGER (1..31),

 milliSeconds-r18 ENUMERATED {

 ms1, ms2, ms3, ms4, ms5, ms6, ms8, ms10, ms20, ms30, ms40, ms50, ms60,

 ms80, ms100, ms200, ms300, ms400, ms500, ms600, ms800, ms1000, ms1200,

 ms1600, spare8, spare7, spare6, spare5, spare4, spare3, spare2, spare1 }

 },

 ...

}

AffectedCarrierFreqRangeList-r18 ::= SEQUENCE (SIZE (1..maxFreqIDC-r16)) OF AffectedCarrierFreqRange-r18

AffectedCarrierFreqRange-r18 ::= SEQUENCE {

 affectedFreqRange-r18 AffectedFreqRange-r18,interferenceDirection-r18 ENUMERATED {nr, other, both, spare},

 victimSystemType-r18 VictimSystemType-r16 OPTIONAL

}

AffectedCarrierFreqRangeCombList-r18 ::= SEQUENCE (SIZE (1..maxCombIDC-r16)) OF AffectedCarrierFreqRangeComb-r18

AffectedCarrierFreqRangeComb-r18 ::= SEQUENCE {

 affectedCarrierFreqRangeComb-r18 SEQUENCE (SIZE (2..maxNrofServingCells)) OF AffectedFreqRange-r18,

 interferenceDirection-r18 ENUMERATED {nr, other, both, spare},

 victimSystemType-r18 VictimSystemType-r16 OPTIONAL

}

AffectedFreqRange-r18 ::= SEQUENCE {

 centerFreq-r18 ARFCN-ValueNR,

 affectedBandwidth-r18 ENUMERATED {khz200, khz400, khz600, khz800, mhz1, mhz2, mhz3, mhz4, mhz5, mhz6,

 mhz8, mhz10, mhz20, mhz30, mhz40, mhz50, mhz60, mhz80, mhz100, mhz200,

 mhz300, mhz400, spare10, spare9, spare8, spare7, spare6, spare5, spare4,

 spare3, spare2, spare1}

}

UL-TrafficInfo-r18 ::= SEQUENCE (SIZE (1..maxNrofPDU-Sessions-r17)) OF PDU-SessionUL-TrafficInfo-r18

PDU-SessionUL-TrafficInfo-r18 ::= SEQUENCE {

 pdu-SessionID-r18 PDU-SessionID,

 qos-FlowUL-TrafficInfoList-r18 SEQUENCE (SIZE (1..maxNrofQFIs)) OF QOS-FlowUL-TrafficInfo-r18

}

QOS-FlowUL-TrafficInfo-r18 ::= SEQUENCE {

 qfi-r18 QFI,

 jitterRange-r18 SEQUENCE {

 lowerBound-r18 JitterBound-r18,

 upperBound-r18 JitterBound-r18

 } OPTIONAL,

 burstArrivalTime-r18 CHOICE {

 referenceTime ReferenceTime-r16,

 referenceSFN-AndSlot ReferenceSFN-AndSlot-r18

 } OPTIONAL,

 trafficPeriodicity-r18 INTEGER (1..640000) OPTIONAL,

 pdu-SetIdentification-r18 BOOLEAN OPTIONAL,

 psi-Identification-r18 BOOLEAN OPTIONAL,

 ...

}

ReferenceSFN-AndSlot-r18 ::= SEQUENCE {

 referenceSFN-r18 INTEGER (0..1023),

 referenceSlot-r18 INTEGER (0..639)

}

JitterBound-r18 ::= ENUMERATED {ms0, ms0dot5, ms1, ms1dot5, ms2, ms2dot5, ms3, ms3dot5, ms4, ms4dot5, ms5, ms5dot5, ms6, ms6dot5, ms7, beyondMs7}

SL-PRS-UE-AssistanceInformationNR-r18 ::= SEQUENCE (SIZE (1..maxNrofSL-PRS-TxConfig-r18)) OF SL-PRS-TxInfo-r18

SL-PRS-TxInfo-r18 ::= SEQUENCE {

 sl-PRS-Periodicity-r18 ENUMERATED {ms100, ms200, ms300, ms400, ms500, ms600, ms700, ms800, ms900, ms1000, spare6,

 spare5, spare4, spare3, spare2, spare1},

 sl-PRS-Priority-r18 INTEGER (1..8) OPTIONAL,

 sl-PRS-DelayBudget-r18 INTEGER (0..1023) OPTIONAL,

 sl-PRS-Bandwidth-r18 ENUMERATED {mhz5, mhz10, mhz15, mhz20, mhz25, mhz30, mhz35, mhz40,

 mhz45, mhz50, mhz60, mhz70, mhz80, mhz90, mhz100, mhz200, mhz400,

 spare15, spare14, spare13, spare12, spare11, spare10, spare9, spare8,

 spare7, spare6, spare5, spare4, spare3, spare2, spare1} OPTIONAL,

 ...

}

-- TAG-UEASSISTANCEINFORMATION-STOP

-- ASN1STOP

### 6.3.1 System information blocks

<skipped>

#### *– SIB19*

*SIB19* contains satellite assistance information for NTN access.

***SIB19* information element**

-- ASN1START

-- TAG-SIB19-START

SIB19-r17 ::= SEQUENCE {

 ntn-Config-r17 NTN-Config-r17 OPTIONAL, -- Need R

 t-Service-r17 INTEGER (0..549755813887) OPTIONAL, -- Need R

 referenceLocation-r17 ReferenceLocation-r17 OPTIONAL, -- Need R

 distanceThresh-r17 INTEGER(0..65525) OPTIONAL, -- Need R

 ntn-NeighCellConfigList-r17 NTN-NeighCellConfigList-r17 OPTIONAL, -- Need R

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 ...,

 [[

 ntn-NeighCellConfigListExt-v1720 NTN-NeighCellConfigList-r17 OPTIONAL -- Need R

 ]],

 [[

 movingReferenceLocation-r18 ReferenceLocation-r17 OPTIONAL, -- Need R

 ntn-CovEnh-r18 NTN-CovEnh-r18 OPTIONAL, -- Need R

 satSwitchWithReSync-r18 SatSwitchWithReSync-r18 OPTIONAL -- Need R

 ]]

}

NTN-NeighCellConfigList-r17 ::= SEQUENCE (SIZE(1..maxCellNTN-r17)) OF NTN-NeighCellConfig-r17

NTN-NeighCellConfig-r17 ::= SEQUENCE {

 ntn-Config-r17 NTN-Config-r17 OPTIONAL, -- Need R

 carrierFreq-r17 ARFCN-ValueNR OPTIONAL, -- Need R

 physCellId-r17 PhysCellId OPTIONAL -- Need R

}

NTN-CovEnh-r18 ::= SEQUENCE {

 numberOfMsg4HARQ-ACK-Repetitions-r18 BIT STRING (SIZE(4)),

 rsrp-ThresholdMsg4HARQ-ACK-r18 RSRP-Range OPTIONAL -- Need R

}

SatSwitchWithReSync-r18 ::= SEQUENCE {

 ntn-Config-r18 NTN-Config-r17,

 t-ServiceStart-r18 INTEGER (0..549755813887) OPTIONAL, -- Need R

 ssb-TimeOffset-r18 INTEGER (0..159) OPTIONAL -- Need R

}

-- TAG-SIB19-STOP

-- ASN1STOP

| ***SIB19* field descriptions** |
| --- |
| ***distanceThresh***Distance from the serving cell reference location and is used in location-based measurement initiation in RRC\_IDLE and RRC\_INACTIVE, as defined in TS 38.304 [20]. Each step represents 50m. This field is only present in an NTN cell. |
| ***movingReferenceLocation***Reference location of the serving cell of an NTN Earth-moving cell at a time reference. It is used in the evaluation of *eventD2* and *condEventD2* criteria for the serving cell in RRC\_CONNECTED, and location-based measurement initiation in RRC\_IDLE and RRC\_INACTIVE when *distanceThresh* is also configured, as defined in TS 38.304 [20]. The time reference of this field is indicated by *epochTime* in *ntn-Config* of the serving cell. This field is excluded when determining changes in system information, i.e., changes to *movingReferenceLocation* should neither result in system information change notifications nor in a modification of *valueTag* in *SIB1*. This field is only present in an NTN cell. |
| ***ntn-Config***Provides parameters needed for the UE to access NR via NTN access such as Ephemeris data, common TA parameters, k\_offset, validity duration for UL sync information and epoch time. In a TN cell, this field is only present in *ntn-NeighCellConfigList* and *ntn-NeighCellConfigListExt*. |
| ***ntn-NeighCellConfigList, ntn-NeighCellConfigListExt***Provides a list of NTN neighbour cells including their *ntn-Config*, carrier frequency and *PhysCellId*. This set includes all elements of *ntn-NeighCellConfigList* and all elements of *ntn-NeighCellConfigListExt*. If *ntn-Config* is absent for an entry in *ntn-NeighCellConfigListExt*, the *ntn-Config* provided in the entry at the same position in *ntn-NeighCellConfigList* applies. Network provides *ntn-Config* for the first entry of *ntn-NeighCellConfigList.* If the *ntn-Config* is absent for any other entry in *ntn-NeighCellConfigList*, the *ntn-Config* provided in the previous entry in *ntn-NeighCellConfigList* applies. |
| ***referenceLocation***Reference location of the serving cell provided via NTN (quasi)-Earth fixed cell and is used in location-based measurement initiation in RRC\_IDLE and RRC\_INACTIVE, as defined in TS 38.304 [20]. This field is only present in an NTN cell. |
| ***satSwitchWithReSync***Provides parameters for the target satellite required to perform satellite switch with resynchronization. This field is only present in an NTN cell and its presence indicates that satellite switch without PCI change is supported in the cell. |
| ***t-Service***Indicates the time information on when a cell provided via NTN is going to stop serving the area it is currently covering. This field applies for both service link switches in NTN quasi-Earth fixed cell and feeder link switches for both NTN quasi-Earth fixed and Earth-moving cell. The field indicates a time in multiples of 10 ms after 00:00:00 on Gregorian calendar date 1 January, 1900 (midnight between Sunday, December 31, 1899 and Monday, January 1, 1900). The exact stop time is between the time indicated by the value of this field minus 1 and the time indicated by the value of this field. The reference point for *t-Service* is the uplink time synchronization reference point of the cell. This field is only present in an NTN cell. |

|  |
| --- |
| *NTN-CovEnh* field descriptions |
| ***numberOfMsg4HARQ-ACK-Repetitions***The number of repetition slots for PUCCH transmission with HARQ-ACK information for Msg4, see clause 9.2.6 in TS 38.213 [13]. The first/leftmost bit corresponds to the repetition factor 1, the second bit corresponds to repetition the factor 2, the third bit corresponds to the repetition factor 4, and the last/rightmost bit corresponds to the repetition factor 8. The repetition factor 1 shall be indicated together with at least one other repetition factor. |
| ***rsrp-ThresholdMsg4HARQ-ACK***This threshold is used by the UE for determining the configuration of the MAC entity for PUCCH repetition for Msg4 HARQ-ACK, as specified in clause 6.2.1 in TS 38.321 [3]. |

| *SatSwitchWithReSync* field descriptions |
| --- |
| ***ssb-TimeOffset***Indicates the time offset of the SSB from target satellite at its uplink time synchronization reference point with respect to the SSB from source satellite at its uplink time synchronization reference point. It is given in number of subframes. |
| ***t-ServiceStart***Indicates the time information on when the target satellite is going to start serving the area currently covered by the serving satellite. The field indicates a time in multiples of 10 ms after 00:00:00 on Gregorian calendar date 1st January 1900 (midnight between Sunday, December 31, 1899, and Monday, January 1, 1900). The exact start time is between the time indicated by the value of this field minus 1 and the time indicated by the value of this field. The reference point for *t-ServiceStart* is the uplink time synchronization reference point of the serving satellite. |

<skipped>

#### – *SIB22*

*SIB22* contains ATG assistance information for ATG access.

*SIB22* information element

-- ASN1START

-- TAG-SIB22-START

SIB22-r18 ::= SEQUENCE {

 atg-Config-r18 ATG-Config-r18 OPTIONAL, -- Need R

 hs-ATG-CellReselectionSet-r18 ENUMERATED {true} OPTIONAL, -- Need R

 atg-NeighCellConfigList-r18 ATG-NeighCellConfigList-r18 OPTIONAL, -- Need R

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 ...

 }

ATG-NeighCellConfigList-r18 ::= SEQUENCE (SIZE(1..maxCellATG-r18)) OF ATG-NeighCellConfig-r18

ATG-NeighCellConfig-r18 ::= SEQUENCE {

 atg-gNB-Location-r18 ReferenceLocation-r17 OPTIONAL, -- Need R

 height-gNB-r18 INTEGER (-16384..16383) OPTIONAL, -- Need R

 carrierFreq-r18 ARFCN-ValueNR OPTIONAL, -- Need R

 physCellId-r18 PhysCellId OPTIONAL -- Need R

}

-- TAG-SIB22-STOP

-- ASN1STOP

| *SIB22* field descriptions |
| --- |
| ***atg-Config***Provides parameters needed for ATG access such as ATG gNB location information, cell Specific Koffset, TA Report indication. |
| ***atg-NeighCellConfigList***Provides ATG assistance information of ATG neighbour cells. |
| ***hs-ATG-CellReselectionSet***Indicates whether the UE applies high speed inter-frequency measurements requirements for inter-frequency cell reselection in RRC\_IDLE and RRC\_INACTIVE states as specified in TS 38.133 [14]. If the field is absent UE applies only the NR cell reselection requirements as specified in TS 38.133 [14]. |

#### – *SIB23*

*SIB23* contains NR sidelink Positioning configuration for dedicated SL-PRS resource pool.

*SIB23* information element

-- ASN1START

-- TAG-SIB23-START

SIB23-r18 ::= SEQUENCE {

 segmentNumber-r18 INTEGER (0..63),

 segmentType-r18 ENUMERATED {notLastSegment, lastSegment},

 segmentContainer-r18 OCTET STRING

}

SIB23-IEs-r18 ::= SEQUENCE {

 sl-PosConfigCommonNR-r18 SL-PosConfigCommonNR-r18,

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 ...

}

SL-PosConfigCommonNR-r18 ::= SEQUENCE {

 sl-PosFreqInfoList-r18 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfigCommon-r16 OPTIONAL, -- Need R

 sl-PosUE-SelectedConfig-r18 SL-UE-SelectedConfig-r16 OPTIONAL, -- Need R

 sl-PosNR-AnchorCarrierFreqList-r18 SL-NR-AnchorCarrierFreqList-r16 OPTIONAL, -- Need R

 sl-PosMeasConfigCommon-r18 SL-MeasConfigCommon-r16 OPTIONAL, -- Need R

 sl-PosOffsetDFN-r18 INTEGER (1..1000) OPTIONAL, -- Need R

 sl-PosSSB-PriorityNR-r18 INTEGER (1..8) OPTIONAL, -- Need R

 ...

}

-- TAG-SIB23-STOP

-- ASN1STOP

| *SIB23* field descriptions |
| --- |
| ***segmentContainer***This field includes a segment of the encoded *SIB23-IEs*. The size of the included segment in this container should be small enough that the SI message size is less than or equal to the maximum size of a NR SI, i.e. 2976 bits when SIB23 is broadcast. |
| ***segmentNumber***This field identifies the sequence number of a segment of *SIB23-IEs*. A segment number of zero corresponds to the first segment, a segment number of one corresponds to the second segment, and so on. |
| ***segmentType***This field indicates whether the included segment is the last segment or not. |
| ***sl-PosConfigCommonNR***This field indicates the NR sidelink positioning configuration.  |

| *SL-PosConfigCommonNR* field descriptions |
| --- |
| ***sl-PosFreqInfoList***This field indicates the NR sidelink positioning carrier frequencies for SL-PRS transmission and reception. In this release, only one entry of *SL-FreqConfigCommon* is included in the list. |
| ***sl-PosMeasConfigCommon***This field indicates the measurement configurations (e.g. RSRP) for NR sidelink positioning. |
| ***sl-PosNR-AnchorCarrierFreqList***This field indicates the NR anchor carrier frequency list, which can provide the NR sidelink positioning configurations. |
| ***sl-PosOffsetDFN***Indicates the timing offset for the UE to determine DFN timing when GNSS is used for timing reference. Value 1 corresponds to 0.001 milliseconds, value 2 corresponds to 0.002 milliseconds, and so on. |
| ***sl-PosSSB-PriorityNR***This field indicates the priority of NR sidelink SSB transmission and reception. |
| ***sl-PosUE-SelectedConfig***Indicates the configuration used for UE autonomous resource selection. |

<skipped>

### 6.3.2 Radio resource control information elements

<Skipped>

#### – *ATG-Config*

The IE *ATG-Config* provides parameters needed for the UE to access NR via ATG access.

*ATG-Config* information element

-- ASN1START

-- TAG-ATG-CONFIG-START

ATG-Config-r18 ::= SEQUENCE {

 atg-gNB-Location-r18 ReferenceLocation-r17 OPTIONAL, -- Need R

 height-gNB-r18 INTEGER (-16384..16383) OPTIONAL, -- Need R

 cellSpecificKoffset-r18 INTEGER(1..3) OPTIONAL, -- Need R

 ta-ReportATG-r18 ENUMERATED {enabled} OPTIONAL -- Need R

}

-- TAG-ATG-CONFIG-STOP

-- ASN1STOP

| *ATG-Config* field descriptions |
| --- |
| ***atg-gNB-Location***Indicates the BS location for ATG access. |
| ***cellSpecificKoffset***Scheduling offset used for the timing relationships that are modified for ATG. Unit in slot. |
| ***height-gNB***Indicates the height of the BS for ATG access relative to the sea level. Unit in meter. |
| ***ta-ReportATG***When this field is included in SIB22, it indicates reporting of timing advanced is enabled during Random Access due to RRC connection establishment or RRC connection resume, and during RRC connection reestablishment. When this field is included in *ServingCellConfigCommon* within dedicated signalling, it indicates TA reporting is enabled during Random Access due to reconfiguration with sync (see TS 38.321 [3], clause 5.4.8). |

#### – *CodebookConfig*

The IE *CodebookConfig* is used to configure codebooks of Type-I and Type-II (see TS 38.214 [19], clause 5.2.2.2)

*CodebookConfig* information element

-- ASN1START

-- TAG-CODEBOOKCONFIG-START

CodebookConfig ::= SEQUENCE {

 codebookType CHOICE {

 type1 SEQUENCE {

 subType CHOICE {

 typeI-SinglePanel SEQUENCE {

 nrOfAntennaPorts CHOICE {

 two SEQUENCE {

 twoTX-CodebookSubsetRestriction BIT STRING (SIZE (6))

 },

 moreThanTwo SEQUENCE {

 n1-n2 CHOICE {

 two-one-TypeI-SinglePanel-Restriction BIT STRING (SIZE (8)),

 two-two-TypeI-SinglePanel-Restriction BIT STRING (SIZE (64)),

 four-one-TypeI-SinglePanel-Restriction BIT STRING (SIZE (16)),

 three-two-TypeI-SinglePanel-Restriction BIT STRING (SIZE (96)),

 six-one-TypeI-SinglePanel-Restriction BIT STRING (SIZE (24)),

 four-two-TypeI-SinglePanel-Restriction BIT STRING (SIZE (128)),

 eight-one-TypeI-SinglePanel-Restriction BIT STRING (SIZE (32)),

 four-three-TypeI-SinglePanel-Restriction BIT STRING (SIZE (192)),

 six-two-TypeI-SinglePanel-Restriction BIT STRING (SIZE (192)),

 twelve-one-TypeI-SinglePanel-Restriction BIT STRING (SIZE (48)),

 four-four-TypeI-SinglePanel-Restriction BIT STRING (SIZE (256)),

 eight-two-TypeI-SinglePanel-Restriction BIT STRING (SIZE (256)),

 sixteen-one-TypeI-SinglePanel-Restriction BIT STRING (SIZE (64))

 },

 typeI-SinglePanel-codebookSubsetRestriction-i2 BIT STRING (SIZE (16)) OPTIONAL -- Need R

 }

 },

 typeI-SinglePanel-ri-Restriction BIT STRING (SIZE (8))

 },

 typeI-MultiPanel SEQUENCE {

 ng-n1-n2 CHOICE {

 two-two-one-TypeI-MultiPanel-Restriction BIT STRING (SIZE (8)),

 two-four-one-TypeI-MultiPanel-Restriction BIT STRING (SIZE (16)),

 four-two-one-TypeI-MultiPanel-Restriction BIT STRING (SIZE (8)),

 two-two-two-TypeI-MultiPanel-Restriction BIT STRING (SIZE (64)),

 two-eight-one-TypeI-MultiPanel-Restriction BIT STRING (SIZE (32)),

 four-four-one-TypeI-MultiPanel-Restriction BIT STRING (SIZE (16)),

 two-four-two-TypeI-MultiPanel-Restriction BIT STRING (SIZE (128)),

 four-two-two-TypeI-MultiPanel-Restriction BIT STRING (SIZE (64))

 },

 ri-Restriction BIT STRING (SIZE (4))

 }

 },

 codebookMode INTEGER (1..2)

 },

 type2 SEQUENCE {

 subType CHOICE {

 typeII SEQUENCE {

 n1-n2-codebookSubsetRestriction CHOICE {

 two-one BIT STRING (SIZE (16)),

 two-two BIT STRING (SIZE (43)),

 four-one BIT STRING (SIZE (32)),

 three-two BIT STRING (SIZE (59)),

 six-one BIT STRING (SIZE (48)),

 four-two BIT STRING (SIZE (75)),

 eight-one BIT STRING (SIZE (64)),

 four-three BIT STRING (SIZE (107)),

 six-two BIT STRING (SIZE (107)),

 twelve-one BIT STRING (SIZE (96)),

 four-four BIT STRING (SIZE (139)),

 eight-two BIT STRING (SIZE (139)),

 sixteen-one BIT STRING (SIZE (128))

 },

 typeII-RI-Restriction BIT STRING (SIZE (2))

 },

 typeII-PortSelection SEQUENCE {

 portSelectionSamplingSize ENUMERATED {n1, n2, n3, n4} OPTIONAL, -- Need R

 typeII-PortSelectionRI-Restriction BIT STRING (SIZE (2))

 }

 },

 phaseAlphabetSize ENUMERATED {n4, n8},

 subbandAmplitude BOOLEAN,

 numberOfBeams ENUMERATED {two, three, four}

 }

 }

}

CodebookConfig-r16 ::= SEQUENCE {

 codebookType CHOICE {

 type2 SEQUENCE {

 subType CHOICE {

 typeII-r16 SEQUENCE {

 n1-n2-codebookSubsetRestriction-r16 CHOICE {

 two-one BIT STRING (SIZE (16)),

 two-two BIT STRING (SIZE (43)),

 four-one BIT STRING (SIZE (32)),

 three-two BIT STRING (SIZE (59)),

 six-one BIT STRING (SIZE (48)),

 four-two BIT STRING (SIZE (75)),

 eight-one BIT STRING (SIZE (64)),

 four-three BIT STRING (SIZE (107)),

 six-two BIT STRING (SIZE (107)),

 twelve-one BIT STRING (SIZE (96)),

 four-four BIT STRING (SIZE (139)),

 eight-two BIT STRING (SIZE (139)),

 sixteen-one BIT STRING (SIZE (128))

 },

 typeII-RI-Restriction-r16 BIT STRING (SIZE(4))

 },

 typeII-PortSelection-r16 SEQUENCE {

 portSelectionSamplingSize-r16 ENUMERATED {n1, n2, n3, n4},

 typeII-PortSelectionRI-Restriction-r16 BIT STRING (SIZE (4))

 }

 },

 numberOfPMI-SubbandsPerCQI-Subband-r16 INTEGER (1..2),

 paramCombination-r16 INTEGER (1..8)

 }

 }

}

CodebookConfig-r17 ::= SEQUENCE {

 codebookType CHOICE {

 type1 SEQUENCE {

 typeI-SinglePanel-Group1-r17 SEQUENCE {

 nrOfAntennaPorts CHOICE {

 two SEQUENCE {

 twoTX-CodebookSubsetRestriction1-r17 BIT STRING (SIZE (6))

 },

 moreThanTwo SEQUENCE {

 n1-n2 CHOICE {

 two-one-TypeI-SinglePanel-Restriction1-r17 BIT STRING (SIZE (8)),

 two-two-TypeI-SinglePanel-Restriction1-r17 BIT STRING (SIZE (64)),

 four-one-TypeI-SinglePanel-Restriction1-r17 BIT STRING (SIZE (16)),

 three-two-TypeI-SinglePanel-Restriction1-r17 BIT STRING (SIZE (96)),

 six-one-TypeI-SinglePanel-Restriction1-r17 BIT STRING (SIZE (24)),

 four-two-TypeI-SinglePanel-Restriction1-r17 BIT STRING (SIZE (128)),

 eight-one-TypeI-SinglePanel-Restriction1-r17 BIT STRING (SIZE (32)),

 four-three-TypeI-SinglePanel-Restriction1-r17 BIT STRING (SIZE (192)),

 six-two-TypeI-SinglePanel-Restriction1-r17 BIT STRING (SIZE (192)),

 twelve-one-TypeI-SinglePanel-Restriction1-r17 BIT STRING (SIZE (48)),

 four-four-TypeI-SinglePanel-Restriction1-r17 BIT STRING (SIZE (256)),

 eight-two-TypeI-SinglePanel-Restriction1-r17 BIT STRING (SIZE (256)),

 sixteen-one-TypeI-SinglePanel-Restriction1-r17 BIT STRING (SIZE (64))

 }

 }

 }

 } OPTIONAL, -- Need R

 typeI-SinglePanel-Group2-r17 SEQUENCE {

 nrOfAntennaPorts CHOICE {

 two SEQUENCE {

 twoTX-CodebookSubsetRestriction2-r17 BIT STRING (SIZE (6))

 },

 moreThanTwo SEQUENCE {

 n1-n2 CHOICE {

 two-one-TypeI-SinglePanel-Restriction2-r17 BIT STRING (SIZE (8)),

 two-two-TypeI-SinglePanel-Restriction2-r17 BIT STRING (SIZE (64)),

 four-one-TypeI-SinglePanel-Restriction2-r17 BIT STRING (SIZE (16)),

 three-two-TypeI-SinglePanel-Restriction2-r17 BIT STRING (SIZE (96)),

 six-one-TypeI-SinglePanel-Restriction2-r17 BIT STRING (SIZE (24)),

 four-two-TypeI-SinglePanel-Restriction2-r17 BIT STRING (SIZE (128)),

 eight-one-TypeI-SinglePanel-Restriction2-r17 BIT STRING (SIZE (32)),

 four-three-TypeI-SinglePanel-Restriction2-r17 BIT STRING (SIZE (192)),

 six-two-TypeI-SinglePanel-Restriction2-r17 BIT STRING (SIZE (192)),

 twelve-one-TypeI-SinglePanel-Restriction2-r17 BIT STRING (SIZE (48)),

 four-four-TypeI-SinglePanel-Restriction2-r17 BIT STRING (SIZE (256)),

 eight-two-TypeI-SinglePanel-Restriction2-r17 BIT STRING (SIZE (256)),

 sixteen-one-TypeI-SinglePanel-Restriction2-r17 BIT STRING (SIZE (64))

 }

 }

 }

 } OPTIONAL, -- Need R

 typeI-SinglePanel-ri-RestrictionSTRP-r17 BIT STRING (SIZE (8)) OPTIONAL, -- Need R

 typeI-SinglePanel-ri-RestrictionSDM-r17 BIT STRING (SIZE (4)) OPTIONAL -- Need R

 },

 type2 SEQUENCE {

 typeII-PortSelection-r17 SEQUENCE {

 paramCombination-r17 INTEGER (1..8),

 valueOfN-r17 ENUMERATED {n2, n4} OPTIONAL, -- Need R

 numberOfPMI-SubbandsPerCQI-Subband-r17 INTEGER(1..2) OPTIONAL, -- Need R

 typeII-PortSelectionRI-Restriction-r17 BIT STRING (SIZE (4))

 }

 }

 }

}

CodebookConfig-v1730 ::= SEQUENCE {

 codebookType CHOICE {

 type1 SEQUENCE {

 codebookMode INTEGER (1..2) OPTIONAL -- Need R

 }

 }

}

CodebookConfig-r18 ::= SEQUENCE {

 codebookType CHOICE {

 type2 CHOICE {

 typeII-CJT-r18 SEQUENCE {

 n1-n2-codebookSubsetRestrictionList-r18 N1-N2-CBSR-List-r18,

 paramCombination-CJT-r18 INTEGER (1..7),

 paramCombination-CJT-L-r18 SEQUENCE (SIZE (1..4)) OF INTEGER (1..5),

 restrictedCMR-Selection-r18 ENUMERATED {enable},

 valueOfO3-r18 ENUMERATED {n1, n4} OPTIONAL, -- Need R

 numberOfPMI-SubbandsPerCQI-Subband-r18 INTEGER(1..2),

 typeII-RI-Restriction-r18 BIT STRING (SIZE (4)),

 codebookMode-r18 INTEGER (1..2)

 },

 typeII-CJT-PortSelection-r18 SEQUENCE {

 paramCombination-CJT-PS-r18 INTEGER (1..5),

 paramCombination-CJT-PS-alpha-r18 SEQUENCE (SIZE (1..4)) OF INTEGER (1..8),

 restrictedCMR-Selection-r18 ENUMERATED {enable},

 valueOfO3-r18 ENUMERATED {n1, n4} OPTIONAL, -- Need R

 valueOfN-CJT-r18 ENUMERATED {n2, n4} OPTIONAL, -- Need R

 numberOfPMI-SubbandsPerCQI-Subband-r18 INTEGER(1..2),

 typeII-PortSelectionRI-Restriction-r18 BIT STRING (SIZE (4)),

 codebookMode-r18 INTEGER (1..2)

 },

 typeII-Doppler-r18 SEQUENCE {

 n1-n2-codebookSubsetRestriction-r18 N1-N2-CBSR-r18,

 paramCombination-Doppler-r18 INTEGER (1..9),

 td-dd-config-r18 TD-DD-Config-r18,

 numberOfPMI-SubbandsPerCQI-Subband-r18 INTEGER(1..2),

 predictionDelay-r18 ENUMERATED {m0,n0,n1,n2 },

 typeII-RI-Restriction-r18 BIT STRING (SIZE (4))

 },

 typeII-DopplerPortSelection-r18 SEQUENCE {

 paramCombinationDoppler-PS-r18 INTEGER (1..8),

 td-dd-config-r18 TD-DD-Config-r18,

 valueOfN-Doppler-r18 ENUMERATED {n2, n4} OPTIONAL, -- Need R

 numberOfPMI-SubbandsPerCQI-Subband-r18 INTEGER(1..2),

 predictionDelay-r18 ENUMERATED {m0,n0,n1,n2 },

 typeII-PortSelectionRI-Restriction-r18 BIT STRING (SIZE (4))

 }

 }

 }

}

N1-N2-CBSR-List-r18 ::= CHOICE {

 two-one-r18 CHOICE {no-cbsr-r18 NULL, cbsr-list-r18 SEQUENCE (SIZE (1..4)) OF BIT STRING (SIZE (8))},

 two-two-r18 CHOICE {no-cbsr-r18 NULL, cbsr-list-r18 SEQUENCE (SIZE (1..4)) OF BIT STRING (SIZE (27))},

 four-one-r18 CHOICE {no-cbsr-r18 NULL, cbsr-list-r18 SEQUENCE (SIZE (1..4)) OF BIT STRING (SIZE (16))},

 three-two-r18 CHOICE {no-cbsr-r18 NULL, cbsr-list-r18 SEQUENCE (SIZE (1..4)) OF BIT STRING (SIZE (35))},

 six-one-r18 CHOICE {no-cbsr-r18 NULL, cbsr-list-r18 SEQUENCE (SIZE (1..4)) OF BIT STRING (SIZE (24))},

 four-two-r18 CHOICE {no-cbsr-r18 NULL, cbsr-list-r18 SEQUENCE (SIZE (1..4)) OF BIT STRING (SIZE (43))},

 eight-one-r18 CHOICE {no-cbsr-r18 NULL, cbsr-list-r18 SEQUENCE (SIZE (1..4)) OF BIT STRING (SIZE (32))},

 four-three-r18 CHOICE {no-cbsr-r18 NULL, cbsr-list-r18 SEQUENCE (SIZE (1..4)) OF BIT STRING (SIZE (59))},

 twelve-one-r18 CHOICE {no-cbsr-r18 NULL, cbsr-list-r18 SEQUENCE (SIZE (1..4)) OF BIT STRING (SIZE (48))},

 four-four-r18 CHOICE {no-cbsr-r18 NULL, cbsr-list-r18 SEQUENCE (SIZE (1..4)) OF BIT STRING (SIZE (75))},

 eight-two-r18 CHOICE {no-cbsr-r18 NULL, cbsr-list-r18 SEQUENCE (SIZE (1..4)) OF BIT STRING (SIZE (75))},

 sixteen-one-r18 CHOICE {no-cbsr-r18 NULL, cbsr-list-r18 SEQUENCE (SIZE (1..4)) OF BIT STRING (SIZE (64))}

}

N1-N2-CBSR-r18 ::= CHOICE {

 two-one-r18 CHOICE {no-cbsr-r18 NULL, cbsr-r18 BIT STRING (SIZE (8))},

 two-two-r18 CHOICE {no-cbsr-r18 NULL, cbsr-r18 BIT STRING (SIZE (27))},

 four-one-r18 CHOICE {no-cbsr-r18 NULL, cbsr-r18 BIT STRING (SIZE (16))},

 three-two-r18 CHOICE {no-cbsr-r18 NULL, cbsr-r18 BIT STRING (SIZE (35))},

 six-one-r18 CHOICE {no-cbsr-r18 NULL, cbsr-r18 BIT STRING (SIZE (24))},

 four-two-r18 CHOICE {no-cbsr-r18 NULL, cbsr-r18 BIT STRING (SIZE (43))},

 eight-one-r18 CHOICE {no-cbsr-r18 NULL, cbsr-r18 BIT STRING (SIZE (32))},

 four-three-r18 CHOICE {no-cbsr-r18 NULL, cbsr-r18 BIT STRING (SIZE (59))},

 twelve-one-r18 CHOICE {no-cbsr-r18 NULL, cbsr-r18 BIT STRING (SIZE (48))},

 four-four-r18 CHOICE {no-cbsr-r18 NULL, cbsr-r18 BIT STRING (SIZE (75))},

 eight-two-r18 CHOICE {no-cbsr-r18 NULL, cbsr-r18 BIT STRING (SIZE (75))},

 sixteen-one-r18 CHOICE {no-cbsr-r18 NULL, cbsr-r18 BIT STRING (SIZE (64))}

}

TD-DD-Config-r18 ::= SEQUENCE {

 vectorLengthDD-r18 ENUMERATED {n1,-n2,-n4,-n8},

 unitDurationDD-r18 ENUMERATED {m1,-m2} OPTIONAL, -- Need R

 aperiodicResourceOffset-r18 INTEGER(1..2) OPTIONAL, -- Need R

 tdCQI-r18 ENUMERATED {n11,-n12-,n2, spare1} OPTIONAL -- Need R

}

-- TAG-CODEBOOKCONFIG-STOP

-- ASN1STOP

|  |
| --- |
| *CodebookConfig* field descriptions |
| ***codebookMode***CodebookMode as specified in TS 38.214 [19], clause 5.2.2.2 8 and 5.2.2.9. |
| ***codebookType***CodebookType including possibly sub-types and the corresponding parameters for each (see TS 38.214 [19], clause 5.2.2.2). |
| ***n1-n2-codebookSubsetRestriction,*** ***n1-n2-codebookSubsetRestrictionList***Number of antenna ports in first (*n1*) and second (*n2*) dimension and codebook subset restriction (see TS 38.214 [19] clause 5.2.2.2.3). Value *no-cbsr* means no codebook subset restriction is configured for the n1-n2 pair.If a codebook subset restriction is configured for the n1-n2 pair, the number of elements in *cbsr-list* in *n1-n2-codebookSubSetRestrictionList* is up to the number of elements of *nzp-CSI-RS-Resources* in *NZP-CSI-RS-ResourceSet(s)* indicated by *nzp-CSI-RS-ResourceSetList* in the *CSI-ResourceConfig* indicated by *resourcesForChannelMeasurement* in the *CSI-ReportConfig* in which the *CodebookConfig* is included. An element in the list corresponds to the element at the same position in *nzp-CSI-RS-Resources*. |
| ***n1-n2***Number of antenna ports in first (n1) and second (n2) dimension and codebook subset restriction (see TS 38.214 [19] clause 5.2.2.2.1). |
| ***ng-n1-n2***Codebook subset restriction for Type I Multi-panel codebook (see TS 38.214 [19], clause 5.2.2.2.2). |
| ***numberOfBeams***Number of beams, L, used for linear combination. |
| ***numberOfPMI-SubbandsPerCQI-Subband***Field indicates how PMI subbands are defined per CQI subband according to TS 38.214 [19], clause 5.2.2.2.5, 5.2.2.2.8 and 5.2.2.9. |
| ***paramCombination,*** ***paramCombination-CJT-r18,*** ***paramCombination-CJT-L-r18,*** ***paramCombination-CJT-PS-r18,*** ***paramCombination-CJT-PS-alpha, paramCombinationDoppler-r18, paramCombinationDoppler-PS-r18***Field describes supported parameter combination (*M, ,* ) as specified in TS 38.214 [19] Clause 5.2.2. For fields *paramCombination-CJT-L-r18* or *paramCombination-CJT-PS-alpha* the number of elements is 1, 2 or 4, and the values are configured according to the number of *nzp-CSI-RS-Resources* in *NZP-CSI-RS-ResourceSet* elements from Tables 5.2.2.2.8-1 and 5.2.2.2.9-1 in TS 38.214 [19], respectively***.*** The allowed configuration combinations for *paramCombination-CJT-r18 and paramCombination-CJT-L-r18* are given in Table 5.2.2.2.8-3 in TS 38.214 [19]. The allowed configuration combinations for *paramCombination-CJT-PS-r18 and paramCombination-CJT-PS-alpha-r18* are given in Table 5.2.2.2.9-3 in TS 38.214 [19]. |
| ***phaseAlphabetSize***The size of the PSK alphabet, QPSK or 8-PSK. |
| ***portSelectionSamplingSize***The size of the port selection codebook (parameter d), see TS 38.214 [19] clause 5.2.2.2.6. |
| ***predictionDelay***Prediction delay for Doppler and Doppler port selection codebooks see TS 38.214 [19], Clause 5.2.1.4. The first value m0 means that the first slot for which the CSI corresponds to is the slot where the CSI reference resource is located at.For the other three candidate values (n0, n1, n2), then the first slot for which the CSI corresponds to is given by l= n+delta, where delta can take on values of 0, 1, 2 and n the slot in which CSI is reported. |
| ***restrictedCMR-Selection***Enabling CSI-RS resource (CMR) restriction, (see TS 38.214 [19], clause 5.2.2.2.8) |
| ***ri-Restriction***Restriction for RI for *TypeI-MultiPanel-RI-Restriction* (see TS 38.214 [19], clause 5.2.2.2.2). |
| ***subbandAmplitude***If subband amplitude reporting is activated (*true*). |
| ***twoTX-CodebookSubsetRestriction***Codebook subset restriction for 2TX codebook (see TS 38.214 [19] clause 5.2.2.2.1). |
| ***typeI-SinglePanel-codebookSubsetRestriction-i2***i2 codebook subset restriction for Type I Single-panel codebook used when *reportQuantity* is CRI/Ri/i1/CQI (see TS 38.214 [19] clause 5.2.2.2.1). |
| ***typeI-SinglePanel-ri-Restriction***Restriction for RI for *TypeI-SinglePanel-RI-Restriction* (see TS 38.214 [19], clause 5.2.2.2.1). |
| ***typeI-SinglePanel-Group1, typeI-SinglePanel-Group2***Configures codebooks for CSI calculation when UE is configured with two CMR Groups with *CMRGroupingAndPairing* in the *NZP-CSI-RS-ResourceSet* associated with the *CSI-ReportConfig*. Network configures the same number of ports for both codebooks. |
| ***typeI-SinglePanel-ri-RestrictionSDM, typeI-SinglePanel-ri-RestrictionSTRP***Restriction for RI for *N* Resource Pairs when two CMR Groups are configured with *CMRGroupingAndPairing* in the *NZP-CSI-RS-ResourceSet* associated with the *CSI-ReportConfig* (see TS 38.214 [19], clause 5.2.1.4.2). |
| ***typeII-PortSelectionRI-Restriction***Restriction for RI for *TypeII-PortSelection-RI-Restriction* (see TS 38.214 [19], clauses 5.2.2.2.4, 5.2.2.2.6 and 5.2.2.2.7). |
| ***typeII-RI-Restriction***Restriction for RI for *TypeII-RI-Restriction* (see TS 38.214 [19], clauses 5.2.2.2.3 and 5.2.2.2.5). |
| ***valueOfN***Field provides the value of parameter N as specified in TS 38.214 [19], clause 5.2.2.2.7. The field is present only when M=2 set by *paramCombination*, see TS 38.214 [19]. |
| ***valueOfO3***O3: oversampling factor for frequency-domain basis selection offsetOnly applicable when CodebookMode = 'Mode1'. |
| ***valueOfN-CJT***Field describes the size of the window of FD basis for FeType-II port selection codebook for multi-TRP CJT. For M=2, N=2,4 (see TS 38.214 [19], clause 5.2.2.2.9) |
| ***valueOfN-Doppler***Field describes the size of the window of FD basis for FeType-II port selection codebook for Doppler CSI. For M=2, N=2,4 (see TS 38.214 [19], clause 5.2.2.2.9) |

|  |
| --- |
| *TD-DD-Config* field descriptions |
| ***aperiodicResourceOffset***Offset m between two consecutive aperiodic CSI-RS resources. See TS 38.214 [19], clause 5.2.1.4. |
| ***TdCQI***Number of TD CQIs (X) in each SB and ref slot(s) + ref W2(s).1-1: 1 TD CQI, ref = 1st slot and 1st W21-2: 1 TD CQI, ref = 1st and last slots, and 1st and last W22: 2 TC CQIs(see TS 38.214 [19], clause 5.2.1.4). |
| ***unitDurationDD***DD/TD unit duration (in slots), for AP-CSI-RS only. Note: For P/SP-CSI-RS, d is set to CSI-RS periodicity (see TS 38.214 [19], clause 5.2.1.4). If the value of *aperiodicResourceOffset* is '1', network configures value 'm1' for this field. |
| ***vectorLengthDD***Doppler-/time-domain (DD/TD) basis vector length; See TS 38.214 [19], clause 5.2.1.4. |

– *CSI-AperiodicTriggerStateList*

The *CSI-AperiodicTriggerStateList* IE is used to configure the UE with a list of aperiodic trigger states. Each codepoint of the DCI field "CSI request" is associated with one trigger state (see TS 38.321 [3], clause 6.1.3.13). Upon reception of the value associated with a trigger state, the UE will perform measurement of CSI-RS, CSI-IM and/or SSB (reference signals) and aperiodic reporting on L1 according to all entries in the *associatedReportConfigInfoList* for that trigger state.

***CSI-AperiodicTriggerStateList* information element**

-- ASN1START

-- TAG-CSI-APERIODICTRIGGERSTATELIST-START

CSI-AperiodicTriggerStateList ::= SEQUENCE (SIZE (1..maxNrOfCSI-AperiodicTriggers)) OF CSI-AperiodicTriggerState

CSI-AperiodicTriggerState ::= SEQUENCE {

 associatedReportConfigInfoList SEQUENCE (SIZE(1..maxNrofReportConfigPerAperiodicTrigger)) OF CSI-AssociatedReportConfigInfo,

 ...,

 [[

 ap-CSI-MultiplexingMode-r17 ENUMERATED {enabled} OPTIONAL -- Need R

 ]],

 [[

 ltm-AssociatedReportConfigInfo-r18 LTM-CSI-ReportConfigId-r18 OPTIONAL -- Need R

 ]]

}

CSI-AssociatedReportConfigInfo ::= SEQUENCE {

 reportConfigId CSI-ReportConfigId,

 resourcesForChannel CHOICE {

 nzp-CSI-RS SEQUENCE {

 resourceSet INTEGER (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig),

 qcl-info SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF TCI-StateId

 OPTIONAL -- Cond Aperiodic

 },

 csi-SSB-ResourceSet INTEGER (1..maxNrofCSI-SSB-ResourceSetsPerConfig)

 },

 csi-IM-ResourcesForInterference INTEGER(1..maxNrofCSI-IM-ResourceSetsPerConfig) OPTIONAL, -- Cond CSI-IM-ForInterference

 nzp-CSI-RS-ResourcesForInterference INTEGER (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig) OPTIONAL, -- Cond NZP-CSI-RS-ForInterference

 ...,

 [[

 resourcesForChannel2-r17 CHOICE {

 nzp-CSI-RS2-r17 SEQUENCE {

 resourceSet2-r17 INTEGER (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig),

 qcl-info2-r17 SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF TCI-StateId

 OPTIONAL -- Cond Aperiodic

 },

 csi-SSB-ResourceSet2-r17 INTEGER (1..maxNrofCSI-SSB-ResourceSetsPerConfigExt)

 } OPTIONAL, -- Need R

 csi-SSB-ResourceSetExt INTEGER (1..maxNrofCSI-SSB-ResourceSetsPerConfigExt) OPTIONAL -- Need R

 ]],

 [[

 resourcesForChannelTDCP-r18 SEQUENCE {

 resourceSet2TDCP-r18 INTEGER (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig),

 resourceSet3TDCP-r18 INTEGER (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig) OPTIONAL -- Need R

 } OPTIONAL, -- Cond TDCP

 applyIndicatedTCI-State-r18 CHOICE {

 perSet-r18 ENUMERATED {first, second},

 perResource-r18 SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF ENUMERATED {first, second}

 } OPTIONAL, -- Cond ApplyIndicatedTCI

 applyIndicatedTCI-State2-r18 CHOICE {

 perSet-r18 ENUMERATED {first, second},

 perResource-r18 SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF ENUMERATED {first, second}

 } OPTIONAL, -- Cond SecondCSICMR

 csi-ReportSubConfigTriggerList-r18 CSI-ReportSubConfigTriggerList-r18 OPTIONAL -- Need R

 ]]

}

-- TAG-CSI-APERIODICTRIGGERSTATELIST-STOP

-- ASN1STOP

|  |
| --- |
| ***CSI-AperiodicTriggerState field descriptions*** |
| ***ltm-AssociatedReportConfigInfo***This field configures the aperiodic CSI reports of LTM candidate cells. If *ltm-associatedReportConfigInfo* is configured the UE shall ignore the field *associatedReportConfigInfoList*. |

|  |
| --- |
| ***CSI-AssociatedReportConfigInfo* field descriptions** |
| ***ap-CSI-MultiplexingMode***Indicates if the behavior of transmitting aperiodic CSI on the first PUSCH repetitions corresponding to two SRS resource sets configured in *srs-ResourceSetToAddModList* or *srs-ResourceSetToAddModListDCI-0-2* with usage '*codebook*' or '*noncodebook*' is enabled or not. |
| ***applyIndicatedTCI-State,*** ***applyIndicatedTCI-State2***This field indicates, for an aperiodic CSI-RS resource set (perSet) or for CSI-RS resource (perResource), if UE applies the first or the second "indicated" DL only TCI or joint TCI as specified in TS 38.214 [19], clause 5.2.1.5.1. The *applyIndicatedTCI-State* is for *ResourcesForChannel*, and *applyIndicatedTCI-State2* is for *ResourcesForChannels2.* When *applyIndicatedTCI-State* and *applyIndicatedTCI-State2* are absent, the UE shall use *qcl-info* for *ResourcesForChannel* and use *qcl-info2* for *ResourcesForChannel2.* |
| ***csi-IM-ResourcesForInterference****CSI-IM-ResourceSet* for interference measurement. Entry number in csi-IM-ResourceSetList in the *CSI-ResourceConfig* indicated by *csi-IM-ResourcesForInterference* in the *CSI-ReportConfig* indicated by *reportConfigId* above (value 1 corresponds to the first entry, value 2 to the second entry, and so on). The indicated *CSI-IM-ResourceSet* should have exactly the same number of resources like the *NZP-CSI-RS-ResourceSet* indicated in *resourceSet* within *nzp-CSI-RS*. |
| ***csi-ReportSubConfigTriggerList***A list of sub-configuration ID(s) of N sub-configurations out of L configured sub-configurations within a *CSI-ReportConfig* associated with a triggering state for aperiodic CSI reporting on PUSCH. |
| ***csi-SSB-ResourceSet,*** ***csi-SSB-ResourceSet2***CSI-SSB-ResourceSet for channel measurements. Entry number in *csi-SSB-ResourceSetList* in the *CSI-ResourceConfig* indicated by *resourcesForChannelMeasurement* in the *CSI-ReportConfig* indicated by *reportConfigId* above (value 1 corresponds to the first entry, value 2 to the second entry, and so on). |
| ***nzp-CSI-RS-ResourcesForInterference****NZP-CSI-RS-ResourceSet* for interference measurement. Entry number in *nzp-CSI-RS-ResourceSetList* in the *CSI-ResourceConfig* indicated by *nzp-CSI-RS-ResourcesForInterference* in the *CSI-ReportConfig* indicated by *reportConfigId* above (value 1 corresponds to the first entry, value 2 to the second entry, and so on).  |
| ***qcl-info, qcl-info2***List of references to TCI-States for providing the QCL source and QCL type for each *NZP-CSI-RS-Resource* listed in *nzp-CSI-RS-Resources* of the *NZP-CSI-RS-ResourceSet* indicated by *resourceSet* within *nzp-CSI-RS* or *resourceSet2* within *nzp-CSI-RS2*. Each *TCI-StateId* refers to the *TCI-State* which has this value for *tci-StateId* and is defined in *tci-StatesToAddModList* or in *dl-OrJointTCI-StateList* in the *PDSCH-Config* included in the *BWP-Downlink* corresponding to the serving cell and to the DL BWP to which the *resourcesForChannelMeasuremen*t (in the *CSI-ReportConfig* indicated by *reportConfigId* above) belong to. First entry in *qcl-info*/*qcl-info2* corresponds to first entry in *nzp-CSI-RS-Resources* of that *NZP-CSI-RS-ResourceSet*, second entry in *qcl-info/qcl-info2* corresponds to second entry in *nzp-CSI-RS-Resources*, and so on (see TS 38.214 [19], clause 5.2.1.5.1). When this field is absent for aperiodic CSI RS, and *applyIndicatedTCI-State* or *applyIndicatedTCI-State2* is not configured, the UE shall use QCL information included in the "indicated" DL only/Joint TCI state as specified in TS 38.214 [19]. |
| ***reportConfigId***The *reportConfigId* of one of the *CSI-ReportConfigToAddMod* configured in *CSI-MeasConfig* |
| ***resourcesForChannel2***Configures reference signals for channel measurement corresponding to the second resource set for L1-RSRP measurement as configured in IE *CSI-ResourceConfig* when *nrofReportedGroups-r17* is configured in IE *CSI-ReportConfig*. If this is present, network configures csi-SSB-ResourceSetExt instead of csi-SSB-ResourceSet and the UE ignores csi-SSB-ResourceSet in resourcesForChannel, and the *resourcesForChannel* configures the reference signals for channel measurement corresponding to the first resource set for L1-RSRP measurement (see TS 38.214 [19], clause 5.2.1.4). |
| ***resourcesForChannelTDCP***Configures reference signals for channel measurement corresponding to the second resource set and third resource set for TDCP reporting. All CSI resources of these two resource sets always share the same QCL-info with the resource sets indicated by *resourcesForChannel* as spcified in TS 38.214 [19]. |
| ***resourceSet*, *resourceSet2****NZP-CSI-RS-ResourceSet* for channel measurements. Entry number in *nzp-CSI-RS-ResourceSetList* in the *CSI-ResourceConfig* indicated by *resourcesForChannelMeasurement* in the *CSI-ReportConfig* indicated by r*eportConfigId* above (value 1 corresponds to the first entry, value 2 to the second entry, and so on). |

|  |  |
| --- | --- |
| **Conditional Presence** | **Explanation** |
| *Aperiodic* | The field is mandatory present if the *NZP-CSI-RS-Resources* in the associated *resourceSet* have the resourceType aperiodic and *unifiedTCI-StateType* is not configured. The field is optionally present, Need R, if the *NZP-CSI-RS-Resources* in the associated *resourceSet* have the *resourceType* aperiodic and *unifiedTCI-StateType* is configured. The field is absent otherwise. |
| *ApplyIndicatedTCI* | The field is optionally present, need R, if *resourceForChannel* has aperiodic CSI-RS and *unifiedTCI-StateType* is configured. This field is absent otherwise. |
| *CSI-IM-ForInterference* | This field is mandatory present if the *CSI-ReportConfig* identified by *reportConfigId* is configured with *csi-IM-ResourcesForInterference*; otherwise it is absent. |
| *NZP-CSI-RS-ForInterference* | This field is mandatory present if the *CSI-ReportConfig* identified by *reportConfigId* is configured with *nzp-CSI-RS-ResourcesForInterference*; otherwise it is absent. |
| *SecondCSICMR* | This field is mandatory present if *resourcesForChannel2* is configured with aperiodic CSI-RS and *applyIndicatedTCI-State* is configured. It is absent otherwise. |
| *TDCP* | This field is absent if *resourcesForChannel2* is configured. It is optionally present, Need R, otherwise. |

#### – *LTM-CSI-ReportConfig*

The IE *LTM-CSI-ReportConfig* is used to configure report on the cell in which the *LTM-CSI-ReportConfig* is included.

*LTM-CSI-ReportConfig* information element

-- ASN1START

-- TAG-LTM-CSI-REPORTCONFIG-START

LTM-CSI-ReportConfig-r18 ::= SEQUENCE {

 ltm-CSI-ReportConfigId-r18 LTM-CSI-ReportConfigId-r18,

 ltm-ResourcesForChannelMeasurement-r18 LTM-CSI-ResourceConfigId-r18,

 ltm-ReportConfigType-r18 CHOICE {

 periodic-r18 SEQUENCE {

 reportSlotConfig-r18 CSI-ReportPeriodicityAndOffset,

 pucch-CSI-ResourceList-r18 SEQUENCE (SIZE (1..maxNrofBWPs)) OF PUCCH-CSI-Resource

 },

 semiPersistentOnPUCCH-r18 SEQUENCE {

 reportSlotConfig-r18 CSI-ReportPeriodicityAndOffset,

 pucch-CSI-ResourceList-r18 SEQUENCE (SIZE (1..maxNrofBWPs)) OF PUCCH-CSI-Resource

 },

 semiPersistentOnPUSCH-r18 SEQUENCE {

 reportSlotConfig-r18 CSI-ReportPeriodicityAndOffset,

 reportSlotOffsetList-r18 SEQUENCE (SIZE (1.. maxNrofUL-Allocations-r16)) OF INTEGER (0..128),

 reportSlotOffsetListDCI-0-2-r18 SEQUENCE (SIZE (1.. maxNrofUL-Allocations-r16)) OF INTEGER (0..128),

 reportSlotOffsetListDCI-0-1-r18 SEQUENCE (SIZE (1.. maxNrofUL-Allocations-r16)) OF INTEGER (0..128),

 p0alpha-r18 P0-PUSCH-AlphaSetId

 },

 aperiodic-r18 SEQUENCE {

 reportSlotOffsetList-r18 SEQUENCE (SIZE (1.. maxNrofUL-Allocations-r16)) OF INTEGER (0..128),

 reportSlotOffsetListDCI-0-2-r18 SEQUENCE (SIZE (1.. maxNrofUL-Allocations-r16)) OF INTEGER (0..128),

 reportSlotOffsetListDCI-0-1-r18 SEQUENCE (SIZE (1.. maxNrofUL-Allocations-r16)) OF INTEGER (0..128)

 },

 ...

 },

 ltm-ReportContent-r18 LTM-ReportContent-r18,

 ...

}

LTM-ReportContent-r18 ::= SEQUENCE {

 nrOfReportedCells-r18 ENUMERATED {n1,n2,n3,n4},

 nrOfReportedRS-PerCell-r18 ENUMERATED {n1,n2,n3,n4},

 spCellInclusion-r18 ENUMERATED {true} OPTIONAL -- Need R

}

-- TAG-LTM-CSI-REPORTCONFIG-STOP

-- ASN1STOP

|  |
| --- |
| *LTM-CSI-ReportConfig* field descriptions |
| ***ltm-ReportContent***This field defines the content of the LTM L1 measurement report. |
| ***reportSlotConfig***Periodicity and slot offset (see TS 38.214 [19], clause 5.2.1.4). |
| ***reportSlotOffsetList, reportSlotOffsetListDCI-0-1***, ***reportSlotOffsetListDCI-0-2***Timing offset Y for semi persistent reporting using PUSCH and aperiodic reporting. |

|  |
| --- |
| *LTM-ReportContent field descriptions* |
| ***nrOfReportedCells***This field defines how many cells are reported within a single L1 measurement report instance. |
| ***nrOfReportedRS-PerCell***This field defines how many RSs per cell are reported within a single L1 measurement report instance. |
| ***spCellInclusion***This field indicates whether the UE shall include a L1 measurement report associated to the current SpCell. This field can only be configured if the current SpCell is configured as an SpCell of an LTM candidate configuration and the *LTM-CSI-ResourceConfig* IE associated to the *LTM-CSI-ReportConfig* IE includes resources for the current SpCell. |

#### *– MeasWindowConfig*

The IE *MeasWindowConfig* specifies the effective measurement window configuration for inter-RAT E-UTRA measurement.

*MeasWindowConfig* information element

-- ASN1START

-- TAG-MEASWINDOWCONFIG-START

MeasWindowConfig-r18 ::= SEQUENCE {

 windowOffsetPeriodicity-r18 CHOICE {

 periodicityMs40-r18 INTEGER (0..39),

 periodicityMs80-r18 INTEGER (0..79),

 ...

 },

 windowDuration-r18 ENUMERATED {ms2, ms5, ms5dot5, spare1},

 ...

}

-- TAG-MEASWINDOWCONFIG-STOP

-- ASN1STOP

|  |
| --- |
| *MeasWindowConfig* field descriptions |
| ***windowDuration***Value windowDuration is the measurement window length in ms of effective measurement window. Value *ms2* corresponds to 2 ms, value *ms5* corresponds to 5 ms, and Value *ms5dot5* corresponds to 5.5 ms. |
| ***windowOffsetPeriodicity***Indicates the periodicity and offset of effective measurement window. The choice determines the periodicity (periodicityMs40 for 40ms and periodicityMs80 for 80 ms). The field value indicates the offset in ms. |

#### – *RACH-ConfigTwoTA*

The IE *RACH-ConfigTwoTA* is used to specify random access parameters for each additional PCI configured for the serving cell.

*RACH-ConfigTwoTA* information element

-- ASN1START

-- TAG-RACH-CONFIGTWOTA-START

RACH-ConfigTwoTA-r18 ::= SEQUENCE {

 additionalPCI-andRACH-Index-r18 AdditionalPCIIndex-r17,

 rach-ConfigGeneric-r18 RACH-ConfigGeneric,

 ssb-perRACH-Occasion-r18 ENUMERATED {oneEighth, oneFourth, oneHalf, one, two, four, eight, sixteen} OPTIONAL, -- Need M

 prach-RootSequenceIndex-r18 CHOICE {

 l839 INTEGER (0..837),

 l139 INTEGER (0..137),

 l571 INTEGER (0..569),

 l1151 INTEGER (0..1149)

 },

 msg1-SubcarrierSpacing-r18 SubcarrierSpacing OPTIONAL, -- Cond L139

 ...

}

-- TAG-RACH-CONFIGTWOTA-STOP

-- ASN1STOP

|  |
| --- |
| *RACH-ConfigTwoTA* field descriptions |
| ***additionalPCI-andRACH-Index***Indicates the associated PCI to this random access configuration. |
| ***msg1-SubcarrierSpacing***Subcarrier spacing of PRACH when prach-RootSequenceIndex has value set to l139 (see TS 38.211 [16], clause 5.3.2). Only the following values are applicable depending on the used frequency: FR1: 15 or 30 kHz FR2-1: 60 or 120 kHz FR2-2: 120, 480, or 960 kHz. If absent, the UE applies the SCS as derived from the *prach-ConfigurationIndex* in *RACH-ConfigGeneric* (see tables Table 6.3.3.1-1, Table 6.3.3.1-2, Table 6.3.3.2-2 and Table 6.3.3.2-3, TS 38.211 [16]). |
| ***prach-RootSequenceIndex***PRACH root sequence index (see TS 38.211 [16], clause 6.3.3.1). The value range depends on whether L=839, L=139, L=571 or L=1151.For FR2-2, only the following values are applicable depending on the used subcarrier spacing:120 kHz: L=139, L=571, and L=1151480 kHz: L=139, and L=571960 kHz: L=139 |
| ***rach-ConfigGeneric***RACH parameters for contention free random access occasions for CFRA. |
| ***ssb-perRACH-Occasion***Number of SSBs per RACH occasion. |

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *L139* | The field is mandatory present if *prach-RootSequenceIndex* L=139, or if L=571 for FR2-2, otherwise the field is absent, Need S. |

#### – *ServingCellConfig*

The IE *ServingCellConfig* is used to configure (add or modify) the UE with a serving cell, which may be the SpCell or an SCell of an MCG or SCG. The parameters herein are mostly UE specific but partly also cell specific (e.g. in additionally configured bandwidth parts). Reconfiguration between a PUCCH and PUCCHless SCell is only supported using an SCell release and add.

*ServingCellConfig* information element

-- ASN1START

-- TAG-SERVINGCELLCONFIG-START

ServingCellConfig ::= SEQUENCE {

 tdd-UL-DL-ConfigurationDedicated TDD-UL-DL-ConfigDedicated OPTIONAL, -- Cond TDD

 initialDownlinkBWP BWP-DownlinkDedicated OPTIONAL, -- Need M

 downlinkBWP-ToReleaseList SEQUENCE (SIZE (1..maxNrofBWPs)) OF BWP-Id OPTIONAL, -- Need N

 downlinkBWP-ToAddModList SEQUENCE (SIZE (1..maxNrofBWPs)) OF BWP-Downlink OPTIONAL, -- Need N

 firstActiveDownlinkBWP-Id BWP-Id OPTIONAL, -- Cond SyncAndCellAdd

 bwp-InactivityTimer ENUMERATED {ms2, ms3, ms4, ms5, ms6, ms8, ms10, ms20, ms30,

 ms40,ms50, ms60, ms80,ms100, ms200,ms300, ms500,

 ms750, ms1280, ms1920, ms2560, spare10, spare9, spare8,

 spare7, spare6, spare5, spare4, spare3, spare2, spare1 } OPTIONAL, --Need R

 defaultDownlinkBWP-Id BWP-Id OPTIONAL, -- Need S

 uplinkConfig UplinkConfig OPTIONAL, -- Need M

 supplementaryUplink UplinkConfig OPTIONAL, -- Need M

 pdcch-ServingCellConfig SetupRelease { PDCCH-ServingCellConfig } OPTIONAL, -- Need M

 pdsch-ServingCellConfig SetupRelease { PDSCH-ServingCellConfig } OPTIONAL, -- Need M

 csi-MeasConfig SetupRelease { CSI-MeasConfig } OPTIONAL, -- Need M

 sCellDeactivationTimer ENUMERATED {ms20, ms40, ms80, ms160, ms200, ms240,

 ms320, ms400, ms480, ms520, ms640, ms720,

 ms840, ms1280, spare2,spare1} OPTIONAL, -- Cond ServingCellWithoutPUCCH

 crossCarrierSchedulingConfig CrossCarrierSchedulingConfig OPTIONAL, -- Need M

 tag-Id TAG-Id,

 dummy1 ENUMERATED {enabled} OPTIONAL, -- Need R

 pathlossReferenceLinking ENUMERATED {spCell, sCell} OPTIONAL, -- Cond SCellOnly

 servingCellMO MeasObjectId OPTIONAL, -- Cond MeasObject

 ...,

 [[

 lte-CRS-ToMatchAround SetupRelease { RateMatchPatternLTE-CRS } OPTIONAL, -- Need M

 rateMatchPatternToAddModList SEQUENCE (SIZE (1..maxNrofRateMatchPatterns)) OF RateMatchPattern OPTIONAL, -- Need N

 rateMatchPatternToReleaseList SEQUENCE (SIZE (1..maxNrofRateMatchPatterns)) OF RateMatchPatternId OPTIONAL, -- Need N

 downlinkChannelBW-PerSCS-List SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier OPTIONAL -- Need S

 ]],

 [[

 supplementaryUplinkRelease-r16 ENUMERATED {true} OPTIONAL, -- Need N

 tdd-UL-DL-ConfigurationDedicated-IAB-MT-r16 TDD-UL-DL-ConfigDedicated-IAB-MT-r16 OPTIONAL, -- Cond TDD\_IAB

 dormantBWP-Config-r16 SetupRelease { DormantBWP-Config-r16 } OPTIONAL, -- Need M

 ca-SlotOffset-r16 CHOICE {

 refSCS15kHz INTEGER (-2..2),

 refSCS30KHz INTEGER (-5..5),

 refSCS60KHz INTEGER (-10..10),

 refSCS120KHz INTEGER (-20..20)

 } OPTIONAL, -- Cond AsyncCA

 dummy2 SetupRelease { DummyJ } OPTIONAL, -- Need M

 intraCellGuardBandsDL-List-r16 SEQUENCE (SIZE (1..maxSCSs)) OF IntraCellGuardBandsPerSCS-r16 OPTIONAL, -- Need S

 intraCellGuardBandsUL-List-r16 SEQUENCE (SIZE (1..maxSCSs)) OF IntraCellGuardBandsPerSCS-r16 OPTIONAL, -- Need S

 csi-RS-ValidationWithDCI-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

 lte-CRS-PatternList1-r16 SetupRelease { LTE-CRS-PatternList-r16 } OPTIONAL, -- Need M

 lte-CRS-PatternList2-r16 SetupRelease { LTE-CRS-PatternList-r16 } OPTIONAL, -- Need M

 crs-RateMatch-PerCORESETPoolIndex-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

 enableTwoDefaultTCI-States-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

 enableDefaultTCI-StatePerCoresetPoolIndex-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

 enableBeamSwitchTiming-r16 ENUMERATED {true} OPTIONAL, -- Need R

 cbg-TxDiffTBsProcessingType1-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

 cbg-TxDiffTBsProcessingType2-r16 ENUMERATED {enabled} OPTIONAL -- Need R

 ]],

 [[

 directionalCollisionHandling-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

 channelAccessConfig-r16 SetupRelease { ChannelAccessConfig-r16 } OPTIONAL -- Need M

 ]],

 [[

 nr-dl-PRS-PDC-Info-r17 SetupRelease {NR-DL-PRS-PDC-Info-r17} OPTIONAL, -- Need M

 semiStaticChannelAccessConfigUE-r17 SetupRelease {SemiStaticChannelAccessConfigUE-r17} OPTIONAL, -- Need M

 mimoParam-r17 SetupRelease {MIMOParam-r17} OPTIONAL, -- Need M

 channelAccessMode2-r17 ENUMERATED {enabled} OPTIONAL, -- Need R

 timeDomainHARQ-BundlingType1-r17 ENUMERATED {enabled} OPTIONAL, -- Need R

 nrofHARQ-BundlingGroups-r17 ENUMERATED {n1, n2, n4} OPTIONAL, -- Need R

 fdmed-ReceptionMulticast-r17 ENUMERATED {true} OPTIONAL, -- Need R

 moreThanOneNackOnlyMode-r17 ENUMERATED {mode2} OPTIONAL, -- Need S

 tci-ActivatedConfig-r17 TCI-ActivatedConfig-r17 OPTIONAL, -- Cond TCI\_ActivatedConfig

 directionalCollisionHandling-DC-r17 ENUMERATED {enabled} OPTIONAL, -- Need R

 lte-NeighCellsCRS-AssistInfoList-r17 SetupRelease { LTE-NeighCellsCRS-AssistInfoList-r17 } OPTIONAL -- Need M

 ]],

 [[

 lte-NeighCellsCRS-Assumptions-r17 ENUMERATED {false} OPTIONAL -- Need R

 ]],

 [[

 crossCarrierSchedulingConfigRelease-r17 ENUMERATED {true} OPTIONAL -- Need N

 ]],

 [[

 multiPDSCH-PerSlotType1-CB-r17 ENUMERATED {enabled, disabled} OPTIONAL -- Need R

 ]],

 [[

 lte-CRS-PatternList3-r18 SetupRelease { LTE-CRS-PatternList-r16 } OPTIONAL, -- Need M

 lte-CRS-PatternList4-r18 SetupRelease { LTE-CRS-PatternList-r16 } OPTIONAL, -- Need M

 pdcch-CandidateReceptionWithCRS-Overlap-r18 ENUMERATED {enabled} OPTIONAL, -- Need R

 cjt-Scheme-PDSCH-r18 ENUMERATED {cjtSchemeA, cjtSchemeB} OPTIONAL, -- Need R

 tag2-r18 Tag2-r18 OPTIONAL, -- Need R

 cellDTX-DRX-Config-r18 SetupRelease { CellDTX-DRX-Config-r18 } OPTIONAL, -- Need M

 positionInDCI-cellDTRX-r18 INTEGER (0..maxDCI-2-9-Size-1-r18) OPTIONAL, -- Need R

 cellDTX-DRX-L1activation-r18 ENUMERATED {enabled} OPTIONAL, -- Need R

 mc-DCI-SetOfCellsToAddModList-r18 SEQUENCE (SIZE (1..maxNrofSetsOfCells-r18)) OF MC-DCI-SetOfCells-r18 OPTIONAL, -- Need N

 mc-DCI-SetOfCellsToReleaseList-r18 SEQUENCE (SIZE (1..maxNrofSetsOfCells-r18)) OF SetOfCellsId-r18 OPTIONAL -- Need N

 ]]

}

Tag2-r18 ::= SEQUENCE {

 tag2-Id-r18 TAG-Id,

 tag2-flag-r18 BOOLEAN,

 n-TimingAdvanceOffset2-r18 ENUMERATED { n0, n25600, n39936, spare1 } OPTIONAL -- Need S

}

UplinkConfig ::= SEQUENCE {

 initialUplinkBWP BWP-UplinkDedicated OPTIONAL, -- Need M

 uplinkBWP-ToReleaseList SEQUENCE (SIZE (1..maxNrofBWPs)) OF BWP-Id OPTIONAL, -- Need N

 uplinkBWP-ToAddModList SEQUENCE (SIZE (1..maxNrofBWPs)) OF BWP-Uplink OPTIONAL, -- Need N

 firstActiveUplinkBWP-Id BWP-Id OPTIONAL, -- Cond SyncAndCellAdd

 pusch-ServingCellConfig SetupRelease { PUSCH-ServingCellConfig } OPTIONAL, -- Need M

 carrierSwitching SetupRelease { SRS-CarrierSwitching } OPTIONAL, -- Need M

 ...,

 [[

 powerBoostPi2BPSK BOOLEAN OPTIONAL, -- Need M

 uplinkChannelBW-PerSCS-List SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier OPTIONAL -- Need S

 ]],

 [[

 enablePL-RS-UpdateForPUSCH-SRS-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

 enableDefaultBeamPL-ForPUSCH0-0-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

 enableDefaultBeamPL-ForPUCCH-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

 enableDefaultBeamPL-ForSRS-r16 ENUMERATED {enabled} OPTIONAL, -- Need R

 uplinkTxSwitching-r16 SetupRelease { UplinkTxSwitching-r16 } OPTIONAL, -- Need M

 mpr-PowerBoost-FR2-r16 ENUMERATED {true} OPTIONAL -- Need R

 ]],

 [[

 srs-PosTx-Hopping-r18 SetupRelease { SRS-PosTx-Hopping-r18 } OPTIONAL, -- Need M

 enablePL-RS-UpdateForType1CG-PUSCH-r18 ENUMERATED {enabled} OPTIONAL, -- Need R

 powerBoostPi2BPSK-r18 BOOLEAN OPTIONAL, -- Need R

 powerBoostQPSK-r18 BOOLEAN OPTIONAL -- Need R

 ]]

}

DummyJ ::= SEQUENCE {

 maxEnergyDetectionThreshold-r16 INTEGER(-85..-52),

 energyDetectionThresholdOffset-r16 INTEGER (-20..-13),

 ul-toDL-COT-SharingED-Threshold-r16 INTEGER (-85..-52) OPTIONAL, -- Need R

 absenceOfAnyOtherTechnology-r16 ENUMERATED {true} OPTIONAL -- Need R

}

ChannelAccessConfig-r16 ::= SEQUENCE {

 energyDetectionConfig-r16 CHOICE {

 maxEnergyDetectionThreshold-r16 INTEGER (-85..-52),

 energyDetectionThresholdOffset-r16 INTEGER (-13..20)

 } OPTIONAL, -- Need R

 ul-toDL-COT-SharingED-Threshold-r16 INTEGER (-85..-52) OPTIONAL, -- Need R

 absenceOfAnyOtherTechnology-r16 ENUMERATED {true} OPTIONAL -- Need R

}

IntraCellGuardBandsPerSCS-r16 ::= SEQUENCE {

 guardBandSCS-r16 SubcarrierSpacing,

 intraCellGuardBands-r16 SEQUENCE (SIZE (1..4)) OF GuardBand-r16

}

GuardBand-r16 ::= SEQUENCE {

 startCRB-r16 INTEGER (0..274),

 nrofCRBs-r16 INTEGER (0..15)

}

DormancyGroupID-r16 ::= INTEGER (0..4)

DormantBWP-Config-r16::= SEQUENCE {

 dormantBWP-Id-r16 BWP-Id OPTIONAL, -- Need M

 withinActiveTimeConfig-r16 SetupRelease { WithinActiveTimeConfig-r16 } OPTIONAL, -- Need M

 outsideActiveTimeConfig-r16 SetupRelease { OutsideActiveTimeConfig-r16 } OPTIONAL -- Need M

}

WithinActiveTimeConfig-r16 ::= SEQUENCE {

 firstWithinActiveTimeBWP-Id-r16 BWP-Id OPTIONAL, -- Need M

 dormancyGroupWithinActiveTime-r16 DormancyGroupID-r16 OPTIONAL -- Need R

}

OutsideActiveTimeConfig-r16 ::= SEQUENCE {

 firstOutsideActiveTimeBWP-Id-r16 BWP-Id OPTIONAL, -- Need M

 dormancyGroupOutsideActiveTime-r16 DormancyGroupID-r16 OPTIONAL -- Need R

}

UplinkTxSwitching-r16 ::= SEQUENCE {

 uplinkTxSwitchingPeriodLocation-r16 BOOLEAN,

 uplinkTxSwitchingCarrier-r16 ENUMERATED {carrier1, carrier2}

}

MIMOParam-r17 ::= SEQUENCE {

 additionalPCI-ToAddModList-r17 SEQUENCE (SIZE(1..maxNrofAdditionalPCI-r17)) OF SSB-MTC-AdditionalPCI-r17 OPTIONAL, -- Need N

 additionalPCI-ToReleaseList-r17 SEQUENCE (SIZE(1..maxNrofAdditionalPCI-r17)) OF AdditionalPCIIndex-r17 OPTIONAL, -- Need N

 unifiedTCI-StateType-r17 ENUMERATED {separate, joint} OPTIONAL, -- Need R

 uplink-PowerControlToAddModList-r17 SEQUENCE (SIZE (1..maxUL-TCI-r17)) OF Uplink-powerControl-r17 OPTIONAL, -- Need N

 uplink-PowerControlToReleaseList-r17 SEQUENCE (SIZE (1..maxUL-TCI-r17)) OF Uplink-powerControlId-r17 OPTIONAL, -- Need N

 sfnSchemePDCCH-r17 ENUMERATED {sfnSchemeA,sfnSchemeB} OPTIONAL, -- Need R

 sfnSchemePDSCH-r17 ENUMERATED {sfnSchemeA,sfnSchemeB} OPTIONAL -- Need R

}

MC-DCI-SetOfCells-r18 ::= SEQUENCE {

 setOfCellsId-r18 SetOfCellsId-r18,

 nCI-Value-r18 INTEGER (0..7),

 scheduledCellListDCI-1-3-r18 SEQUENCE (SIZE (2..maxNrofCellsInSet-r18)) OF ServCellIndex OPTIONAL, -- Need R

 scheduledCellListDCI-0-3-r18 SEQUENCE (SIZE (2..maxNrofCellsInSet-r18)) OF ServCellIndex OPTIONAL, -- Need R

 scheduledCellComboListDCI-1-3-r18 SEQUENCE (SIZE (1..maxNrofCellCombos-r18)) OF ScheduledCellCombo-r18 OPTIONAL, -- Need R

 scheduledCellComboListDCI-0-3-r18 SEQUENCE (SIZE (1..maxNrofCellCombos-r18)) OF ScheduledCellCombo-r18 OPTIONAL, -- Need R

 antennaPortsDCI1-3-r18 ENUMERATED {type1a, type2} OPTIONAL, -- Cond TypeDCI1-3

 antennaPortsDCI0-3-r18 ENUMERATED {type1a, type2} OPTIONAL, -- Cond TypeDCI0-3

 tpmi-DCI0-3-r18 ENUMERATED {type1a, type2} OPTIONAL, -- Cond TypeDCI0-3

 sri-DCI0-3-r18 ENUMERATED {type1a, type2} OPTIONAL, -- Cond TypeDCI0-3

 priorityIndicatorDCI-1-3-r18 ENUMERATED {enabled} OPTIONAL, -- Need R

 priorityIndicatorDCI-0-3-r18 ENUMERATED {enabled} OPTIONAL, -- Need R

 dormancyDCI-1-3-r18 ENUMERATED {enabled} OPTIONAL, -- Need R

 dormancyDCI-0-3-r18 ENUMERATED {enabled} OPTIONAL, -- Need R

 pdcchMonAdaptDCI-1-3-r18 ENUMERATED {enabled} OPTIONAL, -- Need R

 pdcchMonAdaptDCI-0-3-r18 ENUMERATED {enabled} OPTIONAL, -- Need R

 minimumSchedulingOffsetK0DCI-1-3-r18 ENUMERATED {enabled} OPTIONAL, -- Need R

 minimumSchedulingOffsetK0DCI-0-3-r18 ENUMERATED {enabled} OPTIONAL, -- Need R

 pdsch-HARQ-ACK-OneShotFeedbackDCI-1-3-r18 ENUMERATED {enabled} OPTIONAL, -- Need R

 pdsch-HARQ-ACK-enhType3DCI-1-3-r18 ENUMERATED {enabled} OPTIONAL, -- Need R

 pdsch-HARQ-ACK-enhType3DCIfieldDCI-1-3-r18 ENUMERATED {enabled} OPTIONAL, -- Need R

 pdsch-HARQ-ACK-retxDCI-1-3-r18 ENUMERATED {enabled} OPTIONAL, -- Need R

 pucch-sSCellDynDCI-1-3-r18 ENUMERATED {enabled} OPTIONAL, -- Need R

 tdra-FieldIndexListDCI-1-3-r18 SEQUENCE (SIZE (1..32)) OF TDRA-FieldIndexDCI-1-3-r18 OPTIONAL, -- Need R

 tdra-FieldIndexListDCI-0-3-r18 SEQUENCE (SIZE (1..64)) OF TDRA-FieldIndexDCI-0-3-r18 OPTIONAL, -- Need R

 rateMatchListDCI-1-3-r18 SEQUENCE (SIZE (1..16)) OF RateMatchDCI-1-3-r18 OPTIONAL, -- Need R

 zp-CSI-RSListDCI-1-3-r18 SEQUENCE (SIZE (1..8)) OF ZP-CSI-DCI-1-3-r18 OPTIONAL, -- Need R

 tci-ListDCI-1-3-r18 SEQUENCE (SIZE (1..16)) OF TCI-DCI-1-3-r18 OPTIONAL, -- Need R

 srs-RequestListDCI-1-3-r18 SEQUENCE (SIZE (1..16)) OF SRS-RequestCombo-r18 OPTIONAL, -- Need R

 srs-OffsetListDCI-1-3-r18 SEQUENCE (SIZE (1..8)) OF SRS-OffsetCombo-r18 OPTIONAL, -- Need R

 srs-RequestListDCI-0-3-r18 SEQUENCE (SIZE (1..16)) OF SRS-RequestCombo-r18 OPTIONAL, -- Need R

 srs-OffsetListDCI-0-3-r18 SEQUENCE (SIZE (1..8)) OF SRS-OffsetCombo-r18 OPTIONAL -- Need R

}

SetOfCellsId-r18 ::= INTEGER (0..maxNrofSetsOfCells-1-r18)

ScheduledCellCombo-r18 ::= SEQUENCE (SIZE (1..maxNrofCellsInSet-r18)) OF INTEGER (0..maxNrofCellsInSet-1-r18)

RateMatchDCI-1-3-r18 ::= SEQUENCE (SIZE (1..maxNrofCellsInSet-r18)) OF BIT STRING (SIZE (1..2))

ZP-CSI-DCI-1-3-r18 ::= SEQUENCE (SIZE (1.. maxNrofCellsInSet-r18)) OF BIT STRING (SIZE (1..2))

TCI-DCI-1-3-r18 ::= SEQUENCE (SIZE (2.. maxNrofCellsInSet-r18)) OF BIT STRING (SIZE (3))

SRS-RequestCombo-r18 ::= SEQUENCE (SIZE (1.. maxNrofCellsInSet-r18)) OF BIT STRING (SIZE (2..3))

SRS-OffsetCombo-r18 ::= SEQUENCE (SIZE (1.. maxNrofCellsInSet-r18)) OF INTEGER (0..3)

TDRA-FieldIndexDCI-1-3-r18 ::= SEQUENCE (SIZE (2.. maxNrofBWPsInSetOfCells-r18)) OF INTEGER (0..maxNrofDL-Allocations-1-r18)

TDRA-FieldIndexDCI-0-3-r18 ::= SEQUENCE (SIZE (2.. maxNrofBWPsInSetOfCells-r18)) OF INTEGER (0..maxNrofUL-Allocations-1-r18)

-- TAG-SERVINGCELLCONFIG-STOP

-- ASN1STOP

|  |
| --- |
| *ChannelAccessConfig* field descriptions |
| ***absenceOfAnyOtherTechnology***Presence of this field indicates absence on a long term basis (e.g. by level of regulation) of any other technology sharing the carrier; absence of this field indicates the potential presence of any other technology sharing the carrier, as specified in TS 37.213 [48] clauses 4.2.1 and 4.2.3. |
| ***energyDetectionConfig***Indicates whether to use the *maxEnergyDetectionThreshold* or the *energyDetectionThresholdOffset* (see TS 37.213 [48], clause 4.2.3)*.* |
| ***energyDetectionThresholdOffset***Indicates the offset to the default maximum energy detection threshold value. Unit in dB. Value -13 corresponds to -13dB, value -12 corresponds to -12dB, and so on (i.e. in steps of 1dB) as specified in TS 37.213 [48], clause 4.2.3. |
| ***maxEnergyDetectionThreshold***Indicates the absolute maximum energy detection threshold value. Unit in dBm. Value -85 corresponds to -85 dBm, value -84 corresponds to -84 dBm, and so on (i.e. in steps of 1dBm) as specified in TS 37.213 [48], clause 4.2.3. |
| ***ul-toDL-COT-SharingED-Threshold***Maximum energy detection threshold that the UE should use to share channel occupancy with gNB for DL transmission as specified in TS 37.213 [48], clause 4.1.3 for downlink channel access and clause 4.2.3 for uplink channel access. This field is not applicable in semi-static channel access mode. |

|  |
| --- |
| *ServingCellConfig* field descriptions |
| ***additionalPCI-ToAddModList***List of information for the additional SSB with different PCI than the serving cell PCI. The additional SSBs with different PCIs are not used for serving cell quality derivation. |
| ***bwp-InactivityTimer***The duration in ms after which the UE falls back to the default Bandwidth Part (see TS 38.321 [3], clause 5.15). When the network releases the timer configuration, the UE stops the timer without switching to the default BWP. |
| ***ca-SlotOffset***Slot offset between the primary cell (PCell/PSCell) and the SCell in unaligned frame boundary with slot alignment and partial SFN alignment inter-band CA. Based on this field, the UE determines the time offset of the SCell as specified in clause 4.5 of TS 38.211 [16]. The granularity of this field is determined by the reference SCS for the slot offset (i.e. the maximum of PCell/PSCell lowest SCS among all the configured SCSs in DL/UL *SCS-SpecificCarrierList* in *ServingCellConfigCommon* or *ServingCellConfigCommonSIB* and this serving cell's lowest SCS among all the configured SCSs in DL/UL *SCS-SpecificCarrierList* in *ServingCellConfigCommon* or *ServingCellConfigCommonSIB*).The Network configures at most single non-zero offset duration in ms (independent on SCS) among CCs in the unaligned CA configuration. If the field is absent, the UE applies the value of 0. The slot offset value can only be changed with SCell release and add. |
| ***cbg-TxDiffTBsProcessingType1, cbg-TxDiffTBsProcessingType2***Indicates whether processing types 1 and 2 based CBG based operation is enabled according to Rel-16 UE capabilities. |
| ***cellDTX-DRX-Config***Used to configure cell DTX/DRX for the serving cell, as specified in TS 38.321 [3]. A maximum of two cell DTX/DRX patterns can be configured per MAC entity for different serving cells. The two configured patterns are aligned, that the start and slot offset are common and the periodicity of one pattern is an integer multiple of the other. Cell DTX is configured only when connected mode DRX is configured. |
| ***cellDTX-DRX-L1activation***Indicates whether this serving cell has enabled L1 signaling based on DCI 2\_9 for dynamic activation/deactivation of cell DTX/DRX configuration. |
| ***cjt-Scheme-PDSCH***This field is used to configure CJT Tx scheme *cjtSchemeA* or *cjtSchemeB* for PDSCH reception, see TS 38.214 [19] clause 5.1.5. |
| ***channelAccessConfig***List of parameters used for access procedures of operation with shared spectrum channel access (see TS 37.213 [48). |
| ***channelAccessMode2***If present, this field indicates that the UE shall apply channel access procedures for operation with shared spectrum channel access in accordance with TS 37.213 [48], clause 4.4 for FR2-2. If absent, the UE does not apply these channel access procedures. The network always configures this field if channel access procedures are required for the serving cell within this region by regulations.Overwrites the corresponding field in *ServingCellConfigCommon* or *ServingCellConfigCommonSIB* for this serving cell. |
| ***crossCarrierSchedulingConfig***Indicates whether this serving cell is cross-carrier scheduled by another serving cell or whether it cross-carrier schedules another serving cell. If the field *other* is configured for an SpCell (i.e., the SpCell is cross-carrier scheduled by another serving cell), the SpCell can be additionally scheduled by the PDCCH on the SpCell. |
| ***crossCarrierSchedulingConfigRelease***If this field is included, the UE shall release the cross carrier scheduling configuration configured by *crossCarrierSchedulingConfig*. The network may only include either *crossCarrierSchedulingConfigRelease* or *crossCarrierSchedulingConfig* at a time. |
| ***crs-RateMatch-PerCORESETPoolIndex***Indicates how UE performs rate matching when both lte-CRS-PatternList1-r16 and lte-CRS-PatternList2-r16 are configured or when both *lte-CRS-PatternList3-r18* and *lte-CRS-PatternList4-r18* are configured as specified in TS 38.214 [19], clause 5.1.4.2. |
| ***csi-RS-ValidationWithDCI***Indicates how the UE performs periodic and semi-persistent CSI-RS reception in a slot. The presence of this field indicates that the UE uses DCI detection to validate whether to receive CSI-RS (see TS 38.213 [13], clause 11.1). |
| ***defaultDownlinkBWP-Id***The initial bandwidth part is referred to by BWP-Id = 0. ID of the downlink bandwidth part to be used upon expiry of the BWP inactivity timer. This field is UE specific. When the field is absent the UE uses the initial BWP as default BWP. (see TS 38.213 [13], clause 12 and TS 38.321 [3], clause 5.15). |
| ***directionalCollisionHandling***Indicates that this serving cell is using directional collision handling between a reference and other cell(s) for half-duplex operation in TDD CA with same SCS as specified in TS 38.213 [13], clause 11.1. The half-duplex operation only applies within the same frequency range and cell group.The network only configures this field for TDD serving cells that are using the same SCS. |
| ***directionalCollisionHandling-DC***For the IAB-MT, it indicates that this serving cell is using directional collision handling between a reference and other cell(s) for half-duplex operation in TDD NR-DC with same SCS within same cell group or cross different cell groups. |
| ***dormantBWP-Config***The dormant BWP configuration for an SCell. This field can be configured only for a (non-PUCCH) SCell. |
| ***downlinkBWP-ToAddModList***List of additional downlink bandwidth parts to be added or modified. (see TS 38.213 [13], clause 12). |
| ***downlinkBWP-ToReleaseList***List of additional downlink bandwidth parts to be released. (see TS 38.213 [13], clause 12). |
| ***downlinkChannelBW-PerSCS-List***A set of UE specific channel bandwidth and location configurations for different subcarrier spacings (numerologies). Defined in relation to Point A. The UE uses the configuration provided in this field only for the purpose of channel bandwidth and location determination. If absent, UE uses the configuration indicated in *scs-SpecificCarrierList* in *DownlinkConfigCommon* / *DownlinkConfigCommonSIB*. Network only configures channel bandwidth that corresponds to the channel bandwidth values defined in TS 38.101-1 [15], TS 38.101-2 [39], and TS 38.101-5 [75]. If the UE is an (e)RedCap UE and needs to autonomously switch to its initial downlink bandwidth part to perform a random access procedure but its current UE specific channel bandwidth does not cover the initial downlink bandwidth part, the UE autonomously changes its UE specific channel bandwidth to cover the initial downlink bandwidth part. In that case, after completion of the random access procedure, the network ensures that the UE specific channel bandwidth fully covers the UE's active downlink bandwidth part in subsequent bandwidth part switch operations. |
| ***dummy1, dummy 2***This field is not used in the specification. If received it shall be ignored by the UE. |
| ***enableBeamSwitchTiming***Indicates the aperiodic CSI-RS triggering with beam switching triggering behaviour as defined in clause 5.2.1.5.1 of TS 38.214 [19]. |
| ***enableDefaultTCI-StatePerCoresetPoolIndex***Presence of this field indicates the UE shall follow the release 16 behavior of default TCI state per CORESETPoolindex when the UE is configured by higher layer parameter PDCCH-Config that contains two different values of CORESETPoolIndex in ControlResourceSet is enabled. |
| ***enableTwoDefaultTCI-States***Presence of this field indicates the UE shall follow the release 16 behavior of two default TCI states for PDSCH when at least one TCI codepoint is mapped to two TCI states is enabled |
| ***fdmed-ReceptionMulticast***Indicates the Type-1 HARQ codebook generation as specified in TS 38.213 [13], clause 9.1.2.1. |
| ***firstActiveDownlinkBWP-Id***If configured for an SpCell, this field contains the ID of the DL BWP to be activated or to be used for RLM, BFD and measurements if included in an *RRCReconfiguration* message contained in an NR or E-UTRA RRC message indicating that the SCG is deactivated, upon performing the RRC (re-)configuration. If the field is absent, the RRC (re-)configuration does not impose a BWP switch. If the field is absent for the PSCell at SCG deactivation, the UE considers the previously activated DL BWP as the BWP to be used for RLM, BFD and measurements. If the field is absent for the PSCell at SCG activation, the DL BWP to be activated is the DL BWP previously to be used for RLM, BFD and measurements.If configured for an SCell, this field contains the ID of the downlink bandwidth part to be used upon activation of an SCell. The initial bandwidth part is referred to by BWP-Id = 0.Upon reconfiguration with *reconfigurationWithSync*, the network sets the *firstActiveDownlinkBWP-Id* and *firstActiveUplinkBWP-Id* to the same value. |
| ***initialDownlinkBWP***The dedicated (UE-specific) configuration for the initial downlink bandwidth-part (i.e., DL BWP#0). If any of the optional IEs are configured within this IE, the UE considers the BWP#0 to be an RRC configured BWP (from UE capability viewpoint). Otherwise, the UE does not consider the BWP#0 as an RRC configured BWP (from UE capability viewpoint). Network always configures the UE with a value for this field if no other BWPs are configured. NOTE1 |
| ***intraCellGuardBandsDL-List, intraCellGuardBandsUL-List***List of intra-cell guard bands in a serving cell for operation with shared spectrum channel access in FR1. If not configured, the guard bands are defined according to 38.101-1 [15], see TS 38.214 [19], clause 7. For operation in licensed spectrum, this field is absent, and no UE action is required. |
| ***lte-CRS-PatternList1***A list of LTE CRS patterns around which the UE shall do rate matching for PDSCH. The LTE CRS patterns in this list shall be non-overlapping in frequency. The network does not configure this field and *lte-CRS-ToMatchAround* simultaneously. |
| ***lte-CRS-PatternList2***A list of LTE CRS patterns around which the UE shall do rate matching for PDSCH scheduled with a DCI detected on a CORESET with CORESETPoolIndex configured with 1. This list is configured only if CORESETPoolIndex configured with 1. The first LTE CRS pattern in this list shall be fully overlapping in frequency with the first LTE CRS pattern in lte-CRS-PatternList1, The second LTE CRS pattern in this list shall be fully overlapping in frequency with the second LTE CRS pattern in lte-CRS-PatternList1, and so on. Network configures this field only if the field *lte-CRS-ToMatchAround* is not configured and there is at least one ControlResourceSet in one DL BWP of this serving cell with *coresetPoolIndex* set to 1. |
| ***lte-CRS-PatternList3***A list of LTE CRS patterns around which the UE shall do rate matching for PDSCH. The LTE CRS patterns in this list shall be non-overlapping in frequency. The network does not configure this field and *lte-CRS-ToMatchAround,* or this field and *lte-CRS-PatternList1*, or this field and *lte-CRS-PatternList2* simultaneously. |
| ***lte-CRS-PatternList4***A list of LTE CRS patterns around which the UE shall do rate matching for PDSCH. The LTE CRS patterns in this list shall be non-overlapping in frequency. The first LTE CRS pattern in this list shall be fully overlapping in frequency with the first LTE CRS pattern in *lte-CRS-PatternList3*. The second LTE CRS pattern in this list shall be fully overlapping in frequency with the second LTE CRS pattern in *lte-CRS-PatternList3*, and so on. Network configures this field only if the field *lte-CRS-ToMatchAround* is not configured and the field *lte-CRS-PatternList3* is configured. |
| ***lte-CRS-ToMatchAround***Parameters to determine an LTE CRS pattern that the UE shall rate match around. |
| ***lte-NeighCellsCRS-AssistInfoList***A list of LTE neighbour cells configuration information which is used to assist the UE to perform CRS interference mitigation (CRS-IM) in scenarios with overlapping spectrum for LTE and NR (see TS 38.101-4 [59]). If the field is included, it replaces any previous list, i.e. all the entries of the list are replaced and each of the *LTE-NeighCellsCRS-AssistInfo* entries is considered to be newly created and the conditions and Need codes for setup of the entry apply. |
| ***lte-NeighCellsCRS-Assumptions***If the field is not configured, the following default network configuration assumptions are valid for all LTE neighbour cells for the purpose of CRS interference mitigation (CRS-IM) in scenarios with overlapping spectrum for LTE and NR (see TS 38.101-4 [59]).- The CRS port number is the same as the one indicated in *RateMatchPatternLTE-CRS* if configured for the serving cell.- The CRS port number is 4 if *RateMatchPatternLTE-CRS* is not configured for the serving cell.- The channel bandwidth and centre frequency are the same as the ones indicated in *RateMatchPatternLTE-CRS* if configured for the serving cell.- The MBSFN configuration is the same as the one indicated in *RateMatchPatternLTE-CRS* if configured for the serving cell. If *RateMatchPatternLTE-CRS* is not configured for the serving cell, MBSFN subframe is not configured.- Network-based CRS interference mitigation (i.e., CRS muting), as in *crs-IntfMitigConfig* specified in TS 36.331 [10], is not enabled.If the field is configured (i.e. false) and *LTE-NeighCellsCRS-AssistInfoList* is configured, the configuration provided in *LTE-NeighCellsCRS-AssistInfoList* overrides the default network configuration assumptions.If the field is configured (i.e. false) and *LTE-NeighCellsCRS-AssistInfoList* is not configured, it is up to the UE implementation whether to apply CRS-IM operation. |
| ***mc-DCI-SetOfCellsToAddModList***List of up to N (N<=4) configurations of set(s) of cells for multi-cell PDSCH/PUSCH scheduling from the serving cell, where N is reported as UE capability and up to 4 sets of cells can be configured per PUCCH group. When this field is configured to a SCell, PCell cannot be included in either *ScheduledCellListDCI-1-3* or *ScheduledCellListDCI-0-3*. |
| ***mc-DCI-SetOfCellsToReleaseList***List of cell set configurations to release. |
| ***multiPDSCH-PerSlotType1-CB***Configures the UE behaviour for Type1 codebook HARQ ACK generation regarding the number of PDSCHs per slot on a serving cell as specified in TS 38.213 [13], clause 9.1.2.1.When this parameter is configured and set to *disabled* for a serving cell, the network does not schedule UE with more than one PDSCH in a slot on the serving cell if HARQ-ACKs of any two PDSCHs in the slot on the serving cell are supposed to be reported on one PUCCH resource in the same PUCCH slot. If two *coresetPoolIndex* values are configured, the number of received PDSCHs is per *coresetPoolIndex* value per slot for a serving cell. If the UE generates two HARQ-ACK codebooks for two priorities, the number of received PDSCHs is per priority per slot for a serving cell. If *fdmed-ReceptionMulticast* is configured, the number of received PDSCHs is per traffic type (unicast / multicast) per slot for a serving cell. |
| ***nr-dl-PRS-PDC-Info***Configures the DL PRS for propagation delay compensation. When configured, the UE measures the UE Rx-Tx time difference based on the reference signals configured in this field. |
| ***nrofHARQ-BundlingGroups***Indicates the number of HARQ bundling groups for type2 HARQ-ACK codebook. |
| ***pathlossReferenceLinking***Indicates whether UE shall apply as pathloss reference either the downlink of SpCell (PCell for MCG or PSCell for SCG) or of SCell that corresponds with this uplink (see TS 38.213 [13], clause 7). |
| ***pdcch-CandidateReceptionWithCRS-Overlap***Presence of this field indicates the UE shall monitor PDCCH candidates that overlap with LTE CRS RE(s). |
| ***pdsch-ServingCellConfig***PDSCH related parameters that are not BWP-specific. |
| ***positionInDCI-cellDTRX***The starting bit position of an information block of DCI format 2\_9 for this serving cell (see TS 38.212 [17], clause 7.3.1.3.10). |
| ***rateMatchPatternToAddModList***Resources patterns which the UE should rate match PDSCH around. The UE rate matches around the union of all resources indicated in the rate match patterns. Rate match patterns defined here on cell level apply only to PDSCH of the same numerology. See TS 38.214 [19], clause 5.1.4.1. If a *RateMatchPattern* with the same *RateMatchPatternId* is configured in both *ServingCellConfig/ServingCellConfigCommon* and in SIB20/MCCH, the entire *RateMatchPattern* configuration shall be the same, including the set of RBs/REs indicated by the patterns for the rate matching around, and they are counted as a single rate match pattern in the total configured rate match patterns as defined in TS 38.214 [19]. |
| ***sCellDeactivationTimer***SCell deactivation timer in TS 38.321 [3]. If the field is absent, the UE applies the value infinity. |
| ***sfnSchemePDCCH***This parameter is used to configure single frequency network scheme for PDCCH: sfnSchemeA or sfnSchemeB as specified (see TS 38.214 [19], clause 5.1). If network includes both *sfnSchemePDCCH* and *sfnSchemePDSCH*, same value shall be configured. |
| ***sfnSchemePDSCH***This parameter is used to configure single frequency network scheme for PDSCH: sfnSchemeA or sfnSchemeB as specified (see TS 38.214 [19], clause 5.1). If network includes both *sfnSchemePDCCH* and *sfnSchemePDSCH*, same value shall be configured. The network does not configure this parameter and *repetitionSchemeConfig* in *PDSCH-Config* simultaneously in the same serving cell. |
| ***semiStaticChannelAccessConfigUE***When this field is configured and when *channelAccessMode-r16* (see IE ServingCellConfigCommon and IE ServingCellConfigCommonSIB) is configured to *semiStatic*, the UE operates in semi-static channel access mode and can initiate a channel occupancy periodically (see TS 37.213 [48], Clause 4.3).The period can be configured independently from period configured in *SemiStaticChannelAccessConfig-r16* if the UE indicates the corresponding capability. Otherwise, the periodicity configured by *periodUE-r17* is an integer multiple of or an integer factor of the periodicity indicated by *period* in *SemiStaticChannelAccessConfig-r16.* |
| ***servingCellMO****measObjectId* of the *MeasObjectNR* in *MeasConfig* which is associated to the serving cell. For this *MeasObjectNR*, the following relationship applies between this MeasObjectNR and *frequencyInfoDL* in *ServingCellConfigCommon/ServingCellConfigCommonSIB* of the serving cell: if *ssbFrequency* is configured, its value is the same as the *absoluteFrequencySSB* and if *csi-rs-ResourceConfigMobility* is configured, the value of its *subcarrierSpacing* is present in one entry of the *scs-SpecificCarrierList*, *csi-RS-CellListMobility* includes an entry corresponding to the serving cell (with *cellId* equal to *physCellId* in *ServingCellConfigCommon*) and the frequency range indicated by the *csi-rs-MeasurementBW* of the entry in *csi-RS-CellListMobility* is included in the frequency range indicated by in the entry of the *scs-SpecificCarrierList*. |
| ***supplementaryUplink***Network may configure this field only when *supplementaryUplinkConfig* is configured in *ServingCellConfigCommon* or *supplementaryUplink* is configured in *ServingCellConfigCommonSIB*. |
| ***supplementaryUplinkRelease***If this field is included, the UE shall release the uplink configuration configured by *supplementaryUplink*. The network only includes either *supplementaryUplinkRelease* or *supplementaryUplink* at a time. |
| ***tag-Id***Timing Advance Group ID, as specified in TS 38.321 [3], which this cell or set of TCI-States of this cell are associated with. |
| ***tag2***This field is used to indicate the second TAG information for the serving cell, it is optionally configured in a serving cell if and only if the serving cell is configured with more than one value for the *coresetPoolIndex*. |
| ***tci-ActivatedConfig***If configured for an SCell, or if configured for the PSCell when the SCG is being activated upon the reception of the containing message, the UE shall consider the TCI states provided in this field as the activated TCI states for PDCCH/PDSCH reception on this serving cell.If configured for the PSCell when the SCG is indicated as deactivated in the containing message:- the UE shall consider the TCI states provided in this field as the TCI states to be activated for PDCCH/PDSCH reception upon a later SCG activation in which *tci-ActivatedConfig* is absent- if bfd-and-RLM is configured and no RS is configured in *RadioLinkMonitoringConfig* for RLM, respectively for BFD, the UE shall use the TCI states provided in this field for PDCCH as RS for RLM, respectively for BFD.When this field is absent for the PSCell and the SCG is being deactivated:- the UE shall consider the previously activated TCI states as the TCI states to be activated for PDCCH/PDSCH reception upon a later SCG activation in which *tci-ActivatedConfig* is absent- if *bfd-and-RLM* is configured and no RS is configured in *RadioLinkMonitoringConfig* for RLM, respectively for BFD, the UE shall use the previously activated TCI states for PDCCH as RS for RLM, respectively for BFD. |
| ***tdd-UL-DL-ConfigurationDedicated-IAB-MT***Resource configuration per IAB-MT D/U/F overrides all symbols (with a limitation that effectively only flexible symbols can be overwritten in Rel-16) per slot over the number of slots as provided by *TDD-UL-DL ConfigurationCommon*. |
| ***unifiedTCI-StateType***Indicates the unified TCI state type the UE is configured for this serving cell. The value *separate* means this serving cell is configured with *dl-OrJointTCI-StateList* for DL TCI state and *ul-TCI-StateList* for UL TCI state. The value *joint* means this serving cell is configured with *dl-OrJointTCI-StateList* for joint TCI state for UL and DL operation. |
| ***uplinkConfig***Network may configure this field only when *uplinkConfigCommon* is configured in *ServingCellConfigCommon* or *ServingCellConfigCommonSIB*. Addition or release of this field can only be done upon SCell addition or release (respectively). |
| ***uplink-PowerControlToAddModList***Configures UL power control parameters for PUSCH, PUCCH and SRS when field unifiedTCI-StateType is configured for this serving cell. |

|  |
| --- |
| *Tag2 field descriptions* |
| ***n-TimingAdvanceOffset2***The *N\_TA-Offset2* to be applied for PDCCH order CFRA towards the active *additionalPCI* as specified in TS 38.133 [14] clause 7.1.1 and for all uplink transmissions on this serving cell associated to *tag2* as specified in TS 38.213 [13] clause 4.2. This field is always present if *SSB-MTC-AdditionalPCI* is configured. It is absent otherwise. If absent, the *N\_TA-Offset* is applied for all uplink transmissions on this serving cell associated to *tag2*. |
| ***tag2-flag***If this field is set to true, the *tag2-Id* is associated to value 0 and *tag-Id* is associated to value 1 of field TI bit in RAR, fallbackRAR and in the absolute TAC MAC CE, see TS 38.321 [3]. Otherwise, the *tag2-Id* is associated to value 1 and *tag-Id* is associated to value 0 of field TI bit in RAR, fallbackRAR and in the absolute TAC MAC CE, see TS 38.321 [3]. |
| ***tag2-Id***Timing Advance Group ID, as specified in TS 38.321 [3], which this cell or set of TCI-States of this cell are associated with. |

|  |
| --- |
| *UplinkConfig* field descriptions |
| ***carrierSwitching***Includes parameters for configuration of carrier based SRS switching (see TS 38.214 [19], clause 6.2.1.3. |
| ***enableDefaultBeamPL-ForPUSCH0-0, enableDefaultBeamPL-ForPUCCH, enableDefaultBeamPL-ForSRS***When the parameter is present, UE derives the spatial relation and the corresponding pathloss reference Rs as specified in 38.213, clauses 7.1.1, 7.2.1, 7.3.1 and 9.2.2. The network only configures these parameters for FR2. |
| ***enablePL-RS-UpdateForPUSCH-SRS***When this parameter is present, the Rel-16 feature of MAC CE based pathloss RS updates for PUSCH/SRS is enabled. Network only configures this parameter when the UE is configured with *sri-PUSCH-PowerControl*. If this field is not configured, network configures at most 4 pathloss RS resources for PUSCH/PUCCH/SRS transmissions per BWP, not including pathloss RS resources for SRS transmissions for positioning. (See TS 38.213 [13], clause 7). |
| ***enablePL-RS-UpdateForType1CG-PUSCH***When this parameter is present, the Rel-18 feature of MAC CE based pathloss RS updates for Type 1 CG-PUSCH is enabled. The network only configures this parameter, when the parameter *enablePL-RS-UpdateForPUSCH-SRS* is configured. (See TS 38.213 [13], clause 7). |
| ***firstActiveUplinkBWP-Id***If configured for an SpCell, this field contains the ID of the UL BWP to be activated upon performing the RRC (re-)configuration. If the field is absent, the RRC (re-)configuration does not impose a BWP switch.If configured for an SCell, this field contains the ID of the uplink bandwidth part to be used upon activation of an SCell. The initial bandwidth part is referred to by BandiwdthPartId = 0. |
| ***initialUplinkBWP***The dedicated (UE-specific) configuration for the initial uplink bandwidth-part (i.e. UL BWP#0). If any of the optional IEs are configured within this IE as part of the IE *uplinkConfig*, the UE considers the BWP#0 to be an RRC configured BWP (from UE capability viewpoint). Otherwise, the UE does not consider the BWP#0 as an RRC configured BWP (from UE capability viewpoint). Network always configures the UE with a value for this field if no other BWPs are configured. NOTE1 |
| ***moreThanOneNackOnlyMode***Indicates the mode of NACK-only feedback in the PUCCH transmission, as specified in TS 38.213 [13], clause 18. If multicast CFR is not configured, this field is not included. Otherwise, if the field is absent, UE uses mode 1 for multicast CFR. |
| ***mpr-PowerBoost-FR2***Indicates whether UE is allowed to boost uplink transmission power by suspending in-band emission (IBE) requirements as specified in TS 38.101-2 [39]. Network only configures this field for FR2 serving cells. |
| ***powerBoostPi2BPSK***If this field is set to *true*, the UE determines the maximum output power for PUCCH/PUSCH transmissions that use pi/2 BPSK modulation according to TS 38.101-1 [15] /TS 38.101-5 [75], clause 6.2.4. The network ensures that *powerBoostPi2BPSK* and *powerBoostPi2BPSK-r18* are not configured at the same time for a UE. |
| ***powerBoostQPSK***If this field is set to *true*, the UE determines the maximum output power for PUSCH transmissions that use QPSK modulation according to TS 38.101-1 [15], clause 6.2.4. |
| ***pusch-ServingCellConfig***PUSCH related parameters that are not BWP-specific. |
| ***srs-PosTx-Hopping***Contains configuration related to the SRS for Positioning with frequency hopping for RRC\_CONNECTED state. |
| ***uplinkBWP-ToAddModList***The additional bandwidth parts for uplink to be added or modified. In case of TDD uplink- and downlink BWP with the same *bandwidthPartId* are considered as a BWP pair and must have the same center frequency. |
| ***uplinkBWP-ToReleaseList***The additional bandwidth parts for uplink to be released. |
| ***uplinkChannelBW-PerSCS-List***A set of UE specific channel bandwidth and location configurations for different subcarrier spacings (numerologies). Defined in relation to Point A. The UE uses the configuration provided in this field only for the purpose of channel bandwidth and location determination. If absent, UE uses the configuration indicated in *scs-SpecificCarrierList* in *UplinkConfigCommon* / *UplinkConfigCommonSIB*. Network only configures channel bandwidth that corresponds to the channel bandwidth values defined in TS 38.101-1 [15], TS 38.101-2 [39], and TS 38.101-5 [75]. If the UE is an (e)RedCap UE and needs to autonomously switch to its initial uplink bandwidth part to perform a random access procedure but its current UE specific channel bandwidth does not cover the initial uplink bandwidth part, the UE autonomously changes its UE specific channel bandwidth to cover the initial uplink bandwidth part. In that case, after completion of the random access procedure, the network ensures that the UE specific channel bandwidth fully covers the UE's active uplink bandwidth part in subsequent bandwidth part switch operations. |
| ***uplinkTxSwitchingPeriodLocation***Indicates whether the location of UL Tx switching period is configured in this uplink carrier in case of inter-band UL CA, SUL, or (NG)EN-DC, as specified in TS 38.101-1 [15] and TS 38.101-3 [34].In case of (NG)EN-DC, network always configures this field to TRUE for NR carrier (i.e. with (NG)EN-DC, the UL switching period always occurs on the NR carrier).In case of inter-band UL CA or SUL, for dynamic uplink Tx switching between 2 bands with 2 uplink carriers or 3 uplink carriers as defined in TS 38.101-1 [15], network configures this field to TRUE for the uplink carrier(s) on one band and configures this field to FALSE for the uplink carrier(s) on the other band. This field is set to the same value for the carriers on the same band. |
| ***uplinkTxSwitchingCarrier***Indicates that the configured carrier is carrier1 or carrier2 for dynamic uplink Tx switching, as defined in TS 38.101-1 [15] and TS 38.101-3 [34]. In case of (NG)EN-DC, network always configures the NR carrier as carrier 2.In case of inter-band UL CA or SUL, for dynamic uplink Tx switching between 2 bands with 2 uplink carriers or 3 uplink carriers as defined in TS 38.101-1 [15], network configures the uplink carrier(s) on one band as carrier1 and the uplink carrier(s) on the other band as carrier2. This field is set to the same value for the carriers on the same band. |

|  |
| --- |
| *DormantBWP-Config* field descriptions |
| ***dormancyGroupWithinActiveTime***This field contains the ID of an SCell group for Dormancy within active time, to which this SCell belongs. The use of the Dormancy within active time for SCell groups is specified in TS 38.213 [13]. |
| ***dormancyGroupOutsideActiveTime***This field contains the ID of an SCell group for Dormancy outside active time, to which this SCell belongs. The use of the Dormancy outside active time for SCell groups is specified in TS 38.213 [13]. |
| ***dormantBWP-Id***This field contains the ID of the downlink bandwidth part to be used as dormant BWP. If this field is configured, its value is different from *defaultDownlinkBWP-Id*, and at least one of the *withinActiveTimeConfig* and *outsideActiveTimeConfig* should be configured. |
| ***firstOutsideActiveTimeBWP-Id***This field contains the ID of the downlink bandwidth part to be activated when receiving a DCI indication for SCell dormancy outside active time. |
| ***firstWithinActiveTimeBWP-Id***This field contains the ID of the downlink bandwidth part to be activated when receiving a DCI indication for SCell dormancy within active time. |
| ***outsideActiveTimeConfig***This field contains the configuration to be used for SCell dormancy outside active time, as specified in TS 38.213 [13]. The field can only be configured when the cell group the SCell belongs to is configured with *dcp-Config*. |
| ***withinActiveTimeConfig***This field contains the configuration to be used for SCell dormancy within active time, as specified in TS 38.213 [13].  |

|  |
| --- |
| *GuardBand* field descriptions |
| ***startCRB***Indicates the starting RB of the guard band. |
| ***nrofCRB***Indicates the length of the guard band in RBs. When set to 0, zero-size guard band is used. |

|  |
| --- |
| *MC-DCI-SetOfCells* field descriptions |
| ***antennaPortsDCI1-3, antennaPortsDCI0-3***Configure the indication type for antenna port(s) field in DCI format 1\_3 and DCI format 0\_3, respectively (see TS 38.212, clauses 7.3.1.2.4 and 7.3.1.1.4). |
| ***dormancyDCI-1-3, dormancyDCI-0-3***Configure the presence of Scell dormancy indication field in DCI format 1\_3 and DCI format 0\_3, respectively. |
| ***minimumSchedulingOffsetK0DCI-1-3, minimumSchedulingOffsetK0DCI-0-3***Configure the presence of minimum applicable scheduling offset indicator field in DCI format 1\_3 and DCI format 0\_3, respectively. |
| ***nCI-Value***Configure n\_CI value used for the set of cells, where unique n\_CI value is configured for each set of cells. |
| ***pdcchMonAdaptDCI-1-3, pdcchMonAdaptDCI-0-3***Configure the presence of PDCCH monitoring adaptation indication field in DCI format 1\_3 and DCI format 0\_3, respectively. |
| ***pdsch-HARQ-ACK-enhType3DCI-1-3***Enable the enhanced Type 3 HARQ-ACK codebook triggering using DCI format 1\_3. |
| ***pdsch-HARQ-ACK-enhType3DCIfieldDCI-1-3***Enables the enhanced Type 3 CB through a new DCI field to indicate the enhanced Type 3 HARQ-ACK codebook in DCI format 1\_3 if the more than one enhanced Type HARQ-ACK codebook is configured for the primary PUCCH cell group. |
| ***pdsch-HARQ-ACK-OneShotFeedbackDCI-1-3***When configured, the DCI format 1\_3 can request the UE to report A/N for all HARQ processes and all CCs configured in the PUCCH group. |
| ***pdsch-HARQ-ACK-retxDCI-1-3***When configured, the DCI format 1\_3 can request the UE to perform a HARQ-ACK re-transmission on a PUCCH resource (see TS 38.213 [13], clause 9.1.5). |
| ***priorityIndicatorDCI-1-3, priorityIndicatorDCI-0-3***Configure the presence of priority indicator field in DCI format 1\_3 and DCI format 0\_3, respectively (see TS 38.212 [17], clauses 7.3.1.2.4 and 7.3.1.1.4 and TS 38.213 [13] clause 9). |
| ***pucch-sSCellDynDCI-1-3***Configure the UE with PUCCH cell switching based on dynamic indication in DCI format 1\_3 (see TS 38.213 [13], clause 9.A). |
| ***RateMatchDCI-1-3***Configure each row of the joint rate matching indication table for DL scheduling via DCI format 1\_3, where bitmap for a cell points to a corresponding rate matching indication applicable for DCI format 1\_1 (i.e., MSB and LSB of bitmap refer *rateMatchPatternGroup1* and *rateMatchPatternGroup2* for a cell, respectively), the order of rate matching indication bitmap in each row refers the order of cells in *ScheduledCellListDCI-1-3*, that are configured with *rateMatchPatternGroup1* or *rateMatchPatternGroup2* on at least one DL BWP (i.e., first bitmap is for the first cell in *ScheduledCellListDCI-1-X*, that are configured with *rateMatchPatternGroup1* or *rateMatchPatternGroup2* on at least one DL BWP and so on), the number of entries in a row of *rateMatchDCI-1-3* should be the same as the number of cells, that are configured with *rateMatchPatternGroup1* or *rateMatchPatternGroup2* on at least one DL BWP, included in *ScheduledCellListDCI-1-3*, and entries for co-scheduled cells in a row of *rateMatchDCI-1-3* are interpreted based on the BWPs of co-scheduled cells on which the UE operates based on the BWP indicator field of DCI format 1\_3 (see TS 38.212 [17], clause 7.3.1.2.4 and TS 38.213 [13], clause 12). |
| ***rateMatchListDCI-1-3***Configure joint rate matching indication table for DL scheduling via DCI format 1\_3. |
| ***ScheduledCellCombo***Configure each row of the table for combinations of co-scheduled cells for DL scheduling via DCI format 1\_3 and for UL scheduling via DCI format 0\_3, where index with value INTEGER (0...3) of co-scheduled cell refers to *scheduledCellListDCI-1-3* for DL and *scheduledCellListDCI-0-3* for UL. |
| ***scheduledCellComboListDCI-1-3, scheduledCellComboListDCI-0-3***Configure the table for combinations of co-scheduled cells for DL scheduling via DCI format 1\_3 and DCI format 0\_3, respectively. |
| ***scheduledCellListDCI-1-3, scheduledCellListDCI-0-3***Configure the list of possible co-scheduled cells in the set for DL scheduling via DCI format 1\_3 and DCI format 0\_3 respectively, where the serving cells in the list are in ascending order of serving cell indices and are mapped to index {0, 1, 2, 3} in the set. Total number of cells within the same set of cells i.e., in *scheduledCellListDCI-1-3* and *scheduledCellListDCI-0-3*, is up to 4.When a cell is included in either or both of *scheduledCellListDCI-1-3* or *scheduledCellListDCI-0-3* for one set of cells *MC-DCI-SetofCells*, the cell cannot be included in any of *scheduledCellListDCI-1-3* or *scheduledCellListDCI-0-3* for any other set of cells. |
| ***setOfCellsId***Configure index of the set of cells to be indicated in DCI format 0\_3/1\_3. |
| ***sri-DCI0-3***Configure the indication type for SRS resource indicator field in DCI format 0\_3 (See TS 38.212, clause 7.3.1.1.4). |
| ***SRS-OffsetCombo***Configure each row of the joint SRS offset indicator table for DL scheduling via DCI format 1\_3 and for UL scheduling via DCI format 0\_3, where index for a cell points to a corresponding SRS offset indicator applicable for DCI formats 1\_1 and 0\_1, and the order of SRS offset indicator index in each row refers the order of cells in *scheduledCell-ListDCI-1-3* (i.e., first index is for the first cell in *scheduledCellListDCI-1-3*, that are configured with more than one entry in *availableSlotOffsetList* for at least one aperiodic SRS resource set on at least one UL BWP and so on) for DL and *scheduledCellListDCI-0-3* for UL, included in *scheduledCellListDCI-1-3* for *srs-OffsetListDCI-1-3* and *scheduledCellListDCI-0-3* for *srs-OffsetListDCI-0-3*, and entries for co-scheduled cells in a row of *SRS-OffsetCombo* are interpreted based on the BWPs of co-scheduled cells on which the UE operates based on the BWP indicator field of DCI format 1\_3 and 0\_3 (see TS 38.212 [17], clause 7.3.1.2.4 and clause 7.3.1.1.4, and TS 38.213 [13], clause 12). |
| ***srs-OffsetListDCI-1-3, srs-OffsetListDCI-0-3***Configure joint SRS offset indicator table for DL scheduling via DCI format 1\_3 and DCI format 0\_3, respectively. |
| ***SRS-RequestCombo***Configure each row of the joint SRS request table for DL scheduling via DCI format 1\_3 and for UL scheduling via DCI format 0\_3, where index for a cell points to a corresponding SRS request applicable for DCI formats 1\_1 and 0\_1, and the order of SRS request index in each row refers the order of cells in *scheduledCellListDCI-1-3* (i.e., first index is for the first cell in *scheduledCellListDCI-1-3* and so on) for DL and *scheduledCellListDCI-0-3* for UL. The number of entries in a row of *SRS-RequestCombo* should be the same as the number of cells included in *scheduledCellListDCI-1-3* for *srs-RequestListDCI-1-3* and *scheduledCellListDCI-0-3* for *srs-RequestListDCI-0-3*, and entries for co-scheduled cells in a row of *SRS-RequestCombo* are interpreted based on the BWPs of co-scheduled cells on which the UE operates based on the BWP indicator field of DCI format 1\_3 and 0\_3 (see TS 38.212 [17], clause 7.3.1.2.4 and clause 7.3.1.1.4, and TS 38.213 [13], clause 12). |
| ***srs-RequestListDCI-1-3, srs-RequestListDCI-0-3***Configure joint SRS request table for DL scheduling via DCI format 1\_3 and DCI format 0\_3, respectively. |
| ***TCI-DCI-1-3***Configure each row of the joint TCI table for DL scheduling via DCI format 1\_3, where index for a cell points to a corresponding TCI applicable for DCI format 1\_1, and the order of TCI index in each row refers the order of cells in *scheduledCellListDCI-1-3* (i.e., first index is for the first cell in *scheduledCellListDCI-1-3* that configured with *tci-StatesToAddModList* and so on), the number of entries in a row of *TCI-DCI-1-3* should be the same as the number of cells that configured with *tci-StatesToAddModList* on at least one DL BWP, included in *scheduledCellListDCI-1-3*, and entries for cells in a row of *TCI-DCI-1-3* are interpreted based on the BWPs of cells in *scheduledCellListDCI-1-3* on which the UE operates based on the BWP indicator field of DCI format 1\_3 (see TS 38.212 [17], clause 7.3.1.2.4, and TS 38.213 [13], clause 12). |
| ***tci-ListDCI-1-3***Configure joint TCI table for DL scheduling via DCI format 1\_3 |
| ***TDRA-FieldIndexDCI-0-3***Configure each row of the joint TDRA field table for UL scheduling via DCI format 0\_3 containing the applicable TDRA field indexes for multiple BWPs/cells, where the TDRA index for a BWP of a cell points to a corresponding TDRA in the TDRA table applicable for DCI format 0\_1, the order of TDRA index in each row refers the *BWP-Id* for a cell and the order of cells in *scheduledCellListDCI-0-3* (i.e., first TDRA index in a row is for the smallest BWP-Id that can be scheduled by the DCI format 0\_3, as specified in TS 38.212 [17], of the first cell in *scheduledCellListDCI-0-3*, second TDRA index in a row is for the second smallest BWP-Id 1 that can be scheduled by the DCI format 0\_3, as specified in TS 38.212 [17], of the first cell and so on), and the number of TDRA indices in a row of *TDRA-FieldIndexDCI-0-3* should be the same as the total number of BWPs that can be scheduled by the DCI format 0\_3, as specified in TS 38.212 [17], across cells included in *scheduledCellListDCI-0-3*. |
| ***TDRA-FieldIndexDCI-1-3***Configure each row of the joint TDRA field table for DL scheduling via DCI format 1\_3 containing the applicable TDRA field indexes for multiple BWPs/cells, where the TDRA index for a BWP of a cell points to a corresponding TDRA in the TDRA table applicable for DCI format 1-1, the order of TDRA index in each row refers the BWP-Id for a cell and the order of cells in *scheduledCellListDCI-1-3* (i.e., first TDRA index in a row is for the smallest BWP-Id that can be scheduled by the DCI format 1-3, as specified in TS 38.212 [17], of the first cell in *scheduledCellListDCI-1-3*, second TDRA index in a row is for the second smallest BWP-Id that can be scheduled by the DCI format 1-3, as specified in TS 38.212 [17], of the first cell and so on ), and the number of TDRA indices in a row of *TDRA-FieldIndexDCI-1-3* should be the same as the total number of BWPs that can be scheduled by the DCI format 1-3, as specified in TS 38.212 [17], across cells included in *scheduledCellListDCI-1-3*. |
| ***tdra-FieldIndexListDCI-1-3, tdra-FieldIndexListDCI-0-3***Configure joint TDRA table for UL scheduling via DCI format 1\_3 and DCI format 0\_3, respectively. |
| ***tpmi-DCI0-3***Configure the indication type for precoding information and number of layers field in DCI format 0\_3 (See TS 38.212 [17], clause 7.3.1.1.4). |
| ***ZP-CSI-DCI-1-3***Configure each row of the joint ZP-CSI-RS trigger table for DL scheduling via DCI format 1\_3, where index for a cell points to a corresponding ZP-CSI-RS trigger applicable for DCI format 1\_1, and the order of ZP-CSI-RS trigger index in each row refers the order of cells in *scheduledCellListDCI-1-3* (i.e., first index is for the first cell in *scheduledCellListDCI-1-3*, that are configured with aperiodic-*ZP-CSI-RS-ResourceSetsToAddModList* on at least one DL BWP and so on), the number of entries in a row of *ZP-CSI-DCI-1-3* should be the same as the number of cells, that are configured with *aperiodic-ZP-CSI-RS-ResourceSetsToAddModList* on at least one DL BWP, included in *scheduledCellListDCI-1-3*, and entries for co-scheduled cells in a row of *ZP-CSI-DCI-1-3* are interpreted based on the BWPs of co-scheduled cells on which the UE operates based on the BWP indicator field of DCI format 1\_3 (see TS 38.212 [17], clause 7.3.1.2.4 and TS 38.213 [13], clause 12). |
| ***zp-CSI-RSListDCI-1-3***Configure joint ZP-CSI-RS trigger table for DL scheduling via DCI format 1\_3. |

NOTE 1: If the dedicated part of initial UL/DL BWP configuration is absent, the initial BWP can be used but with some limitations. For example, changing to another BWP requires *RRCReconfiguration* since DCI format 1\_0 doesn't support DCI-based switching.

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *AsyncCA* | This field is mandatory present for SCells whose slot offset between the SpCell is not 0. Otherwise it is absent, Need S. |
| *MeasObject* | This field is mandatory present for the SpCell if the UE has a *measConfig*, and it is optionally present, Need M, for SCells. For (e)RedCap UEs, this field is optionally present, Need M. |
| *SCellOnly* | This field is optionally present, Need R, for SCells. It is absent otherwise.  |
| *ServingCellWithoutPUCCH* | This field is optionally present, Need S, for SCells except PUCCH SCells. It is absent otherwise. |
| *SyncAndCellAdd* | This field is mandatory present for a SpCell upon reconfiguration with *reconfigurationWithSync* and upon *RRCSetup*/*RRCResume*.The field is optionally present for an SpCell, Need N, upon reconfiguration without *reconfigurationWithSync*.The field is mandatory present for an SCell upon addition, and absent for SCell in other cases, Need M. |
| *TCI\_ActivatedConfig* | This field is optional Need N for SCells if *sCellState* is configured, otherwise it is absent.This field is optional Need S for the PSCell when the SCG is indicated as deactivated or is being activated, otherwise it is absent.This field is absent for the PCell. |
| *TDD* | This field is optionally present, Need R, for TDD cells. It is absent otherwise. |
| *TDD\_IAB* | For IAB-MT, this field is optionally present, Need R, for TDD cells. It is absent otherwise. |
| *TypeDCI0-3* | This field is mandatory present if *ScheduledCellListDCI-0-3* is configured, otherwise it is absent, Need R. |
| *TypeDCI1-3* | This field is mandatory present if *ScheduledCellListDCI-1-3* is configured, otherwise it is absent, Need R. |

<skipped>

### 6.3.3 UE capability information elements

<skipped>

#### – *CA-ParametersNR*

The IE *CA-ParametersNR* contains carrier aggregation and inter-frequency DAPS handover related capabilities that are defined per band combination.

*CA-ParametersNR* information element

-- ASN1START

-- TAG-CA-PARAMETERSNR-START

CA-ParametersNR ::= SEQUENCE {

 dummy ENUMERATED {supported} OPTIONAL,

 parallelTxSRS-PUCCH-PUSCH ENUMERATED {supported} OPTIONAL,

 parallelTxPRACH-SRS-PUCCH-PUSCH ENUMERATED {supported} OPTIONAL,

 simultaneousRxTxInterBandCA ENUMERATED {supported} OPTIONAL,

 simultaneousRxTxSUL ENUMERATED {supported} OPTIONAL,

 diffNumerologyAcrossPUCCH-Group ENUMERATED {supported} OPTIONAL,

 diffNumerologyWithinPUCCH-GroupSmallerSCS ENUMERATED {supported} OPTIONAL,

 supportedNumberTAG ENUMERATED {n2, n3, n4} OPTIONAL,

 ...

}

CA-ParametersNR-v1540 ::= SEQUENCE {

 simultaneousSRS-AssocCSI-RS-AllCC INTEGER (5..32) OPTIONAL,

 csi-RS-IM-ReceptionForFeedbackPerBandComb SEQUENCE {

 maxNumberSimultaneousNZP-CSI-RS-ActBWP-AllCC INTEGER (1..64) OPTIONAL,

 totalNumberPortsSimultaneousNZP-CSI-RS-ActBWP-AllCC INTEGER (2..256) OPTIONAL

 } OPTIONAL,

 simultaneousCSI-ReportsAllCC INTEGER (5..32) OPTIONAL,

 dualPA-Architecture ENUMERATED {supported} OPTIONAL

}

CA-ParametersNR-v1550 ::= SEQUENCE {

 dummy ENUMERATED {supported} OPTIONAL

}

CA-ParametersNR-v1560 ::= SEQUENCE {

 diffNumerologyWithinPUCCH-GroupLargerSCS ENUMERATED {supported} OPTIONAL

}

CA-ParametersNR-v15g0 ::= SEQUENCE {

 simultaneousRxTxInterBandCAPerBandPair SimultaneousRxTxPerBandPair OPTIONAL,

 simultaneousRxTxSULPerBandPair SimultaneousRxTxPerBandPair OPTIONAL

}

CA-ParametersNR-v1610 ::= SEQUENCE {

 -- R1 9-3: Parallel MsgA and SRS/PUCCH/PUSCH transmissions across CCs in inter-band CA

 parallelTxMsgA-SRS-PUCCH-PUSCH-r16 ENUMERATED {supported} OPTIONAL,

 -- R1 9-4: MsgA operation in a band combination including SUL

 msgA-SUL-r16 ENUMERATED {supported} OPTIONAL,

 -- R1 10-9c: Joint search space group switching across multiple cells

 jointSearchSpaceSwitchAcrossCells-r16 ENUMERATED {supported} OPTIONAL,

 -- R1 14-5: Half-duplex UE behaviour in TDD CA for same SCS

 half-DuplexTDD-CA-SameSCS-r16 ENUMERATED {supported} OPTIONAL,

 -- R1 18-4: SCell dormancy within active time

 scellDormancyWithinActiveTime-r16 ENUMERATED {supported} OPTIONAL,

 -- R1 18-4a: SCell dormancy outside active time

 scellDormancyOutsideActiveTime-r16 ENUMERATED {supported} OPTIONAL,

 -- R1 18-6: Cross-carrier A-CSI RS triggering with different SCS

 crossCarrierA-CSI-trigDiffSCS-r16 ENUMERATED {higherA-CSI-SCS,lowerA-CSI-SCS,both} OPTIONAL,

 -- R1 18-6a: Default QCL assumption for cross-carrier A-CSI-RS triggering

 defaultQCL-CrossCarrierA-CSI-Trig-r16 ENUMERATED {diffOnly, both} OPTIONAL,

 -- R1 18-7: CA with non-aligned frame boundaries for inter-band CA

 interCA-NonAlignedFrame-r16 ENUMERATED {supported} OPTIONAL,

 simul-SRS-Trans-BC-r16 ENUMERATED {n2} OPTIONAL,

 interFreqDAPS-r16 SEQUENCE {

 interFreqAsyncDAPS-r16 ENUMERATED {supported} OPTIONAL,

 interFreqDiffSCS-DAPS-r16 ENUMERATED {supported} OPTIONAL,

 interFreqMultiUL-TransmissionDAPS-r16 ENUMERATED {supported} OPTIONAL,

 interFreqSemiStaticPowerSharingDAPS-Mode1-r16 ENUMERATED {supported} OPTIONAL,

 interFreqSemiStaticPowerSharingDAPS-Mode2-r16 ENUMERATED {supported} OPTIONAL,

 interFreqDynamicPowerSharingDAPS-r16 ENUMERATED {short, long} OPTIONAL,

 interFreqUL-TransCancellationDAPS-r16 ENUMERATED {supported} OPTIONAL

 } OPTIONAL,

 codebookParametersPerBC-r16 CodebookParameters-v1610 OPTIONAL,

 -- R1 16-2a-10 Value of R for BD/CCE

 blindDetectFactor-r16 INTEGER (1..2) OPTIONAL,

 -- R1 11-2a: Capability on the number of CCs for monitoring a maximum number of BDs and non-overlapped CCEs per span when configured

 -- with DL CA with Rel-16 PDCCH monitoring capability on all the serving cells

 pdcch-MonitoringCA-r16 SEQUENCE {

 maxNumberOfMonitoringCC-r16 INTEGER (2..16),

 supportedSpanArrangement-r16 ENUMERATED {alignedOnly, alignedAndNonAligned}

 } OPTIONAL,

 -- R1 11-2c: Number of carriers for CCE/BD scaling with DL CA with mix of Rel. 16 and Rel. 15 PDCCH monitoring capabilities on

 -- different carriers

 pdcch-BlindDetectionCA-Mixed-r16 SEQUENCE {

 pdcch-BlindDetectionCA1-r16 INTEGER (1..15),

 pdcch-BlindDetectionCA2-r16 INTEGER (1..15),

 supportedSpanArrangement-r16 ENUMERATED {alignedOnly, alignedAndNonAligned}

 } OPTIONAL,

 -- R1 11-2d: Capability on the number of CCs for monitoring a maximum number of BDs and non-overlapped CCEs per span for MCG and for

 -- SCG when configured for NR-DC operation with Rel-16 PDCCH monitoring capability on all the serving cells

 pdcch-BlindDetectionMCG-UE-r16 INTEGER (1..14) OPTIONAL,

 pdcch-BlindDetectionSCG-UE-r16 INTEGER (1..14) OPTIONAL,

 -- R1 11-2e: Number of carriers for CCE/BD scaling for MCG and for SCG when configured for NR-DC operation with mix of Rel. 16 and

 -- Rel. 15 PDCCH monitoring capabilities on different carriers

 pdcch-BlindDetectionMCG-UE-Mixed-r16 SEQUENCE {

 pdcch-BlindDetectionMCG-UE1-r16 INTEGER (0..15),

 pdcch-BlindDetectionMCG-UE2-r16 INTEGER (0..15)

 } OPTIONAL,

 pdcch-BlindDetectionSCG-UE-Mixed-r16 SEQUENCE {

 pdcch-BlindDetectionSCG-UE1-r16 INTEGER (0..15),

 pdcch-BlindDetectionSCG-UE2-r16 INTEGER (0..15)

 } OPTIONAL,

 -- R1 18-5 cross-carrier scheduling with different SCS in DL CA

 crossCarrierSchedulingDL-DiffSCS-r16 ENUMERATED {low-to-high, high-to-low, both} OPTIONAL,

 -- R1 18-5a Default QCL assumption for cross-carrier scheduling

 crossCarrierSchedulingDefaultQCL-r16 ENUMERATED {diff-only, both} OPTIONAL,

 -- R1 18-5b cross-carrier scheduling with different SCS in UL CA

 crossCarrierSchedulingUL-DiffSCS-r16 ENUMERATED {low-to-high, high-to-low, both} OPTIONAL,

 -- R1 13.19a Simultaneous positioning SRS and MIMO SRS transmission for a given BC

 simul-SRS-MIMO-Trans-BC-r16 ENUMERATED {n2} OPTIONAL,

 -- R1 16-3a, 16-3a-1, 16-3b, 16-3b-1: New Individual Codebook

 codebookParametersAdditionPerBC-r16 CodebookParametersAdditionPerBC-r16 OPTIONAL,

 -- R1 16-8: Mixed codebook

 codebookComboParametersAdditionPerBC-r16 CodebookComboParametersAdditionPerBC-r16 OPTIONAL

}

CA-ParametersNR-v1630 ::= SEQUENCE {

 -- R1 22-5b: Simultaneous transmission of SRS for antenna switching and SRS for CB/NCB /BM for inter-band UL CA

 -- R1 22-5d: Simultaneous transmission of SRS for antenna switching for inter-band UL CA

 simulTX-SRS-AntSwitchingInterBandUL-CA-r16 SimulSRS-ForAntennaSwitching-r16 OPTIONAL,

 -- R4 8-5: supported beam management type for inter-band CA

 beamManagementType-r16 ENUMERATED {ibm, dummy} OPTIONAL,

 -- R4 7-3a: UL frequency separation class with aggregate BW and Gap BW

 intraBandFreqSeparationUL-AggBW-GapBW-r16 ENUMERATED {classI, classII, classIII} OPTIONAL,

 -- RAN 89: Case B in case of Inter-band CA with non-aligned frame boundaries

 interCA-NonAlignedFrame-B-r16 ENUMERATED {supported} OPTIONAL

}

CA-ParametersNR-v1640 ::= SEQUENCE {

 -- R4 7-5: Support of reporting UL Tx DC locations for uplink intra-band CA.

 uplinkTxDC-TwoCarrierReport-r16 ENUMERATED {supported} OPTIONAL,

 -- RAN 22-6: Support of up to 3 different numerologies in the same NR PUCCH group for NR part of EN-DC, NGEN-DC, NE-DC and NR-CA

 -- where UE is not configured with two NR PUCCH groups

 maxUpTo3Diff-NumerologiesConfigSinglePUCCH-grp-r16 PUCCH-Grp-CarrierTypes-r16 OPTIONAL,

 -- RAN 22-6a: Support of up to 4 different numerologies in the same NR PUCCH group for NR part of EN-DC, NGEN-DC, NE-DC and NR-CA

 -- where UE is not configured with two NR PUCCH groups

 maxUpTo4Diff-NumerologiesConfigSinglePUCCH-grp-r16 PUCCH-Grp-CarrierTypes-r16 OPTIONAL,

 -- RAN 22-7: Support two PUCCH groups for NR-CA with 3 or more bands with at least two carrier types

 twoPUCCH-Grp-ConfigurationsList-r16 SEQUENCE (SIZE (1..maxTwoPUCCH-Grp-ConfigList-r16)) OF TwoPUCCH-Grp-Configurations-r16 OPTIONAL,

 -- R1 22-7a: Different numerology across NR PUCCH groups

 diffNumerologyAcrossPUCCH-Group-CarrierTypes-r16 ENUMERATED {supported} OPTIONAL,

 -- R1 22-7b: Different numerologies across NR carriers within the same NR PUCCH group, with PUCCH on a carrier of smaller SCS

 diffNumerologyWithinPUCCH-GroupSmallerSCS-CarrierTypes-r16 ENUMERATED {supported} OPTIONAL,

 -- R1 22-7c: Different numerologies across NR carriers within the same NR PUCCH group, with PUCCH on a carrier of larger SCS

 diffNumerologyWithinPUCCH-GroupLargerSCS-CarrierTypes-r16 ENUMERATED {supported} OPTIONAL,

 -- R1 11-2f: add the replicated FGs of 11-2a/c with restriction for non-aligned span case

 -- with DL CA with Rel-16 PDCCH monitoring capability on all the serving cells

 pdcch-MonitoringCA-NonAlignedSpan-r16 INTEGER (2..16) OPTIONAL,

 -- R1 11-2g: add the replicated FGs of 11-2a/c with restriction for non-aligned span case

 pdcch-BlindDetectionCA-Mixed-NonAlignedSpan-r16 SEQUENCE {

 pdcch-BlindDetectionCA1-r16 INTEGER (1..15),

 pdcch-BlindDetectionCA2-r16 INTEGER (1..15)

 } OPTIONAL

}

CA-ParametersNR-v1690 ::= SEQUENCE {

 csi-ReportingCrossPUCCH-Grp-r16 SEQUENCE {

 computationTimeForA-CSI-r16 ENUMERATED {sameAsNoCross, relaxed},

 additionalSymbols-r16 SEQUENCE {

 scs-15kHz-additionalSymbols-r16 ENUMERATED {s14, s28} OPTIONAL,

 scs-30kHz-additionalSymbols-r16 ENUMERATED {s14, s28} OPTIONAL,

 scs-60kHz-additionalSymbols-r16 ENUMERATED {s14, s28, s56} OPTIONAL,

 scs-120kHz-additionalSymbols-r16 ENUMERATED {s14, s28, s56} OPTIONAL

 } OPTIONAL,

 sp-CSI-ReportingOnPUCCH-r16 ENUMERATED {supported} OPTIONAL,

 sp-CSI-ReportingOnPUSCH-r16 ENUMERATED {supported} OPTIONAL,

 carrierTypePairList-r16 SEQUENCE (SIZE (1..maxCarrierTypePairList-r16)) OF CarrierTypePair-r16

 } OPTIONAL

}

CA-ParametersNR-v16a0 ::= SEQUENCE {

 pdcch-BlindDetectionMixedList-r16 SEQUENCE(SIZE(1..maxNrofPdcch-BlindDetectionMixed-1-r16)) OF PDCCH-BlindDetectionMixedList-r16

}

CA-ParametersNR-v1700 ::= SEQUENCE {

 -- R1 23-9-1: Basic Features of Further Enhanced Port-Selection Type II Codebook (FeType-II) per band combination information

 codebookParametersfetype2PerBC-r17 CodebookParametersfetype2PerBC-r17 OPTIONAL,

 -- R4 18-4: Support of enhanced Demodulation requirements for CA in HST SFN FR1

 demodulationEnhancementCA-r17 ENUMERATED {supported} OPTIONAL,

 -- R4 20-1: Maximum uplink duty cycle for NR inter-band CA power class 2

 maxUplinkDutyCycle-interBandCA-PC2-r17 ENUMERATED {n50, n60, n70, n80, n90, n100} OPTIONAL,

 -- R4 20-2: Maximum uplink duty cycle for NR SUL combination power class 2

 maxUplinkDutyCycle-SULcombination-PC2-r17 ENUMERATED {n50, n60, n70, n80, n90, n100} OPTIONAL,

 beamManagementType-CBM-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 25-18: Parallel PUCCH and PUSCH transmission across CCs in inter-band CA

 parallelTxPUCCH-PUSCH-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 23-9-5 Active CSI-RS resources and ports for mixed codebook types in any slot per band combination

 codebookComboParameterMixedTypePerBC-r17 CodebookComboParameterMixedTypePerBC-r17 OPTIONAL,

 -- R1 23-7-1 Basic Features of CSI Enhancement for Multi-TRP

 mTRP-CSI-EnhancementPerBC-r17 SEQUENCE {

 maxNumNZP-CSI-RS-r17 INTEGER (2..8),

 cSI-Report-mode-r17 ENUMERATED {mode1, mode2, both},

 supportedComboAcrossCCs-r17 SEQUENCE (SIZE (1..16)) OF CSI-MultiTRP-SupportedCombinations-r17,

 codebookMode-NCJT-r17 ENUMERATED{mode1,mode1And2}

 } OPTIONAL,

 -- R1 23-7-1b Active CSI-RS resources and ports in the presence of multi-TRP CSI

 codebookComboParameterMultiTRP-PerBC-r17 CodebookComboParameterMultiTRP-PerBC-r17 OPTIONAL,

 -- R1 24-8b: 32 DL HARQ processes for FR 2-2 - maximum number of component carriers

 maxCC-32-DL-HARQ-ProcessFR2-2-r17 ENUMERATED {n1, n2, n3, n4, n6, n8, n16, n32} OPTIONAL,

 -- R1 24-9b: 32 UL HARQ processes for FR 2-2 - maximum number of component carriers

 maxCC-32-UL-HARQ-ProcessFR2-2-r17 ENUMERATED {n1, n2, n3, n4, n5, n8, n16, n32} OPTIONAL,

 -- R1 34-2: Cross-carrier scheduling from SCell to PCell/PSCell (Type B)

 crossCarrierSchedulingSCell-SpCellTypeB-r17 CrossCarrierSchedulingSCell-SpCell-r17 OPTIONAL,

-- R1 34-1: Cross-carrier scheduling from SCell to PCell/PSCell with search space restrictions (Type A)

 crossCarrierSchedulingSCell-SpCellTypeA-r17 CrossCarrierSchedulingSCell-SpCell-r17 OPTIONAL,

 -- R1 34-1a: DCI formats on PCell/PSCell USS set(s) support

 dci-FormatsPCellPSCellUSS-Sets-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 34-3: Disabling scaling factor alpha when sSCell is deactivated

 disablingScalingFactorDeactSCell-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 34-4: Disabling scaling factor alpha when sSCell is deactivated

 disablingScalingFactorDormantSCell-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 34-5: Non-aligned frame boundaries between PCell/PSCell and sSCell

 non-AlignedFrameBoundaries-r17 SEQUENCE {

 scs15kHz-15kHz-r17 BIT STRING (SIZE (1..496)) OPTIONAL,

 scs15kHz-30kHz-r17 BIT STRING (SIZE (1..496)) OPTIONAL,

 scs15kHz-60kHz-r17 BIT STRING (SIZE (1..496)) OPTIONAL,

 scs30kHz-30kHz-r17 BIT STRING (SIZE (1..496)) OPTIONAL,

 scs30kHz-60kHz-r17 BIT STRING (SIZE (1..496)) OPTIONAL,

 scs60kHz-60kHz-r17 BIT STRING (SIZE (1..496)) OPTIONAL

 } OPTIONAL

}

CA-ParametersNR-v1720 ::= SEQUENCE {

 -- R1 39-1: Parallel SRS and PUCCH/PUSCH transmission across CCs in intra-band non-contiguous CA

 parallelTxSRS-PUCCH-PUSCH-intraBand-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 39-2: Parallel PRACH and SRS/PUCCH/PUSCH transmissions across CCs in intra-band non-contiguous CA

 parallelTxPRACH-SRS-PUCCH-PUSCH-intraBand-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 25-9: Semi-static PUCCH cell switching for a single PUCCH group only

 semiStaticPUCCH-CellSwitchSingleGroup-r17 SEQUENCE {

 pucch-Group-r17 ENUMERATED {primaryGroupOnly, secondaryGroupOnly, eitherPrimaryOrSecondaryGroup},

 pucch-Group-Config-r17 PUCCH-Group-Config-r17

 } OPTIONAL,

 -- R1 25-9a: Semi-static PUCCH cell switching for two PUCCH groups

 semiStaticPUCCH-CellSwitchTwoGroups-r17 SEQUENCE (SIZE (1..maxTwoPUCCH-Grp-ConfigList-r17)) OF TwoPUCCH-Grp-Configurations-r17 OPTIONAL,

 -- R1 25-10: PUCCH cell switching based on dynamic indication for same length of overlapping PUCCH slots/sub-slots for a single

 -- PUCCH group only

 dynamicPUCCH-CellSwitchSameLengthSingleGroup-r17 SEQUENCE {

 pucch-Group-r17 ENUMERATED {primaryGroupOnly, secondaryGroupOnly, eitherPrimaryOrSecondaryGroup},

 pucch-Group-Config-r17 PUCCH-Group-Config-r17

 } OPTIONAL,

 -- R1 25-10a: PUCCH cell switching based on dynamic indication for different length of overlapping PUCCH slots/sub-slots

 -- for a single PUCCH group only

 dynamicPUCCH-CellSwitchDiffLengthSingleGroup-r17 SEQUENCE {

 pucch-Group-r17 ENUMERATED {primaryGroupOnly, secondaryGroupOnly, eitherPrimaryOrSecondaryGroup},

 pucch-Group-Config-r17 PUCCH-Group-Config-r17

 } OPTIONAL,

 -- R1 25-10b: PUCCH cell switching based on dynamic indication for same length of overlapping PUCCH slots/sub-slots for two PUCCH

 -- groups

 dynamicPUCCH-CellSwitchSameLengthTwoGroups-r17 SEQUENCE (SIZE (1..maxTwoPUCCH-Grp-ConfigList-r17)) OF TwoPUCCH-Grp-Configurations-r17

 OPTIONAL,

 -- R1 25-10c: PUCCH cell switching based on dynamic indication for different length of overlapping PUCCH slots/sub-slots for two

 -- PUCCH groups

 dynamicPUCCH-CellSwitchDiffLengthTwoGroups-r17 SEQUENCE (SIZE (1..maxTwoPUCCH-Grp-ConfigList-r17)) OF TwoPUCCH-Grp-Configurations-r17

 OPTIONAL,

 -- R1 33-2a: ACK/NACK based HARQ-ACK feedback and RRC-based enabling/disabling ACK/NACK-based

 -- feedback for dynamic scheduling for multicast

 ack-NACK-FeedbackForMulticast-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-2d: PTP retransmission for multicast dynamic scheduling

 ptp-Retx-Multicast-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-4: NACK-only based HARQ-ACK feedback for RRC-based enabling/disabling multicast with ACK/NACK transforming

 nack-OnlyFeedbackForMulticast-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-4a: NACK-only based HARQ-ACK feedback for multicast corresponding to a specific sequence or a PUCCH transmission

 nack-OnlyFeedbackSpecificResourceForMulticast-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-5-1a: ACK/NACK based HARQ-ACK feedback and RRC-based enabling/disabling ACK/NACK-based feedback

 -- for SPS group-common PDSCH for multicast

 ack-NACK-FeedbackForSPS-Multicast-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-5-1d: PTP retransmission for SPS group-common PDSCH for multicast

 ptp-Retx-SPS-Multicast-r17 ENUMERATED {supported} OPTIONAL,

 -- R4 26-1: Higher Power Limit CA DC

 higherPowerLimit-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 39-4: Parallel MsgA and SRS/PUCCH/PUSCH transmissions across CCs in intra-band non-contiguous CA

 parallelTxMsgA-SRS-PUCCH-PUSCH-intraBand-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 24-11a: Capability on the number of CCs for monitoring a maximum number of BDs and non-overlapped CCEs per span when

 -- configured with DL CA with Rel-17 PDCCH monitoring capability on all the serving cells

 pdcch-MonitoringCA-r17 INTEGER (4..16) OPTIONAL,

 -- R1 24-11f: Capability on the number of CCs for monitoring a maximum number of BDs and non-overlapped CCEs for MCG and for SCG

 -- when configured for NR-DC operation with Rel-17 PDCCH monitoring capability on all the serving cells

 pdcch-BlindDetectionMCG-SCG-List-r17 SEQUENCE(SIZE(1..maxNrofPdcch-BlindDetection-r17)) OF PDCCH-BlindDetectionMCG-SCG-r17

 OPTIONAL,

 -- R1 24-11c: Number of carriers for CCE/BD scaling with DL CA with mix of Rel. 17 and Rel. 15 PDCCH monitoring capabilities on

 -- different Carriers

 -- R1 24-11g: Number of carriers for CCE/BD scaling for MCG and for SCG when configured for NR-DC operation with mix of Rel. 17 and

 -- Rel. 15 PDCCH monitoring capabilities on different carriers

 pdcch-BlindDetectionMixedList1-r17 SEQUENCE(SIZE(1..maxNrofPdcch-BlindDetection-r17)) OF PDCCH-BlindDetectionMixed-r17

 OPTIONAL,

 -- R1 24-11d: Number of carriers for CCE/BD scaling with DL CA with mix of Rel. 17 and Rel. 16 PDCCH monitoring capabilities on

 -- different Carriers

 -- R1 24-11h: Number of carriers for CCE/BD scaling for MCG and for SCG when configured for NR-DC operation with mix of Rel. 17 and

 -- Rel. 16 PDCCH monitoring capabilities on different carriers

 pdcch-BlindDetectionMixedList2-r17 SEQUENCE(SIZE(1..maxNrofPdcch-BlindDetection-r17)) OF PDCCH-BlindDetectionMixed-r17

 OPTIONAL,

 -- R1 24-11e: Number of carriers for CCE/BD scaling with DL CA with mix of Rel. 17, Rel. 16 and Rel. 15 PDCCH monitoring

 -- capabilities on different carriers

 -- R1 24-11i: Number of carriers for CCE/BD scaling for MCG and for SCG when configured for NR-DC operation with mix of Rel. 17,

 -- Rel. 16 and Rel. 15 PDCCH monitoring capabilities on different carriers

 pdcch-BlindDetectionMixedList3-r17 SEQUENCE(SIZE(1..maxNrofPdcch-BlindDetection-r17)) OF PDCCH-BlindDetectionMixed1-r17

 OPTIONAL

}

CA-ParametersNR-v1730 ::= SEQUENCE {

 -- R1 30-4a: DM-RS bundling for PUSCH repetition type A (per BC)

 dmrs-BundlingPUSCH-RepTypeAPerBC-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 30-4b: DM-RS bundling for PUSCH repetition type B(per BC)

 dmrs-BundlingPUSCH-RepTypeBPerBC-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 30-4c: DM-RS bundling for TB processing over multi-slot PUSCH(per BC)

 dmrs-BundlingPUSCH-multiSlotPerBC-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 30-4d: DMRS bundling for PUCCH repetitions(per BC)

 dmrs-BundlingPUCCH-RepPerBC-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 30-4g: Restart DM-RS bundling (per BC)

 dmrs-BundlingRestartPerBC-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 30-4h: DM-RS bundling for non-back-to-back transmission (per BC)

 dmrs-BundlingNonBackToBackTX-PerBC-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 39-3-1: Stay on the target CC for SRS carrier switching

 stayOnTargetCC-SRS-CarrierSwitch-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-3-3a: FDM-ed Type-1 and Type-2 HARQ-ACK codebooks for multiplexing HARQ-ACK for unicast and HARQ-ACK for multicast

 fdm-CodebookForMux-UnicastMulticastHARQ-ACK-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-3-3b: Mode 2 TDM-ed Type-1 and Type-2 HARQ-ACK codebook for multiplexing HARQ-ACK for unicast and HARQ-ACK for multicast

 mode2-TDM-CodebookForMux-UnicastMulticastHARQ-ACK-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-3-4: Mode 1 for type1 codebook generation

 mode1-ForType1-CodebookGeneration-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-5-1j: NACK-only based HARQ-ACK feedback for multicast corresponding to a specific sequence or a PUCCH transmission

 -- for SPS group-commmon PDSCH for multicast

 nack-OnlyFeedbackSpecificResourceForSPS-Multicast-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-8-2: Up to 2 PUCCH resources configuration for multicast feedback for dynamically scheduled multicast

 multiPUCCH-ConfigForMulticast-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-8-3: PUCCH resource configuration for multicast feedback for SPS GC-PDSCH

 pucch-ConfigForSPS-Multicast-r17 ENUMERATED {supported} OPTIONAL,

 -- The following parameter is associated with R1 33-2a, R1 33-3-3a, and R1 33-3-3b, and is not a RAN1 FG.

 maxNumberG-RNTI-HARQ-ACK-Codebook-r17 INTEGER (1..4) OPTIONAL,

 -- R1 33-3-5: Feedback multiplexing for unicast PDSCH and group-common PDSCH for multicast with same priority and different codebook

 -- type

 mux-HARQ-ACK-UnicastMulticast-r17 ENUMERATED {supported} OPTIONAL

}

CA-ParametersNR-v1740 ::= SEQUENCE {

 -- R1 33-5-1f: NACK-only based HARQ-ACK feedback for multicast RRC-based enabling/disabling NACK-only based feedback

 -- for SPS group-common PDSCH for multicast

 nack-OnlyFeedbackForSPS-Multicast-r17 ENUMERATED {supported} OPTIONAL,

 -- R1 33-8-1: PUCCH resource configuration for multicast feedback for dynamically scheduled multicast

 singlePUCCH-ConfigForMulticast-r17 ENUMERATED {supported} OPTIONAL

}

CA-ParametersNR-v1760 ::= SEQUENCE {

 prioSCellPRACH-OverSP-PeriodicSRS-Support-r17 ENUMERATED {supported} OPTIONAL

}

CA-ParametersNR-v1770 ::= SEQUENCE {

 parallelTxPUCCH-PUSCH-SamePriority-r17 ENUMERATED {supported} OPTIONAL

}

CA-ParametersNR-v1780 ::= SEQUENCE {

 parallelTxPUCCH-PUSCH-SamePriority-r17 ENUMERATED {supported} OPTIONAL,

 supportedAggBW-FR1-r17 SEQUENCE {

 scalingFactorSCS-r17 ENUMERATED {true} OPTIONAL,

 supportedAggBW-FDD-DL-r17 SupportedAggBandwidth-r17 OPTIONAL,

 supportedAggBW-FDD-UL-r17 SupportedAggBandwidth-r17 OPTIONAL,

 supportedAggBW-TDD-DL-r17 SupportedAggBandwidth-r17 OPTIONAL,

 supportedAggBW-TDD-UL-r17 SupportedAggBandwidth-r17 OPTIONAL,

 supportedAggBW-TotalDL-r17 SupportedAggBandwidth-r17 OPTIONAL,

 supportedAggBW-TotalUL-r17 SupportedAggBandwidth-r17 OPTIONAL

 } OPTIONAL

}

CA-ParametersNR-v1800 ::= SEQUENCE {

 codebookParametersetype2DopplerCSI-PerBC-r18 CodebookParametersetype2DopplerCSI-r18 OPTIONAL,

 codebookParametersfetype2DopplerCSI-PerBC-r18 CodebookParametersfetype2DopplerCSI-r18 OPTIONAL,

 codebookParametersetype2CJT-PerBC-r18 CodebookParametersetype2CJT-r18 OPTIONAL,

 codebookParametersfetype2CJT-PerBC-r18 CodebookParametersfetype2CJT-r18 OPTIONAL,

 codebookComboParametersCJT-PerBC-r18 CodebookComboParametersCJT-r18 OPTIONAL,

 codebookParametersHARQ-ACK-PUSCH-PerBC-r18 CodebookParametersHARQ-ACK-PUSCH-r18 OPTIONAL,

 -- R1 40-2-8: Maximum number of TAGs across all CCs

 maxNumberTAG-AcrossCC-r18 INTEGER (2..4) OPTIONAL,

 -- R1 40-3-3-1: TDCP (Time Domain Channel Properties) report

 tdcp-ReportPerBC-r18 SEQUENCE {

 valueX-r18 INTEGER (1..2),

 maxNumberActiveResource-r18 INTEGER (2..32)

 } OPTIONAL,

 -- R1 40-3-3-5: Number of CSI-RS resources for TDCP

 tdcp-ResourcePerBC-r18 SEQUENCE {

 maxNumberConfigPerCC-r18 ENUMERATED {n2,n4,n6,n8,n10,n12},

 maxNumberConfigAcrossCC-r18 INTEGER (1..32),

 maxNumberSimultaneousPerCC-r18 ENUMERATED {n2, n4, n6, n8, n12, n16, n20, n24, n28, n32}

 } OPTIONAL,

 -- R1 40-3-1-24: Timeline for regular eType-II-CJT CSI, or for port selection FeType-II-CJT CSI

 timelineRelax-CJT-CSI-CA-r18 ENUMERATED {n0,n2} OPTIONAL,

 -- R1 42-1: Spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s) for periodic CSI reporting

 spatialAdaptation-CSI-FeedbackPerBC-r18 SEQUENCE {

 maxNumberCSI-ResourceAcrossCC-r18 SEQUENCE {

 sdType1-Resource-r18 ENUMERATED {n5, n6, n7, n8, n9, n10, n12, n14, n16, n18, n20, n22,

 n24, n26, n28, n30, n32, n34, n36, n38, n40, n42, n44,

 n46, n48, n50, n52, n54, n56, n58, n60, n62, n64},

 sdType2-Resource-r18 ENUMERATED {n5, n6, n7, n8, n9, n10, n12, n14, n16, n18, n20, n22,

 n24, n26, n28, n30, n32, n34, n36, n38, n40, n42, n44,

 n46, n48, n50, n52, n54, n56, n58, n60, n62, n64}

 },

 maxNumberPortsAcrossCC-r18 SEQUENCE {

 sdType1-Resource-r18 INTEGER (1..32),

 sdType2-Resource-r18 INTEGER (1..32)

 }

 } OPTIONAL,

 -- R1 40-7-2a: Association between CSI-RS and SRS for non-codebook case

 nonCodebook-CSI-RS-SRS-PerBC-r18 SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource OPTIONAL,

 -- R1 42-1a: Spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s) for periodic CSI reporting on

 -- PUSCH

 spatialAdaptation-CSI-FeedbackPUSCH-PerBC-r18 SEQUENCE {

 maxNumberCSI-ResourceAcrossCC-r18 ENUMERATED {n5, n6, n7, n8, n9, n10, n12, n14, n16, n18, n20, n22, n24, n26, n28,

 n30, n32, n34, n36, n38, n40, n42, n44, n46, n48, n50, n52, n54,

 n56, n58, n60, n62, n64},

 maxNumberPortsAcrossCC-r18 INTEGER (1..32)

 } OPTIONAL,

 -- R1 42-1b: Spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s) for aperiodic CSI reporting

 spatialAdaptation-CSI-FeedbackAperiodicPerBC-r18 SEQUENCE {

 maxNumberCSI-ResourceAcrossCC-r18 SEQUENCE {

 sdType1-Resource-r18 ENUMERATED {n5, n6, n7, n8, n9, n10, n12, n14, n16, n18, n20, n22,

 n24, n26, n28, n30, n32, n34, n36, n38, n40, n42, n44,

 n46, n48, n50, n52, n54, n56, n58, n60, n62, n64},

 sdType2-Resource-r18 ENUMERATED {n5, n6, n7, n8, n9, n10, n12, n14, n16, n18, n20, n22,

 n24, n26, n28, n30, n32, n34, n36, n38, n40, n42, n44,

 n46, n48, n50, n52, n54, n56, n58, n60, n62, n64}

 },

 maxNumberPortsAcrossCC-r18 SEQUENCE {

 sdType1-Resource-r18 INTEGER (1..32),

 sdType2-Resource-r18 INTEGER (1..32) }

 } OPTIONAL,

 -- R1 42-1c: Spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s) for semi-persistent CSI

 -- reporting on PUCCH

 spatialAdaptation-CSI-FeedbackPUCCH-PerBC-r18 SEQUENCE {

 maxNumberCSI-ResourceAcrossCC-r18 ENUMERATED {n5, n6, n7, n8, n9, n10, n12, n14, n16, n18, n20, n22, n24, n26, n28,

 n30, n32, n34, n36, n38, n40, n42, n44, n46, n48, n50, n52, n54,

 n56, n58, n60, n62, n64},

 maxNumberPortsAcrossCC-r18 INTEGER (1..32)

 } OPTIONAL,

 -- R1 42-2: Spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s) for periodic CSI reporting

 powerAdaptation-CSI-FeedbackPerBC-r18 SEQUENCE {

 maxNumberCSI-ResourceAcrossCC-r18 ENUMERATED {n5, n6, n7, n8, n9, n10, n12, n14, n16, n18, n20, n22, n24, n26, n28,

 n30, n32, n34, n36, n38, n40, n42, n44, n46, n48, n50, n52, n54,

 n56, n58, n60, n62, n64},

 maxNumberPortsAcrossCC-r18 INTEGER (1..32)

 } OPTIONAL,

 -- R1 42-2a: Spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s) for periodic CSI reporting on PUSCH

 powerAdaptation-CSI-FeedbackPUSCH-PerBC-r18 SEQUENCE {

 maxNumberCSI-ResourceAcrossCC-r18 ENUMERATED {n5, n6, n7, n8, n9, n10, n12, n14, n16, n18, n20, n22, n24, n26, n28,

 n30, n32, n34, n36, n38, n40, n42, n44, n46, n48, n50, n52, n54,

 n56, n58, n60, n62, n64},

 maxNumberPortsAcrossCC-r18 INTEGER (1..32)

 } OPTIONAL,

 -- R1 42-2b: Spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s) for aperiodic CSI reporting

 powerAdaptation-CSI-FeedbackAperiodicPerBC-r18 SEQUENCE {

 maxNumberCSI-ResourceAcrossCC-r18 ENUMERATED {n5, n6, n7, n8, n9, n10, n12, n14, n16, n18, n20, n22, n24, n26, n28,

 n30, n32, n34, n36, n38, n40, n42, n44, n46, n48, n50, n52, n54,

 n56, n58, n60, n62, n64},

 maxNumberPortsAcrossCC-r18 INTEGER (1..32)

 } OPTIONAL,

 -- R1 42-2c: Spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s) for semi-persistent CSI

 -- reporting on PUCCH

 powerAdaptation-CSI-FeedbackPUCCH-PerBC-r18 SEQUENCE {

 maxNumberCSI-ResourceAcrossCC-r18 ENUMERATED {n5, n6, n7, n8, n9, n10, n12, n14, n16, n18, n20, n22, n24, n26, n28,

 n30, n32, n34, n36, n38, n40, n42, n44, n46, n48, n50, n52, n54,

 n56, n58, n60, n62, n64},

 maxNumberPortsAcrossCC-r18 INTEGER (1..32)

 } OPTIONAL,

 -- R1 42-7: Mixed codebook combination for spatial domain adaptation with CSI feedback based on CSI report sub-configuration(s),

 -- each containing one port subset configuration

 mixCodeBookSpatialAdaptationPerBC-r18 SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource OPTIONAL,

 -- R1 42-9: Indicates whether the UE supports CSI report framework and the number of CSI report(s) which the UE can

 -- simultaneously process across all CCs, and across MCG and SCG in case of NR-DC.

 simultaneousCSI-SubReportsAllCC-r18 INTEGER (5..32) OPTIONAL,

 -- R1 49-1: Multi-cell PDSCH scheduling by DCI format 1\_3 on a scheduling cell with same SCS between scheduling

 -- cell and cells in the set

 multiCell-PDSCH-DCI-1-3-SameSCS-r18 SEQUENCE {

 coScheduledCellSCS-r18 SEQUENCE {

 nonSharedSpectrum-fdd-fr1 ENUMERATED {supported} OPTIONAL,

 nonSharedSpectrum-tdd-fr1 ENUMERATED {supported} OPTIONAL,

 sharedSpectrum-tdd-fr1 ENUMERATED {supported} OPTIONAL,

 fr2-1 ENUMERATED {supported} OPTIONAL,

 fr2-2 ENUMERATED {supported} OPTIONAL

 },

 maxNumberCoScheduledCell-r18 INTEGER (2..4),

 maxNumberSetsOfCellAcrossPUCCH-Group-r18 INTEGER (1..8),

 maxNumberSetsOfCellScheduling-r18 INTEGER (1..4),

 harqFeedbackType-r18 ENUMERATED {type1, type2, type1And2},

 coScheduledCellIndicationScheme-r18 ENUMERATED {fdra,cellInd, both},

 supportOfSearchSpace-r18 ENUMERATED {supported} OPTIONAL,

 licensed-fdd-tdd-fr1-r18 ENUMERATED {supported} OPTIONAL

 } OPTIONAL,

 -- R1 49-1b: Multi-cell PDSCH scheduling by DCI format 1\_3 on a scheduling cell not included in a set of cells with different

 -- SCS/carrier type between scheduling cell and cells in the set

 multiCell-PDSCH-DCI-1-3-DiffSCS-r18 SEQUENCE {

 coScheduledCellSCS-r18 ENUMERATED {lowScheduling-highScheduled, highScheduling-lowScheduled, both},

 combinationCarrierType-r18 SEQUENCE (SIZE(1..maxSchedulingBandCombination-r18)) OF

 CombinationCarrierType-r18,

 maxNumberCoScheduledCell-r18 INTEGER (2..4),

 maxNumberSetsOfCellAcrossPUCCH-Group-r18 INTEGER (1..8),

 maxNumberSetsOfCellScheduling-r18 INTEGER (1..4),

 harqFeedbackType-r18 ENUMERATED {type1, type2, type1And2},

 coScheduledCellIndicationScheme-r18 ENUMERATED {fdra,cellInd, both}

 } OPTIONAL,

 -- R1 49-2: Multi-cell PUSCH scheduling by DCI format 0\_3 on a scheduling cell with same SCS between scheduling cell

 -- and cells in the set

 multiCell-PUSCH-DCI-0-3-SameSCS-r18 SEQUENCE {

 coScheduledCellSCS-r18 SEQUENCE {

 nonSharedSpectrum-fdd-fr1 ENUMERATED {supported} OPTIONAL,

 nonSharedSpectrum-tdd-fr1 ENUMERATED {supported} OPTIONAL,

 sharedSpectrum-tdd-fr1 ENUMERATED {supported} OPTIONAL,

 fr2-1 ENUMERATED {supported} OPTIONAL,

 fr2-2 ENUMERATED {supported} OPTIONAL

 },

 maxNumberCoScheduledCell-r18 INTEGER (2..4),

 maxNumberSetsOfCellAcrossPUCCH-Group-r18 INTEGER (1..8),

 maxNumberSetsOfCellScheduling-r18 INTEGER (1..4),

 coScheduledCellIndicationScheme-r18 ENUMERATED {fdra,cellInd, both},

 supportOfSearchSpace-r18 ENUMERATED {supported} OPTIONAL,

 licensed-fdd-tdd-fr1-r18 ENUMERATED {supported} OPTIONAL

 } OPTIONAL,

 -- R1 49-2b: Multi-cell PUSCH scheduling by DCI format 0\_3 on a scheduling cell not included in a set of cells with

 -- different SCS/carrier type between scheduling cell and cells in the set

 multiCell-PUSCH-DCI-0-3-DiffSCS-r18 SEQUENCE {

 coScheduledCellSCS-r18 ENUMERATED {lowScheduling-highScheduled, highScheduling-lowScheduled, both},

 combinationCarrierType-r18 SEQUENCE (SIZE(1..maxSchedulingBandCombination-r18)) OF

 CombinationCarrierType-r18,

 maxNumberCoScheduledCell-r18 INTEGER (2..4),

 maxNumberSetsOfCellAcrossPUCCH-Group-r18 INTEGER (1..8),

 maxNumberSetsOfCellScheduling-r18 INTEGER (1..4),

 coScheduledCellIndicationScheme-r18 ENUMERATED {fdra,cellInd, both}

 } OPTIONAL,

 -- R1 49-3x: Advanced UE capability for larger number of unicast DL DCI

 advUnicastDCI-DL-r18 SEQUENCE {

 scs-15kHz-120kHz-r18 ENUMERATED {n2, n4} OPTIONAL,

 scs-15kHz-60kHz-r18 ENUMERATED {n2, n4} OPTIONAL,

 scs-30kHz-120kHz-r18 ENUMERATED {n2, n4} OPTIONAL,

 scs-15kHz-30kHz-r18 ENUMERATED {n2} OPTIONAL,

 scs-30kHz-60kHz-r18 ENUMERATED {n2} OPTIONAL,

 scs-60kHz-120kHz-r18 ENUMERATED {n2} OPTIONAL

 } OPTIONAL,

 -- R1 49-3y: Advanced UE capability for larger number of unicast UL DCI

 advUnicastDCI-UL-r18 SEQUENCE {

 scs-15kHz-120kHz-r18 ENUMERATED {n2, n4} OPTIONAL,

 scs-15kHz-60kHz-r18 ENUMERATED {n2, n4} OPTIONAL,

 scs-30kHz-120kHz-r18 ENUMERATED {n2, n4} OPTIONAL,

 scs-15kHz-30kHz-r18 ENUMERATED {n2} OPTIONAL,

 scs-30kHz-60kHz-r18 ENUMERATED {n2} OPTIONAL,

 scs-60kHz-120kHz-r18 ENUMERATED {n2} OPTIONAL

 } OPTIONAL,

 -- R1 49-5a: Trigger Type 3 HARQ CB based feedback using DCI format 1\_3

 type3HARQ-CB-DCI-1-3-r18 ENUMERATED {supported} OPTIONAL,

 -- R1 49-5b: Trigger enhanced Type 3 HARQ CB based feedback using DCI format 1\_3

 type3EnhHARQ-CB-DCI-1-3-r18 SEQUENCE {

 numberOfCodebook-r18 ENUMERATED {n1, n2, n4, n8},

 maxNumberPUCCH-Trans-r18 INTEGER (1..7)

 } OPTIONAL,

 -- R1 49-9: SCell dormancy indication within active time in DCI format 0\_3/1\_3

 scellDormancyWithinActiveTime-DCI-0-3-And-1-3-r18 ENUMERATED {supported} OPTIONAL,

 pdcch-MonitoringCA-Ext-r18 CHOICE {

 -- R1 55-6a: Capability on the number of CCs for monitoring a maximum number of BDs and non-overlapped CCEs per span when

 -- configured with DL CA with Rel-16 PDCCH monitoring capability on all the serving cells

 pdcch-MonitoringCA-r18 SEQUENCE {

 maxNumberOfMonitoringCC-r18 INTEGER (2..16),

 supportedSpanArrangement-r18 ENUMERATED {alignedOnly, alignedAndNonAligned}

 },

 -- R1 55-6f: Capability on the number of CCs for monitoring a maximum number of BDs and non-overlapped CCEs per span when

 -- configured with DL CA with Rel-16 PDCCH monitoring capability on all the serving cells with restriction for non-aligned

 -- span case

 pdcch-MonitoringCA-NonAlignedSpan-r18 INTEGER (2..16)

 } OPTIONAL,

 pdcch-BlindDetectionCA-MixedExt-r18 CHOICE {

 -- R1 55-6c: Number of carriers for CCE/BD scaling with DL CA with mix of Rel. 16 and Rel. 15 PDCCH monitoring capabilities on

 -- different carriers

 pdcch-BlindDetectionCA-Mixed-r18 SEQUENCE {

 blindDetectionCA-Mixed-r18 SEQUENCE(SIZE (1..maxNrofPdcch-BlindDetectionMixed-1-r16)) OF

 PDCCH-BlindDetectionCA-MixedExt-r16,

 supportedSpanArrangement-r18 ENUMERATED{ alignedOnly, alignedAndNonAligned }

 },

 -- R1 55-6g: Number of carriers for CCE/BD scaling with DL CA with mix of Rel. 16 and Rel. 15 PDCCH monitoring capabilities on

 -- different carriers with restriction for non-aligned span case

 pdcch-BlindDetectionCA-Mixed-NonAlignedSpan-r18 SEQUENCE(SIZE (1..maxNrofPdcch-BlindDetectionMixed-1-r16)) OF

 PDCCH-BlindDetectionCA-MixedExt-r16

 } OPTIONAL,

 -- R1 55-6e: Number of carriers for CCE/BD scaling for MCG and for SCG when configured for NR-DC operation with mix of Rel. 16

 -- and Rel. 15 PDCCH monitoring capabilities on different carriers

 pdcch-BlindDetectionMCG-SCG-List-r18 SEQUENCE(SIZE (1..maxNrofPdcch-BlindDetectionMixed-1-r16)) OF

 PDCCH-BlindDetectionMixed2-r18 OPTIONAL,

 -- R4 33-1: Support of intra-band non-collocated NR CA operation

 intraBandNR-CA-non-collocated-r18 ENUMERATED {supported} OPTIONAL

}

CA-ParametersNR-v1830 ::= SEQUENCE {

 -- R1 45-1: Intra-frequency L1 measurement and reports for L1-L2 Triggered Mobility (LTM) procedure

 intraFreqL1-MeasConfig-r18 SEQUENCE {

 supportedMaxIntraFreqCellsConfig-r18 INTEGER (1..8),

 supportedMaxIntraFreqCellsPerReport-r18 INTEGER (1..4),

 supportedMaxReportBeamsPerReportedCell-r18 INTEGER (1..4),

 supportedMaxReportBeamsReports-r18 ENUMERATED {n1,n2,n3,n4,n6,n8,n9,n12,n16},

 supportedMaxAperiodic-LTM-CSI-ReportConfig-r18 INTEGER (0..4),

 supportedMaxPeriodic-LTM-CSI-ReportConfig-r18 INTEGER (1..4),

 supportedMaxSemiPersistent-LTM-CSI-ReportConfig-r18 INTEGER (0..4)

 } OPTIONAL,

 -- R1 45-1a: Inter-frequency L1 measurement and reports for L1-L2 Triggered Mobility (LTM) procedure

 interFreqL1-MeasConfig-r18 SEQUENCE {

 supportedMaxIntraInterFreqCellsConfig-r18 INTEGER (1..8),

 supportedMaxIntraInterFreqCellsPerReport-r18 INTEGER (1..4),

 supportedMaxIntraInterFreqBeamsPerCellReports-r18 INTEGER (1..4),

 supportedMaxIntraInterFreqBeamsReports-r18 ENUMERATED {n1,n2,n3,n4,n6,n8,n9,n12,n16}

 } OPTIONAL,

 -- R1 45-2: Inclusion of current SpCell in the L1 measurement report

 currentSpCellInclL1-Report-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 39-1: SSB based L1-RSRP measurements for multiple cells with RTD > CP

 multiCellL1-measRTD-greaterThan-CP-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 39-2: SSB based inter-frequency L1-RSRP measurements without measurement gaps

 interFreqSSB-L1-MeasWithoutGaps-r18 ENUMERATED {supported} OPTIONAL,

 -- R4 39-3-1: Number of frequency layers for L1-RSRP measurement

 maxFreqLayersL1-Meas-r18 SEQUENCE {

 supportedMaxIntraInterFreqLayersWithoutGaps-r18 INTEGER (1..8) OPTIONAL,

 supportedMaxInterFreqLayersWithGaps-r18 INTEGER (1..8) OPTIONAL

 } OPTIONAL,

 -- R4 39-3-2: Number of neighbour cells to be measured per frequency layer

 maxNeighCellsPerFreqLayerL1-Meas-r18 SEQUENCE {

 supportedMaxNeighCellsPerFreqLayersWithoutGaps-r18 INTEGER (1..8) OPTIONAL,

 supportedMaxNeighCellsPerFreqLayersWithGaps-r18 INTEGER (1..8) OPTIONAL

 } OPTIONAL,

 -- R4 39-3-3: Number of total cells to be measured

 supportedMaxCellsWithoutGapsL1-Meas-r18 INTEGER (1..24) OPTIONAL,

 -- R4 39-3-4: Number of SSB resources for L1-RSRP measurement within a slot

 supportedMaxSSB-WithinSlotL1-Meas-r18 ENUMERATED {n1,n2,n3,n4,n5,n6,n7,n8,n16,n32,n48,n64} OPTIONAL,

 -- R4 39-3-5: Number of SSB resources for L1-RSRP measurement per frequency layer

 maxSSB-PerFreqLayerL1-Meas-r18 SEQUENCE {

 supportedMaxSSB-PerFreqLayerWithoutGaps-r18 INTEGER (1..8) OPTIONAL,

 supportedMaxSSB-PerFreqLayerWithGaps-r18 INTEGER (1..8) OPTIONAL

 } OPTIONAL,

 -- R4 39-3-6: Number of total SSB resources to be measured

 supportedMaxSSB-L1-Meas-r18 ENUMERATED {n2,n4,n8,n12,n16,n32,n64} OPTIONAL,

 -- R1 49-13: Default QCL assumption for multi-cell scheduling by DCI format 1\_3

 qcl-MultiCellDCI-1-3-r18 ENUMERATED {diff, both} OPTIONAL,

 -- R1 49-14: Support of BWP switch indication by DCI format 0\_3/1\_3

 bwp-SwitchingDCI-0-3-And-1-3-r18 ENUMERATED {supported} OPTIONAL

}

CrossCarrierSchedulingSCell-SpCell-r17 ::= SEQUENCE {

 supportedSCS-Combinations-r17 SEQUENCE {

 scs15kHz-15kHz-r17 ENUMERATED {supported} OPTIONAL,

 scs15kHz-30kHz-r17 ENUMERATED {supported} OPTIONAL,

 scs15kHz-60kHz-r17 ENUMERATED {supported} OPTIONAL,

 scs30kHz-30kHz-r17 BIT STRING (SIZE (1..496)) OPTIONAL,

 scs30kHz-60kHz-r17 BIT STRING (SIZE (1..496)) OPTIONAL,

 scs60kHz-60kHz-r17 BIT STRING (SIZE (1..496)) OPTIONAL

 },

 pdcch-MonitoringOccasion-r17 ENUMERATED {val1, val2}

}

PDCCH-BlindDetectionMixedList-r16::= SEQUENCE {

 pdcch-BlindDetectionCA-MixedExt-r16 CHOICE {

 pdcch-BlindDetectionCA-Mixed-v16a0 PDCCH-BlindDetectionCA-MixedExt-r16,

 pdcch-BlindDetectionCA-Mixed-NonAlignedSpan-v16a0 PDCCH-BlindDetectionCA-MixedExt-r16

 } OPTIONAL,

 pdcch-BlindDetectionCG-UE-MixedExt-r16 SEQUENCE{

 pdcch-BlindDetectionMCG-UE-Mixed-v16a0 PDCCH-BlindDetectionCG-UE-MixedExt-r16,

 pdcch-BlindDetectionSCG-UE-Mixed-v16a0 PDCCH-BlindDetectionCG-UE-MixedExt-r16

 } OPTIONAL

}

PDCCH-BlindDetectionCA-MixedExt-r16 ::= SEQUENCE {

 pdcch-BlindDetectionCA1-r16 INTEGER (1..15),

 pdcch-BlindDetectionCA2-r16 INTEGER (1..15)

}

PDCCH-BlindDetectionCG-UE-MixedExt-r16 ::= SEQUENCE {

 pdcch-BlindDetectionCG-UE1-r16 INTEGER (0..15),

 pdcch-BlindDetectionCG-UE2-r16 INTEGER (0..15)

}

PDCCH-BlindDetectionMCG-SCG-r17 ::= SEQUENCE {

 pdcch-BlindDetectionMCG-UE-r17 INTEGER (1..15),

 pdcch-BlindDetectionSCG-UE-r17 INTEGER (1..15)

}

PDCCH-BlindDetectionMixed-r17::= SEQUENCE {

 pdcch-BlindDetectionCA-Mixed-r17 PDCCH-BlindDetectionCA-Mixed-r17 OPTIONAL,

 pdcch-BlindDetectionCG-UE-Mixed-r17 SEQUENCE{

 pdcch-BlindDetectionMCG-UE-Mixed-v17 PDCCH-BlindDetectionCG-UE-Mixed-r17,

 pdcch-BlindDetectionSCG-UE-Mixed-v17 PDCCH-BlindDetectionCG-UE-Mixed-r17

 } OPTIONAL

}

PDCCH-BlindDetectionCG-UE-Mixed-r17 ::= SEQUENCE {

 pdcch-BlindDetectionCG-UE1-r17 INTEGER (0..15),

 pdcch-BlindDetectionCG-UE2-r17 INTEGER (0..15)

}

PDCCH-BlindDetectionCA-Mixed-r17 ::= SEQUENCE {

 pdcch-BlindDetectionCA1-r17 INTEGER (1..15) OPTIONAL,

 pdcch-BlindDetectionCA2-r17 INTEGER (1..15) OPTIONAL

}

PDCCH-BlindDetectionMixed1-r17::= SEQUENCE {

 pdcch-BlindDetectionCA-Mixed1-r17 PDCCH-BlindDetectionCA-Mixed1-r17 OPTIONAL,

 pdcch-BlindDetectionCG-UE-Mixed1-r17 SEQUENCE{

 pdcch-BlindDetectionMCG-UE-Mixed1-v17 PDCCH-BlindDetectionCG-UE-Mixed1-r17,

 pdcch-BlindDetectionSCG-UE-Mixed1-v17 PDCCH-BlindDetectionCG-UE-Mixed1-r17

 } OPTIONAL

}

PDCCH-BlindDetectionCG-UE-Mixed1-r17 ::= SEQUENCE {

 pdcch-BlindDetectionCG-UE1-r17 INTEGER (0..15),

 pdcch-BlindDetectionCG-UE2-r17 INTEGER (0..15),

 pdcch-BlindDetectionCG-UE3-r17 INTEGER (0..15)

}

PDCCH-BlindDetectionCA-Mixed1-r17 ::= SEQUENCE {

 pdcch-BlindDetectionCA1-r17 INTEGER (1..15) OPTIONAL,

 pdcch-BlindDetectionCA2-r17 INTEGER (1..15) OPTIONAL,

 pdcch-BlindDetectionCA3-r17 INTEGER (1..15) OPTIONAL

}

PDCCH-BlindDetectionMixed2-r18 ::= SEQUENCE{

 pdcch-BlindDetectionMCG-UE-Mixed-r18 PDCCH-BlindDetectionCG-UE-MixedExt-r16,

 pdcch-BlindDetectionSCG-UE-Mixed-r18 PDCCH-BlindDetectionCG-UE-MixedExt-r16

}

SimulSRS-ForAntennaSwitching-r16 ::= SEQUENCE {

 supportSRS-xTyR-xLessThanY-r16 ENUMERATED {supported} OPTIONAL,

 supportSRS-xTyR-xEqualToY-r16 ENUMERATED {supported} OPTIONAL,

 supportSRS-AntennaSwitching-r16 ENUMERATED {supported} OPTIONAL

}

TwoPUCCH-Grp-Configurations-r16 ::= SEQUENCE {

 pucch-PrimaryGroupMapping-r16 TwoPUCCH-Grp-ConfigParams-r16,

 pucch-SecondaryGroupMapping-r16 TwoPUCCH-Grp-ConfigParams-r16

}

TwoPUCCH-Grp-Configurations-r17 ::= SEQUENCE {

 primaryPUCCH-GroupConfig-r17 PUCCH-Group-Config-r17,

 secondaryPUCCH-GroupConfig-r17 PUCCH-Group-Config-r17

}

TwoPUCCH-Grp-ConfigParams-r16 ::= SEQUENCE {

 pucch-GroupMapping-r16 PUCCH-Grp-CarrierTypes-r16,

 pucch-TX-r16 PUCCH-Grp-CarrierTypes-r16

}

CarrierTypePair-r16 ::= SEQUENCE {

 carrierForCSI-Measurement-r16 PUCCH-Grp-CarrierTypes-r16,

 carrierForCSI-Reporting-r16 PUCCH-Grp-CarrierTypes-r16

}

PUCCH-Grp-CarrierTypes-r16 ::= SEQUENCE {

 fr1-NonSharedTDD-r16 ENUMERATED {supported} OPTIONAL,

 fr1-SharedTDD-r16 ENUMERATED {supported} OPTIONAL,

 fr1-NonSharedFDD-r16 ENUMERATED {supported} OPTIONAL,

 fr2-r16 ENUMERATED {supported} OPTIONAL

}

PUCCH-Group-Config-r17 ::= SEQUENCE {

 fr1-FR1-NonSharedTDD-r17 ENUMERATED {supported} OPTIONAL,

 fr2-FR2-NonSharedTDD-r17 ENUMERATED {supported} OPTIONAL,

 fr1-FR2-NonSharedTDD-r17 ENUMERATED {supported} OPTIONAL

}

CombinationCarrierType-r18 ::= SEQUENCE {

 schedulingCellCarrierType-r18 ENUMERATED {licensed-fdd-fr1, licensed-tdd-fr1, unlicensed-tdd-fr1, fr2-1, fr2-2},

 scheduledCellCarrierType-r18 ENUMERATED {licensed-fdd-fr1, licensed-tdd-fr1, unlicensed-tdd-fr1, fr2-1, fr2-2}

}

-- TAG-CA-PARAMETERSNR-STOP

-- ASN1STOP

|  |
| --- |
| *CA-ParametersNR* field description |
| ***codebookParametersPerBC***For a given supported band combination, this field indicates the alternative list of *SupportedCSI-RS-Resource* supported for each codebook type, amongst the supported CSI-RS resources included in *codebookParametersPerBand* in *MIMO-ParametersPerBand*. |

<skipped>

### 6.3.4 Other information elements

<Skipped>

#### – *OtherConfig*

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

*OtherConfig* information element

-- ASN1START

-- TAG-OTHERCONFIG-START

OtherConfig ::= SEQUENCE {

 delayBudgetReportingConfig CHOICE{

 release NULL,

 setup SEQUENCE{

 delayBudgetReportingProhibitTimer ENUMERATED {s0, s0dot4, s0dot8, s1dot6, s3, s6, s12, s30}

 }

 } OPTIONAL -- Need M

}

OtherConfig-v1540 ::= SEQUENCE {

 overheatingAssistanceConfig SetupRelease {OverheatingAssistanceConfig} OPTIONAL, -- Need M

 ...

}

OtherConfig-v1610 ::= SEQUENCE {

 idc-AssistanceConfig-r16 SetupRelease {IDC-AssistanceConfig-r16} OPTIONAL, -- Need M

 drx-PreferenceConfig-r16 SetupRelease {DRX-PreferenceConfig-r16} OPTIONAL, -- Need M

 maxBW-PreferenceConfig-r16 SetupRelease {MaxBW-PreferenceConfig-r16} OPTIONAL, -- Need M

 maxCC-PreferenceConfig-r16 SetupRelease {MaxCC-PreferenceConfig-r16} OPTIONAL, -- Need M

 maxMIMO-LayerPreferenceConfig-r16 SetupRelease {MaxMIMO-LayerPreferenceConfig-r16} OPTIONAL, -- Need M

 minSchedulingOffsetPreferenceConfig-r16 SetupRelease {MinSchedulingOffsetPreferenceConfig-r16} OPTIONAL, -- Need M

 releasePreferenceConfig-r16 SetupRelease {ReleasePreferenceConfig-r16} OPTIONAL, -- Need M

 referenceTimePreferenceReporting-r16 ENUMERATED {true} OPTIONAL, -- Need R

 btNameList-r16 SetupRelease {BT-NameList-r16} OPTIONAL, -- Need M

 wlanNameList-r16 SetupRelease {WLAN-NameList-r16} OPTIONAL, -- Need M

 sensorNameList-r16 SetupRelease {Sensor-NameList-r16} OPTIONAL, -- Need M

 obtainCommonLocation-r16 ENUMERATED {true} OPTIONAL, -- Need R

 sl-AssistanceConfigNR-r16 ENUMERATED{true} OPTIONAL -- Need R

}

OtherConfig-v1700 ::= SEQUENCE {

 ul-GapFR2-PreferenceConfig-r17 ENUMERATED {true} OPTIONAL, -- Need R

 musim-GapAssistanceConfig-r17 SetupRelease {MUSIM-GapAssistanceConfig-r17} OPTIONAL, -- Need M

 musim-LeaveAssistanceConfig-r17 SetupRelease {MUSIM-LeaveAssistanceConfig-r17} OPTIONAL, -- Need M

 successHO-Config-r17 SetupRelease {SuccessHO-Config-r17} OPTIONAL, -- Need M

 maxBW-PreferenceConfigFR2-2-r17 ENUMERATED {true} OPTIONAL, -- Cond maxBW

 maxMIMO-LayerPreferenceConfigFR2-2-r17 ENUMERATED {true} OPTIONAL, -- Cond maxMIMO

 minSchedulingOffsetPreferenceConfigExt-r17 ENUMERATED {true} OPTIONAL, -- Cond minOffset

 rlm-RelaxationReportingConfig-r17 SetupRelease {RLM-RelaxationReportingConfig-r17} OPTIONAL, -- Need M

 bfd-RelaxationReportingConfig-r17 SetupRelease {BFD-RelaxationReportingConfig-r17} OPTIONAL, -- Need M

 scg-DeactivationPreferenceConfig-r17 SetupRelease {SCG-DeactivationPreferenceConfig-r17} OPTIONAL, -- Cond SCG

 rrm-MeasRelaxationReportingConfig-r17 SetupRelease {RRM-MeasRelaxationReportingConfig-r17} OPTIONAL, -- Need M

 propDelayDiffReportConfig-r17 SetupRelease {PropDelayDiffReportConfig-r17} OPTIONAL -- Need M

}

OtherConfig-v1800 ::= SEQUENCE {

 idc-AssistanceConfig-v1800 SetupRelease {IDC-AssistanceConfig-v1800} OPTIONAL, -- Need M

 multiRx-PreferenceReportingConfigFR2-r18 SetupRelease {MultiRx-PreferenceReportingConfigFR2-r18} OPTIONAL, -- Need M

 aerial-FlightPathAvailabilityConfig-r18 ENUMERATED {true} OPTIONAL, -- Need R

 ul-TrafficInfoReportingConfig-r18 SetupRelease {UL-TrafficInfoReportingConfig-r18} OPTIONAL, -- Need M

 n3c-RelayUE-InfoReportConfig-r18 ENUMERATED {true} OPTIONAL, -- Need R

 successPSCell-Config-r18 SetupRelease {SuccessPSCell-Config-r18} OPTIONAL, -- Need M

 sn-InitiatedPSCellChange-r18 ENUMERATED {true} OPTIONAL, -- Need R

 musim-GapPriorityAssistanceConfig-r18 ENUMERATED {true} OPTIONAL, -- Cond musimGapConfig

 musim-CapabilityRestrictionConfig-r18 SetupRelease {MUSIM-CapabilityRestrictionConfig-r18} OPTIONAL -- Need M

}

OtherConfig-v1830 ::= SEQUENCE {

 sl-PRS-AssistanceConfigNR-r18 ENUMERATED{true} OPTIONAL -- Need R

}

IDC-AssistanceConfig-v1800 ::= SEQUENCE {

 idc-FDM-AssistanceConfig-r18 SetupRelease {IDC-FDM-AssistanceConfig-r18} OPTIONAL, -- Need M

 idc-TDM-AssistanceConfig-r18 ENUMERATED {setup} OPTIONAL -- Cond FDM

}

MultiRx-PreferenceReportingConfigFR2-r18 ::= SEQUENCE {

 multiRx-PreferenceReportingConfigFR2ProhibitTimer-r18 ENUMERATED {

 s0, s0dot5, s1, s2, s3, s4, s5, s6, s7,

 s8, s9, s10, s20, s30, spare2, spare1}

}

CandidateServingFreqListNR-r16 ::= SEQUENCE (SIZE (1..maxFreqIDC-r16)) OF ARFCN-ValueNR

MUSIM-GapAssistanceConfig-r17 ::= SEQUENCE {

 musim-GapProhibitTimer-r17 ENUMERATED {s0, s0dot1, s0dot2, s0dot3, s0dot4, s0dot5, s1, s2, s3, s4, s5, s6, s7, s8, s9, s10}

}

MUSIM-LeaveAssistanceConfig-r17 ::= SEQUENCE {

 musim-LeaveWithoutResponseTimer-r17 ENUMERATED {ms10, ms20, ms40, ms60, ms80, ms100, spare2, spare1}

}

MUSIM-CapabilityRestrictionConfig-r18 ::= SEQUENCE {

 musim-CandidateBandList-r18 MUSIM-CandidateBandList-r18 OPTIONAL, -- Need R

 musim-WaitTimer-r18 ENUMERATED {ms10, ms20, ms40, ms60, ms80, ms100, spare2, spare1},

 musim-ProhibitTimer-r18 ENUMERATED {s0, s0dot1, s0dot2, s0dot3, s0dot4, s0dot5, s1, s2, s3, s4, s5, s6, s7, s8,

 s9, s10}

}

MUSIM-CandidateBandList-r18::= SEQUENCE (SIZE (1..maxCandidateBandIndex-r18)) OF FreqBandIndicatorNR

SuccessHO-Config-r17 ::= SEQUENCE {

 thresholdPercentageT304-r17 ENUMERATED {p40, p60, p80, spare5, spare4, spare3, spare2, spare1} OPTIONAL, --Need R

 thresholdPercentageT310-r17 ENUMERATED {p40, p60, p80, spare5, spare4, spare3, spare2, spare1} OPTIONAL, --Need R

 thresholdPercentageT312-r17 ENUMERATED {p20, p40, p60, p80, spare4, spare3, spare2, spare1} OPTIONAL, --Need R

 sourceDAPS-FailureReporting-r17 ENUMERATED {true} OPTIONAL, --Need R

 ...

}

SuccessPSCell-Config-r18 ::= SEQUENCE {

 thresholdPercentageT304-SCG-r18 ENUMERATED {p40, p60, p80, spare5, spare4, spare3, spare2, spare1} OPTIONAL, --Need R

 thresholdPercentageT310-SCG-r18 ENUMERATED {p40, p60, p80, spare5, spare4, spare3, spare2, spare1} OPTIONAL, --Need R

 thresholdPercentageT312-SCG-r18 ENUMERATED {p20, p40, p60, p80, spare4, spare3, spare2, spare1} OPTIONAL, --Need R

 ...

}

OverheatingAssistanceConfig ::= SEQUENCE {

 overheatingIndicationProhibitTimer ENUMERATED {s0, s0dot5, s1, s2, s5, s10, s20, s30,

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

}

IDC-AssistanceConfig-r16 ::= SEQUENCE {

 candidateServingFreqListNR-r16 CandidateServingFreqListNR-r16 OPTIONAL, -- Need R

 ...

}

DRX-PreferenceConfig-r16 ::= SEQUENCE {

 drx-PreferenceProhibitTimer-r16 ENUMERATED {

 s0, s0dot5, s1, s2, s3, s4, s5, s6, s7,

 s8, s9, s10, s20, s30, spare2, spare1}

}

MaxBW-PreferenceConfig-r16 ::= SEQUENCE {

 maxBW-PreferenceProhibitTimer-r16 ENUMERATED {

 s0, s0dot5, s1, s2, s3, s4, s5, s6, s7,

 s8, s9, s10, s20, s30, spare2, spare1}

}

MaxCC-PreferenceConfig-r16 ::= SEQUENCE {

 maxCC-PreferenceProhibitTimer-r16 ENUMERATED {

 s0, s0dot5, s1, s2, s3, s4, s5, s6, s7,

 s8, s9, s10, s20, s30, spare2, spare1}

}

MaxMIMO-LayerPreferenceConfig-r16 ::= SEQUENCE {

 maxMIMO-LayerPreferenceProhibitTimer-r16 ENUMERATED {

 s0, s0dot5, s1, s2, s3, s4, s5, s6, s7,

 s8, s9, s10, s20, s30, spare2, spare1}

}

MinSchedulingOffsetPreferenceConfig-r16 ::= SEQUENCE {

 minSchedulingOffsetPreferenceProhibitTimer-r16 ENUMERATED {

 s0, s0dot5, s1, s2, s3, s4, s5, s6, s7,

 s8, s9, s10, s20, s30, spare2, spare1}

}

ReleasePreferenceConfig-r16 ::= SEQUENCE {

 releasePreferenceProhibitTimer-r16 ENUMERATED {

 s0, s0dot5, s1, s2, s3, s4, s5, s6, s7,

 s8, s9, s10, s20, s30, infinity, spare1},

 connectedReporting ENUMERATED {true} OPTIONAL -- Need R

}

RLM-RelaxationReportingConfig-r17 ::= SEQUENCE {

 rlm-RelaxtionReportingProhibitTimer ENUMERATED {s0, s0dot5, s1, s2, s5, s10, s20, s30,

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

}

BFD-RelaxationReportingConfig-r17 ::= SEQUENCE {

 bfd-RelaxtionReportingProhibitTimer ENUMERATED {s0, s0dot5, s1, s2, s5, s10, s20, s30,

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

}

SCG-DeactivationPreferenceConfig-r17 ::= SEQUENCE {

 scg-DeactivationPreferenceProhibitTimer-r17 ENUMERATED {

 s0, s1, s2, s4, s8, s10, s15, s30,

 s60, s120, s180, s240, s300, s600, s900, s1800}

}

RRM-MeasRelaxationReportingConfig-r17 ::= SEQUENCE {

 s-SearchDeltaP-Stationary-r17 ENUMERATED {dB2, dB3, dB6, dB9, dB12, dB15, spare2, spare1},

 t-SearchDeltaP-Stationary-r17 ENUMERATED {s5, s10, s20, s30, s60, s120, s180, s240, s300, spare7, spare6, spare5,

 spare4, spare3, spare2, spare1}

}

PropDelayDiffReportConfig-r17 ::= SEQUENCE {

 threshPropDelayDiff-r17 ENUMERATED {ms0dot5, ms1, ms2, ms3, ms4, ms5, ms6 ,ms7, ms8, ms9, ms10, spare5,

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

 neighCellInfoList-r17 SEQUENCE (SIZE (1..maxCellNTN-r17)) OF NeighbourCellInfo-r17 OPTIONAL -- Need M

}

NeighbourCellInfo-r17 ::= SEQUENCE {

epochTime-r17 EpochTime-r17,

ephemerisInfo-r17 EphemerisInfo-r17

}

IDC-FDM-AssistanceConfig-r18 ::= SEQUENCE {

 candidateServingFreqRangeListNR-r18 CandidateServingFreqRangeListNR-r18 OPTIONAL, -- Need R

 ...

}

CandidateServingFreqRangeListNR-r18 ::= SEQUENCE (SIZE (1..maxFreqIDC-r16)) OF CandidateServingFreqRangeNR-r18

CandidateServingFreqRangeNR-r18 ::= SEQUENCE {

 candidateCenterFreq-r18 ARFCN-ValueNR,

 candidateBandwidth-r18 ENUMERATED {khz200, khz400, khz600, khz800, mhz1, mhz2, mhz3, mhz4, mhz5,

 mhz6, mhz8, mhz10, mhz20, mhz30, mhz40, mhz50, mhz60, mhz80, mhz100,

 mhz200, mhz300, mhz400} OPTIONAL -- Need R

}

UL-TrafficInfoReportingConfig-r18 ::= SEQUENCE {

 pdu-SessionsToReportUL-TrafficInfoList-r18 SEQUENCE (SIZE (1.. maxNrofPDU-Sessions-r17)) OF PDU-SessionToReportUL-TrafficInfo-r18,

 ul-TrafficInfoProhibitTimer-r18 ENUMERATED {s0, s0dot5, s1, s2, s5, s10, s20, s30,

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

}

PDU-SessionToReportUL-TrafficInfo-r18 ::= SEQUENCE {

 pdu-SessionID-r18 PDU-SessionID,

 qfi-ToReportUL-TrafficInfoList-r18 SEQUENCE (SIZE (1..maxNrofQFIs)) OF QFI

}

-- TAG-OTHERCONFIG-STOP

-- ASN1STOP

| *OtherConfig* field descriptions |
| --- |
| ***aerial-FlightPathAvailabilityConfig***Configuration for the UE to indicate the availability of flight path information for Aerial UE operation. |
| ***bfd-RelaxationReportingConfig***Configuration for the UE to report the relaxation state of BFD measurements. |
| ***btNameList***Configuration for the UE to report measurements from specific Bluetooth beacons. NG-RAN configures the field if *includeBT-Meas* is configured for one or more measurements. |
| ***candidateBandwidth***Indicates the bandwidth of the candidate frequency range around the center frequency. |
| ***candidateCenterFreq***Indicates the center frequency of the candidate frequency range. |
| ***candidateServingFreqListNR***Indicates for each candidate NR serving cells, the center frequency around which UE is requested to report IDC issues. |
| ***candidateServingFreqRangeListNR***Indicates the candidate frequency range with the combination of the center frequency and the candidate bandwidth, around which the UE is requested to report IDC issues. |
| ***connectedReporting***Indicates that the UE can report a preference to remain in RRC\_CONNECTED state following a report to leave RRC\_CONNECTED state. If absent, the UE cannot report a preference to stay in RRC\_CONNECTED state. |
| ***delayBudgetReportingProhibitTimer***Prohibit timer for delay budget reporting. Value in seconds. Value *s0* means prohibit timer is set to 0 seconds, value *s0dot4* means prohibit timer is set to 0.4 seconds, and so on. |
| ***drx-PreferenceConfig***Configuration for the UE to report assistance information to inform the gNB about the UE's DRX preferences for power saving. |
| ***drx-PreferenceProhibitTimer***Prohibit timer for DRX preferences 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 seconds, value *s1* means prohibit timer is set to 1 second and so on. |
| ***idc-AssistanceConfig***Configuration for the UE to report assistance information to inform the gNB about UE detected IDC problem. |
| ***maxBW-PreferenceConfig***Configuration for the UE to report assistance information to inform the gNB about the UE's preferred bandwidth for power saving. |
| ***maxBW-PreferenceProhibitTimer***Prohibit timer for preferred bandwidth 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 seconds, value *s1* means prohibit timer is set to 1 second and so on. |
| ***maxCC-PreferenceConfig***Configuration for the UE to report assistance information to inform the gNB about the UE's preferred number of carriers for power saving. |
| ***maxBW-PreferenceConfigFR2-2***Configuration for the UE to report assistance information to inform the gNB about the UE's preferred bandwidth for power saving for FR2-2. |
| ***maxCC-PreferenceProhibitTimer***Prohibit timer for preferred number of carriers 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 seconds, value *s1* means prohibit timer is set to 1 second and so on. |
| ***maxMIMO-LayerPreferenceConfig***Configuration for the UE to report assistance information to inform the gNB about the UE's preferred number of MIMO layers for power saving. |
| ***maxMIMO-LayerPreferenceConfigFR2-2***Configuration for the UE to report assistance information to inform the gNB about the UE's preferred number of MIMO layers for power saving for FR2-2. |
| ***maxMIMO-LayerPreferenceProhibitTimer***Prohibit timer for preferred number of number of MIMO layers 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 seconds, value *s1* means prohibit timer is set to 1 second and so on. |
| ***minSchedulingOffsetPreferenceConfig***Configuration for the UE to report assistance information to inform the gNB about the UE's preferred *minimumSchedulingOffset* value for cross-slot scheduling for power saving. |
| ***minSchedulingOffsetPreferenceConfigExt***Configuration for the UE to report assistance information to inform the gNB about the UE's preferred *minimumSchedulingOffset* value for cross-slot scheduling for power saving for SCS 480 kHz and/or 960 kHz. |
| ***minSchedulingOffsetPreferenceProhibitTimer***Prohibit timer for preferred *minimumSchedulingOffset* 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 seconds, value *s1* means prohibit timer is set to 1 second and so on. |
| ***multiRx-PreferenceReportingConfigFR2***Configuration for the UE to report assistance information to inform gNB about the UE's preference on multi-Rx operation for FR2. |
| ***multiRx-PreferenceReportingConfigFR2ProhibitTimer***Prohibit timer for multi-Rx operation preference reporting for FR2. Value in seconds. Value *s0* means prohibit timer is set to 0 seconds, value *s0dot5* means prohibit timer is set to 0.5 seconds, value *s1* means prohibit timer is set to 1 second and so on. |
| ***musim-CandidateBandList***A list of candidate bands that the network intends to use, e.g., for serving cells and for which the UE is requested to provide information on temporary restricted capabilities for MUSIM operation as specified in clause 5.7.4.3. |
| ***musim-GapAssistanceConfig***Configuration for the UE to report assistance information for gap preference. |
| ***musim-GapPriorityAssistanceConfig***Indicates the UE is allowed to provide MUSIM assistance information for gap(s) priority or MUSIM gaps keep preference. |
| ***musim-GapProhibitTimer***Prohibit timer for MUSIM assistance information reporting for gap preference. |
| ***musim-LeaveAssistanceConfig***Configuration for the UE to report assistance information for leaving RRC\_CONNECTED for MUSIM purpose. |
| ***musim-LeaveWithoutResponseTimer***Indicates the timer for the UE to enter RRC\_IDLE for MUSIM purpose as defined in clause 5.3.8.6. |
| ***musim-ProhibitTimer***Indicates the prohibit timer for UE temporary restricted capabilities for MUSIM operation. Value in milliseconds. Value *ms0* means prohibit timer is set to 0 milliseconds, value *ms10* means prohibit timer is set to 10 milliseconds and so on. |
| ***musim-WaitTimer***Indicates the wait timer for UE temporary restricted capabilities for MUSIM operation. Value in milliseconds. Value *ms10* means wait timer is set to 10 milliseconds, value *ms20* means wait timer is set to 20 milliseconds and so on. |
| ***obtainCommonLocation***Requests the UE to attempt to have detailed location information available using GNSS. NR configures the field if *includeCommonLocationInfo* is configured for one or more measurements. |
| ***overheatingAssistanceConfig***Configuration for the UE to report assistance information to inform the gNB about UE detected internal overheating. |
| ***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 seconds, value *s1* means prohibit timer is set to 1 second and so on. |
| ***pdu-SessionsToReportUL-TrafficInfoList***A list of PDU sessions for which the UE shall report UL traffic information. |
| ***propDelayDiffReportConfig***Configuration for the UE to report service link propagation delay difference between serving cell and neighbour cell(s). |
| ***qfi-ToReportUL-TrafficInfoList***A list of QFIs of a PDU session for which the UE shall report UL traffic information. |
| ***referenceTimePreferenceReporting***If present, the field indicates the UE is configured to provide reference time assistance information. |
| ***releasePreferenceConfig***Configuration for the UE to report assistance information to inform the gNB about the UE's preference to leave RRC\_CONNECTED state. |
| ***rlm-RelaxationReportingConfig***Configuration for the UE to report the relaxation state of RLM measurements. |
| ***releasePreferenceProhibitTimer***Prohibit timer for release preference 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 seconds, value *s1* means prohibit timer is set to 1 second and so on. Value *infinity* means that once a UE has reported a release preference, the UE cannot report a release preference again during the RRC connection. |
| ***s-SearchDeltaP-Stationary***Parameter "SSearchDeltaP-StationaryConnected" in 5.7.4.4. Value dB2 corresponds to 2 dB, dB3 corresponds to 3 dB and so on. |
| ***scg-DeactivationPreferenceConfig***Configuration of the UE to indicate its preference for SCG deactivation. |
| ***scg -StatePreferenceProhibitTimer***Prohibit timer for UE indication of its preference for SCG deactivation. Value in seconds. Value *s0* means prohibit timer is set to 0 seconds, value *s1* means prohibit timer is set to 1 second and so on. |
| ***sensorNameList***Configuration for the UE to report measurements from specific sensors. NG-RAN configures the field if *includeSensor-Meas* is configured for one or more measurements. |
| ***sl-AssistanceConfigNR***Indicate whether UE is configured to provide configured grant assistance information for NR sidelink communication. |
| ***sl-PRS-AssistanceConfigNR***Indicate whether UE is configured to provide configured grant assistance information for NR sidelink positioning. |
| ***sn-InitiatedPSCellChange***This field indicates whether the PSCell change procedure or the CPC included in the *RRCReconfiguration* message is SN initiated or not. In case of SN initiated inter-SN PSCell change procedure or SN configured inter-SN CPC, MN includes this field in the MCG RRC Reconfiguration message. In case of intra-SN PSCell change, or intra-SN CPC, source SN includes the field in the SCG RRC Reconfiguration. |
| ***sourceDAPS-FailureReporting***This field indicates whether the UE shall generate the SHR upon successfully completing the DAPS handover to the target cell and if a radio link failure was experienced in the source PCell while executing the DAPS handover. This field is set in the *otherConfig* configured by the source cell of the DAPS handover. |
| ***successHO-Config***Configuration for the UE to report the successful handover information to the network. |
| ***successPSCell-Config***Configuration for the UE to report the successful PSCell change or addition information to the network. When this field is configured in CG-Config, the *thresholdPercentageT304-SCG* is absent. |
| ***t-SearchDeltaP-Stationary***Parameter "TSearchDeltaP-StationaryConnected" in 5.7.4.4. Value in seconds. Value s5 means 5 seconds, value s10 means 10 seconds and so on. |
| ***thresholdPercentageT304***This field indicates the threshold for the ratio in percentage between the elapsed T304 timer and the configured value of the T304 timer. Value *p40* corresponds to 40%, value *p60* corresponds to 60% and so on. This field is set in the *otherConfig* configured by the target cell of the handover. |
| ***thresholdPercentageT310***This field indicates the threshold for the ratio in percentage between the elapsed T310 timer and the configured value of the T310 timer. Value *p40* corresponds to 40%, value *p60* corresponds to 60% and so on. This field is set in the *otherConfig* configured by the source cell of the handover. |
| ***thresholdPercentageT312***This field indicates the threshold for the ratio in percentage between the elapsed T312 timer and the configured value(s) of the T312 timer. Value *p20* corresponds to 20%, value *p40* corresponds to 40% and so on. This field is set in the *otherConfig* configured by the source cell of the handover. |
| ***thresholdPercentageT304-SCG***This field indicates the threshold for the ratio in percentage between the elapsed T304 timer associated to the target PSCell and the configured value of the T304 timer. Value *p40* corresponds to 40%, value *p60* corresponds to 60% and so on. This field is set in the *otherConfig* configured by the target PSCell of the PSCell change or addition. |
| ***thresholdPercentageT310-SCG***This field indicates the threshold for the ratio in percentage between the elapsed T310 timer associated to the source PSCell and the configured value of the T310 timer. Value *p40* corresponds to 40%, value *p60* corresponds to 60% and so on. This field is set in the *otherConfig* configured by the source PSCell of the PSCell change or CPC, or in the *otherConfig* configured by the PCell for the PSCell change or CPC. This field is not configured at the time of PSCell change via SRB3. |
| ***thresholdPercentageT312-SCG***This field indicates the threshold for the ratio in percentage between the elapsed T312 timer associated to the measurement identity of the target PSCell and the configured value of the T312 timer. Value *p20* corresponds to 20%, value *p40* corresponds to 40% and so on. This field is set in the *otherConfig* configured by the source PSCell of the PSCell change or CPC, or in the *otherConfig* configured by the PCell for the PSCell change or CPC. This field is not configured at the time of PSCell change via SRB3. |
| ***threshPropDelayDiff***Threshold for one-way service link propagation delay difference report as specified in 5.7.4.2. |
| ***ul-GapFR2-PreferenceConfig***Indicates whether UE is configured to request for FR2 UL gap activation/deactivation and preferred FR2 UL gap pattern. |
| ***wlanNameList***Configuration for the UE to report measurements from specific WLAN APs. NG-RAN configures the field if *includeWLAN-Meas* is configured for one or more measurements. |
| ***ul-TrafficInfoProhibitTimer***Prohibit timer for UL traffic 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 seconds, value *s1* means prohibit timer is set to 1 second and so on. |
| ***ul-TrafficInfoReportingConfig***Configuration for the UE to report UL traffic information. |

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *FDM* | This field is optionally present, need R, if *idc-AssistanceConfig-r16* or *idc-FDM-AssistanceConfig* is setup. Otherwise, it is absent, need R. |
| *maxBW* | This field is optionally present, need R, if *maxBW-PreferenceConfig-r16* is setup; otherwise it is absent, need R. |
| *maxMIMO* | This field is optionally present, need R, if *maxMIMO-LayerPreferenceConfig-r16* is setup; otherwise it is absent, need R. |
| *minOffset* | This field is optionally present, need R, if *minSchedulingOffsetPreferenceConfig-r16* is setup; otherwise it is absent, need R. |
| *musimGapConfig* | This field is optionally present, need R, if *musim-GapAssistanceConfig-r17* is setup; otherwise it is absent, need R. |
| *SCG* | This field is optionally present, need M, in an *RRCReconfiguration* message not within *mrdc-SecondaryCellGroup* and received, either via SRB3 within *DLInformationTransferMRDC* or via SRB1. Otherwise, it is absent. |

### 6.3.5 Sidelink information elements

<skipped>

#### – *SL-BWP-PRS-PoolConfig*

The IE *SL-BWP-PRS-PoolConfig* is used to configure UE specific NR sidelink PRS dedicated resource pool.

*SL-BWP-PRS-PoolConfig* information element

-- ASN1START

-- TAG-SL-BWP-PRS-POOLCONFIG-START

SL-BWP-PRS-PoolConfig-r18 ::= SEQUENCE {

 sl-PRS-RxPool-r18 SEQUENCE (SIZE (1..maxNrofRXPool-r16)) OF SL-PRS-ResourcePool-r18 OPTIONAL, -- Cond HO

 sl-PRS-TxPoolSelectedNormal-r18 SL-PRS-TxPoolDedicated-r18 OPTIONAL, -- Need M

 sl-PRS-TxPoolScheduling-r18 SL-PRS-TxPoolDedicated-r18 OPTIONAL, -- Need M

 sl-PRS-TxPoolExceptional-r18 SL-PRS-ResourcePoolConfig-r18 OPTIONAL -- Need R

}

SL-PRS-TxPoolDedicated-r18 ::= SEQUENCE {

 sl-PRS-PoolToReleaseList-r1 SEQUENCE (SIZE (1..maxNrofSL-PRS-TxPool-r18)) OF SL-PRS-ResourcePoolID-r18 OPTIONAL, -- Need N

 sl-PRS-PoolToAddModList-r18 SEQUENCE (SIZE (1..maxNrofSL-PRS-TxPool-r18)) OF SL-PRS-ResourcePoolConfig-r18 OPTIONAL -- Need N

}

SL-PRS-ResourcePoolConfig-r18 ::= SEQUENCE {

 sl-PRS-ResourcePoolID-r18 SL-PRS-ResourcePoolID-r18,

 sl-PRS-ResourcePool-r18 SL-PRS-ResourcePool-r18 OPTIONAL -- Need M

}

SL-PRS-ResourcePoolID-r18 ::= INTEGER (1.. maxNrofSL-PRS-TxPool-r18)

-- TAG-SL-BWP-PRS-POOLCONFIG-STOP

-- ASN1STOP

|  |
| --- |
| *SL-BWP-PRS-PoolConfig* field descriptions |
| ***sl-PRS-TxPoolSelectedNormal***Indicates the resources by which the UE is allowed to perform SL-PRS transmission by UE autonomous resource selection on the configured BWP. |
| ***sl-PRS-TxPoolScheduling***Indicates the resources by which the UE is allowed to perform SL-PRS transmission based on network selection on the configured BWP. |
| ***sl-PRS-TxPoolExceptional***Indicates the resources by which the UE is allowed to perform SL-PRS transmission in exceptional conditions on the configured BWP. |

<end of changes>

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *HO* | This field is optionally present, need M, in an *RRCReconfiguration* message including *reconfigurationWithSync*; otherwise it is absent, Need M. |

#### – *SL-BWP-PRS-PoolConfigCommon*

The IE *SL-BWP-PRS-PoolConfigCommon* is used to configure the cell-specific NR sidelink PRS dedicated resource pool.

*SL-BWP-PRS-PoolConfigCommon* information element

-- ASN1START

-- TAG-SL-BWP-PRS-POOLCONFIGCOMMON-START

SL-BWP-PRS-PoolConfigCommon-r18 ::= SEQUENCE {

 sl-PRS-RxPool-r18 SEQUENCE (SIZE (1..maxNrofRXPool-r16)) OF SL-PRS-ResourcePool-r18 OPTIONAL, -- Need R

 sl-PRS-TxPoolSelectedNormal-r18 SEQUENCE (SIZE (1..maxNrofSL-PRS-TxPool-r18)) OF SL-PRS-ResourcePoolConfig-r18 OPTIONAL, -- Need R

 sl-PRS-TxPoolExceptional-r18 SL-PRS-ResourcePoolConfig-r18 OPTIONAL, -- Need R

 ...

}

-- TAG-SL-BWP-PRS-POOLCONFIGCOMMON-STOP

-- ASN1STOP

| *SL-BWP-PRS-PoolConfigCommon* field descriptions |
| --- |
| ***sl-PRS-TxPoolExceptional***Indicates the resources by which the UE is allowed to perform NR sidelink transmission in exceptional conditions on the configured BWP. This field is not present when *SL-BWP-PRS-PoolConfigCommon* is included in *SL-PreconfigurationNR* |

#### - *SL-PosBWP-ConfigCommon*

The IE *SL-PosBWP-ConfigCommon* is used to configure the cell-specific configuration for sidelink positioning on one particular sidelink bandwidth part.

*SL-PosBWP-ConfigCommon* information element

-- ASN1START

-- TAG-SL-POSBWP-CONFIGCOMMON-START

SL-PosBWP-ConfigCommon-r18 ::= SEQUENCE {

 sl-BWP-Generic-r18 SL-BWP-Generic-r16 OPTIONAL, -- Need R

 sl-BWP-PRS-PoolConfigCommon-r18 SL-BWP-PRS-PoolConfigCommon-r18 OPTIONAL, -- Need R

 ...

}

-- TAG-SL-POSBWP-CONFIGCOMMON-STOP

-- ASN1STOP

|  |
| --- |
| *SL-PosBWP-ConfigCommon* field descriptions |
| ***sl-BWP-Generic***This field indicates the generic parameters on the configured sidelink BWP. |

#### – *SL-PRS-ResourcePool*

The IE *SL-PRS-ResourcePool* specifies the configuration information for NR sidelink PRS dedicated resource pool.

*SL-PRS-ResourcePool* information element

-- ASN1START

-- TAG-SL-PRS-RESOURCEPOOL-START

SL-PRS-ResourcePool-r18 ::= SEQUENCE {

 sl-PRS-PSCCH-Config-r18 SetupRelease { SL-PSCCH-ConfigDedicatedSL-PRS-RP-r18} OPTIONAL, -- Need M

 sl-StartRB-SubchannelDedicatedSL-PRS-RP-r18 INTEGER (0..265) OPTIONAL, -- Need M

 sl-FilterCoefficient-r18 FilterCoefficient OPTIONAL, -- Need M

 sl-ThreshS-RSSI-PRS-CBR-r18 INTEGER (0..45) OPTIONAL, -- Need M

 sl-RB-Number-r18 INTEGER (10..275) OPTIONAL, -- Need M

 sl-TimeResource-r18 BIT STRING (SIZE (10..160)) OPTIONAL, -- Need M

 sl-PosAllowedResourceSelectionConfig-r18 ENUMERATED {c1, c2, c3} OPTIONAL, -- Need M

 sl-PRS-ResourceReservePeriodList-r18 SEQUENCE (SIZE (1..16)) OF SL-ReservationPeriodAllowedDedicatedSL-PRS-RP-r18

 OPTIONAL,

 sl-PRS-ResourcesDedicatedSL-PRS-RP-r18 SEQUENCE (SIZE (1..12)) OF SL-PRS-ResourceDedicatedSL-PRS-RP-r18 OPTIONAL, -- Need M

 sl-PRS-PowerControl-r18 SL-PRS-PowerControl-r18 OPTIONAL, -- Need M

 sl-SensingWindowDedicatedSL-PRS-RP-r18 ENUMERATED {ms100, ms1100} OPTIONAL, -- Need M

 sl-TxPercentageDedicatedSL-PRS-RP-List-r18 SEQUENCE (SIZE (8)) OF SL-TxPercentageDedicatedSL-PRS-RP-Config-r18 OPTIONAL, -- Need M

 sl-SCI-basedSL-PRS-TxTriggerSCI1-B-r18 BOOLEAN OPTIONAL, -- Need M

 sl-NumSubchannelDedicatedSL-PRS-RP-r18 INTEGER (1..27) OPTIONAL, -- Need M

 sl-SubchannelSizeDedicatedSL-PRS-RP-r18 ENUMERATED {n10, n12, n15, n20, n25, n50, n75, n100} OPTIONAL, -- Need M

 sl-MaxNumPerReserveDedicatedSL-PRS-RP-r18 ENUMERATED {n2, n3} OPTIONAL, -- Need M

 sl-NumReservedBitsSCI1B-DedicatedSL-PRS-RP-r18 INTEGER (0..20) OPTIONAL, -- Need R

 sl-SRC-ID-LenDedicatedSL-PRS-RP-r18 ENUMERATED {n12, n24} OPTIONAL, -- Need M

 sl-CBR-PriorityTxConfigDedicatedSL-PRS-RP-List-r18 SEQUENCE (SIZE (1..8)) OF SL-PriorityTxConfigIndexDedicatedSL-PRS-RP-r18

 OPTIONAL, -- Need M

 sl-TimeWindowSizeCBR-DedicatedSL-PRS-RP-r18 ENUMERATED {ms100, slot100} OPTIONAL, -- Need M

 sl-TimeWindowSizeCR-DedicatedSL-PRS-RP-r18 ENUMERATED {ms1000, slot1000} OPTIONAL, -- Need M

 sl-CBR-CommonTxDedicatedSL-PRS-RP-List-r18 SL-CBR-CommonTxDedicatedSL-PRS-RP-List-r18 OPTIONAL, -- Need M

 sl-PriorityThreshold-UL-URLLC-r18 INTEGER (1..9) OPTIONAL, -- Need M

 sl-PriorityThreshold-r18 INTEGER (1..9) OPTIONAL, -- Need M

 sl-SelectionWindowListDedicatedSL-PRS-RP-r18 SEQUENCE (SIZE (8)) OF SL-SelectionWindowConfigDedicated-SL-PRS-RP-r18

 OPTIONAL, -- Need M

 sl-Thres-RSRP-ListDedicatedSL-PRS-RP-r18 SEQUENCE (SIZE (64)) OF SL-PRS-ThresRSRP-r18 OPTIONAL, -- Need M

 sl-PreemptionEnableDedicatedSL-PRS-RP-r18 ENUMERATED {enabled, pl1, pl2, pl3, pl4, pl5, pl6, pl7, pl8} OPTIONAL -- Need R

}

SL-PSCCH-ConfigDedicatedSL-PRS-RP-r18 ::= SEQUENCE {

 sl-TimeResourcePSCCH-DedicatedSL-PRS-RP-r18 ENUMERATED {n2, n3} OPTIONAL, -- Need M

 sl-FreqResourcePSCCH-DedicatedSL-PRS-RP-r18 ENUMERATED {n10,n12, n15, n20, n25} OPTIONAL, -- Need M

 ...,

 [[

 sl-DMRS-ScrambleID-DedicatedSL-PRS-RP-r18 INTEGER (0..65535) OPTIONAL -- Need M

 ]]

}

SL-ReservationPeriodAllowedDedicatedSL-PRS-RP-r18 ::= CHOICE {

 sl-ResourceReservePeriod1-r18 ENUMERATED {ms0, ms100, ms160, ms200, ms300, ms320, ms400, ms500, ms600, ms640,

 ms700, ms800, ms900, ms1000, ms1280, ms2560, ms5120, ms10240},

 sl-ResourceReservePeriod2-r18 INTEGER (1..99)

}

SL-PRS-ResourceDedicatedSL-PRS-RP-r18::= SEQUENCE {

 sl-PRS-ResourceID-r18 INTEGER (0..11) OPTIONAL, -- Need M

 sl-NumberOfSymbols-r18 INTEGER (1..9) OPTIONAL, -- Need M

 sl-CombSize-r18 ENUMERATED{n2,n4,n6} OPTIONAL, -- Need R

 sl-PRS-starting-symbol-r18 INTEGER (4..12) OPTIONAL, -- Need M

 sl-PRS-comb-offset-r18 INTEGER(1..5) OPTIONAL -- Need M

}

SL-PRS-PowerControl-r18::= SEQUENCE {

 dl-P0-SL-PRS-r18 INTEGER(-202..24) OPTIONAL, -- Need M

 dl-Alpha-SL-PRS-r18 ENUMERATED {alpha0, alpha04, alpha05, alpha06, alpha07, alpha08, alpha09, alpha1} OPTIONAL, -- Need M

 sl-P0-SL-PRS-r18 INTEGER(-202..24) OPTIONAL, -- Need M

 sl-Alpha-SL-PRS-r18 ENUMERATED {alpha0, alpha04, alpha05, alpha06, alpha07, alpha08, alpha09, alpha1} OPTIONAL -- Need S

}

SL-TxPercentageDedicatedSL-PRS-RP-Config-r18::= SEQUENCE {

 sl-TxPercentageDedicatedSL-PRS-RP-r18 INTEGER (1..8) OPTIONAL, -- Need M

 sl-Priority-DedicatedSL-PRS-RP ENUMERATED {p20, p35, p50} OPTIONAL -- Need M

}

SL-PriorityTxConfigIndexDedicatedSL-PRS-RP-r18 ::= SEQUENCE {

 sl-PriorityThresholdDedicatedSL-PRS-RP-r18 INTEGER (1..8) OPTIONAL, -- Need M

 sl-DefaultTxConfigIndexDedicatedSL-PRS-RP-r18 INTEGER (0..maxCBR-LevelDedSL-PRS-1-r18) OPTIONAL, -- Need M

 sl-CBR-ConfigIndexDedicatedSL-PRS-RP-r18 INTEGER (0..maxCBR-ConfigDedSL-PRS-1-r18) OPTIONAL, -- Need M

 sl-PRS-TxConfigIndexList-r18 SEQUENCE (SIZE (1.. maxCBR-LevelDedSL-PRS-1-r18)) OF SL-PRS-TxConfigIndex-r18

 OPTIONAL -- Need M

}

SL-PRS-TxConfigIndex-r18 ::= INTEGER (0.. maxNrofSL-PRS-TxConfig-r18)

SL-SelectionWindowConfigDedicated-SL-PRS-RP-r18::= SEQUENCE {

 sl-PRS-Priority-r18 INTEGER (1..8),

 sl-PRS-SelectionWindow-r18 ENUMERATED {n1, n5, n10, n20}

}

SL-PRS-ThresRSRP-r18 ::= INTEGER (0..66)

-- TAG-SL-PRS-RESOURCEPOOL-STOP

-- ASN1STOP

|  |
| --- |
| *SL-PRS-ResourcePool* field descriptions |
| ***sl-CBR-ConfigIndexDedicatedSL-PRS-RP***Indicates the CBR ranges to be used by an index to the entry of the CBR range configuration in *sl-CBR-RangeDedicatedSL-PRS-RP-List*. |
| ***sl-CBR-PriorityTxConfigDedicatedSL-PRS-RP-List***Indicates the mapping between SL-PRS transmission parameter (such as transmission power, etc.) sets by using the indexes of the configurationsin *sl-CBR-SL-PRS-TxConfigList*, CBR ranges by using the indexes to the entry of the CBR range configurations in *sl-CBR-SL-PRS-RangeDedicatedSL-PRS-RP-List*, and priority ranges. It also indicates the default SL-PRS transmission parameters to be used when CBR measurement results are not available. |
| ***sl-DefaultTxConfigIndexDedicatedSL-PRS-RP***Indicates the SL PRS transmission parameters to be used by the UEs which do not have available CBR measurement results, by means of an index to the corresponding entry in *sl-PRS-TxConfigIndexList*. Value 0 indicates the first entry in *sl-PRS-TxConfigIndexList*. The field is ignored if the UE has available CBR measurement results. |
| ***sl-FilterCoefficient***This field indicates the filtering coefficient for long-term measurement and reference signal power derivation used for sidelink open-loop power control. |
| ***sl-MaxNumPerReserveDedicatedSL-PRS-RP***Indicates the maximum number of SL PRS reservations that can be indicated by an SCI. |
| ***sl-NumReservedBitsSCI1B-DedicatedSL-PRS-RP***Indicates the number of reserved bits in SCI format 1-B. |
| ***sl-NumSubchannelDedicatedSL-PRS-RP***Indicates the number of subchannels in the corresponding resource pool, which consists of contiguous PRBs only. |
| ***sl-PosAllowedResourceSelectionConfig***Indicates allowed resource allocation method configured per resource pool.c1: only sensing allowedc2: only random resource selection allowedc3: sensing and random resource selection allowed |
| ***sl-PreemptionEnableDedicatedSL-PRS-RP***Indicates whether pre-emption is disabled or enabled in a resource pool. If the field is present and the value is *pl1*, *pl2*, and so on (but not *enabled*), it means that pre-emption is enabled and a priority level p\_preemption is configured. If the field is present and the value is *enabled*, the pre-emption is enabled (but p\_preemption is not configured) and pre-emption is applicable to all levels. |
| ***sl-PriorityThreshold***Indicates the threshold used to determine whether NR sidelink transmission in dedicated SL PRS resource pool is prioritized over uplink transmission of priority index 0 as specified in TS 38.213[13], clause 16.2.4.3, or whether PUCCH transmission carrying SL HARQ is prioritized over PUCCH transmission carrying UCI of priority index 0 if they overlap in time as specified in TS 38.213 [13], clause 9.2.5.0. |
| ***sl-PriorityThresholdDedicatedSL-PRS-RP***Indicates the upper bound of priority range which is associated with the configurations in *sl-CBR-ConfigIndexDedicatedSL-PRS-RP* and in *sl-PRS-TxConfigIndexList*. The upper bounds of the priority ranges are configured in ascending order for consecutive entries of *SL-PriorityTxConfigIndexDedicatedSL-PRS-RP* in *sl-CBR-PriorityTxConfigDedicatedSL-PRS-RP-List*. For the first entry of *sl-PriorityThreshold-DedicatedSL-PRS-RP*, the lower bound of the priority range is 1. |
| ***sl-PriorityThreshold-UL-URLLC***Indicates the threshold used to determine whether NR sidelink transmission in dedicated SL PRS resource pool is prioritized over uplink transmission of priority index 1 as specified in TS 38.213[13], clause 16.2.4.3, or whether PUCCH transmission carrying SL HARQ is prioritized over PUCCH transmission carrying UCI of priority index 1 if they overlap in time as specified in TS 38.213 [13], clause 9.2.5.0. |
| ***sl-PRS-ResourceReservePeriodList***Indicates set of possible resource reservation period in the unit of ms allowed in the resource pool. Up to 16 values can be configured per resource pool. The value *ms0* is always configured. |
| ***sl-PRS-ResourcesDedicatedSL-PRS-RP***Indicates SL PRS resources in a slot of dedicated SL PRS resource pool as defined in TS 38.211 [16]. |
| ***sl-PRS-TxConfigIndex***Indicates SL PRS transmission Configuration index. |
| ***sl-PRS-TxConfigIndexList***Indicates List of *sl-PRS-Tx-ConfigIndex* indicating the SL PRS transmission index |
| ***sl-RB-Number***Indicates the number of PRBs in the corresponding SL PRS dedicated resource pool, which consists of contiguous PRBs only. |
| ***sl-SCI-basedSL-PRS-TxTriggerSCI1-B***Indicates presence of a bit-field in SCI format 1-B to trigger SL-PRS transmission by a receiving UE. |
| ***sl-SelectionWindowListDedicatedSL-PRS-RP***Parameter that determines the end of the selection window in the resource selection for a SL-PRS with respect to priority indicated in SCI. Value n1 corresponds to 1\*2µ , value n5 corresponds to 5\*2µ , and so on, where µ = 0,1,2,3 refers to SCS 15,30,60,120 kHz respectively. |
| ***sl-SensingWindowDedicated-SL-PRS-RP***Indicates Parameter that indicates the start of the sensing window for SL PRS in a dedicated resource pool. |
| ***sl-SRC-ID-LenDedicatedSL-PRS-RP***Indicates the number of bits used for the source ID in SCI format 1-B. |
| ***sl-StartRB-Subchannel-DedicatedSL-PRS-RP***Indicates the lowest RB index of the SL PRS dedicated resource pool with respect to the lowest RB index of a SL BWP. |
| ***sl-SubchannelSizeDedicatedSL-PRS-RP***Indicates size of a subchannel for PSCCH in number of RBs. |
| ***sl-Thres-RSRP-ListDedicatedSL-PRS-RP***Indicates a list of 64 thresholds, the threshold should be selected based on the priority in the decoded SCI and the priority in the SCI to be transmitted. |
| ***sl-ThreshS-RSSI-PRS-CBR***Indicates the S-RSSI threshold for determining the contribution of a sub-channel to the SL-PRS CBR measurement in a dedicated SL-PRS resource pool. Value 0 corresponds to -112 dBm, value 1 to -110 dBm, value n to (-112 + n\*2) dBm, and so on. |
| ***sl-TimeResource***This field indicates the bitmap of the SL PRS dedicated resource pool, which is defined by repeating the bitmap with a periodicity during a SFN or DFN cycle. |
| ***sl-TimeWindowSizeCBR-DedicatedSL-PRS-RP***Indicates the time window size for CBR measurement in a dedicated SL-PRS resource pool. |
| ***sl-TimeWindowSizeCR-DedicatedSL-PRS-RP***Indicates the time window size for CR evaluation in a dedicated SL-PRS resource pool. |
| ***sl-TxPercentageDedicatedSL-PRS-RP-List***Indicates List of minimum Tx percentage (list per priority) |

| *SL-PRS-PSCCH-Config* field descriptions |
| --- |
| ***sl-DMRS-ScrambleID-DedicatedSL-PRS-RP***Indicates the initialization value for PSCCH DMRS scrambling in a dedicated SL PRS resource pool. |
| ***sl-FreqResourcePSCCH-DedicatedSL-PRS-RP***Indicates the number of PRBs for PSCCH in a dedicated SL PRS resource pool. |
| ***sl-TimeResourcePSCCH-DedicatedSL-PRS-RP***Indicates the number of symbols for PSCCH in a dedicated SL PRS resource pool. |

| *SL-PRS-PowerControl* field descriptions |
| --- |
| ***dl-P0-SL-PRS***Indicates P0 value for DL pathloss based open loop power control for SL PRS transmission in dedicated SL PRS resource pool. |
| ***dl-AlphaSL-PRS***Indicates alpha value for DL pathloss based open loop power control for SL PRS transmission in dedicated SL PRS resource pool.  |
| ***sl-P0-SL-PRS***Indicates P0 value for SL pathloss based open loop power control for SL PRS transmission in dedicated SL PRS resource pool. |
| ***sl-AlphaSL-PRS***Indicates alpha value for downlink pathloss based power control for PSCCH/PSSCH when *dl-P0-PSSCH-PSCCH* is configured. When the field is absent the UE applies the value 1. |