**3GPP TSG-RAN WG2 Meeting #125 *R2-240XXXX***

**Athens, Greece, 26 February – 01 March 2024**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **38.331** | **CR** | **4628** | **rev** | **1** | **Current version:** | **18.0.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
|  |

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

|  |
| --- |
|  |
| ***Title:***  | eEMR and IMR CR |
|  |  |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | NR\_Mob\_enh2-Core |  | ***Date:*** | 2024-2-28 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-18 |
|  | *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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | 1. RAN4 has agreed for existing idle/inactive measurements to be possible to configure time X which indicates that measurements are valid if thhe measurement are performed within the last [X] seconds before it is reported Details regarding validity will be define in Ran4 (38.133) as well as Ue behaviour in case of absence of timer X.
2. Reselection reporting is missing
 |
|  |  |
| ***Summary of change:*** | 1. timer X (*measurementValidityDuration)* is introduced in RRCRelease and SIB11 (similarly as other parameters done in release 16 EMR) .. In RAN2 we only mention that UE reports valid measurements and RAN4 definess how validity is achieved.
2. Reselection measurement reporting is done by having similar structure with R16 EMR reporting i.e.
3. NW indicates whether reporting allowed in SIB1 with reselectionMeasurementsEUTRA and reselectionMeasurementsNR
4. UE indicates available reselection measurements in the RRCSetup/ResumeComplete messaages with *reselecitonMeasAvailable*
5. Reporting can be done with UEInformationRequest/Response procedure or RRCResumeComplete
6. NW controls which reselection measurements are reported by providing list of frequencies (NR and EUTRA) in the RRCRelease/SIB11. There is no need to have measurement information (how to measure) as UE uses existing reseleciton/idle measurements. When Ue sends measurements it will only send measurements for frequencies configured
7. For reselection measurement one does not store UE measurements into variable as UE does not do any new measurements in this procedure.
 |
|  |  |
| ***Consequences if not approved:*** | eEMR and IMR part of the WI would not be implemented in specifications |
|  |  |
| ***Clauses affected:*** | 5.3.3.4, 5.3.8.3, 5.3.13.4, 5.7.8, 6.2.2, 6.3.1, 6.3.2, 7.4  |
|  |  |
|  | **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:*** |  |

*First Modified Subclause*

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

The UE shall perform the following actions upon reception of the *RRCSetup*:

1> if the *RRCSetup* is received in response to an *RRCReestablishmentRequest*; or

1> if the *RRCSetup* is received in response to an *RRCResumeRequest* or *RRCResumeRequest1*:

2> if the UE is NCR-MT:

3> indicate to NCR-Fwd to cease forwarding;

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

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

3> instruct the MAC entity to start the *timeAlignmentTimer* associated with the PTAG*,* if it is not running;

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

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

2> if *srs-PosRRC-InactiveValidityAreaConfig* is configured:

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

2> discard any stored UE Inactive AS context and *suspendConfig*;

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

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

2> release the RRC configuration except for the default L1 parameter values, default MAC Cell Group configuration, CCCH configuration and broadcast MRBs;

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

2> for each application layer measurement configuration with *configForRRC-IdleInactive* absent or not set to *true*:

3> discard any application layer measurement reports which were not transmitted yet;

3> inform upper layers about the release of all application layer measurement configurations;

2> stop timer T380, if running;

1> perform the cell group configuration procedure in accordance with the received *masterCellGroup* and as specified in 5.3.5.5;

1> perform the radio bearer configuration procedure in accordance with the received *radioBearerConfig* and as specified in 5.3.5.6;

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

1> stop timer T300, T301, T319;

1> if T319a is running:

2> stop T319a;

2> consider SDT procedure is not ongoing;

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> stop timer T320, if running;

1> if the *RRCSetup* is received in response to an *RRCResumeRequest*, *RRCResumeRequest1* or *RRCSetupRequest*:

2> if T331 is running:

3> stop timer T331;

3> perform the actions as specified in 5.7.8.3;

2> enter RRC\_CONNECTED;

2> stop the cell re-selection procedure;

2> stop relay (re)selection procedure if any for L2 U2N Remote UE;

1> consider the current cell to be the PCell;

1> perform the L2 U2N Remote UE configuration procedure in accordance with the received *sl-L2RemoteUE-Config* as specified in 5.3.5.16;

1> perform the sidelink dedicated configuration procedure in accordance with the received *sl-ConfigDedicatedNR* as specified in 5.3.5.14;

1> 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*:

2> if *reconnectCellId* in *VarRLF-Report* is not set after failing to perform reestablishment and if this is the first *RRCSetup* received by the UE after declaring the failure:

3> if the UE supports RLF-Report for conditional handover and if *choCellId* in *VarRLF-Report* is set:

4> set *timeUntilReconnection* in *VarRLF-Report* to the time that elapsed since the radio link failure or handover failure experienced in the *failedPCellId* stored in *VarRLF-Report*;

3> else:

4> set *timeUntilReconnection* in *VarRLF-Report* to the time that elapsed since the last radio link failure or handover failure;

3> set *nrReconnectCellId* in *reconnectCellId* in *VarRLF-Report* to the global cell identity and the tracking area code of the PCell;

1> if the UE supports RLF report for inter-RAT MRO NR as defined in TS 36.306 [62], and if the UE has radio link failure or handover failure information available in *VarRLF-Report* of TS 36.331 [10] and if the RPLMN is included in *plmn-IdentityList* stored in *VarRLF-Report* of TS 36.331 [10]:

2> if *reconnectCellId* in *VarRLF-Report* of TS 36.331[10] is not set after failing to perform reestablishment and if this is the first *RRCSetup* received by the UE after declaring the failure:

3> set *timeUntilReconnection* in *VarRLF-Report* of TS 36.331[10] to the time that elapsed since the last radio link failure or handover failure in LTE;

3> set *nrReconnectCellId* in *reconnectCellId* in *VarRLF-Report* of TS 36.331[10] to the global cell identity and the tracking area code of the PCell;

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

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

3> if the *RRCSetup* is received in response to an *RRCSetupRequest*:

4> set the *ng-5G-S-TMSI-Value* to *ng-5G-S-TMSI-Part2*;

3> else:

4> set the *ng-5G-S-TMSI-Value* to *ng-5G-S-TMSI*;

2> if upper layers selected an SNPN or a PLMN and in case of PLMN UE is either allowed or instructed to access the PLMN via a cell for which at least one CAG ID is broadcast:

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

2> else:

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

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

3> include and set the *registeredAMF* as follows:

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

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

4> set the *amf-Identifier* to the value received from upper layers;

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

2> if upper layers provide one or more S-NSSAI (see TS 23.003 [21]):

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

2> if upper layers provide onboarding request indication:

3> include the *onboardingRequest*;

2> set the *dedicatedNAS-Message* to include the information received from upper layers;

2> if connecting as an IAB-node:

3> include the *iab-NodeIndication*;

2> else if connecting as a mobile IAB-node:

3> include the *mobileIAB-NodeIndication*;

2> if connecting as an NCR-node:

3> include the *ncr-NodeIndication*;

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

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

3> include the *idleMeasAvailable*;

2> if the SIB1 contains *reselectionMeasurementsNR* and the UE has valid as defined in TS 38.133 [14]. NR reselection measurements available for any frequency listed in *measReselectionCarrierListNR* in *VarMeasReselectionConfig*; or

2> if the SIB1 contains *reselectionMeasurementsEUTRA* and the UE has valid as defined in TS 38.133 [14] E-UTRA reselection measurements available for any frequency listed in *measReselectionCarrierListEUTRA* in *VarMeasReselectionConfig*:

3> include the *reselectionMeasAvailable*;

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 is included in *snpn-ConfigIDList* stored in *VarLogMeasReport*:

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

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

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

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

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

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

2> if the UE is capable of reporting availability of 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 *RRCSetupComplete* message;

3> else:

4> if the UE has logged measurements:

5> set *sigLogMeasConfigAvailable* to *false* in the *RRCSetupComplete* 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* or in 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 current registered SNPN identity is equal to *snpn-identity* stored in *VarConnEstFailReport* or any entry of *VarConnEstFailReportList*:

3> include *connEstFailInfoAvailable* in the *RRCSetupComplete* 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 is included in *snpn-IdentityList* stored in the *VarRLF-Report*:

3> include *rlf-InfoAvailable* in the *RRCSetupComplete* 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 is included in *snpn-IdentityList* stored in the *VarSuccessHO-Report*:

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

2> if the UE has successful PSCell change or addition 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 is included in *snpn-IdentityList* stored in the *VarSuccessPSCell-Report*:

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

2> if the UE is configured with at least one application layer measurement with *configForRRC-IdleInactive* set to *true*:

3> for each application layer measurement configuration with *configForRRC-IdleInactive* set to *true*:

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

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

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

5> release the application layer measurement configuration in UE variables *VarAppLayerIdleConfig* and *VarAppLayerPLMN-ListConfig*;

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

3> if at least one stored application layer measurement configuration or application layer measurement report container has not been released:

4> include *measConfigReportAppLayerAvailable* in the *RRCSetupComplete* message;

2> if the UE supports uplink RRC message segmentation of *UECapabilityInformation*:

3> may include the *ul-RRC-Segmentation* in the *RRCSetupComplete* message;

2> if the *RRCSetup* is received in response to an *RRCResumeRequest*, *RRCResumeRequest1* or *RRCSetupRequest*:

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

4> include the *mobilityState* in the *RRCSetupComplete* 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 SIB1 contains *musim-CapRestrictionAllowed* and the UE capability is restricted for MUSIM operation:

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

2> if the UE has flight path information available:

3> include *flightPathInfoAvailable*;

1> submit the *RRCSetupComplete* message to lower layers for transmission, upon which the procedure ends.

*Next Modified Subclause*

#### 5.3.8.3 Reception of the *RRCRelease* by the UE

The UE shall:

1> delay the following actions defined in this clause 60 ms from the moment the *RRCRelease* message was received or optionally when lower layers indicate that the receipt of the *RRCRelease* message has been successfully acknowledged, whichever is earlier;

NOTE 0: When the *RRCRelease* message is received on a HARQ process with disabled HARQ feedback, and when STATUS reporting, as defined in TS 38.322 [4], has not been triggered for a logical channel associated with the SRB1, the lower layers can be considered to have indicated that the receipt of the *RRCRelease* message has been successfully acknowledged.

1> stop timer T380, if running;

1> stop timer T320, if running;

1> if timer T316 is running;

2> stop timer T316;

2> if the UE supports RLF-Report for fast MCG recovery procedure:

3> set the *elapsedTimeT316* in the *VarRLF-Report* to the value of the elapsed time of the timer T316;

3> set the *pSCellId* to the global cell identity of the PSCell, if available, otherwise to the physical cell identity and carrier frequency of the PSCell;

2> else:

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

1> stop timer T350, if running;

1> stop timer T346g, if running;

1> if theAS security is not activated:

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

2> perform the actions upon going to RRC\_IDLE as specified in 5.3.11 with the release cause 'other' upon which the procedure ends;

1> if the *RRCRelease* message includes *redirectedCarrierInfo* indicating redirection to *eutra*:

2> if *cnType* is included:

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

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

2> if *voiceFallbackIndication* is included:

3> consider the RRC connection release was for EPS fallback for IMS voice (see TS 23.502 [43]);

1> if the *RRCRelease* message includes the *cellReselectionPriorities*:

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

2> if the *t320* is included:

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

1> else:

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

1> if *deprioritisationReq* is included and the UE supports RRC connection release with deprioritisation:

2> start or restart timer T325 with the timer value set to the *deprioritisationTimer* signalled;

2> store the *deprioritisationReq* until T325 expiry;

NOTE 1a: The UE stores the deprioritisation request irrespective of any cell reselection absolute priority assignments (by dedicated or common signalling) and regardless of RRC connections in NR or other RATs unless specified otherwise.

1> if the *RRCRelease* includes the *measIdleConfig*:

2> if T331 is running:

3> stop timer T331;

3> perform the actions as specified in 5.7.8.3;

2> if the *measIdleConfig* is set to *setup*:

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

3> start timer T331 with the value set to *measIdleDuration*;

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

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

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

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

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

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

3> if the *measIdleConfig* contains *measReselectionCarrierListEUTRA:*

4> store the received *measReselectionCarrierListEUTRA* in *VarMeasReselectionConfig*;

3> if the *measIdleConfig* contains *measReselectionCarrierListNR:*

4> store the received *measReselectionCarrierListNR* in *VarMeasReselectionConfig*;3> if the *measIdleConfig* contains *measurementValidityDuration:*

4> store the received *measReselectionCarrierListNR* in *VarMeasReselectionConfig*;

1> if the *RRCRelease* includes *suspendConfig*:

2> reset MAC and release the default MAC Cell Group configuration, if any;

2> apply the received *suspendConfig* except the received *nextHopChainingCount*;

2> if the *sdt-Config* is configured:

3> for each of the DRB in the *sdt-DRB-List*:

4> consider the DRB to be configured for SDT;

3> if *sdt-SRB2-Indication* is configured:

4> consider the SRB2 to be configured for SDT;

3> for each RLC bearer (except those associated with broadcast MRBs) that is not suspended:

4> re-establish the RLC entity as specified in TS 38.322 [4];

3> for SRB2 (if it is resumed) and for SRB1:

4> trigger the PDCP entity to perform SDU discard as specified in TS 38.323 [5];

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

4> configure the PCell with the configured grant resources for SDT and instruct the MAC entity to start the *cg-SDT-TimeAlignmentTimer*;

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

3> apply the configuration and instruct MAC to start the *inactivePosSRS-TimeAlignmentTimer*;

2> if *srs-PosRRC-InactiveValidityAreaConfig* is configured:

3> apply the configuration and instruct MAC to start the *inactivePosSRS-ValidityAreaTAT*;

NOTE 1b: The Network should provide full configuration to UE for SRS for Positioning in RRC\_INACTIVE.

2> perform the LTM configuration release procedure for the MCG and the SCG as specified in clause 5.3.5.18.7;

2> remove all the entries within the MCG and the SCG *VarConditionalReconfig*, if any;

2> remove the *servingSecurityCellSetId* within the *VarServingSecurityCellSetID*, if any;

2> for each *measId* of the MCG *measConfig* and for each *measId* of the SCG *measConfig*, if configured, if the associated *reportConfig* has a *reportType* set to *condTriggerConfig*:

3> for the associated *reportConfigId*:

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

3> if the associated *measObjectId* is only associated to a *reportConfig* with *reportType* set to *condTriggerConfig*:

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

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

2> for NCR-MT, if *NCR-FwdConfig* is configured:

3> if the *NCR-FwdConfig* includes periodic forwarding resource configuration:

4> indicate to NCR-Fwd to continue forwarding only in accordance with the configured periodic forwarding resource set(s);

3> else:

4> indicate to NCR-Fwd to cease forwarding;

2> if the UE is acting as L2 U2N Remote UE and is not configured with MP:

3> if the PC5-RRC connection with the U2N Relay UE is determined to be released:

4> indicate upper layers to trigger PC5 unicast link release;

3> else (i.e., maintain the PC5 RRC connection):

4> establish or re-establish (e.g. via release and add) SL RLC entity for SRB1;

2> else:

3> re-establish RLC entities for SRB1;

2> if the *RRCRelease* message with *suspendConfig* was received in response to an *RRCResumeRequest* or an *RRCResumeRequest1*:

3> stop the timer T319 if running;

3> in the stored UE Inactive AS context:

4> replace the KgNB and KRRCint keys with the current KgNB and KRRCint keys;

4> replace the *nextHopChainingCount* with the value of *nextHopChainingCount* received in the *RRCRelease* message*;*

4> replace the *cellIdentity* with the *cellIdentity* of the cell the UE has received the *RRCRelease* message;

4> if the *suspendConfig* contains the *sl-UEIdentityRemote* (i.e. the UE is a L2 U2N Remote UE):

5> replace the C-RNTI with the value of the *sl-UEIdentityRemote*;

5> replace the physical cell identitywith the value of the *sl-PhysCellId* in *sl-ServingCellInfo* contained in the discovery message received from the connected L2 U2N Relay UE;

4> else:

5> replace the C-RNTI with the C-RNTI used in the cell (see TS 38.321 [3]) the UE has received the *RRCRelease* message;

5> replace the physical cell identitywith the physical cell identity of the cell the UE has received the *RRCRelease* message;

3> replace the *nextHopChainingCount* with the value associated with the current KgNB;

3> stop the timer T319a if running and consider SDT procedure is not ongoing;

2> else:

3> store in the UE Inactive AS Context the *nextHopChainingCount* received in the *RRCRelease* message*,* the current KgNB and KRRCint keys, the ROHC state, the EHC context(s), the UDC state, the stored QoS flow to DRB mapping rules, the application layer measurement configuration, the C-RNTI used in the source PCell, the *cellIdentity* and the physical cell identity of the source PCell, the *NCR-FwdConfig* (if configured), the *spCellConfigCommon* within *ReconfigurationWithSync* of the NR PSCell (if configured) and all other parameters configured except for:

- parameters within *ReconfigurationWithSync* of the PCell;

- parameters within *ReconfigurationWithSync* of the NR PSCell, if configured;

- parameters within *MobilityControlInfoSCG* of the E-UTRA PSCell, if configured;

- *servingCellConfigCommonSIB*;

- *sl-L2RelayUE-Config*, if configured;

- *sl-L2RemoteUE-Config*, if configured;

- *uav-Config*, if configured;

NOTE 1c: *suspendConfig* is not stored as part of UE Inactive AS Context, except for the fields explicitly specified.

3> store any previously or subsequently received application layer measurement report containers for which no segment, or full message, has been submitted to lower layers for transmission;

3> for each application layer measurement configuration for which *configForRRC-IdleInactive* is set to *true*:

4> initiate the procedure in 5.5b.1.2;

NOTE 2: NR sidelink communication/discovery related configurations and logged measurement configuration are not stored as UE Inactive AS Context, when UE enters RRC\_INACTIVE.

2> suspend all SRB(s) and DRB(s), except SRB0 and broadcast MRBs;

2> suspend all multicast MRB(s) associated with multicast session(s) not configured to receive in RRC\_INACTIVE;

2> indicate PDCP suspend to lower layers of all DRBs and multicast MRBs associated with multicast session(s) not configured to receive in RRC\_INACTIVE;

2> release Uu Relay RLC channel(s), if configured;

2> release PC5 Relay RLC channel(s), if configured;

2> release the SRAP entity, if configured;

NOTE 2a: A L2 U2N Relay UE may re-establish the SL-RLC0, SL-RLC1 and SRAP entity after release.

2> if SL indirect path is configured:

3> release cell identity and relay UE ID configured in *sl-IndirectPathAddChange*;

3> indicate upper layers to trigger PC5 unicast link release of the SL indirect path;

2> if N3C indirect path is configured:

3> release *n3c-IndirectPathAddChange*;

3> consider the non-3GPP connection is not used;

2> if the UE is acting as a N3C relay UE:

3> release *n3c-IndirectPathConfigRelay*;

3> consider the non-3GPP connection is not used;

2> if the *t380* is included:

3> start timer T380, with the timer value set to *t380*;

2> if the *RRCRelease* message is including the *waitTime*:

3> start timer T302 with the value set to the *waitTime*;

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

2> if T390 is running:

3> stop timer T390 for all access categories;

3> perform the actions as specified in 5.3.14.4;

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

2> if the UE is capable of L2 U2N Remote UE:

3> enter RRC\_INACTIVE, and perform either cell selection as specified in TS 38.304 [20], or relay selection as specified in clause 5.8.15.3, or both;

2> else:

3> enter RRC\_INACTIVE and perform cell selection as specified in TS 38.304 [20];

2> if the *suspendConfig* includes *resumeIndication*:

3> perform the actions as if the UE received *Paging* message with the *ue-Identity* included in the *PagingRecord* matching the UE's stored *fullI-RNTI*, as specified in clause 5.3.2.3;

2> if the *multicastConfigInactive* is configured:

3> if the multicast PTM configuration is provided for a multicast session for which the UE is not indicated to stop monitoring the G-RNTI and the UE selects the same cell as the one on which it received *RRCRelease*:

4> apply the multicast PTM configuration as specified in 5.10.3;

4> monitor the Multicast MCCH-RNTI as specified in 5.10.2;

1> else:

2> perform the actions upon going to RRC\_IDLE as specified in 5.3.11, with the release cause 'other'.

NOTE 3: Whether to release the PC5 unicast link is left to L2 U2N Remote UE's implementation.

NOTE 4: It is left to UE implementation whether to stop T430, if running, when going to RRC\_INACTIVE.

*Next Modified Subclause*

#### 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 *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*,* 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-InactiveValidityAreaConfig* is configured:

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> if *idleInactiveReportAllowed* is not included in the *RRCResume* message:

2> for each application layer measurement configuration with *configforRRC-IdleInactive* set to *true*:

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

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

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

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

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

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

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

4> 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 UE has valid reselection measurements available;

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

4> set the *measResultReselectionEUTRA* in the *RRCResumeComplete* message to the valid as defined in TS 38.133 [14] EUTRA measurement results*,* if available for any frequency listed in *measReselectionCarrierListEUTRA* in *VarMeasReselectionConfig*;

4> set the *measResultReselectionNR* in the *RRCResumeComplete* message to the valid as defined in TS 38.133 [14] NR measurement results, if available for any frequency listed in *measReselectionCarrierListNR* in *VarMeasReselectionConfig*;

3> else:

4> if the SIB1 contains *reselectionModeMeasurementsNR* and the UE has valid as defined in TS 38.133 [14] NR reselection measurements available for any frequency listed in *measReselectionCarrierListNR* in *VarMeasReselectionConfig*; or

4> if the SIB1 contains *reselectionModeMeasurementsEUTRA* and the UE has valid as defined in TS 38.133 [14] E-UTRA reselection measurements available for any frequency listed in *measReselectionCarrierListEUTRA* in *VarMeasReselectionConfig*:

5> 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 is included in *snpn-ConfigIDList* 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 is capable of reporting availability of 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:

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* 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 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 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 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 is configured with at least one application layer measurement with *configForRRC-IdleInactive* set to *true*:

3> for each application layer measurement configuration with *configForRRC-IdleInactive* set to *true*:

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

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

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

5> release the application layer measurement configuration in UE variables *VarAppLayerIdleConfig* and *VarAppLayerPLMN-ListConfig*;

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

3> if at least one stored application layer measurement configuration or application layer measurement report container has not been released:

4> 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*, 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*, 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 the SIB1 contains *musim-CapRestrictionAllowed* and the UE capability is restricted for MUSIM operation:

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*.*

*Next Modified Subclause*

### 5.7.8 Idle/inactive Measurements

#### 5.7.8.1 General

This procedure specifies the measurements to be performed and stored by a UE in RRC\_IDLE and RRC\_INACTIVE when it has an idle/inactive measurement configuration.

#### 5.7.8.1a Measurement configuration

The purpose of this procedure is to update the idle/inactive measurement configuration.

The UE initiates this procedure while T331 is running and SDT procedure is not ongoing and one of the following conditions is met:

1> upon selecting a cell when entering RRC\_IDLE or RRC-INACTIVE from RRC\_CONNECTED or RRC\_INACTIVE; or

1> upon update of system information (*SIB4*, or *SIB11*), e.g. due to intra-RAT cell (re)selection;

While in RRC\_IDLE or RRC\_INACTIVE, and T331 is running, the UE shall:

1> if *VarMeasIdleConfig* includes neither a *measIdleCarrierListEUTRA* nor a *measIdleCarrierListNR* received from the *RRCRelease* message:

2> if the UE supports *idleInactiveEUTRA-MeasReport*:

3> if the SIB11 includes the *measIdleConfigSIB* and contains *measIdleCarrierListEUTRA*:

4> store or replace the *measIdleCarrierListEUTRA* of *measIdleConfigSIB* of SIB11 within *VarMeasIdleConfig*;

3> else:

4> remove the *measIdleCarrierListEUTRA* in *VarMeasIdleConfig*, if stored;

2> if the UE supports *idleInactiveNR-MeasReport*:

3> if *SIB11* includes the *measIdleConfigSIB* and contains *measIdleCarrierListNR*:

4> store or replace the *measIdleCarrierListNR* of *measIdleConfigSIB* of *SIB11* within *VarMeasIdleConfig*;

3> else:

4> remove the *measIdleCarrierListNR* in *VarMeasIdleConfig*, if stored;

2> if the UE supports reselection measurement reporting:

3> if *SIB11* includes the *measIdleConfigSIB* and contains *measReselectionCarrierListNR*:

4> store or replace the *measReselectionCarrierListNR* of *measIdleConfigSIB* of *SIB11* within *VarMeasReselectionConfig*;

3> else:

4> remove the *measReselectionCarrierListNR* in *VarMeasReselectionConfig*, if stored;

3> if *SIB11* includes the *measIdleConfigSIB* and contains *measReselectionCarrierListEUTRA*:

4> store or replace the *measReselectionCarrierListEUTRA*of *measIdleConfigSIB* of *SIB11* within *VarMeasReselectionConfig*;

3> else:

4> remove the *measReselectionCarrierListEUTRA* in *VarMeasReselectionConfig*, if stored;

3> if *SIB11* includes the *measIdleConfigSIB* and contains *measurementValidityDuration*:

4> store or replace the *measurementValidityDuration measIdleConfigSIB* of *SIB11* within *VarMeasReselectionConfig*;

3> else:

4> remove the *measurementValidityDuration* in *VarMeasReselectionConfig*, if stored;

1> for each entry in the *measIdleCarrierListNR* within *VarMeasIdleConfig* that does not contain an *ssb-MeasConfig* received from the *RRCRelease* message:

2> if there is an entry in *measIdleCarrierListNR* in *measIdleConfigSIB* of *SIB11* that has the same carrier frequency and subcarrier spacing as the entry in the *measIdleCarrierListNR* within *VarMeasIdleConfig* and that contains *ssb-MeasConfig*:

3> delete the *ssb-MeasConfig* of the corresponding entry in the *measIdleCarrierListNR* within *VarMeasIdleConfig*;

3> store the SSB measurement configuration from *SIB11* into *nrofSS-BlocksToAverage*, *absThreshSS-BlocksConsolidation*, *smtc*, *ssb-ToMeasure*, *deriveSSB-IndexFromCell*, and *ss-RSSI-Measurement* within *ssb-MeasConfig* of the corresponding entry in the *measIdleCarrierListNR* within *VarMeasIdleConfig*;

2> else if there is an entry in *interFreqCarrierFreqList* of *SIB4* with the same carrier frequency and subcarrier spacing as the entry in *measIdleCarrierListNR* within *VarMeasIdleConfig*:

3> delete the *ssb-MeasConfig* of the corresponding entry in the *measIdleCarrierListNR* within *VarMeasIdleConfig*;

3> store the SSB measurement configuration from *SIB4* into *nrofSS-BlocksToAverage*, *absThreshSS-BlocksConsolidation*, *smtc*, *ssb-ToMeasure*, *deriveSSB-IndexFromCell*, and *ss-RSSI-Measurement* within *ssb-MeasConfig* of the corresponding entry in the *measIdleCarrierListNR* within *VarMeasIdleConfig*;

2> else:

3> remove the *ssb-MeasConfig* of the corresponding entry in the *measIdleCarrierListNR* within *VarMeasIdleConfig*, if stored;

1> perform measurements according to 5.7.8.2a.

*Next Modified Subclause*

#### 5.7.10.3 Reception of the *UEInformationRequest* message

Upon receiving the *UEInformationRequest* message, the UE shall, only after successful security activation:

1> if the *idleModeMeasurementReq* is included in the *UEInformationRequest* and the UE has stored *VarMeasIdleReport* that contains measurement information concerning cells other than the PCell:

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

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

2> discard the *VarMeasIdleReport* upon successful delivery of the *UEInformationResponse* message confirmed by lower layers;

1> if the *reselectionModeMeasurementReq* is included in the *UEInformationRequest* and the UE has valid as defined in TS 38.133 [14] reselection measurements available:

2> set the *measResultReselectionEUTRA* in the *UEInformationResponse* message the valid as defined in TS 38.133 [14] EUTRA measurement results*, if available* for any frequency listed in *measReselectionCarrierListEUTRA* in *VarMeasReselectionConfig*;

2> set the *measResultReselectionNR* in the *UEInformationResponse* message the valid NR as defined in TS 38.133 [14] measurement results, if available for any frequency listed in *measReselectionCarrierListNR* in *VarMeasReselectionConfig*;

1> if the *logMeasReportReq* is present and if the RPLMN is included in *plmn-IdentityList* stored in *VarLogMeasReport*, or if the current registered SNPN is included in *snpn-ConfigIDList* stored in *VarLogMeasReport*:

2> if *VarLogMeasReport* includes one or more logged measurement entries, set the contents of the *logMeasReport* in the *UEInformationResponse* message as follows:

3> include the *absoluteTimeStamp* and set it to the value of *absoluteTimeInfo* in the *VarLogMeasReport*;

3> include the *traceReference* and set it to the value of *traceReference* in the *VarLogMeasReport*;

3> include the *traceRecordingSessionRef* and set it to the value of *traceRecordingSessionRef* in the *VarLogMeasReport;*

3> include the *tce-Id* and set it to the value of *tce-Id* in the *VarLogMeasReport*;

3> include the *logMeasInfoList* and set it to include one or more entries from the *VarLogMeasReport* starting from the entries logged first, and for each entry of the *logMeasInfoList* that is included, include all information stored in the corresponding *logMeasInfoList* entry in *VarLogMeasReport*;

3> if the *VarLogMeasReport* includes one or more additional logged measurement entries that are not included in the *logMeasInfoList* within the *UEInformationResponse* message:

4> include the *logMeasAvailable*;

4> if *bt-LocationInfo* is included in *locationInfo* of one or more of the additional logged measurement entries in *VarLogMeasReport* that are not included in the *logMeasInfoList* within the *UEInformationResponse* message:

5> include the *logMeasAvailableBT*;

4> if *wlan-LocationInfo* is included in *locationInfo* of one or more of the additional logged measurement entries in *VarLogMeasReport* that are not included in the *logMeasInfoList* within the *UEInformationResponse* message:

5> include the *logMeasAvailableWLAN*;

1> if *ra-ReportReq* is set to *true* and the UE has random access related information available in *VarRA-Report* and if the RPLMN is included in *plmn-IdentityList* stored in *VarRA-Report*; or

1> if *ra-ReportReq* is set to *true* and the UE has random access related information available in *VarRA-Report* and if the registered SNPN is included in *snpn-IdentityList* stored in *VarRA-Report*:

2> set the *ra-ReportList* in the *UEInformationResponse* message to the value of *ra-ReportList* in *VarRA-Report*;

2> discard the *ra-ReportList* from *VarRA-Report* upon successful delivery of the *UEInformationResponse* message confirmed by lower layers;

1> if *rlf-ReportReq* is set to *true*:

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

3> set *timeSinceFailure* in *VarRLF-Report* to the time that elapsed since the last radio link failure or handover failure in NR;

3> set the *rlf-Report* in the *UEInformationResponse* message to the value of *rlf-Report* in *VarRLF-Report*;

3> discard the *rlf-Report* from *VarRLF-Report* upon successful delivery of the *UEInformationResponse* message confirmed by lower layers;

2> else if the UE is capable of cross-RAT RLF reporting as defined in TS 38.306 [26] and has radio link failure information or handover failure information available in *VarRLF-Report* of TS 36.331 [10] and if the RPLMN is included in *plmn-IdentityList* stored in *VarRLF-Report* of TS 36.331 [10]:

3> set *timeSinceFailure* in *VarRLF-Report* of TS 36.331 [10] to the time that elapsed since the last radio link failure or handover failure in EUTRA;

3> set failedPCellId-EUTRA in the *rlf-Report* in the *UEInformationResponse* message to indicate the PCell in which RLF was detected or the source PCell of the failed handover in the *VarRLF-Report* of TS 36.331 [10];

3> set the *measResult-RLF-Report-EUTRA* in the *rlf-Report* in the *UEInformationResponse* message to the value of *rlf-Report* in *VarRLF-Report* of TS 36.331 [10];

3> discard the *rlf-Report* from *VarRLF-Report* of TS 36.331 [10] upon successful delivery of the *UEInformationResponse* message confirmed by lower layers;

1> if *connEstFailReportReq* is set to *true* and the UE has connection establishment failure or connection resume failure information 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*:

1> if *connEstFailReportReq* is set to *true* and 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* stored in *VarConnEstFailReport* or any entry of *VarConnEstFailReportList*:

2> set *timeSinceFailure* in *VarConnEstFailReport* to the time that elapsed since the last connection establishment failure or connection resume failure in NR;

2> set the *connEstFailReport* in the *UEInformationResponse* message to the value of *connEstFailReport* in *VarConnEstFailReport*;

2> if the UE supports multiple CEF report:

3> for each *connEstFailReport* in the *connEstFailReportList* in *VarConnEstFailReportList*:

4> set *timeSinceFailure* to the time that elapsed since the associated connection establishment failure or connection resume failure in NR;

2> for each *connEstFailReport* in the *connEstFailReportList* in the *UEInformationResponse* message, set the value to the value of *connEstFailReport* in *VarConnEstFailReport* in *VarConnEstFailReportList*;

2> discard the *connEstFailReport* from *VarConnEstFailReport* and *VarConnEstFailReportList* upon successful delivery of the *UEInformationResponse* message confirmed by lower layers;

1> if the *mobilityHistoryReportReq* is set to *true*:

2> include the *mobilityHistoryReport* and set it to include *visitedCellInfoList* from *VarMobilityHistoryReport*;

2> include in the *mobilityHistoryReport* an entry for the current PCell, possibly after removing the oldest entry if required, and set its fields as follows:

3> set *visitedCellId* to the global cell identity or the physical cell identity and carrier frequency of the current PCell:

3> set field *timeSpent* to the time spent in the current PCell;

3> if the UE supports PSCell mobility history information and if *visitedPSCellInfoList* is present in *VarMobilityHistoryReport*:

4> for the newest entry of the PCell in the *mobilityHistoryReport*, include *visitedPSCellInfoList* from *VarMobilityHistoryReport*;

4> if the UE is configured with a PSCell:

5> for the newest entry of the PCell in the *mobilityHistoryReport*, include the current PSCell information in the *visitedPSCellInfoListReport,* possibly after removing the oldest PSCell entry of a PCell in the *mobilityHistoryReport*, if required, and set its fields as follows:

6> set *visitedCellId* to the global cell identity or the physical cell identity and carrier frequency of the current PSCell:

6> set field *timeSpent* to the time spent in the current PSCell while being connected to the current PCell;

4> else:

5> for the newest entry of the PCell in the *mobilityHistoryReport*, include a new entry in the *visitedPSCellInfoListReport,* possibly after removing the oldest PSCell entry of a PCell in the *mobilityHistoryReport*, if required, and set its fields as follows:

6> set field *timeSpent* to the time spent without PSCell in the current PCell since last PSCell release since connected to the current PCell in RRC\_CONNECTED;

3> else if the UE supports PSCell mobility history information:

4> if the UE is configured with a PSCell:

5> for the newest entry of the PCell in the *mobilityHistoryReport*, include the current PSCell information in the *visitedPSCellInfoListReport,* possibly after removing the oldest PSCell entry of a PCell in the *mobilityHistoryReport*, if required, and set its fields as follows:

6> set *visitedCellId* to the global cell identity or the physical cell identity and carrier frequency of the current PSCell:

6> set field *timeSpent* to the time spent in the current PSCell while being connected to the current PCell;

4> else:

5> for the newest entry of the PCell in the *mobilityHistoryReport*, include a new entry in the *visitedPSCellInfoListReport,* possibly after removing the oldest PSCell entry of a PCell in the *mobilityHistoryReport*, if required, and set its fields as follows:

6> set field *timeSpent* to the time spent without PSCell in the current PCell since connected to the current PCell in RRC\_CONNECTED;

1> if the *successHO-ReportReq* is set to *true* and if the UE has successful handover related information available in *VarSuccessHO-Report* and if the RPLMN is included in the *plmn-IdentityList* stored in *VarSuccessHO-Report*; or

1> if the *successHO-ReportReq* is set to *true* and if the UE has successful handover related information available in *VarSuccessHO-Report* and if the current registered SNPN is included in *snpn-IdentityList* if stored in the *VarSuccessHO-Report*:

2> if the *successHO-Report* in the *VarSuccessHO-Report* concerns a DAPS handover and if a PDCP PDU has been received from the source cell of the concerned HO and a non-duplicated PDCP PDU has been received from the target cell of the concerned HO:

3> set *upInterruptionTimeAtHO* in *VarSuccessHO-Report* to include the time elapsed between the time of arrival of the last PDCP PDU received from the source cell of the concerned handover and the time of arrival of the first non-duplicate PDCP PDU received from the target cell of the concerned handover, as measured at the time of arrival of the first non-duplicate PDCP PDU received from the target cell;

2> if the *successHO-Report* in the *VarSuccessHO-Report* concerns a *mobilityFromNRCommand*:

3> set *timeSinceSHR* in *VarSuccessHO-Report* to the time that elapsed since the execution of the associated *mobilityFromNRCommand*;

2> set the *successHO-Report* in the *UEInformationResponse* message to the value of *successHO-Report* in the *VarSuccessHO-Report*, if available;

2> discard the *VarSuccessHO-Report* upon successful delivery of the *UEInformationResponse* message confirmed by lower layers;

1> if the *successPSCell-ReportReq* is set to *true* and if the UE has successful PSCell change or addition information available in *VarSuccessPSCell-Report* and if the RPLMN is included in *plmn-IdentityList* stored in *VarSuccessPSCell-Report*; or

1> if the *successPSCell-ReportReq* is set to *true* and if the UE has successful PSCell change or addition information available in *VarSuccessPSCell-Report* and if the current registered SNPN is included in *snpn-IdentityList* if stored in the *VarSuccessPSCell-Report*:

2> set the *successPSCell-Report* in the *UEInformationResponse* message to the value of *successPSCell-Report* in the *VarSuccessPSCell-Report*;

2> discard the *VarSuccessPSCell-Report* upon successful delivery of the *UEInformationResponse* message confirmed by lower layers;

1> if the *coarseLocationRequest* is set to *true*:

2> include *coarseLocationInfo,* if available;

1> if the *flightPathInfoReq* is included in the *UEInformationRequest* and the UE has flight path information available, set the *flightPathInfoReport* in the *UEInformationResponse* message as follows:

2> include the list of up to *maxWayPointNumber* waypoints along the flight path;

2> if the *includeTimeStamp* is set to *true*, for each included waypoint:

3> if available, set the field *timestamp* to the time when UE intends to arrive at the waypoint;

1> if the *logMeasReport* is included in the *UEInformationResponse*:

2> submit the *UEInformationResponse* message to lower layers for transmission via SRB2;

2> discard the logged measurement entries included in the *logMeasInfoList* from *VarLogMeasReport* upon successful delivery of the *UEInformationResponse* message confirmed by lower layers;

1> else:

2> submit the *UEInformationResponse* message to lower layers for transmission via SRB1.

*Next Modified Subclause*

*Next Modified Subclause*

6.2.2 Message definitions

#### – *RRCRelease*

The *RRCRelease* message is used to command the release of an RRC connection or the suspension of the RRC connection.

Signalling radio bearer: SRB1

RLC-SAP: AM

Logical channel: DCCH

Direction: Network to UE

*RRCRelease* message

-- ASN1START

-- TAG-RRCRELEASE-START

RRCRelease ::= SEQUENCE {

 rrc-TransactionIdentifier RRC-TransactionIdentifier,

 criticalExtensions CHOICE {

 rrcRelease RRCRelease-IEs,

 criticalExtensionsFuture SEQUENCE {}

 }

}

RRCRelease-IEs ::= SEQUENCE {

 redirectedCarrierInfo RedirectedCarrierInfo OPTIONAL, -- Need N

 cellReselectionPriorities CellReselectionPriorities OPTIONAL, -- Need R

 suspendConfig SuspendConfig OPTIONAL, -- Need R

 deprioritisationReq SEQUENCE {

 deprioritisationType ENUMERATED {frequency, nr},

 deprioritisationTimer ENUMERATED {min5, min10, min15, min30}

 } OPTIONAL, -- Need N

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 nonCriticalExtension RRCRelease-v1540-IEs OPTIONAL

}

RRCRelease-v1540-IEs ::= SEQUENCE {

 waitTime RejectWaitTime OPTIONAL, -- Need N

 nonCriticalExtension RRCRelease-v1610-IEs OPTIONAL

}

RRCRelease-v1610-IEs ::= SEQUENCE {

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

 measIdleConfig-r16 SetupRelease {MeasIdleConfigDedicated-r16} OPTIONAL, -- Need M

 nonCriticalExtension RRCRelease-v1650-IEs OPTIONAL

}

RRCRelease-v1650-IEs ::= SEQUENCE {

 mpsPriorityIndication-r16 ENUMERATED {true} OPTIONAL, -- Cond Redirection2

 nonCriticalExtension RRCRelease-v1710-IEs OPTIONAL

}

RRCRelease-v1710-IEs ::= SEQUENCE {

 noLastCellUpdate-r17 ENUMERATED {true} OPTIONAL, -- Need S

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

RedirectedCarrierInfo ::= CHOICE {

 nr CarrierInfoNR,

 eutra RedirectedCarrierInfo-EUTRA,

 ...

}

RedirectedCarrierInfo-EUTRA ::= SEQUENCE {

 eutraFrequency ARFCN-ValueEUTRA,

 cnType ENUMERATED {epc,fiveGC} OPTIONAL -- Need N

}

CarrierInfoNR ::= SEQUENCE {

 carrierFreq ARFCN-ValueNR,

 ssbSubcarrierSpacing SubcarrierSpacing,

 smtc SSB-MTC OPTIONAL, -- Need S

 ...

}

SuspendConfig ::= SEQUENCE {

 fullI-RNTI I-RNTI-Value,

 shortI-RNTI ShortI-RNTI-Value,

 ran-PagingCycle PagingCycle,

 ran-NotificationAreaInfo RAN-NotificationAreaInfo OPTIONAL, -- Need M

 t380 PeriodicRNAU-TimerValue OPTIONAL, -- Need R

 nextHopChainingCount NextHopChainingCount,

 ...,

 [[

 sl-UEIdentityRemote-r17 RNTI-Value OPTIONAL, -- Cond L2RemoteUE

 sdt-Config-r17 SetupRelease { SDT-Config-r17 } OPTIONAL, -- Need M

 srs-PosRRC-Inactive-r17 SetupRelease { SRS-PosRRC-Inactive-r17 } OPTIONAL, -- Need M

 ran-ExtendedPagingCycle-r17 ExtendedPagingCycle-r17 OPTIONAL -- Cond RANPaging

 ]],

 [[

 ncd-SSB-RedCapInitialBWP-SDT-r17 SetupRelease {NonCellDefiningSSB-r17} OPTIONAL -- Need M

 ]],

 [[

 resumeIndication-r18 ENUMERATED {true} OPTIONAL, -- Need N

 srs-PosRRC-Inactive-v1800 SetupRelease { SRS-PosRRC-Inactive-v1800 } OPTIONAL, -- Need M

 srs-PosRRC-InactiveValidityAreaConfigList-r18 SetupRelease { SRS-PosRRC-InactiveValidityAreaConfigList-r18 } OPTIONAL, -- Need M

 ran-ExtendedPagingCycle-r18 ExtendedPagingCycle-Config-r18 OPTIONAL, -- Cond RANPaging

 multicastConfigInactive-r18 SetupRelease { MulticastConfigInactive-r18 } OPTIONAL -- Need M

 ]]

}

PeriodicRNAU-TimerValue ::= ENUMERATED { min5, min10, min20, min30, min60, min120, min360, min720}

CellReselectionPriorities ::= SEQUENCE {

 freqPriorityListEUTRA FreqPriorityListEUTRA OPTIONAL, -- Need M

 freqPriorityListNR FreqPriorityListNR OPTIONAL, -- Need M

 t320 ENUMERATED {min5, min10, min20, min30, min60, min120, min180, spare1} OPTIONAL, -- Need R

 ...,

 [[

 freqPriorityListDedicatedSlicing-r17 FreqPriorityListDedicatedSlicing-r17 OPTIONAL -- Need M

 ]]

}

PagingCycle ::= ENUMERATED {rf32, rf64, rf128, rf256}

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

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

FreqPriorityEUTRA ::= SEQUENCE {

 carrierFreq ARFCN-ValueEUTRA,

 cellReselectionPriority CellReselectionPriority,

 cellReselectionSubPriority CellReselectionSubPriority OPTIONAL -- Need R

}

FreqPriorityNR ::= SEQUENCE {

 carrierFreq ARFCN-ValueNR,

 cellReselectionPriority CellReselectionPriority,

 cellReselectionSubPriority CellReselectionSubPriority OPTIONAL -- Need R

}

RAN-NotificationAreaInfo ::= CHOICE {

 cellList PLMN-RAN-AreaCellList,

 ran-AreaConfigList PLMN-RAN-AreaConfigList,

 ...

}

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

PLMN-RAN-AreaCell ::= SEQUENCE {

 plmn-Identity PLMN-Identity OPTIONAL, -- Need S

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

}

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

PLMN-RAN-AreaConfig ::= SEQUENCE {

 plmn-Identity PLMN-Identity OPTIONAL, -- Need S

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

}

RAN-AreaConfig ::= SEQUENCE {

 trackingAreaCode TrackingAreaCode,

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

}

SDT-Config-r17 ::= SEQUENCE {

 sdt-DRB-List-r17 SEQUENCE (SIZE (0..maxDRB)) OF DRB-Identity OPTIONAL, -- Need M

 sdt-SRB2-Indication-r17 ENUMERATED {allowed} OPTIONAL, -- Need R

 sdt-MAC-PHY-CG-Config-r17 SetupRelease {SDT-CG-Config-r17} OPTIONAL, -- Need M

 sdt-DRB-ContinueROHC-r17 ENUMERATED { cell, rna } OPTIONAL -- Need S

}

SDT-CG-Config-r17 ::= OCTET STRING (CONTAINING SDT-MAC-PHY-CG-Config-r17)

SDT-MAC-PHY-CG-Config-r17 ::= SEQUENCE {

 -- CG-SDT specific configuration

 cg-SDT-ConfigLCH-RestrictionToAddModList-r17 SEQUENCE (SIZE(1..maxLC-ID)) OF CG-SDT-ConfigLCH-Restriction-r17 OPTIONAL, -- Need N

 cg-SDT-ConfigLCH-RestrictionToReleaseList-r17 SEQUENCE (SIZE(1..maxLC-ID)) OF LogicalChannelIdentity OPTIONAL, -- Need N

 cg-SDT-ConfigInitialBWP-NUL-r17 SetupRelease {BWP-UplinkDedicatedSDT-r17} OPTIONAL, -- Need M

 cg-SDT-ConfigInitialBWP-SUL-r17 SetupRelease {BWP-UplinkDedicatedSDT-r17} OPTIONAL, -- Need M

 cg-SDT-ConfigInitialBWP-DL-r17 BWP-DownlinkDedicatedSDT-r17 OPTIONAL, -- Need M

 cg-SDT-TimeAlignmentTimer-r17 TimeAlignmentTimer OPTIONAL, -- Need M

 cg-SDT-RSRP-ThresholdSSB-r17 RSRP-Range OPTIONAL, -- Need M

 cg-SDT-TA-ValidationConfig-r17 SetupRelease { CG-SDT-TA-ValidationConfig-r17 } OPTIONAL, -- Need M

 cg-SDT-CS-RNTI-r17 RNTI-Value OPTIONAL, -- Need M

 ...,

 [[

 cg-SDT-ConfigLCH-RestrictionToAddModListExt-v1800 SEQUENCE (SIZE(1..maxLC-ID)) OF CG-SDT-ConfigLCH-Restriction-v1800

 OPTIONAL, -- Need N

 cg-MT-SDT-MaxDurationToNext-CG-Occasion-r18 ENUMERATED {

 ms10, ms100, sec1, sec10, sec60, sec100, sec300, sec600,

 sec1200, sec1800, sec3600,

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

 ]]

}

CG-SDT-TA-ValidationConfig-r17 ::= SEQUENCE {

 cg-SDT-RSRP-ChangeThreshold-r17 ENUMERATED { dB2, dB4, dB6, dB8, dB10, dB14, dB18, dB22,

 dB26, dB30, dB34, spare5, spare4, spare3, spare2, spare1}

}

BWP-DownlinkDedicatedSDT-r17 ::= SEQUENCE {

 pdcch-Config-r17 SetupRelease { PDCCH-Config } OPTIONAL, -- Need M

 pdsch-Config-r17 SetupRelease { PDSCH-Config } OPTIONAL, -- Need M

 ...

}

BWP-UplinkDedicatedSDT-r17 ::= SEQUENCE {

 pusch-Config-r17 SetupRelease { PUSCH-Config } OPTIONAL, -- Need M

 configuredGrantConfigToAddModList-r17 ConfiguredGrantConfigToAddModList-r16 OPTIONAL, -- Need N

 configuredGrantConfigToReleaseList-r17 ConfiguredGrantConfigToReleaseList-r16 OPTIONAL, -- Need N

 ...

}

CG-SDT-ConfigLCH-Restriction-r17 ::= SEQUENCE {

 logicalChannelIdentity-r17 LogicalChannelIdentity,

 configuredGrantType1Allowed-r17 ENUMERATED {true} OPTIONAL, -- Need R

 allowedCG-List-r17 SEQUENCE (SIZE (0.. maxNrofConfiguredGrantConfigMAC-1-r16)) OF ConfiguredGrantConfigIndexMAC-r16

 OPTIONAL -- Need R

}

CG-SDT-ConfigLCH-Restriction-v1800 ::= SEQUENCE {

 cg-SDT-MaxDurationToNext-CG-Occasion-r18 ENUMERATED {

 ms10, ms100, sec1, sec10, sec60, sec100, sec300, sec600,

 sec1200, sec1800, sec3600,

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

}

SRS-PosRRC-Inactive-r17 ::= OCTET STRING (CONTAINING SRS-PosRRC-InactiveConfig-r17)

SRS-PosRRC-InactiveConfig-r17 ::= SEQUENCE {

 srs-PosConfigNUL-r17 SRS-PosConfig-r17 OPTIONAL, -- Need R

 srs-PosConfigSUL-r17 SRS-PosConfig-r17 OPTIONAL, -- Need R

 bwp-NUL-r17 BWP OPTIONAL, -- Need S

 bwp-SUL-r17 BWP OPTIONAL, -- Need S

 inactivePosSRS-TimeAlignmentTimer-r17 TimeAlignmentTimer OPTIONAL, -- Need M

 inactivePosSRS-RSRP-ChangeThreshold-r17 RSRP-ChangeThreshold-r17 OPTIONAL -- Need M

}

RSRP-ChangeThreshold-r17 ::= ENUMERATED {dB4, dB6, dB8, dB10, dB14, dB18, dB22, dB26, dB30, dB34, spare6, spare5, spare4, spare3, spare2, spare1}

SRS-PosConfig-r17 ::= SEQUENCE {

 srs-PosResourceSetToReleaseList-r17 SEQUENCE (SIZE(1..maxNrofSRS-PosResourceSets-r16)) OF SRS-PosResourceSetId-r16 OPTIONAL,-- Need N

 srs-PosResourceSetToAddModList-r17 SEQUENCE (SIZE(1..maxNrofSRS-PosResourceSets-r16)) OF SRS-PosResourceSet-r16 OPTIONAL,-- Need N

 srs-PosResourceToReleaseList-r17 SEQUENCE (SIZE(1..maxNrofSRS-PosResources-r16)) OF SRS-PosResourceId-r16 OPTIONAL,-- Need N

 srs-PosResourceToAddModList-r17 SEQUENCE (SIZE(1..maxNrofSRS-PosResources-r16)) OF SRS-PosResource-r16 OPTIONAL -- Need N

}

SRS-PosRRC-Inactive-v1800 ::= SEQUENCE {

 srs-PosRRC-AggBW-InactiveConfigList-r18 SetupRelease { SRS-PosRRC-AggBW-InactiveConfigList-r18 } OPTIONAL, -- Need M

 srs-PosResSetLinkedForAggBWInactiveList-r18 SetupRelease { SRS-PosResSetLinkedForAggBWInactiveList-r18 } OPTIONAL, -- Need M

 srs-PosTx-Hopping-r18 SetupRelease { SRS-PosTx-Hopping-r18 } OPTIONAL, -- Need M

 ...

}

SRS-PosRRC-InactiveValidityAreaConfigList-r18 ::= SEQUENCE SIZE(1..maxNrOfVA-r18) OF SRS-PosRRC-InactiveValidityAreaConfig-r18

SRS-PosRRC-InactiveValidityAreaConfig-r18 ::= SEQUENCE {

 configType-r18 ENUMERATED {preconfig, non-preconfig},

 srs-PosConfigValidityArea-r18 SEQUENCE (SIZE(1..maxNrOfCellsInVA-r18)) OF CellIdentity,

 srs-PosConfigNUL-r18 SRS-PosConfig-r17 OPTIONAL, -- Need R

 srs-PosConfigSUL-r18 SRS-PosConfig-r17 OPTIONAL, -- Need R

 bwp-NUL-r18 BWP OPTIONAL, -- Need S

 bwp-SUL-r18 BWP OPTIONAL, -- Need S

 areaValidityTA-Config-r18 SetupRelease { AreaValidityTA-Config-r18 } OPTIONAL, -- Need M

 srs-PosRRC-AggBW-InactiveConfigList-r18 SetupRelease { SRS-PosRRC-AggBW-InactiveConfigList-r18 } OPTIONAL, -- Need M

 srs-PosResSetLinkedForAggBWInactiveList-r18 SetupRelease { SRS-PosResSetLinkedForAggBWInactiveList-r18 } OPTIONAL, -- Need M

 srs-PosHyperSFN-Index-r18 ENUMERATED {even0, odd1} OPTIONAL, --Need S

 ...

}

AreaValidityTA-Config-r18 ::= SEQUENCE {

 inactivePosSRS-ValidityAreaTAT-r18 ENUMERATED {ms1280, ms1920, ms2560, ms5120, ms10240, ms20480, ms40960, infinity},

 inactivePosSRS-ValidityAreaRSRP-r18 RSRP-ChangeThreshold-r17 OPTIONAL, -- Need M

 autonomousTA-AdjustmentEnabled-r18 ENUMERATED {true} OPTIONAL -- Need M

}

-- Editor's Note: FFS on configType timer value and on optional need codes for area Validity TA Config

SRS-PosResSetLinkedForAggBWInactiveList-r18 ::= SEQUENCE (SIZE(1..maxNrOfLinkedSRS-PosResourceSet-r18)) OF SRS-PosResourceSetLinkedForAggBW-r18

SRS-PosRRC-AggBW-InactiveConfigList-r18 ::= SEQUENCE (SIZE (2..3)) OF SRS-PosRRC-AggBW-InactiveConfig-r18

SRS-PosRRC-AggBW-InactiveConfig-r18 ::= SEQUENCE {

 srs-PosConfig-r18 SRS-PosConfig-r17,

 freqInfoAdditionalCcList-r18 ARFCN-ValueNR

}

ExtendedPagingCycle-r17 ::= ENUMERATED {rf256, rf512, rf1024, spare1}

ExtendedPagingCycle-Config-r18 ::= SEQUENCE {

 extendedPagingCycle-r18 ENUMERATED {hf2, hf4, hf8, hf16, hf32, hf64, hf128,hf256, hf512, hf1024,

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

 pagingPTWLength-r18 ENUMERATED {ms1280, ms2560, ms3840, ms5120, ms6400, ms7680, ms8960, ms10240, ms11520,

 ms12800, ms14080, ms15360, ms16640, ms17920, ms19200, ms20480, ms21760,

 ms23040, ms24320, ms25600, ms26880, ms28160, ms29440, ms30720, ms32000,

 ms33280, ms34560, ms35840, ms37120, ms38400, ms39680, ms40960}

}

MulticastConfigInactive-r18::= SEQUENCE {

 inactivePTM-Config-r18 OCTET STRING (CONTAINING MBSMulticastConfiguration-r18) OPTIONAL, -- Need N

 inactiveMCCH-Config-r18 OCTET STRING (CONTAINING SystemInformation) OPTIONAL -- Need N

}

-- TAG-RRCRELEASE-STOP

-- ASN1STOP

|  |
| --- |
| *RRCRelease-IEs* field descriptions |
| ***cellReselectionPriorities***Dedicated priorities to be used for cell reselection as specified in TS 38.304 [20]*.* The maximum number of NR carrier frequencies that the network can configure through *FreqPriorityListNR* and *FreqPriorityListDedicatedSlicing* together is eight. If the same frequency is configured in both *FreqPriorityListNR* and *FreqPriorityListDedicatedSlicing*, the frequency is only counted once. |
| ***cnType***Indicate that the UE is redirected to EPC or 5GC. |
| ***deprioritisationReq***Indicates whether the current frequency or RAT is to be de-prioritised. |
| ***deprioritisationTimer***Indicates the period for which either the current carrier frequency or NR is deprioritised. Value *minN* corresponds to N minutes. |
| ***measIdleConfig***Indicates measurement configuration to be stored and used by the UE while in RRC\_IDLE or RRC\_INACTIVE. |
| ***mpsPriorityIndication***Indicates the UE can set the establishment cause to *mps-PriorityAccess* for a new connection following a redirect to NR or set the resume cause to *mps-PriorityAccess* for a resume following a redirect to NR. If the target RAT is E-UTRA, see TS 36.331 [10]. The gNB sets the indication only for UEs authorized to receive MPS treatment as indicated by ARP and/or QoS characteristics at the gNB, and it is applicable only for this instance of release with redirection to carrier/RAT included in the *redirectedCarrierInfo* field in the *RRCRelease* message. |
| ***multicastConfigInactive***Indicates the multicast service(s) that can be received in RRC\_INACTIVE in the current serving cell and optionally the corresponding configuration. The presence of this field indicates the UE is configured to receive MBS multicast in RRC\_INACTIVE. |
| ***noLastCellUpdate***Presence of the field indicates that the last used cell for PEI shall not be updated. When the field is absent, the PEI-capable UE shall update its last used cell with the current cell. The UE shall not update its last used cell with the current cell if the AS security is not activated. |
| ***srs-PosRRC-Inactive***SRS for positioning configuration during RRC\_INACTIVE state. |
| ***srs-PosRRC-InactiveValidityAreaConfigList***List of SRS for positioning configuration during RRC\_INACTIVE state which is valid across a number of cells comprising a validity area. For each validity area, the UE is preconfigured with only one SRS for positioning configuration.The Network configures multiple validity area only when *configType* value is set *preconfig*.The below fields for the respective IEs are configured commonly in the validity area when *srs-PosRRC-InactiveValidityAreaConfig* is configured:*IE SRS-PosReseourceSet: srs-PosResourceSetId, srs-PosResourceSetIdList, srs-PosResourceIdList, resourceType, alpha, p0**IE SRS-PosResource: srs-PosResourceId, transmissionComb, resourceMapping, freqDomainShift, freqHopping, resourceType, groupOrSequenceHopping, sequenceID* |
| ***srs-PosTx-Hopping***Contains configuration related to the SRS for Positioning hopping outside the active BWP of the UE. |
| ***suspendConfig***Indicates configuration for the RRC\_INACTIVE state. The network does not configure *suspendConfig* when the network redirect the UE to an inter-RAT carrier frequency or if the UE is configured with a DAPS bearer. |
| ***redirectedCarrierInfo***Indicates a carrier frequency (downlink for FDD) and is used to redirect the UE to an NR or an inter-RAT carrier frequency, by means of cell selection at transition to RRC\_IDLE or RRC\_INACTIVE as specified in TS 38.304 [20]. Based on UE capability, the network may include *redirectedCarrierInfo* in *RRCRelease* message with *suspendConfig* if this message is sent in response to an *RRCResumeRequest* or an *RRCResumeRequest1* which is triggered by the NAS layer (see 5.3.1.4 in TS 24.501 [23]). |
| ***voiceFallbackIndication***Indicates the RRC release is triggered by EPS fallback for IMS voice as specified in TS 23.502 [43]. |

|  |
| --- |
| *CarrierInfoNR* field descriptions |
| ***carrierFreq***Indicates the redirected NR frequency. |
| ***ssbSubcarrierSpacing***Subcarrier spacing of SSB in the redirected SSB frequency.Only the following values are applicable depending on the used frequency:FR1: 15 or 30 kHzFR2-1: 120 or 240 kHzFR2-2: 120, 480, or 960 kHz |
| ***smtc***The SSB periodicity/offset/duration configuration for the redirected SSB frequency. It is based on timing reference of PCell. If the field is absent, the UE uses the SMTC configured in the measObjectNR having the same SSB frequency and subcarrier spacing. |

|  |
| --- |
| *RAN-NotificationAreaInfo* field descriptions |
| ***cellList***A list of cells configured as RAN area. |
| ***ran-AreaConfigList***A list of RAN area codes or RA code(s) as RAN area. |

|  |
| --- |
| *PLMN-RAN-AreaConfig* field descriptions |
| ***plmn-Identity***PLMN Identity to which the cells in *ran-Area* belong. If the field is absent the UE not in SNPN access mode uses the ID of the registered PLMN. This field is not included for UE in SNPN access mode (for UE in SNPN access mode the *ran-Area* always belongs to the registered SNPN). |
| ***ran-AreaCodeList***The total number of RAN-AreaCodes of all PLMNs does not exceed 32. |
| ***ran-Area***Indicates whether TA code(s) or RAN area code(s) are used for the RAN notification area. The network uses only TA code(s) or both TA code(s) and RAN area code(s) to configure a UE. The total number of TACs across all PLMNs does not exceed 16. |

|  |
| --- |
| *PLMN-RAN-AreaCell* field descriptions |
| ***plmn-Identity***PLMN Identity to which the cells in *ran-AreaCells* belong. If the field is absent the UE not in SNPN access mode uses the ID of the registered PLMN. This field is not included for UE in SNPN access mode (for UE in SNPN access mode the *ran-AreaCells* always belongs to the registered SNPN). |
| ***ran-AreaCells***The total number of cells of all PLMNs does not exceed 32. |

|  |
| --- |
| *SDT-Config* field descriptions |
| ***sdt-DRB-ContinueROHC***Indicates whether the PDCP entity of the radio bearers configured for SDT continues or resets the ROHC header compression protocol during PDCP re-establishment during SDT procedure, as specified in TS 38.323 [5]. Value *cell* indicates that ROHC header compression continues when the UE resumes for SDT in the same cell as the PCell when the RRCRelease message was received. Value *rna* indicates that ROHC header compression continues when the UE resumes for SDT in a cell belonging to the same RNA as the PCell where the RRCRelease message was received. If the field is absent, the UE releases any stored value for this field and the PDCP entity of the radio bearers configured for SDT always resets the ROHC header compression protocol during PDCP re-establishment when SDT procedure is initiated, as specified in TS 38.323 [5]. |
| ***sdt-DRB-List***Indicates the ID(s) of the DRB(s) that are configured for SDT. If size of the sequence is zero, then the UE assumes that none of the DRBs are configured for SDT. The network only configures MN terminated MCG bearers for SDT. |
| ***sdt-SRB2-Indication***Indiates whether SRB2 is configured for SDT or not. |

|  |
| --- |
| *SDT-MAC-PHY-CG-Config* field descriptions |
| ***cg-MT-SDT-MaxDurationToNext-CG-Occasion***The maximum duration until the next CG-SDT occasion as specified in TS 38.321 [3] for MT-SDT. If configured, the CG-SDT resource can only be used for the initial CG-SDT transmission if the duration between the initiation of the CG-SDT procedure and the next CG-SDT occasion is less than the value configured by this field. |
| ***cg-SDT-ConfigInitialBWP-DL***Downlink BWP configuration for CG-SDT. If a UE is an (e)RedCap UE and if the *initialDownlinkBWP-RedCap* is configured in *downlinkConfigCommon* in *SIB1*, this field is configured for *initialDownlinkBWP-RedCap*, otherwise it is configured for *initialDownlinkBWP*. |
| ***cg-SDT-ConfigInitialBWP-NUL***UL BWP configuration for CG-SDT on NUL carrier. If a UE is an (e)RedCap UE and if the *initialUplinkBWP-RedCap* is configured in *uplinkConfigCommon* in *SIB1*, this field is configured for *initialUplinkBWP-RedCap*, otherwise it is configured for *initialUplinkBWP* for NUL. |
| ***cg-SDT-ConfigInitialBWP-SUL***UL BWP configuration for CG-SDT on SUL carrier configured for the *initialUplinkBWP* for SUL. |
| ***cg-SDT-ConfigLCH-RestrictionToAddModList, cg-SDT-ConfigLCH-RestrictionToAddModListExt, cg-SDT-ConfigLCH-RestrictionToReleaseList***Lists for adding and releasing logical channel mapping restrictions for CG-SDT. If the network includes *cg-SDT-ConfigLCH-RestrictionToAddModListExt*, it includes the same number of entries, and listed in the same order, as in *cg-SDT-ConfigLCH-RestrictionToAddModList*. |
| ***cg-SDT-CS-RNTI***The CS-RNTI value for CG-SDT as specified in TS 38.321 [3]. |
| ***cg-SDT-RSRP-ThresholdSSB***An RSRP threshold configured for SSB selection for CG-SDT as specified in TS 38.321 [3]. |
| ***cg-SDT-TA-ValidationConfig***Configuration for the RSRP based TA validation. If this field is not configured, then the UE does not perform RSRP based TA validation. |
| ***cg-SDT-timeAlignmentTimer***TAT value for CG-SDT as specified in TS 38.321 [3]. The network always configures this field when *sdt-MAC-PHY-CG-Config* is configured. |

|  |
| --- |
| *CG-SDT-ConfigLCH-Restriction* field descriptions |
| ***allowedCG-List***This restriction applies only when the UL grant is a configured grant for CG-SDT. If present, UL MAC SDUs from this logical channel can only be mapped to the indicated CG-SDT configured grant configuration. If the size of the sequence is zero, then UL MAC SDUs from this logical channel cannot be mapped to any CG-SDT configured grant configurations. If the field is not present, UL MAC SDUs from this logical channel can be mapped to any CG-SDT configured grant configurations. If the field *configuredGrantType1Allowed* is present, only those CG-SDT configured grant type 1 configurations indicated in this sequence are allowed for use by this logical channel; otherwise, this sequence shall not include any CG-SDT configured grant type 1 configuration. Corresponds to "*allowedCG*-*List*" as specified in TS 38.321 [3]. |
| ***cg-SDT-MaxDurationToNext-CG-Occasion***The maximum duration until the next CG-SDT occasion for the logical channel identified by the *logicalChannelIdentity* as specified in TS 38.321 [3]. If configured, the CG-SDT resource can only be used for the initial CG-SDT transmission if the duration between the initiation of the CG-SDT procedure and the next CG-SDT occasion is less than the value configured by this field as specified in TS 38.321 [3]. |
| ***configuredGrantType1Allowed***If present, or if the capability *lcp-Restriction* as specified in TS 38.306 [26] is not supported, UL MAC SDUs from this logical channel can be transmitted on a configured grant type 1 for CG-SDT. Otherwise, UL MAC SDUs from this logical channel cannot be transmitted on a configured grant type 1 for CG-SDT. Corresponds to "*configuredGrantType1Allowed*" in TS 38.321 [3]. |
| ***logicalChannelIdentity***ID used commonly for the MAC logical channel and for the RLC bearer associated with a *servedRadioBearer* configured for SDT. |

|  |
| --- |
| *CG-SDT-TA-ValidationConfig* field descriptions |
| ***cg-SDT-RSRP-ChangeThreshold***The RSRP threshold for TA validation for CG-SDT as specified in TS 38.321 [3]. Value *dB2* corresponds to 2 dB, value *dB4* corresponds to 4 dB and so on. |

|  |
| --- |
| *SRS-PosRRC-InactiveConfig* field descriptions |
| ***bwp-NUL***BWP configuration for SRS for Positioning during the RRC\_INACTIVE state in Normal Uplink Carrier. If the field is absent UE is configured with an SRS for Positioning associated with the initial UL BWP and transmitted, during the RRC\_INACTIVE state, inside the initial UL BWP with the same CP and SCS as configured for initial UL BWP. |
| ***bwp-SUL***BWP configuration for SRS for Positioning during the RRC\_INACTIVE state in Supplementary Uplink Carrier. If the field is absent UE is configured with an SRS for Positioning associated with the initial UL BWP and transmitted, during the RRC\_INACTIVE state, inside the initial UL BWP with the same CP and SCS as configured for initial UL BWP. |
| ***inactivePosSRS-RSRP-ChangeThreshold***RSRP threshold for the increase/decrease of RSRP for time alignment validation as specified in TS 38.321 [3]. |
| ***inactivePosSRS-TimeAlignmentTimer***TAT value for SRS for positioning transmission during RRC\_INACTIVE state as specified in TS 38.321 [3]. The network always configures this field when *srs-PosRRC-Inactive* is configured. |
| ***srs-PosConfigNUL***SRS for Positioning configuration in RRC\_INACTIVE state in Normal Uplink Carrier. |
| ***srs-PosConfigSUL***SRS for Positioning configuration in RRC\_INACTIVE state in Supplementary Uplink Carrier. |
| ***srs-PosResSetLinkedForAggBWInactiveList***This field indicates the SRS resource sets across carriers which are linked for SRS bandwidth aggregation in RRC\_INACTIVE state as defined in clause 6.2.1.4 of TS 38.214 [19]. |

|  |
| --- |
| *SRS-PosRRC-InactiveValidityAreaConfig* field descriptions |
| ***autonomousTA-AdjustmentEnabled***This field indicates that UE may adjust the TA value and stored RSRP autonomously after cell reselection within a validity area, if configured. |
| ***bwp-NUL***BWP configuration for SRS for Positioning during the RRC\_INACTIVE state in Normal Uplink Carrier. If the field is absent UE is configured with an SRS for Positioning associated with the initial UL BWP and transmitted, during the RRC\_INACTIVE state, inside the initial UL BWP with the same CP and SCS as configured for initial UL BWP. |
| ***bwp-SUL***BWP configuration for SRS for Positioning during the RRC\_INACTIVE state in Supplementary Uplink Carrier. If the field is absent UE is configured with an SRS for Positioning associated with the initial UL BWP and transmitted, during the RRC\_INACTIVE state, inside the initial UL BWP with the same CP and SCS as configured for initial UL BWP. |
| ***configType***Indicates whether the SRS for Positioning configuration in the validity area is to be applied immediately or only when a trigger for an event is met. The value *preconfig* indicates that the SRS for positioning is to be deferred whereas the value *non-preconfig* indicates that the configuration is to be applied immediately. |
| ***srs-PosHyperSFN-Index***Indicates whether the current SFN is even or odd SFN for SRS for Positioning transmission. If this filed is not configured, the UE assumes that SRS for positioning periodictity longer than one SFN is not configured. |
| ***srs-PosRRC-InactiveValidityArea***Provides a list of cells where SRS Positioning Configuration in RRC\_INACTIVE state is valid. |
| ***inactivePosSRS-ValidityAreaTAT***Time alignment timer value for SRS for positioning transmission during RRC\_INACTIVE state which is applicable in a validity area. |
| ***inactivePosSRS-ValidityAreaRSRP***RSRP threshold for the increase/decrease of RSRP for validity area time alignment validation as specified in TS 38.321 [3]. |

|  |
| --- |
| *SRS-PosRRC-AggBW-InactiveConfig* field descriptions |
| ***bwp***BWP configuration for SRS for Positioning during the RRC\_INACTIVE for bandwidth aggregation. If the field is absent UE is configured with an SRS for Positioning associated with the initial UL BWP and transmitted, during the RRC\_INACTIVE state, inside the initial UL BWP with the same CP and SCS as configured for initial UL BWP. |
| ***srs-PosConfig***SRS for Positioning configuration in RRC\_INACTIVE state configured with linked carrier for bandwidth aggregation. |
| ***freqInfoAdditionalCcList***Indiicates the frequency information offset to carrier of one or two additional carrier(s) with respective SRS configurations where the carrier and the carrier of the initial BWP should be intra-band contiguous carriers. |

|  |
| --- |
| *SuspendConfig* field descriptions |
| ***extendedPagingCycle***The eDRX cycle longer than 10.24 s for RAN-initiated paging to be applied by the UE. Value *hf2* corresponds to 2 hyper frames, value *hf4* corresponds to 4 hyper frames and so on. Value of the field is shorter than or equal to the IDLE mode eDRX cycle configured for the UE. |
| ***ncd-SSB-RedCapInitialBWP-SDT***Indicates that the UE uses the (e)RedCap-specific initial DL BWP associated with the NCD-SSB for SDT. The network configures this field if an (e)RedCap UE is configured with SDT in the (e)RedCap-specific initial DL BWP not associated with CD-SSB. If configured, the NCD-SSB indicated by this field can only be used during the SDT procedure for CG-SDT or RA-SDT. |
| ***pagingPTWLength***The length of paging transmission window for RAN-initiated paging to be applied by the UE as defined in TS 38.304 [20]. Value *ms1280* corresponds to 1280 miliseconds, value *ms2560* corresponds to 2560 miliseconds and so on. |
| ***ran-ExtendedPagingCycle***The extended DRX (eDRX) cycle for RAN-initiated paging to be applied by the UE. Value *rf256* corresponds to 256 radio frames, value *rf512* corresponds to 512 radio frames and so on. Value of the field indicates an eDRX cycle which is shorter or equal to the IDLE mode eDRX cycle configured for the UE. |
| ***ran-NotificationAreaInfo***Network ensures that the UE in RRC\_INACTIVE always has a valid *ran-NotificationAreaInfo*. |
| ***ran-PagingCycle***Refers to the UE specific cycle for RAN-initiated paging. Value *rf32* corresponds to 32 radio frames, value *rf64* corresponds to 64 radio frames and so on. |
| ***resumeIndication***Indicates that the UE shall trigger the RRC connection resume procedure after receiving this *RRCRelease* message, as specified in clause 5.3.8.3. The network only includes this field in the *RRCRelease* message used to terminate an ongoing SDT procedure. |
| ***sl-UEIdentityRemote***Indicates the C-RNTI to the L2 U2N Remote UE. |
| ***t380***Refers to the timer that triggers the periodic RNAU procedure in UE. Value *min5* corresponds to 5 minutes, value *min10* corresponds to 10 minutes and so on. |

|  |
| --- |
| *MulticastConfigInactive* field descriptions |
| ***inactivePTM-Config***Indicates PTM configuration for MBS multicast reception in RRC\_INACTIVE in the serving cell. |
| ***inactiveMCCH-Config***Indicates MCCH configuration for MBS multicast reception in RRC\_INACTIVE in the serving cell. Only *SIB24* is allowed to be included. |

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *L2RemoteUE* | The field is mandatory present for L2 U2N Remote UE's RNAU; otherwise it is absent. |
| *RANPaging* | This field is optionally present, Need R, if the UE is configured with IDLE eDRX, see TS 24.501 [23]; otherwise the field is not present. |
| *Redirection2* | The field is optionally present, Need R, if *redirectedCarrierInfo* is included; otherwise the field is not present. |

#### – *RRCResume*

The *RRCResume* message is used to resume the suspended RRC connection.

Signalling radio bearer: SRB1

RLC-SAP: AM

Logical channel: DCCH

Direction: Network to UE

*RRCResume* message

-- ASN1START

-- TAG-RRCRESUME-START

RRCResume ::= SEQUENCE {

 rrc-TransactionIdentifier RRC-TransactionIdentifier,

 criticalExtensions CHOICE {

 rrcResume RRCResume-IEs,

 criticalExtensionsFuture SEQUENCE {}

 }

}

RRCResume-IEs ::= SEQUENCE {

 radioBearerConfig RadioBearerConfig OPTIONAL, -- Need M

 masterCellGroup OCTET STRING (CONTAINING CellGroupConfig) OPTIONAL, -- Need M

 measConfig MeasConfig OPTIONAL, -- Need M

 fullConfig ENUMERATED {true} OPTIONAL, -- Need N

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 nonCriticalExtension RRCResume-v1560-IEs OPTIONAL

}

RRCResume-v1560-IEs ::= SEQUENCE {

 radioBearerConfig2 OCTET STRING (CONTAINING RadioBearerConfig) OPTIONAL, -- Need M

 sk-Counter SK-Counter OPTIONAL, -- Need N

 nonCriticalExtension RRCResume-v1610-IEs OPTIONAL

}

RRCResume-v1610-IEs ::= SEQUENCE {

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

 restoreMCG-SCells-r16 ENUMERATED {true} OPTIONAL, -- Need N

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

 mrdc-SecondaryCellGroup-r16 CHOICE {

 nr-SCG-r16 OCTET STRING (CONTAINING RRCReconfiguration),

 eutra-SCG-r16 OCTET STRING

 } OPTIONAL, -- Cond RestoreSCG

 needForGapsConfigNR-r16 SetupRelease {NeedForGapsConfigNR-r16} OPTIONAL, -- Need M

 nonCriticalExtension RRCResume-v1700-IEs OPTIONAL

}

RRCResume-v1700-IEs ::= SEQUENCE {

 sl-ConfigDedicatedNR-r17 SetupRelease {SL-ConfigDedicatedNR-r16} OPTIONAL, -- Cond L2RemoteUE

 sl-L2RemoteUE-Config-r17 SetupRelease {SL-L2RemoteUE-Config-r17} OPTIONAL, -- Cond L2RemoteUE

 needForGapNCSG-ConfigNR-r17 SetupRelease {NeedForGapNCSG-ConfigNR-r17} OPTIONAL, -- Need M

 needForGapNCSG-ConfigEUTRA-r17 SetupRelease {NeedForGapNCSG-ConfigEUTRA-r17} OPTIONAL, -- Need M

 scg-State-r17 ENUMERATED {deactivated} OPTIONAL, -- Need N

 appLayerMeasConfig-r17 AppLayerMeasConfig-r17 OPTIONAL, -- Need M

 nonCriticalExtension RRCResume-v1800-IEs OPTIONAL

}

RRCResume-v1800-IEs ::= SEQUENCE {

 needForInterruptionConfigNR-r18 ENUMERATED { enabled, disabled } OPTIONAL, -- Need M

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

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- TAG-RRCRESUME-STOP

-- ASN1STOP

|  |
| --- |
| *RRCResume-IEs* field descriptions |
| ***appLayerMeasConfig***This field is used to configure application layer measurements. This field is absent when the UE is configured to operate with shared spectrum channel access. |
| ***idleModeMeasurementReq***This field indicates that the UE shall report the idle/inactive measurements, if available, to the network in the *RRCResumeComplete* message |
| ***masterCellGroup***Configuration of the master cell group. |
| ***mrdc-SecondaryCellGroup***Includes an RRC message for SCG configuration in NR-DC or NE-DC.For NR-DC (*nr-SCG*), *mrdc-SecondaryCellGroup* contains the *RRCReconfiguration* message as generated (entirely) by SN gNB. In this version of the specification, the RRC message can only include fields *secondaryCellGroup* (with at least *reconfigurationWithSync*)*,* *otherConfig* and *measConfig*.For NE-DC (*eutra-SCG*), *mrdc-SecondaryCellGroup* includes the E-UTRA *RRCConnectionReconfiguration* message as specified in TS 36.331 [10]. In this version of the specification, the E-UTRA RRC message only include the field *scg-Configuration* with at least *mobilityControlInfoSCG*. |
| ***needForGapsConfigNR***Configuration for the UE to report measurement gap requirement information of NR target bands in the *RRCReconfigurationComplete* and *RRCResumeComplete* message. |
| ***needForGapNCSG-ConfigEUTRA***Configuration for the UE to report measurement gap and NCSG requirement information of E‑UTRA target bands in the *RRCReconfigurationComplete* and *RRCResumeComplete* message. |
| ***needForGapNCSG-ConfigNR***Configuration for the UE to report measurement gap and NCSG requirement information of NR target bands in the *RRCReconfigurationComplete* and *RRCResumeComplete* message. |
| ***needForInterruptionConfigNR***Indicates whether the UE shall report interruption requirement information of NR target bands in the *RRCReconfigurationComplete* and *RRCResumeComplete* message. The network sets this field to *enabled* only if the *needForGapsConfigNR* is configured. The network sets this field to *disabled* if the *needForGapsConfigNR* is released. |
| ***radioBearerConfig***Configuration of Radio Bearers (DRBs, SRBs, multicast MRBs) including SDAP/PDCP. |
| ***radioBearerConfig2***Configuration of Radio Bearers (DRBs, SRBs) including SDAP/PDCP. This field can only be used if the UE supports NR-DC or NE-DC. |
| ***restoreMCG-SCells***Indicates that the UE shall restore the MCG SCells from the UE Inactive AS Context, if stored. |
| ***reselectionMeasurementReq***This field indicates that the UE shall report the reselection measurements, if available, to the network in the RRCResumeComplete message |
| ***restoreSCG***Indicates that the UE shall restore the SCG configurations from the UE Inactive AS Context, if stored. |
| ***scg-State***Indicates that the SCG is in deactivated state. |
| ***sk-Counter***A counter used to derive S-KgNB or S-KeNB based on the newly derived KgNB during RRC Resume. The field is only included when there is one or more RB with *keyToUse* set to *secondary* *or mrdc-SecondaryCellGroup* is included. |
| ***sl-ConfigDedicatedNR***This field is used to provide the dedicated configurations for NR sidelink communication/discovery used by L2 U2N Remote UE. |
| ***sl-L2RemoteUE-Config***Contains L2 U2N relay operation related configurations used by L2 U2N Remote UE. The field is absent if *appLayerMeasConfig* or SRB4 is configured/not released. |

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *L2RemoteUE* | The field is mandatory present for L2 U2N Remote UE; otherwise it is absent. |
| *RestoreSCG* | The field is mandatory present if *restoreSCG* is included. It is optionally present, Need M, otherwise. |

#### – *RRCResumeComplete*

The *RRCResumeComplete* message is used to confirm the successful completion of an RRC connection resumption.

Signalling radio bearer: SRB1

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to Network

*RRCResumeComplete* message

-- ASN1START

-- TAG-RRCRESUMECOMPLETE-START

RRCResumeComplete ::= SEQUENCE {

 rrc-TransactionIdentifier RRC-TransactionIdentifier,

 criticalExtensions CHOICE {

 rrcResumeComplete RRCResumeComplete-IEs,

 criticalExtensionsFuture SEQUENCE {}

 }

}

RRCResumeComplete-IEs ::= SEQUENCE {

 dedicatedNAS-Message DedicatedNAS-Message OPTIONAL,

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

 uplinkTxDirectCurrentList UplinkTxDirectCurrentList OPTIONAL,

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 nonCriticalExtension RRCResumeComplete-v1610-IEs OPTIONAL

}

RRCResumeComplete-v1610-IEs ::= SEQUENCE {

 idleMeasAvailable-r16 ENUMERATED {true} OPTIONAL,

 measResultIdleEUTRA-r16 MeasResultIdleEUTRA-r16 OPTIONAL,

 measResultIdleNR-r16 MeasResultIdleNR-r16 OPTIONAL,

 scg-Response-r16 CHOICE {

 nr-SCG-Response OCTET STRING (CONTAINING RRCReconfigurationComplete),

 eutra-SCG-Response OCTET STRING

 } OPTIONAL,

 ue-MeasurementsAvailable-r16 UE-MeasurementsAvailable-r16 OPTIONAL,

 mobilityHistoryAvail-r16 ENUMERATED {true} OPTIONAL,

 mobilityState-r16 ENUMERATED {normal, medium, high, spare} OPTIONAL,

 needForGapsInfoNR-r16 NeedForGapsInfoNR-r16 OPTIONAL,

 nonCriticalExtension RRCResumeComplete-v1640-IEs OPTIONAL

}

RRCResumeComplete-v1640-IEs ::= SEQUENCE {

 uplinkTxDirectCurrentTwoCarrierList-r16 UplinkTxDirectCurrentTwoCarrierList-r16 OPTIONAL,

 nonCriticalExtension RRCResumeComplete-v1700-IEs OPTIONAL

}

RRCResumeComplete-v1700-IEs ::= SEQUENCE {

 needForGapNCSG-InfoNR-r17 NeedForGapNCSG-InfoNR-r17 OPTIONAL,

 needForGapNCSG-InfoEUTRA-r17 NeedForGapNCSG-InfoEUTRA-r17 OPTIONAL,

 nonCriticalExtension RRCResumeComplete-v1720-IEs OPTIONAL

}

RRCResumeComplete-v1720-IEs ::= SEQUENCE {

 uplinkTxDirectCurrentMoreCarrierList-r17 UplinkTxDirectCurrentMoreCarrierList-r17 OPTIONAL,

 nonCriticalExtension RRCResumeComplete-v1800-IEs OPTIONAL

}

RRCResumeComplete-v1800-IEs ::= SEQUENCE {

 needForInterruptionInfoNR-r18 NeedForInterruptionInfoNR-r18 OPTIONAL,

 musim-CapRestrictionInd-r18 ENUMERATED {true} OPTIONAL,

 flightPathInfoAvailable-r18 ENUMERATED {true} OPTIONAL,

 measConfigReportAppLayerAvailable-r18 ENUMERATED {true} OPTIONAL,

 measResultReselectionEUTRA-r16 MeasResultIdleEUTRA-r16 OPTIONAL,

 measResultReselectionNR-r16 MeasResultIdleNR-r16 OPTIONAL,

 reselectionMeasAvailable-r18 ENUMERATED {true} OPTIONAL,

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- TAG-RRCRESUMECOMPLETE-STOP

-- ASN1STOP

|  |
| --- |
| *RRCResumeComplete-IEs* field descriptions |
| ***idleMeasAvailable***Indication that the UE has idle/inactive measurement report available. |
| ***measConfigReportAppLayerAvailable***Indication that the UE has stored one or more application layer measurement reports while the UE was in RRC\_IDLE/RRC\_INACTIVE state and/or that the UE is configured with at least one application layer measurement configuration with *configforRRC-IdleInactive* set to *true*. |
| ***measResultIdleEUTRA***EUTRA measurement results performed during RRC\_INACTIVE. |
| ***measResultIdleNR***NR measurement results performed during RRC\_INACTIVE. |
| ***measResultIReselectionEUTRA***EUTRA reselection measurement results***.*** |
| ***measResultReselectionNR***NR reselection measurement results. |
| ***musim-CapRestrictionInd***This field indicates the UE temporary capability restriction due to MUSIM operation. |
| ***needForGapsInfoNR***This field is used to indicate the measurement gap requirement information of the UE for NR target bands. |
| ***needForGapNCSG-InfoEUTRA***This field is used to indicate the measurement gap and NCSG requirement information of the UE for E‑UTRA target bands |
| ***needForGapNCSG-InfoNR***This field is used to indicate the measurement gap and NCSG requirement information of the UE for NR target bands |
| ***needForInterruptionInfoNR***This field indicates whether interruption is needed while performing measurement on NR target bands without measurement gap. |
| ***reselectionMeasAvailable***Indication that the UE has reselection measurement report available. |
| ***selectedPLMN-Identity***Index of the PLMN selected by the UE from the *plmn-IdentityInfoList* or *npn-IdentityInfoList* fields included in *SIB1*. |
| ***uplinkTxDirectCurrentList***The Tx Direct Current locations for the configured serving cells and BWPs if requested by the NW (see *reportUplinkTxDirectCurrent* in *CellGroupConfig*). |
| ***uplinkTxDirectCurrentMoreCarrierList***The Tx Direct Current locations for the configured intra-band CA requested by *reportUplinkTxDirectCurrentMoreCarrier-r17*. |
| ***uplinkTxDirectCurrentTwoCarrierList***The Tx Direct Current locations for the configured uplink intra-band CA with two carriers if requested by the NW (see *reportUplinkTxDirectCurrentTwoCarrier-r16* in *CellGroupConfig*). |

#### – *RRCResumeRequest*

The *RRCResumeRequest* message is used to request the resumption of a suspended RRC connection or perform an RNA update.

Signalling radio bearer: SRB0

RLC-SAP: TM

Logical channel: CCCH

Direction: UE to Network

*RRCResumeRequest* message

-- ASN1START

-- TAG-RRCRESUMEREQUEST-START

RRCResumeRequest ::= SEQUENCE {

 rrcResumeRequest RRCResumeRequest-IEs

}

RRCResumeRequest-IEs ::= SEQUENCE {

 resumeIdentity ShortI-RNTI-Value,

 resumeMAC-I BIT STRING (SIZE (16)),

 resumeCause ResumeCause,

 spare BIT STRING (SIZE (1))

}

-- TAG-RRCRESUMEREQUEST-STOP

-- ASN1STOP

|  |
| --- |
| *RRCResumeRequest-IEs* field descriptions |
| ***resumeCause***Provides the resume cause for the RRC connection resume request as provided by the upper layers or RRC. The network is not expected to reject an *RRCResumeRequest* due to unknown cause value being used by the UE. |
| ***resumeIdentity***UE identity to facilitate UE context retrieval at gNB. |
| ***resumeMAC-I***Authentication token to facilitate UE authentication at gNB. The 16 least significant bits of the MAC-I calculated using the AS security configuration as specified in 5.3.13.3. |

#### – *RRCResumeRequest1*

The *RRCResumeRequest1* message is used to request the resumption of a suspended RRC connection or perform an RNA update.

Signalling radio bearer: SRB0

RLC-SAP: TM

Logical channel: CCCH1

Direction: UE to Network

*RRCResumeRequest1* message

-- ASN1START

-- TAG-RRCRESUMEREQUEST1-START

RRCResumeRequest1 ::= SEQUENCE {

 rrcResumeRequest1 RRCResumeRequest1-IEs

}

RRCResumeRequest1-IEs ::= SEQUENCE {

 resumeIdentity I-RNTI-Value,

 resumeMAC-I BIT STRING (SIZE (16)),

 resumeCause ResumeCause,

 spare BIT STRING (SIZE (1))

}

-- TAG-RRCRESUMEREQUEST1-STOP

-- ASN1STOP

|  |
| --- |
| *RRCResumeRequest1-IEs* field descriptions |
| ***resumeCause***Provides the resume cause for the *RRCResumeRequest1* as provided by the upper layers or RRC. A gNB is not expected to reject an *RRCResumeRequest1* due to unknown cause value being used by the UE. |
| ***resumeIdentity***UE identity to facilitate UE context retrieval at gNB. |
| ***resumeMAC-I***Authentication token to facilitate UE authentication at gNB. The 16 least significant bits of the MAC-I calculated using the AS security configuration as specified in 5.3.13.3. |

#### – *RRCSetup*

The *RRCSetup* message is used to establish SRB1.

Signalling radio bearer: SRB0

RLC-SAP: TM

Logical channel: CCCH

Direction: Network to UE

*RRCSetup* message

-- ASN1START

-- TAG-RRCSETUP-START

RRCSetup ::= SEQUENCE {

 rrc-TransactionIdentifier RRC-TransactionIdentifier,

 criticalExtensions CHOICE {

 rrcSetup RRCSetup-IEs,

 criticalExtensionsFuture SEQUENCE {}

 }

}

RRCSetup-IEs ::= SEQUENCE {

 radioBearerConfig RadioBearerConfig,

 masterCellGroup OCTET STRING (CONTAINING CellGroupConfig),

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 nonCriticalExtension RRCSetup-v1700-IEs OPTIONAL

}

RRCSetup-v1700-IEs ::= SEQUENCE {

 sl-ConfigDedicatedNR-r17 SL-ConfigDedicatedNR-r16 OPTIONAL, -- Cond L2RemoteUE

 sl-L2RemoteUE-Config-r17 SL-L2RemoteUE-Config-r17 OPTIONAL, -- Cond L2RemoteUE

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

-- TAG-RRCSETUP-STOP

-- ASN1STOP

|  |
| --- |
| *RRCSetup-IEs* field descriptions |
| ***masterCellGroup***The network configures only the RLC bearer for the SRB1, *mac-CellGroupConfig*, *physicalCellGroupConfig* and *spCellConfig*. |
| ***radioBearerConfig***Only SRB1 can be configured in RRC setup. |
| ***sl-ConfigDedicatedNR***Contains dedicated configurations for NR sidelink communication. The network configures only the PC5 Relay RLC channel and *sl-PHY-MAC-RLC-Config* used for the SRB1. |
| ***sl-L2RemoteUE-Config***Contains dedicated configurations used for L2 U2N relay related operation. The network configures only the SRAP configuration used for the SRB1 and local UE ID. |

|  |  |
| --- | --- |
| Conditional Presence | Explanation |
| *L2RemoteUE* | The field is mandatory present for L2 U2N Remote UE; otherwise it is absent. |

#### – *RRCSetupComplete*

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

Signalling radio bearer: SRB1

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to Network

*RRCSetupComplete* message

-- ASN1START

-- TAG-RRCSETUPCOMPLETE-START

RRCSetupComplete ::= SEQUENCE {

 rrc-TransactionIdentifier RRC-TransactionIdentifier,

 criticalExtensions CHOICE {

 rrcSetupComplete RRCSetupComplete-IEs,

 criticalExtensionsFuture SEQUENCE {}

 }

}

RRCSetupComplete-IEs ::= SEQUENCE {

 selectedPLMN-Identity INTEGER (1..maxPLMN),

 registeredAMF RegisteredAMF OPTIONAL,

 guami-Type ENUMERATED {native, mapped} OPTIONAL,

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

 dedicatedNAS-Message DedicatedNAS-Message,

 ng-5G-S-TMSI-Value CHOICE {

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

 ng-5G-S-TMSI-Part2 BIT STRING (SIZE (9))

 } OPTIONAL,

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 nonCriticalExtension RRCSetupComplete-v1610-IEs OPTIONAL

}

RRCSetupComplete-v1610-IEs ::= SEQUENCE {

 iab-NodeIndication-r16 ENUMERATED {true} OPTIONAL,

 idleMeasAvailable-r16 ENUMERATED {true} OPTIONAL,

 ue-MeasurementsAvailable-r16 UE-MeasurementsAvailable-r16 OPTIONAL,

 mobilityHistoryAvail-r16 ENUMERATED {true} OPTIONAL,

 mobilityState-r16 ENUMERATED {normal, medium, high, spare} OPTIONAL,

 nonCriticalExtension RRCSetupComplete-v1690-IEs OPTIONAL

}

RRCSetupComplete-v1690-IEs ::= SEQUENCE {

 ul-RRC-Segmentation-r16 ENUMERATED {true} OPTIONAL,

 nonCriticalExtension RRCSetupComplete-v1700-IEs OPTIONAL

}

RRCSetupComplete-v1700-IEs ::= SEQUENCE {

 onboardingRequest-r17 ENUMERATED {true} OPTIONAL,

 nonCriticalExtension RRCSetupComplete-v1800-IEs OPTIONAL

}

RRCSetupComplete-v1800-IEs ::= SEQUENCE {

 ncr-NodeIndication-r18 ENUMERATED {true} OPTIONAL,

 musim-CapRestrictionInd-r18 ENUMERATED {true} OPTIONAL,

 flightPathInfoAvailable-r18 ENUMERATED {true} OPTIONAL,

 measConfigReportAppLayerAvailable-r18 ENUMERATED {true} OPTIONAL,

 mobileIAB-NodeIndication-r18 ENUMERATED {true} OPTIONAL,

 reselectionMeasAvailable-r18 ENUMERATED {true} OPTIONAL,

 nonCriticalExtension SEQUENCE{} OPTIONAL

}

RegisteredAMF ::= SEQUENCE {

 plmn-Identity PLMN-Identity OPTIONAL,

 amf-Identifier AMF-Identifier

}

-- TAG-RRCSETUPCOMPLETE-STOP

-- ASN1STOP

|  |
| --- |
| *RRCSetupComplete-IEs* field descriptions |
| ***guami-Type***This field is used to indicate whether the GUAMI included is native (derived from native 5G-GUTI) or mapped (from EPS, derived from EPS GUTI) as specified in TS 24.501 [23]. |
| ***iab-NodeIndication***This field is used to indicate that the connection is being established by an IAB-node as specified in TS 38.300 [2]. If this field is included, the UE shall not include the field *mobileIAB-NodeIndication*. |
| ***idleMeasAvailable***Indication that the UE has idle/inactive measurement report available. |
| ***measConfigReportAppLayerAvailable***Indication that the UE has stored one or more application layer measurement reports while the UE was in RRC\_IDLE/RRC\_INACTIVE state and/or that the UE is configured with at least one application layer measurement configuration with *configforRRC-IdleInactive* set to *true*. |
| ***mobileIAB-NodeIndication***This field is used to indicate that the connection is being established by a mobile IAB-node as specified in TS 38.300 [2]. If this field is included, the UE shall not include the field *iab-NodeIndication*. |
| ***mobilityState***This field indicates the UE mobility state (as defined in TS 38.304 [20], clause 5.2.4.3) just prior to UE going into RRC\_CONNECTED state. The UE indicates the value of *medium* and *high* when being in Medium-mobility and High-mobility states respectively. Otherwise the UE indicates the value *normal*. |
| ***musim-CapRestrictionInd***This field indicates the UE temporary capability restriction due to MUSIM operation. |
| ***ncr-NodeIndication***This field is used to indicate that the connection is being established by an NCR-node as specified in TS 38.300 [2]. |
| ***ng-5G-S-TMSI-Part2***The leftmost 9 bits of 5G-S-TMSI. |
| ***onboardingRequest***This field indicates that the connection is being established for UE onboarding in the selected onboarding SNPN, see TS 23.501 [32]. |
| ***registeredAMF***This field is used to transfer the GUAMI of the AMF where the UE is registered, as provided by upper layers, see TS 23.003 [21]. |
| ***reselectionMeasAvailable***Indication that the UE has reselection measurement report available. |
| ***selectedPLMN-Identity***Index of the PLMN or SNPN selected by the UE from the *plmn-IdentityInfoList* or *npn-IdentityInfoList* fields included in SIB1. |
| ***ul-RRC-Segmentation***This field indicates the UE supports uplink RRC segmentation of *UECapabilityInformation.* |

*Next Modified Subclause*

#### – *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

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

 reselectionMeasurementsNR-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

 ...,

 [[

 cellBarredRedCap-r18 SEQUENCE {

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

 cellBarred-eRedCap2Rx-r18 ENUMERATED {barred, notBarred}

 } OPTIONAL -- Need R

 ]]

}

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

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

 sdt-RSRP-ThresholdMT-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 |
| ***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 with 1 Rx branch, as defined in TS 38.304 [20]. This field is ignored by non-eRedCap UEs. |
| ***cellBarred-eRedCap2Rx***Value *barred* means that the cell is barred for an eRedCap UE with 2 Rx branches, as defined in TS 38.304 [20]. This field is ignored by non-eRedCap UEs. |
| ***cellBarredNES***The presence of this field indicates that the cell is allowed for UEs supporting NES cell DTX/DRX. |
| ***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 with 1 Rx branch, as defined in TS 38.304 [20]. This field is ignored by non-RedCap UEs. |
| ***cellBarredRedCap2Rx***Value *barred* means that the cell is barred for a RedCap UE with 2 Rx branches, as defined in TS 38.304 [20]. This field is ignored by non-RedCap UEs. |
| ***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* this field 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. |
| ***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. |
| ***musim-CapRestrictionAllowed***Indicates the UE is allowed to send the *musim-CapRestrictionInd* in *RRCSetupComplete* and *RRCResumeComplete* messages. |
| ***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. |
| ***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. |
| ***reselectionMeasurementsEUTRA***This field indicates that a UE that is configured for EUTRA reselection measuremenrts shall report availability of these measurements when establishing or resuming a connection in this cell. |
| ***reselectionMeasurementsNR***This field indicates that a UE that is configured for NR reselection measuremenrts shall report availability of these measurements when establishing or resuming a connection in this cell. |
| ***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]. |
| ***sdt-RSRP-ThresholdMT***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*. |
| ***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 |
| *EDRX-RC* | The field is optionally present, Need R, in a cell that enables *eDRX-AllowedIdle*, 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. |
| *Standalone* | The field is mandatory present in a cell that supports standalone operation, otherwise it is absent. |

*Next Modified Subclause*

#### – *UEInformationRequest*

The *UEInformationRequest* message is used by the network to retrieve information from the UE.

Signalling radio bearer: SRB1

RLC-SAP: AM

Logical channel: DCCH

Direction: Network to UE

*UEInformationRequest message*

-- ASN1START

-- TAG-UEINFORMATIONREQUEST-START

UEInformationRequest-r16 ::= SEQUENCE {

 rrc-TransactionIdentifier RRC-TransactionIdentifier,

 criticalExtensions CHOICE {

 ueInformationRequest-r16 UEInformationRequest-r16-IEs,

 criticalExtensionsFuture SEQUENCE {}

 }

}

UEInformationRequest-r16-IEs ::= SEQUENCE {

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

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

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

 ra-ReportReq-r16 ENUMERATED {true} OPTIONAL, -- Need N

 rlf-ReportReq-r16 ENUMERATED {true} OPTIONAL, -- Need N

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

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 nonCriticalExtension UEInformationRequest-v1700-IEs OPTIONAL

}

UEInformationRequest-v1700-IEs ::= SEQUENCE {

 successHO-ReportReq-r17 ENUMERATED {true} OPTIONAL, -- Need N

 coarseLocationRequest-r17 ENUMERATED {true} OPTIONAL, -- Need N

 nonCriticalExtension UEInformationRequest-v1800-IEs OPTIONAL

}

UEInformationRequest-v1800-IEs ::= SEQUENCE {

 flightPathInfoReq-r18 FlightPathInfoReportConfig-r18 OPTIONAL, -- Need N

 successPSCell-ReportReq-r18 ENUMERATED {true} OPTIONAL, -- Need N

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

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

FlightPathInfoReportConfig-r18 ::= SEQUENCE {

 maxWayPointNumber-r18 INTEGER (1..maxWayPoint-r18),

 includeTimeStamp-r18 ENUMERATED {true} OPTIONAL

}

-- TAG-UEINFORMATIONREQUEST-STOP

-- ASN1STOP

|  |
| --- |
| *UEInformationRequest-IEs* field descriptions |
| ***coarseLocationRequest***This field is used to request UE to report coarse location information. |
| ***connEstFailReportReq***This field is used to indicate whether the UE shall report information about the connection failure. |
| ***flightPathInfoReq***This field is used to indicate whether the UE can report information about the flight path information, if available, and to specify the flight path information report configuration. |
| ***idleModeMeasurementReq***This field indicates that the UE shall report the idle/inactive measurement information, if available, to the network in the *UEInformationResponse* message.  |
| ***logMeasReportReq***This field is used to indicate whether the UE shall report information about logged measurements. |
| ***mobilityHistoryReportReq***This field is used to indicate whether the UE shall report information about mobility history information. |
| ***ra-ReportReq***This field is used to indicate whether the UE shall report information about the random access procedure. |
| ***reselectionMeasurementReq***This field indicates that the UE shall report the reselection measurement information, if available, to the network in the *UEInformationResponse* message.  |
| ***rlf-ReportReq***This field is used to indicate whether the UE shall report information about the radio link failure. |
| ***successHO-ReportReq***This field is used to indicate whether the UE shall report information about the successful handover report. |
| ***successPSCell-ReportReq***This field is used to indicate whether the UE shall report information about the successful PSCell change or addition report. |

| *FlightPathInfoReportConfig* field descriptions |
| --- |
| ***includeTimeStamp***Indicates whether time stamp of each way point can be reported in the flight path information report if time stamp information is available at the UE. |
| ***maxWayPointNumber***Indicates the maximum number of way points UE can include in the flight path information report if this information is available at the UE.  |

#### – *UEInformationResponse*

The *UEInformationResponse* message is used by the UE to transfer information requested by the network.

Signalling radio bearer: SRB1 or SRB2 (when logged measurement information is included)

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to network

*UEInformationResponse message*

-- ASN1START

-- TAG-UEINFORMATIONRESPONSE-START

UEInformationResponse-r16 ::= SEQUENCE {

 rrc-TransactionIdentifier RRC-TransactionIdentifier,

 criticalExtensions CHOICE {

 ueInformationResponse-r16 UEInformationResponse-r16-IEs,

 criticalExtensionsFuture SEQUENCE {}

 }

}

UEInformationResponse-r16-IEs ::= SEQUENCE {

 measResultIdleEUTRA-r16 MeasResultIdleEUTRA-r16 OPTIONAL,

 measResultIdleNR-r16 MeasResultIdleNR-r16 OPTIONAL,

 logMeasReport-r16 LogMeasReport-r16 OPTIONAL,

 connEstFailReport-r16 ConnEstFailReport-r16 OPTIONAL,

 ra-ReportList-r16 RA-ReportList-r16 OPTIONAL,

 rlf-Report-r16 RLF-Report-r16 OPTIONAL,

 mobilityHistoryReport-r16 MobilityHistoryReport-r16 OPTIONAL,

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 nonCriticalExtension UEInformationResponse-v1700-IEs OPTIONAL

}

UEInformationResponse-v1700-IEs ::= SEQUENCE {

 successHO-Report-r17 SuccessHO-Report-r17 OPTIONAL,

 connEstFailReportList-r17 ConnEstFailReportList-r17 OPTIONAL,

 coarseLocationInfo-r17 OCTET STRING OPTIONAL,

 nonCriticalExtension UEInformationResponse-v1800-IEs OPTIONAL

}

UEInformationResponse-v1800-IEs ::= SEQUENCE {

 flightPathInfoReport-r18 FlightPathInfoReport-r18 OPTIONAL,

 successPSCell-Report-r18 SuccessPSCell-Report-r18 OPTIONAL,

 measResultReselectionEUTRA-r18 MeasResultIdleEUTRA-r16 OPTIONAL,

 measResultReselectionNR-r18 MeasResultIdleNR-r16 OPTIONAL,

 nonCriticalExtension SEQUENCE {} OPTIONAL

}

FlightPathInfoReport-r18 ::= SEQUENCE (SIZE (0..maxWayPoint-r18)) OF WayPoint-r18

WayPoint-r18 ::= SEQUENCE {

 wayPointLocation-r18 OCTET STRING,

 timeStamp-r18 AbsoluteTimeInfo-r16 OPTIONAL

}

LogMeasReport-r16 ::= SEQUENCE {

 absoluteTimeStamp-r16 AbsoluteTimeInfo-r16,

 traceReference-r16 TraceReference-r16,

 traceRecordingSessionRef-r16 OCTET STRING (SIZE (2)),

 tce-Id-r16 OCTET STRING (SIZE (1)),

 logMeasInfoList-r16 LogMeasInfoList-r16,

 logMeasAvailable-r16 ENUMERATED {true} OPTIONAL,

 logMeasAvailableBT-r16 ENUMERATED {true} OPTIONAL,

 logMeasAvailableWLAN-r16 ENUMERATED {true} OPTIONAL,

 ...

}

LogMeasInfoList-r16 ::= SEQUENCE (SIZE (1..maxLogMeasReport-r16)) OF LogMeasInfo-r16

LogMeasInfo-r16 ::= SEQUENCE {

 locationInfo-r16 LocationInfo-r16 OPTIONAL,

 relativeTimeStamp-r16 INTEGER (0..7200),

 servCellIdentity-r16 CGI-Info-Logging-r16 OPTIONAL,

 measResultServingCell-r16 MeasResultServingCell-r16 OPTIONAL,

 measResultNeighCells-r16 SEQUENCE {

 measResultNeighCellListNR MeasResultListLogging2NR-r16 OPTIONAL,

 measResultNeighCellListEUTRA MeasResultList2EUTRA-r16 OPTIONAL

 },

 anyCellSelectionDetected-r16 ENUMERATED {true} OPTIONAL,

 ...,

 [[

 inDeviceCoexDetected-r17 ENUMERATED {true} OPTIONAL

 ]]

}

ConnEstFailReport-r16 ::= SEQUENCE {

 measResultFailedCell-r16 MeasResultFailedCell-r16,

 locationInfo-r16 LocationInfo-r16 OPTIONAL,

 measResultNeighCells-r16 SEQUENCE {

 measResultNeighCellListNR MeasResultList2NR-r16 OPTIONAL,

 measResultNeighCellListEUTRA MeasResultList2EUTRA-r16 OPTIONAL

 },

 numberOfConnFail-r16 INTEGER (1..8),

 perRAInfoList-r16 PerRAInfoList-r16,

 timeSinceFailure-r16 TimeSinceFailure-r16,

 ...

}

ConnEstFailReportList-r17 ::= SEQUENCE (SIZE (1..maxCEFReport-r17)) OF ConnEstFailReport-r16

MeasResultServingCell-r16 ::= SEQUENCE {

 resultsSSB-Cell MeasQuantityResults,

 resultsSSB SEQUENCE{

 best-ssb-Index SSB-Index,

 best-ssb-Results MeasQuantityResults,

 numberOfGoodSSB INTEGER (1..maxNrofSSBs-r16)

 } OPTIONAL

}

MeasResultFailedCell-r16 ::= SEQUENCE {

 cgi-Info CGI-Info-Logging-r16,

 measResult-r16 SEQUENCE {

 cellResults-r16 SEQUENCE{

 resultsSSB-Cell-r16 MeasQuantityResults

 },

 rsIndexResults-r16 SEQUENCE{

 resultsSSB-Indexes-r16 ResultsPerSSB-IndexList

 }

 }

}

RA-ReportList-r16 ::= SEQUENCE (SIZE (1..maxRAReport-r16)) OF RA-Report-r16

RA-Report-r16 ::= SEQUENCE {

 cellId-r16 CHOICE {

 cellGlobalId-r16 CGI-Info-Logging-r16,

 pci-arfcn-r16 PCI-ARFCN-NR-r16

 },

 ra-InformationCommon-r16 RA-InformationCommon-r16 OPTIONAL,

 raPurpose-r16 ENUMERATED {accessRelated, beamFailureRecovery, reconfigurationWithSync, ulUnSynchronized,

 schedulingRequestFailure, noPUCCHResourceAvailable, requestForOtherSI,

 msg3RequestForOtherSI-r17, lbtFailure-r18, spare7, spare6, spare5, spare4, spare3,

 spare2, spare1},

 ...,

 [[

 spCellID-r17 CGI-Info-Logging-r16 OPTIONAL

 ]]

}

RA-InformationCommon-r16 ::= SEQUENCE {

 absoluteFrequencyPointA-r16 ARFCN-ValueNR,

 locationAndBandwidth-r16 INTEGER (0..37949),

 subcarrierSpacing-r16 SubcarrierSpacing,

 msg1-FrequencyStart-r16 INTEGER (0..maxNrofPhysicalResourceBlocks-1) OPTIONAL,

 msg1-FrequencyStartCFRA-r16 INTEGER (0..maxNrofPhysicalResourceBlocks-1) OPTIONAL,

 msg1-SubcarrierSpacing-r16 SubcarrierSpacing OPTIONAL,

 msg1-SubcarrierSpacingCFRA-r16 SubcarrierSpacing OPTIONAL,

 msg1-FDM-r16 ENUMERATED {one, two, four, eight} OPTIONAL,

 msg1-FDMCFRA-r16 ENUMERATED {one, two, four, eight} OPTIONAL,

 perRAInfoList-r16 PerRAInfoList-r16,

 ...,

 [[

 perRAInfoList-v1660 PerRAInfoList-v1660 OPTIONAL

 ]],

 [[

 msg1-SCS-From-prach-ConfigurationIndex-r16 ENUMERATED {kHz1dot25, kHz5, spare2, spare1} OPTIONAL

 ]],

 [[

 msg1-SCS-From-prach-ConfigurationIndexCFRA-r16 ENUMERATED {kHz1dot25, kHz5, spare2, spare1} OPTIONAL

 ]],

 [[

 msgA-RO-FrequencyStart-r17 INTEGER (0..maxNrofPhysicalResourceBlocks-1) OPTIONAL,

 msgA-RO-FrequencyStartCFRA-r17 INTEGER (0..maxNrofPhysicalResourceBlocks-1) OPTIONAL,

 msgA-SubcarrierSpacing-r17 SubcarrierSpacing OPTIONAL,

 msgA-RO-FDM-r17 ENUMERATED {one, two, four, eight} OPTIONAL,

 msgA-RO-FDMCFRA-r17 ENUMERATED {one, two, four, eight} OPTIONAL,

 msgA-SCS-From-prach-ConfigurationIndex-r17 ENUMERATED {kHz1dot25, kHz5, spare2, spare1} OPTIONAL,

 msgA-TransMax-r17 ENUMERATED {n1, n2, n4, n6, n8, n10, n20, n50, n100, n200} OPTIONAL,

 msgA-MCS-r17 INTEGER (0..15) OPTIONAL,

 nrofPRBs-PerMsgA-PO-r17 INTEGER (1..32) OPTIONAL,

 msgA-PUSCH-TimeDomainAllocation-r17 INTEGER (1..maxNrofUL-Allocations) OPTIONAL,

 frequencyStartMsgA-PUSCH-r17 INTEGER (0..maxNrofPhysicalResourceBlocks-1) OPTIONAL,

 nrofMsgA-PO-FDM-r17 ENUMERATED {one, two, four, eight} OPTIONAL,

 dlPathlossRSRP-r17 RSRP-Range OPTIONAL,

 intendedSIBs-r17 SEQUENCE (SIZE (1..maxSIB)) OF SIB-Type-r17 OPTIONAL,

 ssbsForSI-Acquisition-r17 SEQUENCE (SIZE (1..maxNrofSSBs-r16)) OF SSB-Index OPTIONAL,

 msgA-PUSCH-PayloadSize-r17 BIT STRING (SIZE (5)) OPTIONAL,

 onDemandSISuccess-r17 ENUMERATED {true} OPTIONAL

 ]],

 [[

 usedFeatureCombination-r18 ReportedFeatureCombination-r18 OPTIONAL,

 triggeredFeatureCombination-r18 ReportedFeatureCombination-r18 OPTIONAL,

 attemptedBWP-InfoList-r18 SEQUENCE (SIZE (1..maxNrofBWPs)) OF AttemptedBWP-Info-r18 OPTIONAL,

 numberOfLBTFailures-r18 INTEGER (1..128) OPTIONAL,

 perRAInfoList-v1800 PerRAInfoList-v1800 OPTIONAL,

 sdt-Failed-r18 ENUMERATED {true} OPTIONAL

 ]]

}

AttemptedBWP-Info-r18 ::= SEQUENCE {

 locationAndBandwidth-r18 INTEGER (0..37949),

 subcarrierSpacing-r18 SubcarrierSpacing

}

ReportedFeatureCombination-r18 ::= SEQUENCE {

 redCap-r18 ENUMERATED {true} OPTIONAL,

 smallData-r18 ENUMERATED {true} OPTIONAL,

 nsag-r18 NSAG-List-r17 OPTIONAL,

 msg3-Repetitions-r18 ENUMERATED {true} OPTIONAL,

 triggered-S-NSSAI-List-r18 SEQUENCE (SIZE (1..maxNrofS-NSSAI)) OF S-NSSAI OPTIONAL

}

PerRAInfoList-r16 ::= SEQUENCE (SIZE (1..200)) OF PerRAInfo-r16

PerRAInfoList-v1660 ::= SEQUENCE (SIZE (1..200)) OF PerRACSI-RSInfo-v1660

PerRAInfo-r16 ::= CHOICE {

 perRASSBInfoList-r16 PerRASSBInfo-r16,

 perRACSI-RSInfoList-r16 PerRACSI-RSInfo-r16

}

PerRAInfoList-v1800 ::= SEQUENCE (SIZE (1..200)) OF PerRAInfo-v1800

PerRAInfo-v1800 ::= CHOICE {

 perRASSBInfoList-v1800 PerRASSBInfo-v1800,

 perRACSI-RSInfoList-v1800 PerRACSI-RSInfo-v1800

}

PerRASSBInfo-r16 ::= SEQUENCE {

 ssb-Index-r16 SSB-Index,

 numberOfPreamblesSentOnSSB-r16 INTEGER (1..200),

 perRAAttemptInfoList-r16 PerRAAttemptInfoList-r16

}

PerRASSBInfo-v1800 ::= SEQUENCE {

 allPreamblesBlocked ENUMERATED {true} OPTIONAL,

 lbt-Detected-r18 ENUMERATED {true} OPTIONAL,

 ...

}

PerRACSI-RSInfo-r16 ::= SEQUENCE {

 csi-RS-Index-r16 CSI-RS-Index,

 numberOfPreamblesSentOnCSI-RS-r16 INTEGER (1..200)

}

PerRACSI-RSInfo-v1660 ::= SEQUENCE {

 csi-RS-Index-v1660 INTEGER (1..96) OPTIONAL

}

PerRACSI-RSInfo-v1800 ::= SEQUENCE {

 allPreamblesBlocked ENUMERATED {true} OPTIONAL,

 lbt-Detected-r18 ENUMERATED {true} OPTIONAL,

 ...

}

PerRAAttemptInfoList-r16 ::= SEQUENCE (SIZE (1..200)) OF PerRAAttemptInfo-r16

PerRAAttemptInfo-r16 ::= SEQUENCE {

 contentionDetected-r16 BOOLEAN OPTIONAL,

 dlRSRPAboveThreshold-r16 BOOLEAN OPTIONAL,

 ...,

 [[

 fallbackToFourStepRA-r17 ENUMERATED {true} OPTIONAL

 ]]

}

SIB-Type-r17 ::= ENUMERATED {sibType2, sibType3, sibType4, sibType5, sibType9, sibType10-v1610, sibType11-v1610, sibType12-v1610,

 sibType13-v1610, sibType14-v1610, spare6, spare5, spare4, spare3, spare2, spare1}

RLF-Report-r16 ::= CHOICE {

 nr-RLF-Report-r16 SEQUENCE {

 measResultLastServCell-r16 MeasResultRLFNR-r16,

 measResultNeighCells-r16 SEQUENCE {

 measResultListNR-r16 MeasResultList2NR-r16 OPTIONAL,

 measResultListEUTRA-r16 MeasResultList2EUTRA-r16 OPTIONAL

 } OPTIONAL,

 c-RNTI-r16 RNTI-Value,

 previousPCellId-r16 CHOICE {

 nrPreviousCell-r16 CGI-Info-Logging-r16,

 eutraPreviousCell-r16 CGI-InfoEUTRALogging

 } OPTIONAL,

 failedPCellId-r16 CHOICE {

 nrFailedPCellId-r16 CHOICE {

 cellGlobalId-r16 CGI-Info-Logging-r16,

 pci-arfcn-r16 PCI-ARFCN-NR-r16

 },

 eutraFailedPCellId-r16 CHOICE {

 cellGlobalId-r16 CGI-InfoEUTRALogging,

 pci-arfcn-r16 PCI-ARFCN-EUTRA-r16

 }

 },

 reconnectCellId-r16 CHOICE {

 nrReconnectCellId-r16 CGI-Info-Logging-r16,

 eutraReconnectCellId-r16 CGI-InfoEUTRALogging

 } OPTIONAL,

 timeUntilReconnection-r16 TimeUntilReconnection-r16 OPTIONAL,

 reestablishmentCellId-r16 CGI-Info-Logging-r16 OPTIONAL,

 timeConnFailure-r16 INTEGER (0..1023) OPTIONAL,

 timeSinceFailure-r16 TimeSinceFailure-r16,

 connectionFailureType-r16 ENUMERATED {rlf, hof},

 rlf-Cause-r16 ENUMERATED {t310-Expiry, randomAccessProblem, rlc-MaxNumRetx,

 beamFailureRecoveryFailure, lbtFailure-r16,

 bh-rlfRecoveryFailure, t312-expiry-r17, spare1},

 locationInfo-r16 LocationInfo-r16 OPTIONAL,

 noSuitableCellFound-r16 ENUMERATED {true} OPTIONAL,

 ra-InformationCommon-r16 RA-InformationCommon-r16 OPTIONAL,

 ...,

 [[

 csi-rsRLMConfigBitmap-v1650 BIT STRING (SIZE (96)) OPTIONAL

 ]],

 [[

 lastHO-Type-r17 ENUMERATED {cho, daps, spare2, spare1} OPTIONAL,

 timeConnSourceDAPS-Failure-r17 TimeConnSourceDAPS-Failure-r17 OPTIONAL,

 timeSinceCHO-Reconfig-r17 TimeSinceCHO-Reconfig-r17 OPTIONAL,

 choCellId-r17 CHOICE {

 cellGlobalId-r17 CGI-Info-Logging-r16,

 pci-arfcn-r17 PCI-ARFCN-NR-r16

 } OPTIONAL,

 choCandidateCellList-r17 ChoCandidateCellList-r17 OPTIONAL

 ]],

 [[

 pSCellId-r18 CHOICE {

 cellGlobalId-r18 CGI-Info-Logging-r16,

 pci-arfcn-r18 PCI-ARFCN-NR-r16

 } OPTIONAL,

 mcgRecoveryFailureCause-r18 ENUMERATED {t316-Expiry, scgDeactivated, spare2, spare1} OPTIONAL,

 scgFailureCause-r18 ENUMERATED {t310-Expiry, randomAccessProblem, rlc-MaxNumRetx,

 synchReconfigFailureSCG, scg-ReconfigFailure,

 srb3-IntegrityFailure, scg-lbtFailure-r16, beamFailureRecoveryFailure-r16,

 t312-Expiry-r16, bh-RLF-r16, beamFailure-r17, spare3, spare2, spare1 }

 OPTIONAL,

 elapsedTimeSCGFailure-r18 ElapsedTimeSCGFailure-r18 OPTIONAL,

 voiceFallbackHO-r18 ENUMERATED {true} OPTIONAL,

 measResultLastServCell-RSSI-r18 RSSI-Range-r16 OPTIONAL,

 measResultNeighFreqList-RSSI-r18 MeasResultNeighFreqList-RSSI-r18 OPTIONAL,

 bwp-Info-r18 AttemptedBWP-Info-r18 OPTIONAL,

 elapsedTimeT316-r18 ElapsedTimeT316-r18 OPTIONAL

 ]]

 },

 eutra-RLF-Report-r16 SEQUENCE {

 failedPCellId-EUTRA CGI-InfoEUTRALogging,

 measResult-RLF-Report-EUTRA-r16 OCTET STRING,

 ...,

 [[

 measResult-RLF-Report-EUTRA-v1690 OCTET STRING OPTIONAL

 ]]

 }

}

SuccessHO-Report-r17 ::= SEQUENCE {

 sourceCellInfo-r17 SEQUENCE {

 sourcePCellId-r17 CGI-Info-Logging-r16,

 sourceCellMeas-r17 MeasResultSuccessHONR-r17 OPTIONAL,

 rlf-InSourceDAPS-r17 ENUMERATED {true} OPTIONAL

 },

 targetCellInfo-r17 SEQUENCE {

 targetPCellId-r17 CGI-Info-Logging-r16,

 targetCellMeas-r17 MeasResultSuccessHONR-r17 OPTIONAL

 },

 measResultNeighCells-r17 SEQUENCE {

 measResultListNR-r17 MeasResultList2NR-r16 OPTIONAL,

 measResultListEUTRA-r17 MeasResultList2EUTRA-r16 OPTIONAL

 } OPTIONAL,

 locationInfo-r17 LocationInfo-r16 OPTIONAL,

 timeSinceCHO-Reconfig-r17 TimeSinceCHO-Reconfig-r17 OPTIONAL,

 shr-Cause-r17 SHR-Cause-r17 OPTIONAL,

 ra-InformationCommon-r17 RA-InformationCommon-r16 OPTIONAL,

 upInterruptionTimeAtHO-r17 UPInterruptionTimeAtHO-r17 OPTIONAL,

 c-RNTI-r17 RNTI-Value OPTIONAL,

 ...,

 [[

 eutraTargetCellInfo-r18 SEQUENCE {

 targetPCellId-r18 CGI-InfoEUTRALogging,

 targetCellMeas-r18 MeasQuantityResultsEUTRA OPTIONAL

 } OPTIONAL,

 measResultServCell-RSSI-r18 RSSI-Range-r16 OPTIONAL,

 measResultNeighFreqList-RSSI-r18 MeasResultNeighFreqList-RSSI-r18 OPTIONAL,

 eutra-C-RNTI-r18 EUTRA-C-RNTI OPTIONAL,

 timeSinceSHR-r18 TimeSinceSHR-r18 OPTIONAL

 ]]

}

SuccessPSCell-Report-r18 ::= SEQUENCE {

 pCellId-r18 CGI-Info-Logging-r16,

 sourcePSCellInfo-r18 SEQUENCE {

 sourcePSCellId-r18 CGI-Info-Logging-r16,

 sourcePSCellMeas-r18 MeasResultSuccessHONR-r17 OPTIONAL

 } OPTIONAL,

 targetPSCellInfo-r18 SEQUENCE {

 targetPSCellId-r18 CHOICE {

 cellGlobalId-r18 CGI-Info-Logging-r16,

 pci-arfcn-r18 PCI-ARFCN-NR-r16

 },

 targetPSCellMeas-r18 MeasResultSuccessHONR-r17 OPTIONAL

 },

 measResultNeighCells-r18 SEQUENCE {

 measResultListNR-r18 MeasResultList2NR-r16 OPTIONAL,

 measResultListEUTRA-r18 MeasResultList2EUTRA-r16 OPTIONAL

 } OPTIONAL,

 spr-Cause-r18 SPR-Cause-r18 OPTIONAL,

 timeSinceCPAC-Reconfig-r18 TimeSinceCPAC-Reconfig-r18 OPTIONAL,

 locationInfo-r18 LocationInfo-r16 OPTIONAL,

 ra-InformationCommon-r18 RA-InformationCommon-r16 OPTIONAL,

 sn-InitiatedPSCellChange-r18 ENUMERATED {true} OPTIONAL,

...

}

MeasResultNeighFreqList-RSSI-r18 ::= SEQUENCE(SIZE (1..maxFreq)) OF MeasResultNeighFreq-RSSI-r18

MeasResultNeighFreq-RSSI-r18 ::= SEQUENCE {

 ssbFrequency-r18 ARFCN-ValueNR OPTIONAL,

 refFreqCSI-RS-r18 ARFCN-ValueNR OPTIONAL,

 measResult-RSSI-r18 RSSI-Range-r16 OPTIONAL

}

MeasResultList2NR-r16 ::= SEQUENCE(SIZE (1..maxFreq)) OF MeasResult2NR-r16

MeasResultList2EUTRA-r16 ::= SEQUENCE(SIZE (1..maxFreq)) OF MeasResult2EUTRA-r16

MeasResult2NR-r16 ::= SEQUENCE {

 ssbFrequency-r16 ARFCN-ValueNR OPTIONAL,

 refFreqCSI-RS-r16 ARFCN-ValueNR OPTIONAL,

 measResultList-r16 MeasResultListNR

}

MeasResultListLogging2NR-r16 ::= SEQUENCE(SIZE (1..maxFreq)) OF MeasResultLogging2NR-r16

MeasResultLogging2NR-r16 ::= SEQUENCE {

 carrierFreq-r16 ARFCN-ValueNR,

 measResultListLoggingNR-r16 MeasResultListLoggingNR-r16

}

MeasResultListLoggingNR-r16 ::= SEQUENCE (SIZE (1..maxCellReport)) OF MeasResultLoggingNR-r16

MeasResultLoggingNR-r16 ::= SEQUENCE {

 physCellId-r16 PhysCellId,

 resultsSSB-Cell-r16 MeasQuantityResults,

 numberOfGoodSSB-r16 INTEGER (1..maxNrofSSBs-r16) OPTIONAL

}

MeasResult2EUTRA-r16 ::= SEQUENCE {

 carrierFreq-r16 ARFCN-ValueEUTRA,

 measResultList-r16 MeasResultListEUTRA

}

MeasResultRLFNR-r16 ::= SEQUENCE {

 measResult-r16 SEQUENCE {

 cellResults-r16 SEQUENCE{

 resultsSSB-Cell-r16 MeasQuantityResults OPTIONAL,

 resultsCSI-RS-Cell-r16 MeasQuantityResults OPTIONAL

 },

 rsIndexResults-r16 SEQUENCE{

 resultsSSB-Indexes-r16 ResultsPerSSB-IndexList OPTIONAL,

 ssbRLMConfigBitmap-r16 BIT STRING (SIZE (64)) OPTIONAL,

 resultsCSI-RS-Indexes-r16 ResultsPerCSI-RS-IndexList OPTIONAL,

 csi-rsRLMConfigBitmap-r16 BIT STRING (SIZE (96)) OPTIONAL

 } OPTIONAL

 }

}

MeasResultSuccessHONR-r17::= SEQUENCE {

 measResult-r17 SEQUENCE {

 cellResults-r17 SEQUENCE{

 resultsSSB-Cell-r17 MeasQuantityResults OPTIONAL,

 resultsCSI-RS-Cell-r17 MeasQuantityResults OPTIONAL

 },

 rsIndexResults-r17 SEQUENCE{

 resultsSSB-Indexes-r17 ResultsPerSSB-IndexList OPTIONAL,

 resultsCSI-RS-Indexes-r17 ResultsPerCSI-RS-IndexList OPTIONAL

 }

 }

}

ChoCandidateCellList-r17 ::= SEQUENCE(SIZE (1..maxNrofCondCells-r16)) OF ChoCandidateCell-r17

ChoCandidateCell-r17 ::= CHOICE {

 cellGlobalId-r17 CGI-Info-Logging-r16,

 pci-arfcn-r17 PCI-ARFCN-NR-r16

}

SHR-Cause-r17 ::= SEQUENCE {

 t304-cause-r17 ENUMERATED {true} OPTIONAL,

 t310-cause-r17 ENUMERATED {true} OPTIONAL,

 t312-cause-r17 ENUMERATED {true} OPTIONAL,

 sourceDAPS-Failure-r17 ENUMERATED {true} OPTIONAL,

 ...

}

SPR-Cause-r18 ::= SEQUENCE {

 t304-cause-r18 ENUMERATED {true} OPTIONAL,

 t310-cause-r18 ENUMERATED {true} OPTIONAL,

 t312-cause-r18 ENUMERATED {true} OPTIONAL,

 ...

}

TimeSinceFailure-r16 ::= INTEGER (0..172800)

MobilityHistoryReport-r16 ::= VisitedCellInfoList-r16

TimeUntilReconnection-r16 ::= INTEGER (0..172800)

TimeSinceCHO-Reconfig-r17 ::= INTEGER (0..1023)

TimeSinceCPAC-Reconfig-r18 ::= INTEGER (0.. 1023)

TimeConnSourceDAPS-Failure-r17 ::= INTEGER (0..1023)

UPInterruptionTimeAtHO-r17 ::= INTEGER (0..1023)

ElapsedTimeT316-r18 ::= INTEGER (0..2000)

ElapsedTimeSCGFailure-r18 ::= INTEGER (0..1023)

TimeSinceSHR-r18 ::= INTEGER (0..172800)

-- TAG-UEINFORMATIONRESPONSE-STOP

-- ASN1STOP

|  |
| --- |
| *UEInformationResponse-IEs* field descriptions |
| ***coarseLocationInfo***Parameter type Ellipsoid-Point defined in TS 37.355 [49]. The first/leftmost bit of the first octet contains the most significant bit. The least significant bits of *degreesLatitude* and *degreesLongitude* are set to 0 to meet the accuracy requirement corresponds to a granularity of approximately 2 km.It is up to UE implementation how many LSBs are set to 0 to meet the accuracy requirement. |
| ***connEstFailReport***This field is used to provide connection establishment failure or connection resume failure information*.* |
| ***connEstFailReportList***This field is used to provide the list of *connEstFailReport* that are stored by the UE for the past up to *maxCEFReport-r17.* |
| ***flightPathInfoReport***This field is used to provide the flight path information as list of waypoints and, if available, corresponding timestamps. List of size zero indicates the previously provided flight path information is no longer valid. |
| ***logMeasReport***This field is used to provide the measurement results stored by the UE associated to logged MDT.  |
| ***measResultIdleEUTRA***EUTRA measurement results performed during RRC\_INACTIVE or RRC\_IDLE. |
| ***measResultIdleNR***NR measurement results performed during RRC\_INACTIVE or RRC\_IDLE. |
| ***measResultReselectionEUTRA***EUTRA reselection measurement results. |
| ***measResultReselectionNR***NR reselection measurement results. |
| ***ra-ReportList***This field is used to provide the list of RA reports that is stored by the UE for the past upto *maxRAReport-r16* number of successful random access procedures, or failed or successful completion of on-demand system information request procedure. |
| ***rlf-Report***This field is used to indicate the RLF report related contents. |
| ***successHO-Report***This field is used to provide the successful handover report if triggered based on the successful handover configuration. |
| ***successPSCell-Report***This field is used to provide the successful PSCell change or addition report if triggered based on the successful PSCell change or addition report configuration. |

|  |
| --- |
| *LogMeasReport* field descriptions |
| ***absoluteTimeStamp***Indicates the absolute time when the logged measurement configuration logging is provided, as indicated by NR within *absoluteTimeInfo*. |
| ***anyCellSelectionDetected***This field is used to indicate the detection of *any cell selection* state, as defined in TS 38.304 [20]. The UE sets this field when performing the logging of measurement results in RRC\_IDLE or RRC\_INACTIVE and there is no suitable cell or no acceptable cell. |
| ***inDeviceCoexDetected***Indicates that measurement logging is suspended due to IDC problem detection. |
| ***measResultServingCell***This field refers to the log measurement results taken in the Serving cell. |
| ***numberOfGoodSSB***Indicates the number of good beams (beams that are above *absThreshSS-BlocksConsolidation,* if configured by the network) associated to the cells within the R value range (which is configured by network for cell reselection) of the highest ranked cell as part of the beam level measurements. If the UE has no SSB of a neighbour cell whose measurement quantity is above the *absThreshSS-BlocksConsolidation* or if the network has not configured the *absThreshSS-BlocksConsolidation*, then the UE does not include *numberOfGoodSSB* for the corresponding neighbour cell. If the UE has no SSB of the serving cell whose measurement quantity is above the *absThreshSS-BlocksConsolidation* or if the network has not configured the *absThreshSS-BlocksConsolidation*, then the UE shall set the *numberOfGoodSSB* for the serving cell to one. |
| ***relativeTimeStamp***Indicates the time of logging measurement results, measured relative to the *absoluteTimeStamp*. Value in seconds. |
| ***tce-Id***Parameter Trace Collection Entity Id: See TS 32.422 [52]. |
| ***traceRecordingSessionRef***Parameter Trace Recording Session Reference: See TS 32.422 [52]. |

|  |
| --- |
| *ConnEstFailReport* field descriptions |
| ***measResultFailedCell***This field refers to the last measurement results taken in the cell, where connection establishment failure or connection resume failure happened. |
| ***measResultNeighCells***This field refers to the neighbour cell measurements when connection establishment failure or connection resume failure happened. |
| ***numberOfConnFail***This field is used to indicate the latest number of consecutive failed RRCSetup or RRCResume procedures in the same cell independent of RRC state transition. |
| ***timeSinceFailure***This field is used to indicate the time that elapsed since the connection (establishment or resume) failure. Value in seconds. The maximum value 172800 means 172800s or longer. |

|  |
| --- |
| *RA-InformationCommon* field descriptions |
| ***absoluteFrequencyPointA***This field indicates the absolute frequency position of the reference resource block (Common RB 0). |
| ***allPreamblesBlocked***This field is included when the all the preamble transmission attempts in the corresponding beam (SSB or CSI-RS) are blocked by failed LBT. Otherwise, the field is absent. |
| ***attemptedBWP-InfoList***This field indicates *locationAndBandwidth* and *subcarrierSpacing* of all the BWPs in which the consistent LBT failures are triggered at the moment of successful RA completion. |
| ***locationAndBandwidth***Frequency domain location and bandwidth of the bandwidth part associated to the random-access resources used by the UE. |
| ***numberOfLBTFailures***This field is used to indicate the total number of preamble transmission attempts for which LBT failure indication is received in the RA procedure. If the number of LBT failure indications received from lower layers during the RA procedure exceeds or equals to 128, UE sets the field to 128.This field is optional present when there is at least one preamble transmission attempt for which LBT failure indication is received during the RA procedure, otherwise it is absent. |
| ***perRAInfoList, perRAInfoList-v1660***This field provides detailed information about each of the random access attempts in the chronological order of the random access attempts. If perRAInfoList-v1660 is present, it shall contain the same number of entries, listed in the same order as in perRAInfoList-r16. |
| ***sdt-Failed***This field is included when the RA report entry is included because of SDT and if the SDT transmission failed. Otherwise, the field is absent. |
| ***subcarrierSpacing***Subcarrier spacing used in the BWP associated to the random-access resources used by the UE. |
| ***triggeredFeatureCombination***One or more features (e.g., *RedCap*, *Slicing*, *SDT* and *MSG3 repetition)* that triggers the random-access procedure. When triggered feature is *Slicing*, UE includes all the S-NSSAIs associated to the slices triggering the access attempt in the random-access procedure. |
| ***usedFeatureCombination***The feature or combination of features (e.g., *redCap*, *smallData*, *nsag* and *msg3-Repetitions*) associated to the used random-access resources as specified in TS 38.321[3]. |

|  |
| --- |
| *RA-Report* field descriptions |
| ***cellID***This field indicates the CGI of the cell in which the associated random access procedure was performed. |
| ***contentionDetected***This field is used to indicate that contention was detected for the transmitted preamble in the given random access attempt or not. This field is not included when the UE performs random access attempt is using contention free random-access resources or when the *raPurpose* is set to *requestForOtherSI* or when the RA attempt is a 2-step RA attempt and fallback to 4-step RA did not occur (i.e. *fallbackToFourStepRA* is not included). |
| ***csi-RS-Index, csi-RS-Index-v1660***This field is used to indicate the CSI-RS index corresponding to the random access attempt.If the random access procedure is for beam failure recovery, the field indicates the NZP-CSI-RS-ResourceId. For CSI-RS index larger than maxNrofCSI-RS-ResourcesRRM-1, the index value is the sum of csi-RS-Index (without suffix) and csi-RS-Index-v1660. |
| ***dlPathlossRSRP***Measeured RSRP of the DL pathloss reference obtained at the time of *RA\_Type* selection stage of the RA procedure as captured in TS 38.321 [3]. |
| ***dlRSRPAboveThreshold***In 4 step random access procedure, this field is used to indicate whether the DL beam (SSB) quality associated to the random access attempt was above or below the threshold *rsrp-ThresholdSSB* in *beamFailureRecoveryConfig* in UL BWP configuration of UL BWP selected for random access procedure initiated for beam failure recovery; Otherwise, if the UE has received *rsrp-ThresholdSSB* in *FeatureCombinationPreambles* used for the feature specific random access, the field is used to indicate whether DL beam (SSB) quality associated to the random access attempt was above or below this *rsrp-ThresholdSSB-r17*, else *rsrp-ThresholdSSB* in *rach-ConfigCommon* in UL BWP configuration of UL BWP selected for random access procedure.In 2 step random access procedure, if the UE has received *msgA-RSRP-ThresholdSSB* in *FeatureCombinationPreambles* used for the feature specific random access, the field is used to indicate whetherDL beam (SSB) quality associated to the random access attempt was above or below this *rsrp-ThresholdSSB-r17*, else this field is used to indicate whether the DL beam (SSB) quality associated to the random access attempt was above or below the threshold *msgA-RSRP-ThresholdSSB* in *rach-ConfigCommonTwoStepRA* in UL BWP configuration of UL BWP selected for random access procedure. |
| ***fallbackToFourStepRA***This field indicates if a fallback indication in MsgB is received (according to TS 38.321 [3]) for the 2-step random access attempt. |
| ***intendedSIBs***This field indicates the SIB(s) the UE wanted to receive as a result of the on demand SI request (when the RA procedure is a used as a SI request) initiated by the UE. That is, it indicates the one(s) of the SIB(s) in the SI message(s) requested to be broadcast that the UE was interested in. |
| ***lbt-Detected***This field is included when there is at least one LBT failure indication received prior to change of beam for preamble transmission during RA procedure, otherwise this field is absent. |
| ***msg1-SCS-From-prach-ConfigurationIndex***This field is set by the UE with the corresponding SCS for CBRA as derived from the *prach-ConfigurationIndex* in *RACH-ConfigGeneric* when the *msg1-SubcarrierSpacing* is absent; otherwise, this field is absent. |
| ***msg1-SCS-From-prach-ConfigurationIndexCFRA***This field is set by the UE with the corresponding SCS for CFRA as derived from the *prach-ConfigurationIndex* in *RACH-ConfigGeneric* when the *msg1-SubcarrierSpacing* is absent; otherwise, this field is absent. |
| ***msgA-PUSCH-PayloadSize***This field indicates the size of the overall payload available in the UE buffer at the time of initiating the 2 step RA procedure. The value refers to the index of TS 38.321 [3], table 6.1.3.1-1, corresponding to the UE buffer size. |
| ***msgA-RO-FDM***This field indicates the number of msgA PRACH transmission occasions Frequency-Division Multiplexed in one time instance for the PRACH resources configured for 2-step CBRA.. |
| ***msgA-RO-FDMCFRA***This field indicates the number of msgA PRACH transmission occasions Frequency-Division Multiplexed in one time instance for the PRACH resources configured for 2-step CFRA. |
| ***msgA-RO-FrequencyStart***This field indicates the lowest resource block of the contention based random-access resources for 2-step CBRA in the random-access procedure. The indication has the form of the offset of the lowest PRACH transmissions occasion with respect to PRB 0 in the frequency domain. |
| ***msgA-RO-FrequencyStartCFRA***This field indicates the lowest resource block of the contention free random-access resources for the 2-step CFRA in the random-access procedure. The indication has the form of the offset of the lowest PRACH transmissions occasion with respect to PRB 0 in the frequency domain. |
| ***msgA-SCS-From-prach-ConfigurationIndex***This field is set by the UE with the corresponding SCS as derived from the *msgA-PRACH-ConfigurationIndex* in *RACH-ConfigGenericTwoStepRA* (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]) when the *msgA-SubcarrierSpacing* is absent and when only 2-step random-access resources are available in the UL BWP used in the random-access procedure; otherwise, this field is absent. |
| ***numberOfPreamblesSentOnCSI-RS***This field is used to indicate the total number of successive RA preambles that were transmitted on the corresponding CSI-RS. |
| ***numberOfPreamblesSentOnSSB***This field is used to indicate the total number of successive RA preambles that were transmitted on the corresponding SS/PBCH block. |
| ***onDemandSISuccess***This field is set to *true* when the RA report entry is included because of either msg1 based on demand SI request or msg3 based on demand SI request and if the on-demand SI request is successful. Otherwise, the field is absent. |
| ***perRAAttemptInfoList***This field provides detailed information about a random access attempt. |
| ***perRACSI-RSInfoList***This field provides detailed information about the successive random access attempts associated to the same CSI-RS. |
| ***perRASSBInfoList***This field provides detailed information about the successive random access attempts associated to the same SS/PBCH block. |
| ***ra-InformationCommon***This field is used to provide information on random access attempts. This field is mandatory present. |
| ***raPurpose***This field is used to indicate the RA scenario for which the RA report entry is triggered. The RA accesses associated to Initial access from RRC\_IDLE, RRC re-establishment procedure, transition from RRC-INACTIVE. The indicator *beamFailureRecovery* is used in case of successful beam failure recovery related RA procedure in the SpCell [3]. The indicator *reconfigurationWithSync* is used if the UE executes a reconfiguration with sync. The indicator *ulUnSynchronized* is used if the random access procedure is initiated in a SpCell by DL or UL data arrival during RRC\_CONNECTED when the timeAlignmentTimer is not running in the PTAG or if the RA procedure is initiated in a serving cell by a PDCCH order [3]. The indicator *schedulingRequestFailure* is used in case of SR failures [3]. The indicator *noPUCCHResourceAvailable* is used when the UE has no valid SR PUCCH resources configured [3]. The indicator *requestForOtherSI* is used for MSG1 based on demand SI request. The indicator *msg3RequestForOtherSI* is used in case of MSG3 based SI request. The indication *lbtFailure* is used when the UE initiates RACH in SpCell due to consistent uplink LBT failures [3]. The field can also be used for the SCG-related RA-Report when the *raPurpose* is set to *beamFailureRecovery*, *reconfigurationWithSync*, *ulUnSynchronized*, *schedulingRequestFailure* and *noPUCCHResourceAvailable*. |
| ***spCellID***This field is used to indicate the CGI of the SpCell of the cell group associated to the SCell in which the associated random access procedure was performed. If the UE performs RA procedure on a SCell associated to the MCG, then this field is set to the CGI of the PCell and if the UE performs RA procedure on a SCell associated to the SCG, then this field is set to the CGI of the PSCell. If the CGI of the PSCell is not available at the UE for the RA procedure performed on a SCell associated to the SCG or for the RA procedure on the PSCell, this field is set to the CGI of the PCell. Otherwise, the field is absent. |
| ***ssb-Index***This field is used to indicate the SS/PBCH index of the SS/PBCH block corresponding to the random access attempt. |
| ***ssbsForSI-Acquisition***This field indicates the SSB(s) (in the form of SSB index(es)) that the UE used to receive the requested SI message(s). The field is present if the purpose of the random access procedure was to request on-demand SI (i.e. if the *raPurpose* is set to *requestForOtherSI* or *msg3RequestForOtherSI*). Otherwise, the field is absent. |

|  |
| --- |
| *RLF-Report* field descriptions |
| ***bwp-Info***This field is used to indicate the BWP information in which the UE detected consistent uplink LBT failure. This field is set only when the detected consistent uplink LBT failure did not trigger the random access procedure. |
| ***choCandidateCellList***This field is used to indicate the list of candidate target cells for conditional handover included in *condRRCReconfig* at the time of connection failure. The field does not include the candidate target cells included in *measResultNeighCells*. |
| ***choCellId***This field is used to indicate the candidate target cell for conditional handover included in *condRRCReconfig* that the UE selected for CHO based recovery while T311 is running. |
| ***connectionFailureType***This field is used to indicate whether the connection failure is due to radio link failure or handover failure. |
| ***csi-rsRLMConfigBitmap,csi-rsRLMConfigBitmap-v1650***These fields are used to indicate the CSI-RS indexes configured in the RLM configurations for the active BWP when the UE declares RLF or HOF. The UE first fills in the *csi-rsRLMConfigBitmap-r16* to indicate the first 96 CSI-RS indexes and then *csi-rsRLMConfigBitmap-v1650* to indicate the latter 96 CSI-RS indexes. The first/leftmost bit in *csi-rsRLMConfigBitmap-r16* corresponds to CSI-RS index 0, the second bit corresponds to CSI-RS index 1. The first/leftmost bit in *csi-rsRLMConfigBitmap-v1650* corresponds to CSI-RS index 96, the second bit corresponds to CSI-RS index 97. These fields are included only if the *RadioLinkMonitoringConfig* for the respective BWP is configured. |
| ***c-RNTI***This field indicates the C-RNTI used in the PCell upon detecting radio link failure or the C-RNTI used in the source PCell upon handover failure. |
| ***elapsedTimeSCGFailure***This field is used to indicate the time elapsed between the SCG failure and the MCG failure. The maximum value *1023* means 1023ms or longer. |
| ***elapsedTimeT316***This field is used to indicate the time elapsed between the initiation of the *MCGFailureInformation* and the reception of the *RRCReconfiguration* or *RRCRelease* or *MobilityFromNRCommand* messages. |
| ***failedPCellId***This field is used to indicate the PCell in which RLF is detected or the target PCell of the failed handover. For intra-NR handover *nrFailedPCellId* is included and for the handover from NR to EUTRA *eutraFailedPCellId* is included. The UE sets the ARFCN according to the frequency band used for transmission/ reception when the failure occurred. |
| ***failedPCellId-EUTRA***This field is used to indicate the PCell in which RLF is detected or the source PCell of the failed handover in an E-UTRA RLF report. |
| ***lastHO-Type***This field is used to indicate the type of the last executed handover before the last detected connection failure. The field is set to *cho* if the last executed handover was initiated by a conditional reconfiguration execution. The field is set to *daps* if the last executed handover was a DAPS handover. |
| ***mcgRecoveryFailureCause***This field is used to indicate the cause of the fast MCG recovery failure. |
| ***measResultListEUTRA***This field refers to the last measurement results taken in the neighboring EUTRA Cells, when the radio link failure or handover failure happened. |
| ***measResultListNR***This field refers to the last measurement results taken in the neighboring NR Cells, when the radio link failure or handover failure happened. |
| ***measResultLastServCell***This field refers to the log measurement results taken in the PCell upon detecting radio link failure or the source PCell upon handover failure. |
| ***measResultLastServCell-RSSI***This field refers to the log RSSI measurement results in dBm (see TS 38.215 [9]) taken for the frequency of the PCell upon detecting radio link failure or handover failure. |
| ***measResultNeighFreqList-RSSI***This field is used to log the RSSI measurement results in dBm (see TS 38.215 [9]) taken for the neighbouring frequencies upon detecting radio link failure or handover failure, when UE operates in unlicensed spectrum. |
| ***measResult-RLF-Report-EUTRA***Includes the E-UTRA *RLF-Report-r9* IE as specified in TS 36.331 [10]. |
| ***measResult-RLF-Report-EUTRA-v1690***Includes the E-UTRA *RLF-Report-v9e0* IE as specified in TS 36.331 [10]. |
| ***noSuitableCellFound***This field is set by the UE when the T311 expires. |
| ***previousPCellId***This field is used to indicate the source PCell of the last handover (source PCell when the last executed *RRCReconfiguration* message including *reconfigurationWithSync* was received). For intra-NR handover *nrPreviousCell* is included and for the handover from EUTRA to NR *eutraPreviousCell* is included. |
| ***pSCellId***This field is used to indicate the PSCell in which the UE failed to perform fast MCG recovery procedure or the UE successfully performed fast MCG recovery procedure. |
| ***ra-InformationCommon***This field is optionally included when c*onnectionFailureType* is set to 'hof' or when *connectionFailureType* is set to 'rlf' and the *rlf-Cause* equals to 'randomAccessProblem' or 'beamRecoveryFailure'; otherwise this field is absent. |
| ***reconnectCellId***This field is used to indicate the cell in which the UE comes back to connected after connection failure and after failing to perform reestablishment. If the UE comes back to RRC CONNECTED in an NR cell then *nrReconnectCellID* is included and if the UE comes back to RRC CONNECTED in an LTE cell then *eutraReconnectCellID* is included |
| ***reestablishmentCellId***If the UE was not configured with *conditionalReconfiguration* at the time of re-establishment attempt, or if the cell selected for the re-establishment attempt is not a candidate target cell for conditional reconfiguration, this field is used to indicate the cell in which the re-establishment attempt was made after connection failure. |
| ***rlf-Cause***This field is used to indicate the cause of the last radio link failure that was detected. In case of handover failure information reporting (i.e., the *connectionFailureType* is set to '*hof*'), the UE is allowed to set this field to any value, except for the case in which a radio link failure was detected in the source PCell while performing a DAPS handover.. |
| ***ssbRLMConfigBitmap***This field is used to indicate the SS/PBCH block indexes configured in the RLM configurations for the active BWP when the UE declares RLF or HOF.The first/leftmost bit corresponds to SSB index 0, the second bit corresponds to SSB index 1. This field is included only if the *RadioLinkMonitoringConfig* for the respective BWP is configured. |
| ***timeConnFailure***This field is used to indicate the time elapsed since the last HO execution until connection failure. Actual value = field value \* 100ms. The maximum value 1023 means 102.3s or longer. |
| ***timeConnSourceDAPS-Failure***This field is used to indicate the time that elapsed between the last DAPS handover execution and the radio link failure detected in the source cell while T304 is running. Value in milliseconds. The maximum value 1023 means 1023ms or longer. |
| ***timeSinceFailure***This field is used to indicate the time that elapsed since the connection (radio link or handover) failure. Value in seconds. The maximum value 172800 means 172800s or longer. In the case of failure(s) (either at source or at target or at both) associated to DAPS handover, this field indicates the time elapsed since the latest connection (radio link or handover) failure. |
| *timeSinceCHO-Reconfig*In case of handover failure, this field is used to indicate the time elapsed between the initiation of the last handover execution towards the target cell and the reception of the latest conditional reconfiguration. In case of radio link failure, this field is used to indicate the time elapsed between the radio link failure and the reception of the latest conditional reconfiguration while connected to the source PCell. Actual value = field value \* 100ms. The maximum value 1023 means 102.3s or longer. |
| ***timeUntilReconnection***This field is used to indicate the time that elapsed between the connection (radio link or handover) failure and the next time the UE comes to RRC CONNECTED in an NR or EUTRA cell, after failing to perform reestablishment. Value in seconds. The maximum value 172800 means 172800s or longer. |
| ***voiceFallbackHO***This field is set if for the failed mobility from NR, the *voiceFallbackIndication* was included in the *MobilityFromNRCommand* message. |

|  |
| --- |
| *SuccessHO-Report* field descriptions |
| ***c-RNTI***This field indicates the C-RNTI assigned by the target PCell of the handover for which the successful HO report was generated. |
| ***eutraTargetCellInfo***This field is used to indicate the target EUTRA PCell and the last measurement results of the target PCell of a handover in which the successful handover triggers the *SuccessHO-Report*. |
| ***eutra-C-RNTI***This field indicates the C-RNTI assigned by the E-UTRA target PCell of the mobility from NR command for which the successful HO report was generated. |
| ***measResultListNR***This field refers to the last measurement results taken in the neighboring NR Cells when a successful handover is executed. |
| ***measResultNeighFreqList-RSSI***This field is used to log the RSSI measurement results in dBm (see TS 38.215 [9]) taken for the neighbouring frequencies upon successful handover execution. |
| ***measResultServCell-RSSI***This field refers to the log RSSI measurement results in dBm (see TS 38.215 [9]) taken for the frequency of the source PCell upon successful handover execution. |
| *rlf-InSourceDAPS*This field indicates whether a radio link failure occurred at the source cell while T304 was running. |
| ***shr-Cause***This field is used to indicate the cause of the successful HO report. |
| ***sourceCellMeas***This field refers to the last measurement results taken in the source PCell of a handover in which the successful handover triggers the *SuccessHO-Report*. |
| ***sourcePCellId***This field is used to indicate the source PCell of a handover in which the successful handover triggers the *SuccessHO-Report*. |
| ***targetPCellId***This field is used to indicate the target PCell of a handover in which the successful handover triggers the *SuccessHO-Report*. |
| ***targetCellMeas***This field refers to the last measurement results taken in the target PCell of a handover in which the successful handover triggers the *SuccessHO-Report*. |
| ***timeSinceCHO-Reconfig***This field is used to indicate the time elapsed between the initiation of the last conditional reconfiguration execution towards the target cell and the reception of the latest conditional reconfiguration for this target cell. Actual value = field value \* 100ms. The maximum value 1023 means 102.3s or longer. |
| ***timeSinceSHR***This field is used to indicate the time elapsed since the execution of the last MobilityFromNRCommand towards the target EUTRA cell. Value in seconds. The maximum value 172800 means 172800s or longer. |
| ***upInterruptionTimeAtHO***This field is used to indicate the time elapsed between the time of arrival of the last PDCP PDU received from the source cell for any data radio bearer and the time of arrival of the first non-duplicate PDCP PDU received from the target cell for any data radio bearer, and it is measured at the time of arrival of the first non-duplicate PDCP PDU received from the target cell for any data radio bearer. The field is set only in case of DAPS handover.Value in milliseconds. The maximum value 1023 means 1023ms or longer. |

|  |
| --- |
| *FlightPathInfoReport* field descriptions |
| ***timeStamp***Time stamp that describes estimated time of arrival, if available, of the Aerial UE at the corresponding wayPointLocation. |
| ***wayPointLocation***Location coordinates of the planned waypoint. Parameter type LocationCoordinates defined in TS 37.355 [49]. The first/leftmost bit of the first octet contains the most significant bit. |

|  |
| --- |
| *SuccessPSCell-Report* field descriptions |
| ***measResultListNR***This field refers to the last measurement results according to the initiating node configuration taken in the neighboring NR Cells when a successful PSCell change/addition is executed. |
| ***pCellId***This field is used to indicate the PCell to which the UE was connected when the successful PSCell change or addition triggers the *SuccessPSCell-Report*. |
| ***sn-InitiatedPSCellChange***This field indicates whether the PSCell change procedure for which the successful PSCell change report is logged is SN initiated or not. |
| ***spr-Cause***This field is used to indicate the cause of the successful PSCell change or addition report. |
| ***sourcePSCellId***This field is used to indicate the source PSCell of a PSCell change in which the successful PSCell change triggers the *SuccessPSCell-Report*. |
| ***sourcePSCellMeas***This field refers to the last measurement results taken in the source PSCell of a PSCell change in which the successful PSCell change triggers the *SuccessPSCell-Report*. |
| ***targetPSCellId***This field is used to indicate the target PSCell of a PSCell change/addition in which the successful PSCell change or addition triggers the *SuccessPSCell-Report*. |
| ***targetPSCellMeas***This field refers to the last measurement results taken in the target PSCell of a PSCell change/addition in which the successful PSCell change or addition triggers the *SuccessPSCell-Report*. |
| ***timeSinceCPAC-Reconfig***This field is used to indicate the time elapsed between the initiation of the last conditional reconfiguration execution towards the target PSCell and the reception of the latest conditional reconfiguration for this target PSCell. Actual value = field value \* 100ms. The maximum value 1023 means 102.3s or longer. |

*Next Modified Subclause*

### 6.3.1 System information blocks

*Next Modified Subclause*

#### – *SIB11*

*SIB11* contains information related to idle/inactive measurements.

*SIB11* information element

-- ASN1START

-- TAG-SIB11-START

SIB11-r16 ::= SEQUENCE {

 measIdleConfigSIB-r16 MeasIdleConfigSIB-r16 OPTIONAL, -- Need S

 lateNonCriticalExtension OCTET STRING OPTIONAL,

 ...

}

-- TAG-SIB11-STOP

-- ASN1STOP

| *SIB11* field descriptions |
| --- |
| ***measIdleConfigSIB***Indicates measurement configuration to be stored and used by the UE while in RRC\_IDLE or RRC\_INACTIVE. |

*Next Modified Subclause*

### 6.3.2 Radio resource control information elements

*Next Modified Subclause*

#### – *MeasIdleConfig*

The IE *MeasIdleConfig* is used to convey information to UE about measurements requested to be done while in RRC\_IDLE or RRC\_INACTIVE.

*MeasIdleConfig* information element

-- ASN1START

-- TAG-MEASIDLECONFIG-START

MeasIdleConfigSIB-r16 ::= SEQUENCE {

 measIdleCarrierListNR-r16 SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF MeasIdleCarrierNR-r16 OPTIONAL, -- Need S

 measIdleCarrierListEUTRA-r16 SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF MeasIdleCarrierEUTRA-r16 OPTIONAL, -- Need S

 ... ,

 [[

 measReselectionCarrierListNR-r18 SEQUENCE (SIZE (1..maxFreqIdle-r18)) OF MeasIdleCarrierNR-r18 OPTIONAL, -- Need S

 measReselectionCarrierListEUTRA-r18 SEQUENCE (SIZE (1..maxFreqIdle-r18)) OF MeasIdleCarrierEUTRA-r18 OPTIONAL, -- Need S

 measurementValidityDuration-r18 MeasurementValidityDuration-r18 OPTIONAL -- Need S

 ]]

}

MeasIdleConfigDedicated-r16 ::= SEQUENCE {

 measIdleCarrierListNR-r16 SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF MeasIdleCarrierNR-r16 OPTIONAL, -- Need N

 measIdleCarrierListEUTRA-r16 SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF MeasIdleCarrierEUTRA-r16 OPTIONAL, -- Need N

 measIdleDuration-r16 ENUMERATED{sec10, sec30, sec60, sec120, sec180, sec240, sec300, spare},

 validityAreaList-r16 ValidityAreaList-r16 OPTIONAL, -- Need N

 ...,

 [[

 measReselectionCarrierListNR-r18 SEQUENCE (SIZE (1..maxFreqIdle-r18)) OF MeasIdleCarrierNR-r18 OPTIONAL, -- Need S

 measReselectionCarrierListEUTRA-r18 SEQUENCE (SIZE (1..maxFreqIdle-r18)) OF MeasIdleCarrierEUTRA-r18 OPTIONAL, -- Need S

 measurementValidityDuration-r18 MeasurementValidityDuration-r18 OPTIONAL -- Need S

 ]]

}

ValidityAreaList-r16 ::= SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF ValidityArea-r16

ValidityArea-r16 ::= SEQUENCE {

 carrierFreq-r16 ARFCN-ValueNR,

 validityCellList-r16 ValidityCellList OPTIONAL -- Need N

}

ValidityCellList ::= SEQUENCE (SIZE (1.. maxCellMeasIdle-r16)) OF PCI-Range

MeasIdleCarrierNR-r16 ::= SEQUENCE {

 carrierFreq-r16 ARFCN-ValueNR,

 ssbSubcarrierSpacing-r16 SubcarrierSpacing,

 frequencyBandList MultiFrequencyBandListNR OPTIONAL, -- Need R

 measCellListNR-r16 CellListNR-r16 OPTIONAL, -- Need R

 reportQuantities-r16 ENUMERATED {rsrp, rsrq, both},

 qualityThreshold-r16 SEQUENCE {

 idleRSRP-Threshold-NR-r16 RSRP-Range OPTIONAL, -- Need R

 idleRSRQ-Threshold-NR-r16 RSRQ-Range OPTIONAL -- Need R

 } OPTIONAL, -- Need R

 ssb-MeasConfig-r16 SEQUENCE {

 nrofSS-BlocksToAverage-r16 INTEGER (2..maxNrofSS-BlocksToAverage) OPTIONAL, -- Need S

 absThreshSS-BlocksConsolidation-r16 ThresholdNR OPTIONAL, -- Need S

 smtc-r16 SSB-MTC OPTIONAL, -- Need S

 ssb-ToMeasure-r16 SSB-ToMeasure OPTIONAL, -- Need S

 deriveSSB-IndexFromCell-r16 BOOLEAN,

 ss-RSSI-Measurement-r16 SS-RSSI-Measurement OPTIONAL -- Need S

 } OPTIONAL, -- Need S

 beamMeasConfigIdle-r16 BeamMeasConfigIdle-NR-r16 OPTIONAL, -- Need R

 ...

}

MeasIdleCarrierEUTRA-r16 ::= SEQUENCE {

 carrierFreqEUTRA-r16 ARFCN-ValueEUTRA,

 allowedMeasBandwidth-r16 EUTRA-AllowedMeasBandwidth,

 measCellListEUTRA-r16 CellListEUTRA-r16 OPTIONAL, -- Need R

 reportQuantitiesEUTRA-r16 ENUMERATED {rsrp, rsrq, both},

 qualityThresholdEUTRA-r16 SEQUENCE {

 idleRSRP-Threshold-EUTRA-r16 RSRP-RangeEUTRA OPTIONAL, -- Need R

 idleRSRQ-Threshold-EUTRA-r16 RSRQ-RangeEUTRA-r16 OPTIONAL -- Need R

 } OPTIONAL, -- Need S

 ...

}

MeasIdleCarrierNR-r18 ::= SEQUENCE {

 carrierFreq-r18 ARFCN-ValueNR,

 ...

}

MeasIdleCarrierEUTRA-r18 ::= SEQUENCE {

 carrierFreqEUTRA-r18 ARFCN-ValueEUTRA,

 ...

}

MeasurementValidityDuration-r18 ::= ENUMERATED { 5s, 10s, 20s, 50s, 100s,spare3, spare 2, spare1}

CellListNR-r16 ::= SEQUENCE (SIZE (1..maxCellMeasIdle-r16)) OF PCI-Range

CellListEUTRA-r16 ::= SEQUENCE (SIZE (1..maxCellMeasIdle-r16)) OF EUTRA-PhysCellIdRange

BeamMeasConfigIdle-NR-r16 ::= SEQUENCE {

 reportQuantityRS-Indexes-r16 ENUMERATED {rsrp, rsrq, both},

 maxNrofRS-IndexesToReport-r16 INTEGER (1.. maxNrofIndexesToReport),

 includeBeamMeasurements-r16 BOOLEAN

}

RSRQ-RangeEUTRA-r16 ::= INTEGER (-30..46)

-- TAG-MEASIDLECONFIG-STOP

-- ASN1STOP

|  |
| --- |
| *MeasIdleConfig* field descriptions |
| ***absThreshSS-BlocksConsolidation***Threshold for consolidation of L1 measurements per RS index. |
| ***beamMeasConfigIdle***Indicates the beam level measurement configuration. |
| ***carrierFreq***Indicates the NR carrier frequency to be used for measurements during RRC\_IDLE or RRC\_INACTIVE. |
| ***carrierFreqEUTRA***Indicates the E-UTRA carrier frequency to be used for measurements during RRC\_IDLE or RRC\_INACTIVE. |
| ***deriveSSB-IndexFromCell***This field indicates whether the UE may use the timing of any detected cell on that frequency to derive the SSB index of all neighbour cells on that frequency. If this field is set to true, the UE assumes SFN and frame boundary alignment across cells on the neighbor frequency as specified in TS 38.133 [14]. |
| ***frequencyBandList***Indicates the list of frequency bands for which the NR idle/inactive measurement parameters apply. The UE shall select the first listed band which it supports in the frequencyBandList field to represent the NR neighbour carrier frequency. |
| ***includeBeamMeasurements***Indicates whether or not the UE shall include beam measurements in the NR idle/inactive measurement results. |
| ***maxNrofRS-IndexesToReport***Max number of beam indices to include in the idle/inactive measurement result. |
| ***measCellListEUTRA***Indicates the list of E-UTRA cells which the UE is requested to measure and report for idle/inactive measurements. |
| ***measCellListNR***Indicates the list of NR cells which the UE is requested to measure and report for idle/inactive measurements. |
| ***measIdleCarrierListEUTRA***Indicates the E-UTRA carriers to be measured during RRC\_IDLE or RRC\_INACTIVE. |
| ***measIdleCarrierListNR***Indicates the NR carriers to be measured during RRC\_IDLE or RRC\_INACTIVE. |
| ***measReselectionCarrierListEUTRA***Indicates the E-UTRA carriers for reselection measurement reporting |
| ***measReselectionCarrierListNR***Indicates the NR carriers for reselection measurement reporting. |
| ***measurementValidityDuration*** Indicates time values for UE to determine validity of reported idle/inactive and reselection measurements as defined in TS 38.133[14]. Value *5s* correspond to 5 seconds, value *10s* correspond to 10 seconds and so on. |
| ***measIdleDuration***Indicates the duration for performing idle/inactive measurements while in RRC\_IDLE or RRC\_INACTIVE. Value sec10 correspond to 10 seconds, value sec30 to 30 seconds and so on. |
| ***nrofSS-BlocksToAverage***Number of SS blocks to average for cell measurement derivation. |
| ***qualityThreshold***Indicates the quality thresholds for reporting the measured cells for idle/inactive NR measurements. |
| ***qualityThresholdEUTRA***Indicates the quality thresholds for reporting the measured cells for idle/inactive E-UTRA measurements. |
| ***reportQuantities***Indicates which measurement quantities UE is requested to report in the idle/inactive measurement report.  |
| ***reportQuantitiesEUTRA***Indicates which E-UTRA measurement quantities the UE is requested to report in the idle/inactive measurement report. |
| ***reportQuantityRS-Indexes***Indicates which measurement information per beam index the UE shall include in the NR idle/inactive measurement results. |
| ***smtc***Indicates the measurement timing configuration for inter-frequency measurement. If this field is absent in *VarMeasIdleConfig*, the UE assumes that SSB periodicity is 5 ms in this frequency. |
| ***ssbSubcarrierSpacing***Indicates subcarrier spacing of SSB.Only the following values are applicable depending on the used frequency:FR1: 15 or 30 kHzFR2-1: 120 or 240 kHzFR2-2: 120, 480, or 960 kHz |
| ***ssb-ToMeasure***The set of SS blocks to be measured within the SMTC measurement duration (see TS 38.215 [9]). When the field is absent in *VarMeasIdleConfig*, the UE measures on all SS-blocks. |
| ***ss-RSSI-Measurement***Indicates the SSB-based RSSI measurement configuration. If the field is absent in *VarMeasIdleConfig*, the UE behaviour is defined in TS 38.215 [89], clause 5.1.3. |
| ***validityAreaList***Indicates the list of frequencies and optionally, for each frequency, a list of cells within which the UE is required to perform measurements while in RRC\_IDLE and RRC\_INACTIVE.  |

#### – *MeasIdToAddModList*

*Next Modified Subclause*

## 7.4 UE variables

NOTE: To facilitate the specification of the UE behavioural requirements, UE variables are represented using ASN.1. Unless explicitly specified otherwise, it is however up to UE implementation how to store the variables. The optionality of the IEs in ASN.1 is used only to indicate that the values may not always be available.

–

*Next Modified Subclause*

#### – *VarMeasIdleConfig*

The UE variable *VarMeasIdleConfig* includes the configuration of the measurements to be performed by the UE while in RRC\_IDLE or RRC\_INACTIVE for NR inter-frequency and inter-RAT (i.e. EUTRA) measurements.

*VarMeasIdleConfig UE* variable

-- ASN1START

-- TAG-VARMEASIDLECONFIG-START

VarMeasIdleConfig-r16 ::= SEQUENCE {

 measIdleCarrierListNR-r16 SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF MeasIdleCarrierNR-r16 OPTIONAL,

 measIdleCarrierListEUTRA-r16 SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF MeasIdleCarrierEUTRA-r16 OPTIONAL,

 measIdleDuration-r16 ENUMERATED {sec10, sec30, sec60, sec120, sec180, sec240, sec300, spare},

 validityAreaList-r16 ValidityAreaList-r16 OPTIONAL

}

VarMeasReselectionConfig-r18 ::= SEQUENCE {

 measurementValidityDuration-r18 MeasurementValidityDuration-r18 OPTIONAL,

 measReselectionCarrierListNR-r18 SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF MeasIdleCarrierNR-r18 OPTIONAL,

 measReselectionCarrierListEUTRA-r18 SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF MeasIdleCarrierEUTRA-r18 OPTIONAL

}

-- TAG-VARMEASIDLECONFIG-STOP

-- ASN1STOP

#### – *VarMeasIdleReport*

The UE variable *VarMeasIdleReport* includes the logged measurements information.

*VarMeasIdleReport UE* variable

-- ASN1START

-- TAG-VARMEASIDLEREPORT-START

VarMeasIdleReport-r16 ::= SEQUENCE {

 measReportIdleNR-r16 MeasResultIdleNR-r16 OPTIONAL,

 measReportIdleEUTRA-r16 MeasResultIdleEUTRA-r16 OPTIONAL

}

-- TAG-VARMEASIDLEREPORT-STOP

-- ASN1STOP