## 4.6 Default NG-RAN RRC message and information elements contents

### 4.6.0 General

#### 4.6.0.1 Global conditions

Groups of RRC and 5GMM conditions including always one and only one condition set to trueper table, unless explicitly stated.

Table 4.6.0.1-1: Signalling, RF/RRM/Performance

|  |  |
| --- | --- |
| Condition | Explanation |
| SIG | Used for signalling test cases |
| RF | Used for RF/Performance test cases |
| RRM | Used for RRM test cases |

Table 4.6.0.1-2: NR operating bands

|  |  |
| --- | --- |
| Condition | Explanation |
| FR1 | 410 MHz – 7125 MHz |
| FR2 | 24250 MHz – 52600 MHz |

Table 4.6.0.1-3: FDD/TDD

|  |  |
| --- | --- |
| Condition | Explanation |
| FDD | Frequency Division Duplex |
| TDD | Time Division Duplex |

Table 4.6.0.1-4: Subcarrier spacing

|  |  |
| --- | --- |
| Condition | Explanation |
| SCS15 | 15kHz |
| SCS30 | 30kHz |
| SCS60 | 60kHz |
| SCS120 | 120kHz |
| SCS240 | 240kHz |

Table 4.6.0.1-5: SST

|  |  |
| --- | --- |
| Condition | Explanation |
| SST\_eMBB | Slice suitable for the handling of 5G enhanced Mobile Broadband. |
| SST\_URLLC | Slice suitable for the handling of ultra- reliable low latency communications. |
| SST\_MIoT | Slice suitable for the handling of massive IoT. |
| SST\_V2X | Slice suitable for the handling of V2X services. |
| NOTE: For the conditions in this table, one or more conditions are set to true. | |

Table 4.6.0.1-6: Channel bandwidth

|  |  |
| --- | --- |
| Condition | Explanation |
| BW5 | 5mhz |
| BW10 | 10mhz |
| BW15 | 15mhz |
| BW20 | 20mhz |
| BW25 | 25mhz |
| BW30 | 30mhz |
| BW40 | 40mhz |
| BW50 | 50mhz |
| BW60 | 60mhz |
| BW80 | 80mhz |
| BW100 | 100mhz |

### 4.6.1 Contents of RRC messages

#### *– CounterCheck*

Table 4.6.1-1: *CounterCheck*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| CounterCheck ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| counterCheck SEQUENCE { | |  |  |  |
| drb-CountMSB-InfoList SEQUENCE (SIZE (1..maxDRB)) OF DRB-CountMSB-Info | | 1 entry |  |  |
| DRB-CountMSB-Info[1] SEQUENCE { | |  | entry 1 |  |
| drb-Identity | | DRB-Identity |  |  |
| countMSB-Uplink | | 0 |  |  |
| countMSB-Downlink | | 0 |  |  |
| } | |  |  |  |
| } | |  |  |  |
| lateNonCriticalExtension | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– CounterCheckResponse*

Table 4.6.1-2: *CounterCheckResponse*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| CounterCheckResponse ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| counterCheckResponse SEQUENCE { | |  |  |  |
| drb-CountInfoList SEQUENCE (SIZE (0..maxDRB)) OF DRB-CountInfo { | | 1 entry |  |  |
| DRB-CountInfo[1] SEQUENCE { | |  | entry 1 |  |
| drb-Identity | | DRB-Identity |  |  |
| count-Uplink | | Not checked |  |  |
| count-Downlink | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– DedicatedSIBRequest*

Table 4.6.1-2A: *DedicatedSIBRequest*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DedicatedSIBRequest-r16 ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| dedicatedSIBRequest-r16 SEQUENCE { | |  |  |  |
| onDemandSIB-RequestList-r16 SEQUENCE { | |  |  |  |
| requestedSIB-List-r16 | | Not checked |  |  |
| requestedPosSIB-List-r16 | | Not checked |  |  |
| } | |  |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– DLDedicatedMessageSegment*

Table 4.6.1-2B: *DLDedicatedMessageSegment*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DLDedicatedMessageSegment-r16 ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| dlDedicatedMessageSegment-r16 SEQUENCE { | |  |  |  |
| segmentNumber-r16 | | 0 |  | firstSegment |
|  | | 1 |  | lastSegment |
| rrc-MessageSegmentContainer-r16 | | Set according to specific message content | OCTET STRING including segmented RRCReconfiguration or RRCResume message |  |
| rrc-MessageSegmentType-r16 | | notLastSegment |  | firstSegment |
|  | | lastSegment |  | lastSegment |
| lateNonCriticalExtension | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| firstSegment | The first segment of the RRCReconfiguration or RRCResume message |
| lastSegment | The last segment of the RRCReconfiguration or RRCResume message |

#### *– DLInformationTransfer*

Table 4.6.1-3: *DLInformationTransfer*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DLInformationTransfer ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| dlInformationTransfer SEQUENCE { | |  |  |  |
| dedicatedNAS-Message | | DedicatedNAS-Message |  |  |
| lateNonCriticalExtension SEQUENCE { | | Not present |  |  |
| referenceTimeInfo-r16 | | ReferenceTimeInfo |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| **Condition** | **Explanation** |
| TSC | For test cases requiring TSC (Time Sensitive Communication) functions enabled. |

#### *– DLInformationTransferMRDC*

Table 4.6.1-3A: *DLInformationTransferMRDC*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DLInformationTransferMRDC-r16 ::= SEQUENCE { | |  |  |  |
| FFS | |  |  |  |
| } | |  |  |  |

#### *– FailureInformation*

Table 4.6.1-4: *FailureInformation*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| **Information Element** | | **Value/remark** | **Comment** | **Condition** |
| FailureInformation ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| failureInformation SEQUENCE { | |  |  |  |
| failureInfoRLC-Bearer SEQUENCE { | |  |  |  |
| cellGroupId | | Not checked |  |  |
| logicalChannelIdentity | | Not checked |  |  |
| failureType | | Not checked |  |  |
| } | |  |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension SEQUENCE { | |  |  | DAPS\_HOF |
| failureInfoDAPS-r16 SEQUENCE { | |  |  |  |
| failureType-r16 | | daps-failure | Indicate handover failure type is DAPS handover failure |  |
| } | |  |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| DAPS\_HOF | DAPS handover failure |

#### *– IABOtherInformation*

Table 4.6.1-4A: *IABOtherInformation*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| IABOtherInformation-r16 ::= SEQUENCE { | |  |  |  |
| FFS | |  |  |  |
| } | |  |  |  |

#### *– LocationMeasurementIndication*

Table 4.6.1-5: *LocationMeasurementIndication*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| LocationMeasurementIndication ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| locationMeasurementIndication SEQUENCE { | |  |  |  |
| measurementIndication CHOICE { | |  |  |  |
| setup | | LocationMeasurementInfo |  |  |
| } | |  |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– LoggedMeasurementConfiguration*

Table 4.6.1-5AA: *LoggedMeasurementConfiguration* (Thres1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| LoggedMeasurementConfiguration-r16 ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| loggedMeasurementConfiguration-r16 SEQUENCE { | |  |  |  |
| traceReference-r16 SEQUENCE { | |  |  |  |
| plmn-Identity-r16 | | plmn-Identity in USIM | MCC/MNC=MCC/MNC in USIM |  |
| traceId-r16 | | ‘0EF’H | OCTET STRING (SIZE (3)) |  |
| } | |  |  |  |
| traceRecordingSessionRef-r16 | | ‘1A’H | OCTET STRING (SIZE (2)) |  |
| tce-Id-r16 | | ‘5’H | OCTET STRING (SIZE (1)) |  |
| absoluteTimeInfo-r16 | | Set to value corresponding to the absolute time when the message is sent | BIT STRING (SIZE (48)) |  |
| areaConfiguration-r16 | | Not present |  |  |
| plmn-IdentityList-r16 | | Not present |  |  |
| bt-NameList-r16 | | Not present |  |  |
| wlan-NameList-r16 | | Not present |  |  |
| sensor-NameList-r16 | | Not present |  |  |
| loggingDuration-r16 | | min120 |  |  |
| reportType CHOICE { | |  |  |  |
| periodical SEQUENCE { | |  |  | PERIODICAL |
| loggingInterval-r16 | | ms2560 | 2.56s |  |
| } | |  |  |  |
| eventTriggered SEQUENCE { | |  |  | EVENT |
| eventType-r16 CHOICE { | |  |  |  |
| outOfCoverage | | NULL |  | OUT-OF-COVERAG |
| eventL1 SEQUENCE { | |  |  | EVENTL1 |
| l1-Threshold CHOICE { | |  |  |  |
| rsrp | | Thres1 | Thres is an entry value into a mapping table in TS 38.133 [13]. |  |
| } | |  |  |  |
| hysteresis | | 0 |  |  |
| timeToTrigger | | ms100 | 0.1s |  |
| } | |  |  |  |
| } | |  |  |  |
| loggingInterval-r16 | | ms2560 | 2.56s |  |
| } | |  |  |  |
| } | |  |  |  |
| lateNonCriticalExtension | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
|  | | LoggedMeasurementConfiguration-v1700-IEs |  | LOG-MEAS-R17 |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| PERIODICAL | Configuration of LoggedPeriodicalReport |
| EVENT | Configuration of LoggedEventTrigger |
| OUT-OF-COVERAGE | Configuration of outOfCoverage |
| EVENTL1 | Configuration of eventL1 |
| LOG-MEAS-R17 | Configuration of LoggedMeasurement in R17 |

#### *– MBSBroadcastConfiguration*

Table 4.6.1-5ABA: *MBSBroadcastConfiguration*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MBSBroadcastConfiguration-r17 ::= SEQUENCE { |  |  |  |
| criticalExtensions CHOICE { |  |  |  |
| mbsBroadcastConfiguration-r17 SEQUENCE { |  |  |  |
| mbs-SessionInfoList-r17 | MBS-SessionInfoList |  |  |
| mbs-NeighbourCellList-r17 | Not present |  |  |
| drx-ConfigPTM-List-r17 | Not present |  |  |
| drx-ConfigPTM-List-r17 SEQUENCE (SIZE (1..maxNrofDRX-ConfigPTM-r17)) OF DRX-ConfigPTM-r17 { | 1 entry |  | DRX\_MBS\_Broadcast |
| DRX-ConfigPTM-r17[1] | DRX-ConfigPTM | entry 1 |  |
| } |  |  |  |
| pdsch-ConfigMTCH-r17 | Not present |  |  |
| mtch-SSB-MappingWindowList-r17 | Not present |  |  |
| lateNonCriticalExtension | Not present |  |  |
| nonCriticalExtension | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| DRX\_MBS\_Broadcast | DRX is used for MBS Broadcast test |

#### *– MBSInterestIndication*

Table 4.6.1-5ABB: *MBSInterestIndication*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MBSInterestIndication-r17 ::= SEQUENCE { |  |  |  |
| criticalExtensions CHOICE { |  |  |  |
| mbsInterestIndication-r17 SEQUENCE { |  |  |  |
| mbs-FreqList-r17[n] SEQUENCE (SIZE (1..maxFreqMBS-r17)) OF ARFCN-ValueNR | The number of entries is set according to specific message content. |  |  |
| mbs-Priority-r17 | Not checked |  |  |
| mbs-ServiceList-r17 | Not checked |  |  |
| lateNonCriticalExtension | Not checked |  |  |
| nonCriticalExtension | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– MCGFailureInformation*

Table 4.6.1-5AB: *MCGFailureInformation*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| MCGFailureInformation-r16 ::= SEQUENCE { | |  |  |  |
| FFS | |  |  |  |
| } | |  |  |  |

#### *– MeasurementReport*

Table 4.6.1-5A: *MeasurementReport*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| MeasurementReport ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| measurementReport SEQUENCE { | |  |  |  |
| measResults | | MeasResults |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– MIB*

Table 4.6.1-6: *MIB*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| MIB ::= SEQUENCE { | |  |  |  |
| systemFrameNumber | | A valid value as defined in TS 38.331 [6] |  |  |
| subCarrierSpacingCommon | | scs15or60 | For signalling test cases see clause 6.2.3, otherwise see clause 4.3.1. | SCS15or60 |
| scs30or120 | For signalling test cases see clause 6.2.3, otherwise see clause 4.3.1. | SCS30or120 |
| ssb-subcarrierOffset | | Set to the integer value of the 4 LSB of kSSB defined for the frequency of the cell | For signalling test cases see clause 6.2.3, otherwise see clause 4.3.1. |  |
| dmrs-TypeA-Position | | pos2 |  |  |
| pdcch-ConfigSIB1 | | PDCCH-ConfigSIB1 |  |  |
| cellBarred | | notBarred |  |  |
| intraFreqReselection | | allowed |  |  |
| spare | | 0 |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SCS15or60 | SCS is 15kHz or 60kHz |
| SCS30or120 | SCS is 30kHz or 120kHz. |

#### *– MobilityFromNRCommand*

Table 4.6.1-8: *MobilityFromNRCommand*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| MobilityFromNRCommand ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| mobilityFromNRCommand SEQUENCE { | |  |  |  |
| targetRAT-Type | | eutra |  |  |
|  | | utra-fdd-v1610 |  | HO-TO-UTRA\_FDD |
| targetRAT-MessageContainer | | OCTET STRING including the RRCConnectionReconfiguration message according TS 36.508 [2], table 4.6.1-8 with condition HO-TO-EUTRA |  |  |
|  | | OCTET STRING including the Handover TO UTRAN message specified in TS 36.508 [2] Table 4.7B.1-1 with condition UTRA FDD PS RB |  | HO-TO-UTRA\_FDD |
| nas-SecurityParamFromNR | | The 4 LSB of the downlink NAS COUNT |  |  |
| lateNonCriticalExtension | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| HO-TO-UTRA\_FDD | For Handover from NR to UTRA FDD |

#### *– Paging*

Table 4.6.1-9: *Paging*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Paging ::= SEQUENCE { | |  |  |  |
| pagingRecordList SEQUENCE (SIZE(1..maxNrofPageRec)) OF PagingRecord { | | 1 entry |  |  |
| PagingRecord[1] SEQUENCE { | |  | entry 1 |  |
| ue-Identity CHOICE { | |  |  |  |
| ng-5G-S-TMSI | | NG-5G-S-TMSI |  |  |
| fullI-RNTI | | I-RNTI-Value |  | NR\_RRC\_RESUME |
| } | |  |  |  |
| accessType | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| lateNonCriticalExtension | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| NR\_RRC\_RESUME | To page a UE in RRC\_INACTIVE state to request RRC connection resumption |

#### *– RRCReestablishment*

Table 4.6.1-10: *RRCReestablishment*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReestablishment ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReestablishment SEQUENCE { | |  |  |  |
| nextHopChainingCount | | NextHopChainingCount |  |  |
| lateNonCriticalExtension | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– RRCReestablishmentComplete*

Table 4.6.1-11: *RRCReestablishmentComplete*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReestablishmentComplete ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReestablishmentComplete SEQUENCE { | |  |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– RRCReestablishmentRequest*

Table 4.6.1-12: *RRCReestablishmentRequest*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReestablishmentRequest ::= SEQUENCE { | |  |  |  |
| ue-Identity SEQUENCE { | |  |  |  |
| c-RNTI | | RNTI-Value |  |  |
| physCellId | | PhysCellId | The physical cell identity of the PCell the UE was connected to prior to the failure |  |
| shortMAC-I | | ShortMAC-I |  |  |
| } | |  |  |  |
| reestablishmentCause | | Not checked |  |  |
| spare | | Present but contents not checked |  |  |
| } | |  |  |  |

#### *– RRCReconfiguration*

Table 4.6.1-13: *RRCReconfiguration*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReconfiguration SEQUENCE { | |  |  |  |
| radioBearerConfig | | Not present |  |  |
|  | | RadioBearerConfig with conditions SRB2 and DRB1 |  | NR, NR-DC |
|  | | RadioBearerConfig with conditions SRB2 and REEST |  | REEST |
| secondaryCellGroup | | CellGroupConfig | OCTET STRING (CONTAINING CellGroupConfig) | EN-DC |
|  | | CellGroupConfig with condition NR-DC\_SCG | OCTET STRING (CONTAINING CellGroupConfig) | NR-DC\_SCG |
|  | | CellGroupConfig with conditions EN-DC and PSCell\_change | OCTET STRING (CONTAINING CellGroupConfig) | EN-DC\_HO |
|  | | CellGroupConfig with condition MEAS | OCTET STRING (CONTAINING CellGroupConfig) | EN-DC\_MEAS |
|  | | CellGroupConfig with condition SCell\_add | OCTET STRING (CONTAINING CellGroupConfig) | EN-DC\_SCell\_add |
|  | | Not present |  |  |
| measConfig | | Not present |  |  |
|  | | MeasConfig | Measurements configuration | NR\_MEAS, EN-DC\_MEAS,  IRAT\_MEAS |
| lateNonCriticalExtension | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| nonCriticalExtension SEQUENCE { | |  |  | NR, SCell\_add, NR\_MEAS, NR-DC, SIDELINK, DAPS\_HO\_ReleaseSource, CHO, CPC, REEST |
| masterCellGroup | | CellGroupConfig with condition SRB2\_DRB1 | OCTET STRING (CONTAINING CellGroupConfig) | NR, NR-DC |
|  | | CellGroupConfig with condition SCell\_add | OCTET STRING (CONTAINING CellGroupConfig) | SCell\_add |
|  | | CellGroupConfig with condition MEAS | OCTET STRING (CONTAINING CellGroupConfig) | NR\_MEAS |
|  | | CellGroupConfig with condition REEST | OCTET STRING (CONTAINING CellGroupConfig) | REEST |
| fullConfig | | Not present |  |  |
| dedicatedNAS-MessageList | | Not present |  |  |
| dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message { | | 1 entry |  | NR |
| DedicatedNAS-Message[1] | | DedicatedNAS-Message | entry 1  A sequence of OCTET STRING (s) containing one or more DedicatedNAS-Message(s) |  |
| } | |  |  |  |
| masterKeyUpdate | | Not present |  |  |
| masterKeyUpdate SEQUENCE { | |  |  | MasterKeyChange |
| keySetChangeIndicator | | true |  |  |
| nextHopChainingCount | | NextHopChainingCount |  |  |
| nas-Container | | Not present |  |  |
|  | | OCTET STRING including the 10 Octets value generated according to TS 24.501 [28] clause 9.11.2.9 |  | Inter\_Sys\_HO |
| } | |  |  |  |
| dedicatedSIB1-Delivery | | Not present |  |  |
| dedicatedSystemInformationDelivery | | Not present |  |  |
| otherConfig | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| nonCriticalExtension SEQUENCE { | |  |  | NR-DC, SIDELINK, DAPS\_HO\_ReleaseSource, CHO, CPC, NE-DC |
| otherConfig-v1540 | | Not present |  |  |
| nonCriticalExtension SEQUENCE { | |  |  |  |
| mrdc-SecondaryCellGroupConfig | | Not present |  |  |
| mrdc-SecondaryCellGroupConfig CHOICE { | |  |  | NR-DC, NE-DC |
| setup SEQUENCE { | |  |  |  |
| mrdc-ReleaseAndAdd | | Not present |  |  |
| mrdc-SecondaryCellGroup CHOICE { | |  |  |  |
| nr-SCG | | RRCReconfiguration with condition NR-DC\_SCG | OCTET STRING (CONTAINING RRCReconfiguration) | NR-DC |
| eutra-SCG | | RRCConnectionReconfiguration according TS 36.508 [2], table 4.6.1-8 with condition NE-DC | OCTET STRING (CONTAINING RRCConnectionReconfiguration) | NE-DC |
|  | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
|  | |  |  |  |
| radioBearerConfig2 | | Not present |  | NE-DC |
|  | | RadioBearerConfig with condition DRBn and SecondaryKeys | OCTET STRING (CONTAINING RadioBearerConfig) | NR-DC |
| sk-Counter | | SK-Counter |  |  |
| nonCriticalExtension | | Not present |  |  |
| nonCriticalExtension SEQUENCE { | |  |  | SIDELINK, DAPS\_HO\_ReleaseSource, CHO, CPC |
| otherConfig-v1610 | | Not present |  |  |
| bap-Config-r16 | | Not present |  |  |
| iab-IP-AddressConfigurationList-r16 | | Not present |  |  |
| conditionalReconfiguration-r16 | | Not present |  |  |
|  | | ConditionalReconfiguration |  | CHO, CPC |
| daps-SourceRelease-r16 | | Not present |  |  |
|  | | true |  | DAPS\_HO\_ReleaseSource |
| t316-r16 | | Not present |  |  |
| needForGapsConfigNR-r16 | | Not present |  |  |
| onDemandSIB-Request-r16 | | Not present |  |  |
| dedicatedPosSysInfoDelivery-r16 | | Not present |  |  |
| sl-ConfigDedicatedNR-r16 | | Not present |  |  |
| sl-ConfigDedicatedNR-r16 CHOICE { | |  |  | SIDELINK |
| setup | | SL-ConfigDedicatedNR-r16 |  |  |
| } | |  |  |  |
| sl-ConfigDedicatedEUTRA-Info-r16 | | Not present |  |  |
| smtc-r16 | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| EN-DC | E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC |
| EN-DC\_MEAS | An EN-DC measurement is configured |
| IRAT\_MEAS | An IRAT measurement is configured in the NR PCell |
| NR\_MEAS | A NR measurement is configured |
| NR | NR connected to 5GC |
| NR-DC | NR-NR Dual Connectivity is configured |
| NR-DC\_SCG | Add SCG side configuration (NR-DC) |
| EN-DC\_HO | NR PSCell change (EN-DC) |
| SCell\_add | Add SCell |
| EN-DC\_SCell\_add | Add Scell (EN-DC) |
| MasterKeyChange | MasterKeyUpdate when peforming ReconfigurationWithSync and indicating a change of the AS security algorithms associated to the master key |
| Inter\_Sys\_HO | Used during inter-system handover to NR procedure |
| REEST | The first RRCReconfiguration message after successful completion of the RRC re-establishment procedure |
| SIDELINK | For NR sidelink dedicated configuration |
| DAPS\_HO\_ReleaseSource | The source cell part of DAPS operation is to be stopped and the source cell part of DAPS configuration is to be released. |
| CHO | Conditional handover |
| CPC | Conditional PSCell change |
| NE-DC | NR E-UTRA Dual Connectivity |

#### *– RRCReconfigurationComplete*

Table 4.6.1-14: *RRCReconfigurationComplete*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReconfigurationComplete ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | Not checked |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReconfigurationComplete SEQUENCE { | |  |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension SEQUENCE { | |  |  | NR-DC, NE-DC |
| uplinkTxDirectCurrentList | | Not checked |  |  |
| nonCriticalExtension SEQUENCE { | |  |  |  |
| scg-Response CHOICE { | |  |  |  |
| nr-SCG-Response | | RRCReconfigurationComplete | OCTET STRING (CONTAINING RRCReconfigurationComplete) | NR-DC |
| eutra-SCG-Response | | RRCConnectionReconfigurationComplete | OCTET STRING | NE-DC |
| } | |  |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| NR-DC | Used in NR-DC configuration |
| NE-DC | NR E-UTRA Dual Connectivity is configured |

#### *– RRCReject*

Table 4.6.1-15: *RRCReject*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReject ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReject SEQUENCE { | |  |  |  |
| waitTime | | 1 |  |  |
| lateNonCriticalExtension | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– RRCRelease*

Table 4.6.1-16: *RRCRelease*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCRelease ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcRelease SEQUENCE { | |  |  |  |
| redirectedCarrierInfo | | Not present |  |  |
| cellReselectionPriorities | | Not present |  |  |
| suspendConfig | | Not present |  |  |
| suspendConfig SEQUENCE { | |  |  | NR\_RRC\_INACTIVE |
| fullI-RNTI | | I-RNTI-Value |  |  |
| shortI-RNTI | | ShortI-RNTI-Value |  |  |
| ran-PagingCycle | | rf32 |  |  |
| ran-NotificationAreaInfo CHOICE { | |  |  |  |
| cellList SEQUENCE (SIZE (1.. maxPLMNIdentities)) OF PLMN-RAN-AreaCell { | | 1 entry |  |  |
| PLMN-RAN-AreaCellList[1] SEQUENCE { | |  | entry 1 |  |
| plmn-Identity | | Not present |  |  |
| ran-AreaCells SEQUENCE (SIZE (1..32)) OF CellIdentity { | | 1 entry |  |  |
| CellIdentity[1] | | CellIdentity | entry 1  Cellidentity for the used cell. |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| t380 | | Not present |  |  |
| nextHopChainingCount | | NextHopChainingCount |  |  |
| sl-UEIdentityRemote-r17 | | Not present |  |  |
| sdt-Config-r17 | | Not present |  |  |
| sdt-Config-r17 CHOICE { | |  |  | SDT |
| setup SEQUENCE { | |  |  |  |
| sdt-DRB-List-r17 SEQUENCE (SIZE (0..maxDRB)) OF DRB-Identity { | | 1 entry |  |  |
| DRB-Identity | | DRB-Identity using condition DRB1 |  |  |
| } | |  |  |  |
| sdt-SRB2-Indication-r17 | | Not present |  |  |
|  | | allowed |  | pc\_srb\_SDT\_r17 |
| sdt-MAC-PHY-CG-Config-r17 CHOICE { | |  |  |  |
| setup SEQUENCE { | |  |  |  |
| cg-SDT-ConfigLCH-RestrictionToAddModList-r17 SEQUENCE (SIZE(1..maxLC-ID)) OF CG-SDT-Config-LCH-restriction-r17 { | | 1 entry |  |  |
| logicalChannelIdentity-r17 | | LogicalChannelIdentity with condition DRB1 |  |  |
| configuredGrantType1Allowed-r17 | | true |  |  |
| allowedCG-List-r17 | | Not present |  |  |
| } | |  |  |  |
| cg-SDT-ConfigLCH-RestrictionToReleaseList-r17 | | Not present |  |  |
| cg-SDT-ConfigInitialBWP-NUL-r17 | | Not present |  |  |
| cg-SDT-ConfigInitialBWP-SUL-r17 | | Not present |  |  |
| cg-SDT-ConfigInitialBWP-DL-r17 | | Not present |  |  |
| cg-SDT-TimeAlignmentTimer-r17 | | ms750 |  |  |
| cg-SDT-RSRP-ThresholdSSB-r17 | | 66 |  |  |
| cg-SDT-TA-ValiditationConfig-r17 | | Not present |  |  |
| cg-SDT-CS-RNTI-r17 | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| sdt-DRB-ContinueROHC-r17 | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| srs-PosRRC-Inactive-r17 | | Not present |  |  |
| ran-ExtendedPagingCycle-r17 | | Not present |  |  |
| } | |  |  |  |
| deprioritisationReq | | Not present |  |  |
| lateNonCriticalExtension | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| NR\_RRC\_INACTIVE | NR RRC state RRC\_INACTIVE |
| SDT | For SDT test cases |

#### *– RRCResume*

Table 4.6.1-17: RRCResume

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCResume ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcResume SEQUENCE { | |  |  |  |
| radioBearerConfig | | RadioBearerConfig with condition RESUME |  |  |
| masterCellGroup | | CellGroupConfig with condition RESUME | OCTET STRING (CONTAINING CellGroupConfig) |  |
| measConfig | | Not present |  |  |
| fullConfig | | Not present |  |  |
| lateNonCriticalExtension | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– RRCResumeComplete*

Table 4.6.1-18: *RRCResumeComplete*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCResumeComplete ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcResumeComplete SEQUENCE { | |  |  |  |
| dedicatedNAS-Message | | Not checked |  |  |
| selectedPLMN-Identity | | Not checked |  |  |
| uplinkTxDirectCurrentList | | Not checked |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– RRCResumeRequest*

Table 4.6.1-19: *RRCResumeRequest*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCResumeRequest ::= SEQUENCE { | |  |  |  |
| rrcResumeRequest SEQUENCE { | |  |  |  |
| resumeIdentity | | ShortI-RNTI-Value |  |  |
| resumeMAC-I | | Not checked |  |  |
| resumeCause | | ResumeCause |  |  |
| spare | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– RRCResumeRequest1*

Table 4.6.1-20: *RRCResumeRequest1*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCResumeRequest1 ::= SEQUENCE { | |  |  |  |
| rrcResumeRequest1 SEQUENCE { | |  |  |  |
| resumeIdentity | | I-RNTI-Value |  |  |
| resumeMAC-I | | Not checked |  |  |
| resumeCause | | ResumeCause |  |  |
| spare | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– RRCSetup*

Table 4.6.1-21: *RRCSetup*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCSetup ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcSetup SEQUENCE { | |  |  |  |
| radioBearerConfig | | RadioBearerConfig with condition SRB1 |  |  |
| masterCellGroup | | CellGroupConfig with condition SRB1 | OCTET STRING (CONTAINING CellGroupConfig) |  |
| lateNonCriticalExtension | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– RRCSetupComplete*

Table 4.6.1-22: *RRCSetupComplete*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCSetupComplete ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcSetupComplete SEQUENCE { | |  |  |  |
| selectedPLMN-Identity | | Not checked |  |  |
| registeredAMF | | Not checked |  |  |
| guami-Type | | Not checked |  |  |
| s-nssai-List | | Not checked |  |  |
| dedicatedNAS-Message | | DedicatedNAS-Message |  |  |
| ng-5G-S-TMSI-Value | | Not checked |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– RRCSetupRequest*

Table 4.6.1-23: *RRCSetupRequest*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCSetupRequest ::= SEQUENCE { | |  |  |  |
| rrcSetupRequest SEQUENCE { | |  |  |  |
| ue-Identity CHOICE { | |  |  |  |
| randomValue | | Not checked |  |  |
| } | |  |  |  |
| establishmentCause | | Not checked |  |  |
| spare | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– RRCSystemInfoRequest*

Table 4.6.1-24: *RRCSystemInfoRequest*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCSystemInfoRequest ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcSystemInfoRequest SEQUENCE { | |  |  |  |
| requested-SI-List | | Not checked |  |  |
| spare | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– SCGFailureInformation*

Table 4.6.1-24A: *SCGFailureInformation*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SCGFailureInformation ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| scgFailureInformation SEQUENCE { | |  |  |  |
| failureReportSCG | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– SCGFailureInformationEUTRA*

Table 4.6.1-24B: *SCGFailureInformationEUTRA*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SCGFailureInformationEUTRA ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| scgFailureInformationEUTRA SEQUENCE { | |  |  |  |
| failureReportSCG-EUTRA | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– SecurityModeCommand*

Table 4.6.1-25: *SecurityModeCommand*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SecurityModeCommand ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| securityModeCommand SEQUENCE { | |  |  |  |
| securityConfigSMC SEQUENCE { | |  |  |  |
| securityAlgorithmConfig | | SecurityAlgorithmConfig |  |  |
| } | |  |  |  |
| lateNonCriticalExtension | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– SecurityModeComplete*

Table 4.6.1-26: *SecurityModeComplete*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SecurityModeComplete ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| securityModeComplete SEQUENCE { | |  |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– SecurityModeFailure*

Table 4.6.1-27: *SecurityModeFailure*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SecurityModeFailure ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| securityModeFailure SEQUENCE { | |  |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– SIB1*

Table 4.6.1-28: *SIB1*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SIB1 ::= SEQUENCE { | |  |  |  |
| cellSelectionInfo SEQUENCE { | |  |  |  |
| q-RxLevMin | | -70 | -140 dBm | RF OR RRM |
|  | | -55 | -110 dBm | SIG AND FR1 |
|  | | ROUND((-110+Delta(NRfs))/2) | -110+Delta(NRfs) | SIG AND FR2 |
| q-RxLevMinOffset | | Not present |  |  |
| q-RxLevMinSUL | | Not Present |  |  |
|  | | -70 | -140 dBm | SUL AND (RF OR RRM) |
|  | | -55 | -110 dBm | SUL AND SIG |
| q-QualMin | | -20 | -20dB | QBASED |
|  | | Not present |  |  |
| q-QualMinOffset | | Not present |  |  |
| } | |  |  |  |
| cellAccessRelatedInfo | | CellAccessRelatedInfo |  |  |
| connEstFailureControl | | ConnEstFailureControl |  |  |
| si-SchedulingInfo | | Not present |  | NR\_1 |
|  | | SI-SchedulingInfo |  |  |
| servingCellConfigCommon | | ServingCellConfigCommonSIB |  |  |
| ims-EmergencySupport | | Not present |  |  |
|  | | true | Indicates the cell supports IMS emergency bearer services for UEs in limited service mode. | SIG |
| eCallOverIMS-Support | | Not present |  |  |
| true | Support of eCall over IMS services | eCalloverIMSforNR |
| ue-TimersAndConstants | | UE-TimersAndConstants |  |  |
| uac-BarringInfo | | Not present |  |  |
| useFullResumeID | | Not present |  |  |
| lateNonCriticalExtension | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| nonCriticalExtension SEQUENCE { | |  |  | EMR\_EUTRA, EMR\_NR, posSIB, pc\_RedCap\_r17, SDT |
| idleModeMeasurementsEUTRA-r16 | | Not present |  |  |
| true |  | EMR\_EUTRA |
| idleModeMeasurementsNR-r16 | | Not present |  |  |
| true |  | EMR\_NR |
| posSI-SchedulingInfo-r16 | | PosSI-SchedulingInfo-r16 |  |  |
| PosSI-SchedulingInfo-r16 |  | posSIB |
| nonCriticalExtension SEQUENCE { | |  |  |  |
| uac-BarringInfo-v1630 | | Not present |  |  |
| nonCriticalExtension SEQUENCE { | |  |  |  |
| hsdn-Cell-r17 | | Not present |  |  |
| uac-BarringInfo-v1700 | | Not present |  |  |
| sdt-ConfigCommon-r17 | | Not present |  |  |
| sdt-ConfigCommon-r17 SEQUENCE { | |  |  | SDT |
| sdt-RSRP-Threshold-r17 | | 66 |  |  |
| sdt-LogicalChannelSR-DelayTimer-r17 | | Not present |  |  |
| sdt-DataVolumeThreshold-r17 | | byte1000 |  |  |
| t319a-r17 | | ms1000 |  |  |
| } | |  |  |  |
| redCap-ConfigCommon-r17 | | Not present |  |  |
| redCap-ConfigCommon-r17 SEQUENCE { | |  |  | pc\_halfDuplexFDD\_TypeA\_RedCap\_r17 AND FDD |
| halfDuplexRedCapAllowed-r17 | | true |  |  |
| cellBarredRedCap-r17 | | Not present |  |  |
| } | |  |  |  |
| featurePriorities-r17 | | Not present |  |  |
| si-SchedulingInfo-v1700 | | Not present |  |  |
| hyperSFN-r17 | | Not present |  |  |
| eDRX-AllowedIdle-r17 | | Not present |  |  |
| eDRX-AllowedInactive-r17 | | Not present |  |  |
| intraFreqReselectionRedCap-r17 | | Not present |  |  |
|  | | allowed |  | pc\_RedCap\_r17 |
| cellBarredNTN-r17 | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| NOTE 1: Delta(NRfs) is derived based on calibration procedure defined in the clause 6.1.3.3. NRfs is NR frequency on which SIB1 is broadcasted.  NOTE 2: ROUND is rounded off to the nearest integer. As an example, '1 to 1.49' set to '1' while '1.5 to 2' to '2' and '-2.0 to 1.5' set to '-2' while '-1.49 to -1' set to '-1'. | | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| SUL | For test cases using SUL frequency for the serving cell, Qrxlevmin is obtained from q-RxLevMinSUL. |
| QBASED | This condition applies to Quality based signalling test cases. |
| NR\_1 | System information combination NR-1 according table 4.4.3.1.2-1 is applied. |
| SIG | Used for signalling test cases. |
| eCalloverIMSforNR | Used for eCall over IMS test cases (TS 38.523-1[12], TS 34.229-5[47]) |
| posSIB | For test cases using posSIBs in system information. |
| EMR\_EUTRA | For E-UTRA idle/inactive measurement test cases. |
| EMR\_NR | For NR idle/inactive measurement test cases. |
| SDT | For SDT test cases |

#### *– SidelinkUEInformationNR*

Table 4.6.1-28A: *SidelinkUEInformationNR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SidelinkUEInformationNR-r16 ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| sidelinkUEInformationNR-r16 SEQUENCE { | |  |  |  |
| sl-RxInterestedFreqList-r16 | | Not present |  |  |
| sl-RxInterestedFreqList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER { | | 1 entry |  | SIDELINK\_RX |
| INTEGER[1] | | 1 | entry 1 |  |
| } | |  |  |  |
| sl-TxResourceReqList-r16 | | Not present |  |  |
| sl-TxResourceReqList-r16 SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReq-r16 { | | 1 entry |  | SIDELINK\_TX |
| SL-TxResourceReq-r16[1] SEQUENCE { | |  | entry 1 |  |
| sl-DestinationIdentity-r16 | | SL-DestinationIdentity-r16 |  |  |
| sl-CastType-r16 | | unicast |  |  |
| sl-RLC-ModeIndicationList-r16 | | Not present |  |  |
| sl-QoS-InfoList-r16 SEQUENCE (SIZE (1..maxNrofSL-QFIsPerDest-r16)) OF SL-QoS-Info-r16 { | | 1 entry |  |  |
| SL-QoS-Info-r16[1] SEQUENCE { | |  | entry 1 |  |
| sl-QoS-FlowIdentity-r16 | | SL-QoS-FlowIdentity-r16 |  |  |
| sl-QoS-Profile-r16 | | SL-QoS-Profile-r16 |  |  |
| } | |  |  |  |
| } | |  |  |  |
| sl-TypeTxSyncList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-TypeTxSync-r16 { | | 1 entry |  |  |
| SL-TypeTxSync-r16[1] | | SL-TypeTxSync-r16 | entry 1 |  |
| } | |  |  |  |
| sl-TxInterestedFreqList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER { | | 1 entry |  |  |
| INTEGER[1] | | 1 | entry 1 |  |
| } | |  |  |  |
| sl-CapabilityInformationSidelink-r16[1] | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| sl-FailureList-r16 | | Not present |  |  |
| lateNonCriticalExtension | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SIDELINK\_TX | Used when UE indicates its interest on sidelink transmission. |
| SIDELINK\_RX | Used when UE indicates its interest on sidelink reception. |

#### *– SystemInformation*

Table 4.6.1-29: *SystemInformation*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SystemInformation ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| systemInformation SEQUENCE { | |  |  |  |
| sib-TypeAndInfo SEQUENCE (SIZE (1..maxSIB)) OF CHOICE | | See subclause 4.4.3.1.3 |  |  |
| sibX | | "X" denotes the SIB number |  |  |
| ... | |  |  |  |
| sibY | | "Y" denotes the SIB number |  |  |
| } | |  |  |  |
| lateNonCriticalExtension | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |
| criticalExtensionsFuture-r16 CHOICE { | |  |  | posSIB |
| posSystemInformation-r16 | | PosSystemInformation-r16-IEs |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| posSIB | For test cases using posSIBs in system information. |

#### *– UEAssistanceInformation*

Table 4.6.1-30: *UEAssistanceInformation*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| UEAssistanceInformation ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| ueAssistanceInformation SEQUENCE { | |  |  |  |
| delayBudgetReport CHOICE { | |  |  |  |
| type1 | | Not checked |  |  |
| } | |  |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension SEQUENCE { | |  |  | SIDELINK |
| overheatingAssistance | | Not checked |  |  |
| nonCriticalExtension SEQUENCE { | |  |  |  |
| idc-Assistance-r16 | | Not checked |  |  |
| drx-Preference-r16 | | Not checked |  |  |
| maxBW-Preference-r16 | | Not checked |  |  |
| maxCC-Preference-r16 | | Not checked |  |  |
| maxMIMO-LayerPreference-r16 | | Not checked |  |  |
| minSchedulingOffsetPreference-r16 | | Not checked |  |  |
| releasePreference-r16 | | Not checked |  |  |
| sl-UE-AssistanceInformationNR-r16 | | Not checked |  |  |
| sl-UE-AssistanceInformationNR-r16 SEQUENCE (SIZE (1..maxNrofTrafficPattern-r16)) OF SL-TrafficPatternInfo-r16 { | | 1 entry |  | SIDELINK |
| SL-TrafficPatternInfo-r16[1] SEQUENCE { | |  | entry 1 |  |
| trafficPeriodicity-r16 | | FFS |  |  |
| timingOffset-r16 | | FFS |  |  |
| messageSize-r16 | | FFS |  |  |
| sl-QoS-FlowIdentity-r16 | | SL-QoS-FlowIdentity-r16 |  |  |
| } | |  |  |  |
| } | |  |  |  |
| referenceTimeInfoPreference-r16 | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension SEQUENCE { | |  |  | SDT |
| ul-GapFR2-Preference-r17 | | Not checked |  |  |
| musim-Assistance-r17 | | Not checked |  |  |
| overheatingAssistance-r17 | | Not checked |  |  |
| maxBW-PreferenceFR2-2-r17 | | Not checked |  |  |
| maxMIMO-LayerPreferenceFR2-2-r17 | | Not checked |  |  |
| minSchedulingOffsetPreferenceExt-r17 | | Not checked |  |  |
| rlm-MeasRelaxationState-r17 | | Not checked |  |  |
| bfd-MeasRelaxationState-r17 | | Not checked |  |  |
| nonSDT-DataIndication-r17 SEQUENCE { | |  |  | SDT |
| resumeCause-r17 | | mo-Data |  |  |
| } | |  |  |  |
| scg-DeactivationPreference | | Not checked |  |  |
| uplinkData-r17 | | Not checked |  |  |
| rrm-MeasRelaxationFulfilment-r17 | | Not checked |  |  |
| propagationDelayDifference-r17 | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SIDELINK | For NR sidelink dedicated configuration |
| SDT | For SDT test cases |

#### *– UECapabilityEnquiry*

Table 4.6.1-31: *UECapabilityEnquiry*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| UECapabilityEnquiry ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| ueCapabilityEnquiry SEQUENCE { | |  |  |  |
| ue-CapabilityRAT-RequestList | | UE-CapabilityRAT-RequestList |  |  |
| lateNonCriticalExtension | | Not present |  |  |
| ue-CapabilityEnquiryExt | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– UECapabilityInformation*

Table 4.6.1-32: *UECapabilityInformation*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| UECapabilityInformation ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| ueCapabilityInformation SEQUENCE { | |  |  |  |
| ue-CapabilityRAT-ContainerList | | UE-CapabilityRAT-ContainerList |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– UEInformationRequest*

Table 4.6.1-32A: *UEInformationRequest*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| UEInformationRequest-r16 ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| ueInformationRequest-r16 SEQUENCE { | |  |  |  |
| idleModeMeasurementReq-r16 | | Not present |  |  |
|  | | true |  | IDLE |
| logMeasReportReq-r16 | | Not present |  |  |
|  | | true |  | LOG |
| connEstFailReportReq-r16 | | true |  |  |
| ra-ReportReq-r16 | | Not present |  |  |
|  | | true |  | RA |
| rlf-ReportReq-r16 | | Not present |  |  |
|  | | true |  | RLF |
| mobilityHistoryReportReq-r16 | | Not present |  |  |
|  | | true |  | HISTORY |
| lateNonCriticalExtension | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| IDLE | Idle/inactive measurement information reporting |
| LOG | Logged measurement information reporting |
| RA | Random access procedure information reporting |
| RLF | Radio link failure information reporting |
| HISTORY | Mobility history information reporting |

#### *– UEInformationResponse*

Table 4.6.1-32B: *UEInformationResponse*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| UEInformationResponse-r16 ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier | | RRC-TransactionIdentifier |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| ueInformationResponse-r16 SEQUENCE { | |  |  |  |
| measResultIdleEUTRA-r16 | | Not checked |  |  |
| measResultIdleNR-r16 | | Not checked |  |  |
| logMeasReport-r16 | | Not checked |  |  |
| connEstFailReport-r16 | | Not checked |  |  |
| ra-ReportList-r16 | | Not checked |  |  |
| rlf-Report-r16 | | Not checked |  |  |
| mobilityHistoryReport-r16 | | Not checked |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– ULDedicatedMessageSegment*

Table 4.6.1-32C: *ULDedicatedMessageSegment*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| ULDedicatedMessageSegment-r16 ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| ulDedicatedMessageSegment-r16 SEQUENCE { | |  |  |  |
| segmentNumber-r16 | | Any allowed value between 0 to 15 |  |  |
| rrc-MessageSegmentContainer-r16 | | Not Checked | OCTET STRING including segmented UECapabilityInformation message |  |
| rrc-MessageSegmentType-r16 | | Not Checked |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– ULInformationTransfer*

Table 4.6.1-33: *ULInformationTransfer*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| ULInformationTransfer ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| ulInformationTransfer SEQUENCE { | |  |  |  |
| dedicatedNAS-Message | | DedicatedNAS-Message |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– ULInformationTransferIRAT*

Table 4.6.1-33A: *ULInformationTransferIRAT*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| ULInformationTransferIRAT-r16 ::= SEQUENCE { | |  |  |  |
| FFS | |  |  |  |
| } | |  |  |  |

#### *– ULInformationTransferMRDC*

Table 4.6.1-34: *ULInformationTransferMRDC*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| ULInformationTransferMRDC ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| c1 CHOICE { | |  |  |  |
| ulInformationTransferMRDC SEQUENCE { | |  |  |  |
| ul-DCCH-MessageNR | | Not checked |  |  |
| ul-DCCH-MessageEUTRA | | Not checked |  |  |
| lateNonCriticalExtension | | Not checked |  |  |
| nonCriticalExtension | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

### 4.6.1A Contents of PC5 RRC messages

#### *– MasterInformationBlockSidelink*

Table 4.6.1A-1: *MasterInformationBlockSidelink*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.6.2 | | | | |
| Information Element | | Value/remark | Comment | Condition | |
| MasterInformationBlockSidelink ::= SEQUENCE { | |  |  |  | |
| sl-TDD-Config-r16 | 111111111111 |  |  |
| inCoverage-r16 | true |  | RX AND (GNSS\_SYNC OR NB\_SYNC) |
|  | false |  | RX AND (UE\_SYNC OR INTERNAL\_SYNC) |
|  | Not Checked |  | TX |
| directFrameNumber-r16 | DFN of the radio frame in which the S-SSB containing this message is transmitted |  |  |
| slotIndex-r16 | slot index of the slot in which the S-SSB containing this message is transmitted |  |  |
| reservedBits-r16 | 00 |  |  |
| } | |  |  |  | |

|  |  |
| --- | --- |
| Condition | Explanation |
| GNSS\_SYNC | GNSS is used as the synchronization reference source |
| NB\_SYNC | gNB or eNB is used as the synchronization reference source |
| UE\_SYNC | SyncRef UE is used as the synchronization reference source |
| INTERNAL\_SYNC | Internal clock is used as the synchronization reference source |
| TX | UE transmits and NR-SS-UE receives. |
| RX | UE receives and NR-SS-UE transmits. |

#### *– MeasurementReportSidelink*

Table 4.6.1A-2: *MeasurementReportSidelink*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.6.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| MeasurementReportSidelink ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| measurementReportSidelink-r16 SEQUENCE { | |  |  |  |
| sl-measResults-r16 SEQUENCE { | |  |  |  |
| sl-MeasId-r16 | | 1 |  |  |
| sl-MeasResult-r16 SEQUENCE { | |  |  |  |
| sl-ResultDMRS-r16 SEQUENCE { | |  |  |  |
| sl-RSRP-r16 | | (0..127) |  | TX |
|  | | 71 | actuall value is (71-156) = -85dBm | RX |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| lateNonCriticalExtension | | Not checked |  | TX |
|  | | Not present |  | RX |
| nonCriticalExtension | | Not checked |  | TX |
|  | | Not present |  | RX |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| TX | UE transmits and NR-SS-UE receives. |
| RX | UE receives and NR-SS-UE transmits. |

#### *– RRCReconfigurationSidelink*

Table 4.6.1A-3: *RRCReconfigurationSidelink*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.6.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReconfigurationSidelink ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier-r16 | | RRC-TransactionIdentifier |  | RX |
|  | | (0..3) |  | TX |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReconfigurationSidelink-r16 SEQUENCE { | |  |  |  |
| slrb-ConfigToAddModList-r16 | | Not present |  |  |
| slrb-ConfigToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SLRB-Config-r16 { | | 1 entry |  | SL\_DRB |
| SLRB-Config-r16[1] SEQUENCE { | |  | entry 1 |  |
| slrb-PC5-ConfigIndex-r16 | | Not checked |  | TX |
|  | | 1 |  | RX |
| sl-SDAP-ConfigPC5-r16 | | Set according to parameter given in test case |  | TX |
| sl-SDAP-ConfigPC5-r16 SEQUENCE { | |  |  | RX |
| sl-MappedQoS-FlowsToAddList-r16 SEQUENCE (SIZE (1.. maxNrofSL-QFIsPerDest-r16)) OF SL-PQFI-r16 { | | 1 entry |  |  |
| SL-PQFI-r16[1] | | 1 | entry 1 |  |
| } | |  |  |  |
| sl-MappedQoS-FlowsToReleaseList-r16 | | Not present |  |  |
| sl-SDAP-Header-r16 | | absent |  |  |
| } | |  |  |  |
| sl-PDCP-ConfigPC5-r16 | | Set according to parameter given in test case |  | TX |
| sl-PDCP-ConfigPC5-r16 SEQUENCE { | |  |  | RX |
| sl-PDCP-SN-Size-r16 | | len12bits |  |  |
| sl-OutOfOrderDelivery-r16 | | Not present |  |  |
| } | |  |  |  |
| sl-RLC-ConfigPC5-r16 | | Set according to parameter given in test case |  | TX |
| sl-RLC-ConfigPC5-r16 CHOICE { | |  |  | RX |
| sl-AM-RLC-r16 SEQUENCE { | |  |  |  |
| sl-SN-FieldLengthAM-r16 | | size12 |  |  |
| } | |  |  |  |
| } | |  |  |  |
| sl-MAC-LogicalChannelConfigPC5-r16 | | Set according to parameter given in test case |  | TX |
| sl-MAC-LogicalChannelConfigPC5-r16 SEQUENCE { | |  |  | RX |
| sl-LogicalChannelIdentity-r16 | | LogicalChannelIdentity with condition DRB1 |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| slrb-ConfigToReleaseList-r16 | | Not present |  |  |
| sl-MeasConfig-r16 | | Not present |  |  |
| sl-MeasConfig-r16 CHOICE { | |  |  | SL\_MEAS |
| setup | | Set according to parameter given in test case |  | TX |
| setup SEQUENCE { | |  |  | RX |
| sl-MeasObjectToRemoveList-r16 | | Not present |  |  |
| sl-MeasObjectToAddModList-r16 | | SL-MeasObjectList- |  |  |
| sl-ReportConfigToRemoveList-r16 | | Not present |  |  |
| sl-ReportConfigToAddModList-r16 | | SL-ReportConfigList |  |  |
| sl-MeasIdToRemoveList-r16 | | Not present |  |  |
| sl-MeasIdToAddModList-r16 | | SL-MeasIdList |  |  |
| sl-QuantityConfig-r16 | | SL-QuantityConfig |  |  |
| } | |  |  |  |
| } | |  |  |  |
| sl-CSI-RS-Config-r16 | | Not present |  |  |
| sl-CSI-RS-Config-r16 CHOICE { | |  |  | SL\_CSI |
| setup | | Set according to parameter given in test case |  | TX |
| setup SEQUENCE { | |  |  | RX |
| sl-CSI-RS-FreqAllocation-r16 CHOICE { | |  |  |  |
| sl-OneAntennaPort-r16 | | 000000000001 |  |  |
| } | |  |  |  |
| sl-CSI-RS-FirstSymbol-r16 | | 6 |  |  |
| } | |  |  |  |
| } | |  |  |  |
| sl-ResetConfig-r16 | | Not present |  |  |
| sl-LatencyBoundCSI-Report-r16 | | Not present |  |  |
|  | | 160 |  | SL\_CSI |
| lateNonCriticalExtension | | Not checked |  | TX |
|  | | Not present |  | RX |
| nonCriticalExtension | | Not checked |  | TX |
|  | | Not present |  | RX |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SL\_DRB | To provide peer UE SL DRB related configuration via PC5 RRC |
| SL\_MEAS | To provide peer UE SL RSRP measurement and reporting related configuration via PC5 RRC |
| SL\_CSI | To provide peer UE SL CSI reporting related configuration via PC5 RRC |
| TX | UE transmits and NR-SS-UE receives. |
| RX | UE receives and NR-SS-UE transmits. |

#### *– RRCReconfigurationCompleteSidelink*

Table 4.6.1A-4: *RRCReconfigurationCompleteSidelink*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.6.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReconfigurationCompleteSidelink ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier-r16 | | RRC-TransactionIdentifier |  | TX |
|  | | Set to the same value as the rrc-TransactionIdentifier-r16 field in corresponding RRCConfigurationSidelink message |  | RX |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReconfigurationCompleteSidelink-r16 SEQUENCE { | |  |  |  |
| lateNonCriticalExtension | | Not checked |  | TX |
|  | | Not present |  | RX |
| nonCriticalExtension | | Not checked |  | TX |
|  | | Not present |  | RX |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| TX | UE transmits and NR-SS-UE receives. |
| RX | UE receives and NR-SS-UE transmits. |

#### *– RRCReconfigurationFailureSidelink*

Table 4.6.1A-5: *RRCReconfigurationFailureSidelink*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.6.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReconfigurationFailureSidelink ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier-r16 | | RRC-TransactionIdentifier |  | TX |
|  | | Set to the same value as the rrc-TransactionIdentifier-r16 field in corresponding RRCConfigurationSidelink message |  | RX |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReconfigurationFailureSidelink-r16 SEQUENCE { | |  |  |  |
| lateNonCriticalExtension | | Not checked |  | TX |
|  | | Not present |  | RX |
| nonCriticalExtension | | Not checked |  | TX |
|  | | Not present |  | RX |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| TX | UE transmits and NR-SS-UE receives. |
| RX | UE receives and NR-SS-UE transmits. |

#### *– UECapabilityEnquirySidelink*

Table 4.6.1A-6: *UECapabilityEnquirySidelink*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.6.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| UECapabilityEnquirySidelink ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier-r16 | | RRC-TransactionIdentifier |  | RX |
|  | | (0..3) |  | TX |
| criticalExtensions CHOICE { | |  |  |  |
| ueCapabilityEnquirySidelink-r16 SEQUENCE { | |  |  |  |
| frequencyBandListFilterSidelink-r16 | | Not checked |  | TX |
| frequencyBandListFilterSidelink-r16 SEQUENCE (SIZE (1..maxBandsMRDC)) OF FreqBandInformation { | | 1 entry |  | RX |
| FreqBandInformation[1] CHOICE { | |  | entry 1 |  |
| bandInformationNR SEQUENCE { | |  |  |  |
| bandNR | | FreqBandIndicatorNR of the PC5 operating band |  |  |
| maxBandwidthRequestedDL | | Not present |  |  |
| maxBandwidthRequestedUL | | Not present |  |  |
| maxCarriersRequestedDL | | Not present |  |  |
| maxCarriersRequestedUL | | Not present |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| ue-CapabilityInformationSidelink-r16 | | Not present |  |  |
|  | | Not checked |  | TWO\_WAY\_ENQUIRY AND TX |
|  | | OCTET STRING containing UECapabilityInformationSidelink specified in Table 4.6.1A-7 with condition RX |  | TWO\_WAY\_ENQUIRY AND RX |
| lateNonCriticalExtension | | Not checked |  | TX |
|  | | Not present |  | RX |
| nonCriticalExtension | | Not checked |  | TX |
|  | | Not present |  | RX |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| TWO\_WAY\_ENQUIRY | For two-way SL UE capability enquiry procedure |
| TX | UE transmits and NR-SS-UE receives. |
| RX | UE receives and NR-SS-UE transmits. |

#### *– UECapabilityInformationSidelink*

Table 4.6.1A-7: *UECapabilityInformationSidelink*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.6.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| UECapabilityInformationSidelink ::= SEQUENCE { | |  |  |  |
| rrc-TransactionIdentifier-r16 | | RRC-TransactionIdentifier |  | TX |
|  | | Set to the same value as the rrc-TransactionIdentifier-r16 field in corresponding UECapabilityEnquirySidelink message |  | RX |
| criticalExtensions CHOICE { | |  |  |  |
| ueCapabilityInformationSidelink-r16 SEQUENCE { | |  |  |  |
| accessStratumReleaseSidelink-r16 | | rel16 |  |  |
| pdcp-ParametersSidelink-r16 | | Not checked |  | TX |
| pdcp-ParametersSidelink-r16 SEQUENCE { | |  |  | RX |
| outOfOrderDeliverySidelink-r16 | | supported |  |  |
| } | |  |  |  |
| rlc-ParametersSidelink-r16 | | Not checked |  | TX |
| rlc-ParametersSidelink-r16 SEQUENCE { | |  |  | RX |
| am-WithLongSN-Sidelink-r16 | | supported |  |  |
| um-WithLongSN-Sidelink-r16 | | supported |  |  |
| } | |  |  |  |
| supportedBandCombinationListSidelinkNR-r16 | | Not checked |  | TX |
| supportedBandCombinationListSidelinkNR-r16 SEQUENCE (SIZE (1..maxBandComb)) OF BandCombinationParametersSidelinkNR-r16 { | | 1 entry |  | RX |
| BandCombinationParametersSidelinkNR-r16[1] SEQUENCE (SIZE (1..maxSimultaneousBands)) OF BandParametersSidelink-r16 { | | 1 entry | entry 1 |  |
| BandParametersSidelink-r16[1] SEQUENCE { | |  | entry 1 |  |
| freqBandSidelink-r16 | | first FreqBandIndicatorNR contained in frequencyBandListFilterSidelink-r16 of corresponding UECapabilityEnquirySidelink message |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| supportedBandListSidelink-r16 | | Not checked |  | TX |
| supportedBandListSidelink-r16 SEQUENCE (SIZE (1..maxBands)) OF BandSidelinkPC5-r16 { | | 1 entry |  | RX |
| BandSidelinkPC5-r16[1] SEQUENCE { | |  | entry 1 |  |
| freqBandSidelink-r16 | | first FreqBandIndicatorNR contained in frequencyBandListFilterSidelink-r16 of corresponding UECapabilityEnquirySidelink message |  |  |
| sl-Reception-r16 SEQUENCE { | |  |  |  |
| harq-RxProcessSidelink-r16 | | n16 |  |  |
| pscch-RxSidelink-r16 | | value1 |  |  |
| scs-CP-PatternRxSidelink-r16 CHOICE { | |  |  |  |
| fr1-r16 SEQUENCE { | |  |  |  |
| scs-15kHz-r16 | | 0101011000000000 |  |  |
| scs-30kHz-r16 | | 0101011000000000 |  |  |
| scs-60kHz-r16 | | 0101011000000000 |  |  |
| } | |  |  |  |
| } | |  |  |  |
| extendedCP-RxSidelink-r16 | | supported |  |  |
| } | |  |  |  |
| sl-Tx-256QAM-r16 | | supported |  |  |
| lowSE-64QAM-MCS-TableSidelink-r16 | | supported |  |  |
| csi-ReportSidelink-r16 SEQUENCE { | |  |  |  |
| csi-RS-PortsSidelink-r16 | | p2 |  |  |
| } | |  |  |  |
| rankTwoReception-r16 | | supported |  |  |
| sl-openLoopPC-RSRP-ReportSidelink-r16 | | supported |  |  |
| sl-Rx-256QAM-r16 | | supported |  |  |
| } | |  |  |  |
| } | |  |  |  |
| appliedFreqBandListFilter-r16 | | Not checked |  | TX |
|  | | Set to the same value as the frequencyBandListFilterSidelink-r16 of corresponding UECapabilityEnquirySidelink message |  | RX |
| lateNonCriticalExtension | | Not checked |  | TX |
|  | | Not present |  | RX |
| nonCriticalExtension | | Not checked |  | TX |
|  | | Not present |  | RX |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| TX | UE transmits and NR-SS-UE receives. |
| RX | UE receives and NR-SS-UE transmits. |

### 4.6.2 System information blocks

#### *– SIB2*

Table 4.6.2-1: *SIB2*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB2 ::= SEQUENCE { |  |  |  |
| cellReselectionInfoCommon SEQUENCE { |  |  |  |
| nrofSS-BlocksToAverage | 2 |  |  |
| absThreshSS-BlocksConsolidation SEQUENCE { |  |  |  |
| thresholdRSRP | RSRP-Range | Table 4.6.3-152 |  |
| thresholdRSRQ | Not present |  |  |
| thresholdSINR | Not present |  |  |
| } |  |  |  |
| rangeToBestCell | dB0 |  |  |
| q-Hyst | dB0 | To reduce interference between intra-frequency multiple cells |  |
| speedStateReselectionPars | Not present |  |  |
| } |  |  |  |
| cellReselectionServingFreqInfo SEQUENCE { |  |  |  |
| s-NonIntraSearchP | Not present |  |  |
| s-NonIntraSearchQ | Not present |  |  |
| threshServingLowP | 0 | Actual value of threshold = field value \* 2 [dB] |  |
| threshServingLowQ | Not present |  |  |
|  | 3 | 3dB | QBASED |
| cellReselectionPriority | 4 | A middle value in the range has been selected |  |
| cellReselectionSubPriority | Not present |  |  |
| } |  |  |  |
| intraFreqCellReselectionInfo SEQUENCE { |  |  |  |
| q-RxLevMin | -70 | -140dBm |  |
|  | -55 | -110dBm | SIG |
| q-RxLevMinSUL | Not Present |  |  |
|  | -70 | -140dBm | SUL |
|  | -55 | -110dBm | SUL AND SIG |
| q-QualMin | Not present |  |  |
|  | -20 | -20dB | QBASED |
| s-IntraSearchP | 31 | Actual value of threshold = field value \* 2 [dB] |  |
| s-IntraSearchQ | Not present |  |  |
| t-ReselectionNR | 0 |  |  |
| frequencyBandList | Not present |  |  |
| frequencyBandListSUL | Not present |  |  |
| p-Max | Not present |  |  |
| smtc | SSB-MTC | Table 4.6.3-185 |  |
| ss-RSSI-Measurement | Not present |  |  |
| ssb-ToMeasure | SSB-ToMeasure |  |  |
| deriveSSB-IndexFromCell | false |  | FDD |
|  | true |  | TDD |
| } |  |  |  |
| t-ReselectionNR-SF | Not present |  |  |
| smtc2-LP-r16 | Not present |  |  |
| ssb-PositionQCL-Common-r16 | Not present |  |  |
| } |  |  |  |
| relaxedMeasurement-r16 | Not present |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SUL | For test cases using SUL frequency for the serving cell, Qrxlevmin is obtained from *q-RxLevMin-sul.* |
| QBASED | This condition applies to Quality based signalling test cases. |

#### *– SIB3*

Table 4.6.2-2: *SIB3*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB3 ::= SEQUENCE { |  |  |  |
| intraFreqNeighCellList | Not present | Not required unless Qoffset configuration is tested. When Qoffset configuration is tested, see table 6.3.1.1-1 |  |
| intraFreqBlackCellList | Not present | Not required unless Blacklisted cell list configuration is tested. When Blacklisted cell list configuration is tested, see table 6.3.1.1-1 |  |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |

#### *– SIB4*

Table 4.6.2-3: *SIB4*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB4 ::= SEQUENCE { |  |  |  |
| interFreqCarrierFreqList SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo { | The same number of entries as the configured inter-freq carriers defined in table 6.3.1.2-1 | *n* denotes the index of the entry |  |
| InterFreqCarrierFreqInfo[n] SEQUENCE { |  | entry n |  |
| dl-CarrierFreq | Downlink NR SSB ARFCN.  See table 6.3.1.2-1 |  |  |
| frequencyBandList | MultiFrequencyBandListNR-SIB |  |  |
| frequencyBandListSUL | Not present |  |  |
| nrofSS-BlocksToAverage | 2 |  |  |
| absThreshSS-BlocksConsolidation SEQUENCE { |  |  |  |
| thresholdRSRP | RSRP-Range | Table 4.6.3-152 |  |
| thresholdRSRQ | Not present |  |  |
| thresholdSINR | Not present |  |  |
| } |  |  |  |
| smtc | SSB-MTC | Table 4.6.3-185 |  |
| ssbSubcarrierSpacing | SubcarrierSpacing | Table 4.6.3-188 |  |
| ssb-ToMeasure | SSB-ToMeasure |  |  |
| deriveSSB-IndexFromCell | false |  | FDD |
|  | true |  | TDD |
| ss-RSSI-Measurement | Not present |  |  |
| q-RxLevMin | -70 | -140dBm |  |
|  | -55 | -110dBm | SIG and FR1 |
| ROUND((-110+Delta(NRfn))/2) | NOTE1 and NOTE2. | SIG and FR2 |
| q-RxLevMinSUL | -70 | -140dBm, For RF/RRM test cases | SUL |
| Not present |  |  |
| -55 | -110dBm | SUL and SIG |
|  |  |  |
| q-QualMin | Not present |  |  |
|  | -20 | -20dB | QBASED |
| p-Max | Not present |  |  |
| t-ReselectionNR | 0 |  |  |
| t-ReselectionNR-SF | Not present | Not required unless speed-dependent cell re-selection is tested. |  |
| threshX-HighP | 2 | 4dB, this value should be higher than threshServingLow of the serving cell to avoid ping-pong with lower priority cells. |  |
| threshX-LowP | 1 | 2dB |  |
| threshX-Q | Not present |  |  |
| threshX-Q SEQUENCE { |  |  | QBASED |
| threshX-HighQ | 5 | 5dB |  |
| threshX-LowQ | 5 | 5dB |  |
| } |  |  |  |
| cellReselectionPriority | 4 | The same priority as the one used for serving cell in SIB 2. |  |
| cellReselectionSubPriority | Not present | The same subpriority as the one used for serving cell in SIB 2. |  |
| q-OffsetFreq | dBXY with XY = (FLOOR((Delta(NRfn) – Delta(NRfs))/2))\*2 (NOTE 3) | This value is type of Q-OffsetRange in TS 38.331 [6] which must be even value when its absolute value is larger than dB5. | FR2 AND NOT AbsoluteValue\_Within\_dB5 |
|  | dBXY with XY = Delta(NRfn) – Delta(NRfs) |  | FR2 AND AbsoluteValue\_Within\_dB5 |
|  | dB0 |  |  |
| interFreqNeighCellList | Not present | Not required unless Qoffset configuration is tested. |  |
| interFreqBlackCellList | Not present | Not required unless Blacklisted cell list configuration is tested. |  |
| } |  |  |  |
| } |  |  |  |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |
| NOTE 1: Delta(NRfn) and Delta(NRfs) is derived based on calibration procedure defined in the clause 6.1.3.3. NRfn and NRfs are NR frequencies in dl-CarrierFreq[n] and serving cell frequency on which SIB4 is broadcasted.  NOTE 2: ROUND is rounded off to the nearest integer. As an example, ‘1 to 1.49’ set to ‘1’ while ‘1.5 to 2’ to ‘2’ and ‘-2.0 to 1.5’ set to ‘-2’ while ‘-1.49 to -1’ set to ‘-1’.  NOTE 3: FLOOR is rounded off to the smaller integer. As an example, '1.0 to 1.99' set to 1, '-1.01 to -2.00' set to -2. | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| SUL | For test cases using SUL frequency for the serving cell, Qrxlevmin is obtained from *q-RxLevMin-sul.* |
| QBASED | This condition applies to Quality based signalling test cases. |
| AbsoluteValue\_Within\_dB5 | -5dB <= (Delta(NRfn) – Delta(NRfs)) <= 5dB. |

#### *– SIB5*

Table 4.6.2-4: *SIB5*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB5 ::= SEQUENCE { |  |  |  |
| carrierFreqListEUTRA SEQUENCE (SIZE (1..maxEUTRA-Carrier)) OF CarrierFreqEUTRA { | The same number of entries as the configured E-UTRA carriers. For Signalling test cases, see table 6.3.1.3-1. | *n* denotes the index of the entry |  |
| CarrierFreqEUTRA[n] SEQUENCE { |  | entry n |  |
| carrierFreq | Downlink E-UTRA ARFCN under test. For Signalling test cases, see table 6.3.1.3-1. |  |  |
| eutra-multiBandInfoList | Not present |  |  |
| eutra-FreqNeighCellList | Not present | Not required unless EUTRA Qoffset configuration is tested. |  |
| eutra-BlackCellList | Not present | Not required unless Blacklisted cell list configuration is tested. |  |
| allowedMeasBandwidth | *EUTRA-*AllowedMeasBandwidth | The value of *EUTRA-*AllowedMeasBandwidth in Table 4.6.5-1. |  |
| presenceAntennaPort1 | FALSE |  |  |
|  | TRUE | At least two cell-specific antenna ports are used in all neighbouring cells. | All neighCells with port1 |
| cellReselectionPriority | 3 |  |  |
| cellReselectionSubPriority | Not Present |  |  |
| threshX-High | 2 (4 dB) |  |  |
| threshX-Low | 1 (2 dB) |  |  |
| q-RxLevMin | -70 (-140 dBm) | For RF/RRM test cases |  |
|  | -55(-110dBm) | For signalling test cases |  |
| q-QualMin | -20 (-20dB) |  |  |
| p-MaxEUTRA | 23 |  |  |
| threshX-Q | Not present |  |  |
| threshX-Q SEQUENCE { |  |  | QBASED |
| threshX-HighQ | 9 (9dB) |  |  |
| threshX-LowQ | 9 (9dB) |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| t-ReselectionEUTRA | 0 |  |  |
| t-ReselectionEUTRA-SF | Not present | Not required unless speed-dependent cell re-selection is tested. |  |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| QBASED | This condition applies to Quality based cell (re)selection signalling test cases. |
| All neighCells with port1 | Used for all neighbouring cells with at least two cell-specific antenna ports |

#### *– SIB6*

Table 4.6.2-5: *SIB6*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB6 ::= SEQUENCE { |  |  |  |
| messageIdentifier | '0001 0001 0000 0010'B | ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25]) |  |
| serialNumber | '0011 0000 0000 0000'B | Note 1 |  |
| warningType | '0000 0101 1000 0000'B | Note 2 |  |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |
| Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].  Note 2: Warning Type Value (Octet 1 bit 7 ~ 1) set to 'Earthquake and Tsunami', Emergency User Alert (Octet 1 bit 0) set to 'Activate emergency user alert', Popup (Octet 2 bit 7) set to 'Activate Popup', see TS 23.041 [25], Padding (Octet 2 bit 6 ~ 0) set to '000 0000'B. | | | |

#### *– SIB7*

Table 4.6.2-6: *SIB7* (1st Segment)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB7 ::= SEQUENCE { |  |  |  |
| messageIdentifier | '0001 0001 0000 0010'B | ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25]) |  |
| serialNumber | '0011 0000 0000 0000'B | Note 1 |  |
| warningMessageSegmentType | notLastSegment |  |  |
| warningMessageSegmentNumber | 0 |  |  |
| warningMessageSegment | Octetstring of N | Where N ≥ 1 and less than 1246  (see TS 23.041 [25]) |  |
| dataCodingScheme | Bitstring (8) ID of the alphabet/coding and the applied language | see TS 23.041 [25] | Segment 1 |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |
| Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide',  Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert',  Popup (Octet 1 bit 4) set to 'Activate popup',  Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25]. | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| Segment1 | The field is mandatory present in the first segment of SIB7, otherwise it is not present. |

Table 4.6.2-7: *SIB7* (2nd Segment)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB7 ::= SEQUENCE { |  |  |  |
| messageIdentifier | '0001 0001 0000 0010'B | ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25]) |  |
| serialNumber | '0011 0000 0000 0000'B | Note 1 |  |
| warningMessageSegmentType | notLastSegment |  |  |
| warningMessageSegmentNumber | 1 |  |  |
| warningMessageSegment | Octetstring of N | Where N ≥ 1 and less than 1246  (see TS 23.041 [25]) |  |
| dataCodingScheme | Not present |  |  |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |
| Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide',  Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert',  Popup (Octet 1 bit 4) set to 'Activate popup',  Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25]. | | | |

Table 4.6.2-8: *SIB7* (3rd Segment)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB7 ::= SEQUENCE { |  |  |  |
| messageIdentifier | '0001 0001 0000 0010'B | ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25]) |  |
| serialNumber | '0011 0000 0000 0000'B | Note 1 |  |
| warningMessageSegmentType | LastSegment |  |  |
| warningMessageSegmentNumber | 2 |  |  |
| warningMessageSegment | Octetstring of N | Where N ≥ 1 and less than 1246  (see TS 23.041 [25]) |  |
| dataCodingScheme | Not present |  |  |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |
| Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide',  Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert',  Popup (Octet 1 bit 4) set to 'Activate popup',  Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25]. | | | |

#### *– SIB8*

Table 4.6.2-9: *SIB8* (1st Segment)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB8 ::= SEQUENCE { |  |  |  |
| messageIdentifier | '0001 0001 0001 0010'B | CMAS CBS Message Identifier for CMAS Presidential Level Alerts (see TS 23.041 [25]) |  |
| serialNumber | '0011 0000 0000 0000'B | Note 1 |  |
| warningMessageSegmentType | notLastSegment |  |  |
| warningMessageSegmentNumber | 0 |  |  |
| warningMessageSegment | Octetstring of N | Where N ≥ 1 and less than 1246  (see TS 23.041 [25]) |  |
| dataCodingScheme | Bitstring (8) ID of the alphabet/coding and the applied language | see TS 23.041 [25] | Segment 1 |
| warningAreaCoordinatesSegment | Not present |  |  |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |
| Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide',  Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert',  Popup (Octet 1 bit 4) set to 'Activate popup',  Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25]. | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| Segment1 | The field is mandatory present in the first segment of SIB8, otherwise it is not present. |

Table 4.6.2-10: *SIB8* (2nd Segment)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB8 ::= SEQUENCE { |  |  |  |
| messageIdentifier | '0001 0001 0001 0010'B | CMAS CBS Message Identifier for CMAS Presidential Level Alerts (see TS 23.041 [25]) |  |
| serialNumber | '0011 0000 0000 0000'B | Note 1 |  |
| warningMessageSegmentType | notLastSegment |  |  |
| warningMessageSegmentNumber | 1 |  |  |
| warningMessageSegment | Octetstring of N | Where N ≥ 1 and less than 1246  (see TS 23.041 [25]) |  |
| dataCodingScheme | Not present |  |  |
| warningAreaCoordinatesSegment | Not present |  |  |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |
| Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide',  Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert',  Popup (Octet 1 bit 4) set to 'Activate popup',  Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25]. | | | |

Table 4.6.2-11: *SIB8* (3rd Segment)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB8 ::= SEQUENCE { |  |  |  |
| messageIdentifier | '0001 0001 0001 0010'B | CMAS CBS Message Identifier for CMAS Presidential Level Alerts (see TS 23.041 [25]) |  |
| serialNumber | '0011 0000 0000 0000'B | Note 1 |  |
| warningMessageSegmentType | LastSegment |  |  |
| warningMessageSegmentNumber | 2 |  |  |
| warningMessageSegment | Octetstring of N | Where N ≥ 1 and less than 1246  (see TS 23.041 [25]) |  |
| dataCodingScheme | Not present |  |  |
| warningAreaCoordinatesSegment | Not present |  |  |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |
| Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide',  Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert',  Popup (Octet 1 bit 4) set to 'Activate popup',  Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25]. | | | |

#### *– SIB9*

**Table 4.6.2-11A: *SIB9***

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1 | | | |
| **Information Element** | **Value/remark** | **Comment** | **Condition** |
| SIB9 ::= SEQUENCE { |  |  |  |
| timeInfo ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |
| lateNonCriticalExtension | Not present |  |  |
| referenceTimeInfo-r16 | ReferenceTimeInfo |  | TSC |
| } |  |  |  |

|  |  |
| --- | --- |
| **Condition** | **Explanation** |
| TSC | For test cases requiring TSC (Time Sensitive Communication) functions enabled. |

#### *– SIB10*

Table 4.6.2-12: *SIB10*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB10-r16 ::= SEQUENCE { |  |  |  |
| hrnn-List-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF HRNN-r16 { |  |  |  |
| HRNN-r16[1] SEQUENCE { |  | 1 entry |  |
| hrnn-r16 | “3gppTest” | charstring “3gppTest” converted to OCTETSTRING |  |
| } |  |  |  |
| } |  |  |  |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |

#### *– SIB11*

Table 4.6.2-13: *SIB11*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB11-r16 ::= SEQUENCE { |  |  |  |
| measIdleConfigSIB-r16 SEQUENCE { |  |  |  |
| measIdleCarrierListNR-r16 | Not present |  |  |
| measIdleCarrierListNR-r16 SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF MeasIdleCarrierNR-r16 { | The same number of entries as NR cells configured for measurements | Serving cell not included | EMR\_NR\_SIB4, EMR\_NR\_SIB11 |
| MeasIdleCarrierNR-r16[n] SEQUENCE { |  | entry n |  |
| carrierFreq-r16 | ARFCN value of configured NR cell |  |  |
| ssbSubcarrierSpacing-r16 | SubcarrierSpacing | Table 4.6.3-188 |  |
| frequencyBandList | Not present |  |  |
| measCellListNR-r16 | Not present |  |  |
| reportQuantities-r16 | both |  |  |
| qualityThreshold-r16 | Not present |  |  |
| ssb-MeasConfig-r16 | Not present |  | EMR\_NR\_SIB4 |
| ssb-MeasConfig-r16 SEQUENCE { |  |  | EMR\_NR\_SIB11 |
| nrofSS-BlocksToAverage-r16 | 2 |  |  |
| absThreshSS-BlocksConsolidation-r16 SEQUENCE { |  |  |  |
| thresholdRSRP | RSRP-Range | Table 4.6.3-152 |  |
| thresholdRSRQ | Not present |  |  |
| thresholdSINR | Not present |  |  |
| } |  |  |  |
| smtc-r16 | SSB-MTC | Table 4.6.3-185 |  |
| ssb-ToMeasure-r16 | SSB-ToMeasure | Table 4.6.3-187 |  |
| deriveSSB-IndexFromCell-r16 | false |  |  |
|  | true |  | FR1\_TDD, FR2\_TDD |
| ss-RSSI-Measurement-r16 | Not present |  |  |
| } |  |  |  |
| beamMeasConfigIdle-r16 | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| measIdleCarrierListEUTRA-r16 | Not present |  |  |
| measIdleCarrierListEUTRA-r16 SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF MeasIdleCarrierEUTRA-r16 { | The same number of entries as E-UTRA cells configured for measurements | Serving cell not included | EMR\_EUTRA\_SIB11 |
| MeasIdleCarrierEUTRA-r16[n] SEQUENCE { |  | entry n |  |
| carrierFreqEUTRA-r16 | ARFCN value of configured E-UTRA cell |  |  |
| allowedMeasBandwidth-r16 | EUTRA-AllowedMeasBandwidth | Table 4.6.5-1. |  |
| measCellListEUTRA-r16 SEQUENCE (SIZE (1..maxCellMeasIdle-r16)) OF EUTRA-PhysCellIdRange { |  |  |  |
| EUTRA-PhysCellIdRange[n] SEQUENCE { |  | entry n |  |
| start | EUTRA-PhysCellId corresponding to E-UTRA cell |  |  |
| range | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| reportQuatitiesEUTRA-r16 | both |  |  |
| qualityThresholdEUTRA-r16 | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |

*– SIB12*

Table 4.6.2-14: *SIB12*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB12-r16 ::= SEQUENCE { |  |  |  |
| segmentNumber-r16 | index of the segment contained in segmentContainer-r16 |  |  |
| segmentType-r16 | notLastSegment |  | NOT\_LAST\_SEG |
|  | lastSegment |  | LAST\_SEG |
| segmentContainer-r16 | OCTET STRING (CONTAINING SIB12-IEs or segment of SIB12-IEs) | Note 1 |  |
| } |  |  |  |
| Note 1:Size of the SIB12-IEs-r16 or segment of SIB12-IEs-r16 contained in segmentContainer-r16 shall not exceed the maximum TBS size of the SI. For signalling test cases, the size is defined in TS 38.523-3[23] clause 7.3.3.2. | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| NOT\_LAST\_SEG | Used when SIB12-IEs is segmented and the segment contained in segmentContainer-r16 is not the last segment |
| LAST\_SEG | Used when SIB12-IEs is not segmented, or SIB12-IEs is segmented and the segment contained in segmentContainer-r16 is the last segment |

Table 4.6.2-14A: *SIB12-IEs*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB12-IEs-r16 ::= SEQUENCE { |  |  |  |
| sl-ConfigCommonNR-r16 SEQUENCE { |  |  |  |
| sl-FreqInfoList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfigCommon-r16 { | 1 entry |  |  |
| SL-FreqConfigCommon-r16[1] | SL-FreqConfigCommon | entry 1 |  |
| } |  |  |  |
| sl-UE-SelectedConfig-r16 | SL-UE-SelectedConfig |  |  |
| sl-NR-AnchorCarrierFreqList-r16 | Not present |  |  |
| sl-EUTRA-AnchorCarrierFreqList-r16 | Not present |  |  |
| sl-RadioBearerConfigList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SL-RadioBearerConfig-r16 { | 1 entry |  |  |
| SL-RadioBearerConfig-r16[1] | SL-RadioBearerConfig | entry 1 |  |
| } |  |  |  |
| sl-RLC-BearerConfigList-r16 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF SL-RLC-BearerConfig-r16 { | 1 entry |  |  |
| SL-RLC-BearerConfig-r16[1] | SL-RLC-BearerConfig | entry 1 |  |
| } |  |  |  |
| sl-MeasConfigCommon-r16 | SL-MeasConfigCommon |  |  |
| sl-CSI-Acquisition-r16 | Not present |  |  |
| sl-OffsetDFN-r16 | Not present |  |  |
| t400-r16 | ms1000 |  |  |
| sl-MaxNumConsecutiveDTX-r16 | Not present |  |  |
| sl-SSB-PriorityNR-r16 | 1 |  |  |
| } |  |  |  |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |

#### *– SIB13*

Table 4.6.2-15: *SIB13*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB13-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SIB14*

Table 4.6.2-16: *SIB14*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB14-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SIB15*

Table 4.6.2-17: *SIB15*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB15-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SIB16*

Table 4.6.2-18: *SIB16*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB16-r17 ::= SEQUENCE { |  |  |  |
| freqPriorityListSlicing-r17 SEQUENCE (SIZE (1..maxFreqPlus1)) OF FreqPrioritySlicing-r17 { | 2 entries |  |  |
| FreqPrioritySlicing-r17[1] SEQUENCE{ |  | entry 1 |  |
| dl-ImplicitCarrierFreq-r17 | 1 | The first frequency indicated by the *InterFreqCarrierFreqList* in SIB4 |  |
| sliceInfoList-r17 SEQUENCE (SIZE (1..maxSliceInfo-r17)) OF SliceInfo-r17 { | 1 entry |  |  |
| SliceInfo-r17[1] SEQUENCE { |  | entry 1 |  |
| nsag-IdentityInfo-r17 SEQUENCE { |  |  |  |
| nsag-ID-r17 | Set to the corresponding NSAG value used in the test case |  |  |
| trackingAreaCode-r17 | Not present |  |  |
| } |  |  |  |
| nsag-CellReselectionPriority-r17 | 5 |  |  |
| nsag-CellReselectionSubPriority-r17 | Not present |  |  |
| sliceCellListNR-r17 | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| FreqPrioritySlicing-r17[2] SEQUENCE{ |  | entry 2 |  |
| dl-ImplicitCarrierFreq-r17 | 2 | The second frequency indicated by the *InterFreqCarrierFreqList* in SIB4 |  |
| sliceInfoList-r17 SEQUENCE (SIZE (1..maxSliceInfo-r17)) OF SliceInfo-r17 { | 1 entry |  |  |
| SliceInfo-r17[1] SEQUENCE { |  | entry 1 |  |
| nsag-IdentityInfo-r17 SEQUENCE { |  |  |  |
| nsag-ID-r17 | Set to the corresponding NSAG value used in the test case |  |  |
| trackingAreaCode-r17 | Not present |  |  |
| } |  |  |  |
| nsag-CellReselectionPriority-r17 | 4 |  |  |
| nsag-CellReselectionSubPriority-r17 | Not present |  |  |
| sliceCellListNR-r17 | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |

#### *– SIB20*

Table 4.6.2-19: *SIB20*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB20-r17 ::= SEQUENCE { |  |  |  |
| mcch-Config-r17 SEQUENCE { |  |  |  |
| mcch-RepetitionPeriodAndOffset-r17 CHOICE { |  |  |  |
| rf2-r17 | 0 |  |  |
| } |  |  |  |
| mcch-WindowStartSlot-r17 | 2 |  |  |
| mcch-WindowDuration-r17 | sl8 |  |  |
| mcch-ModificationPeriod-r17 | rf8 |  |  |
| } |  |  |  |
| cfr-ConfigMCCH-MTCH-r17 | Not present |  |  |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |

#### *– SIB21*

Table 4.6.2-20: *SIB21*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| SIB21-r17 ::= SEQUENCE { |  |  |  |
| mbs-FSAI-IntraFreq-r17 SEQUENCE (SIZE (1..maxFSAI-MBS-r17)) OF MBS-FSAI-r17 { | 1 entry |  |  |
| MBS-FSAI-r17[1] | ‘000000’H | entry 1  OCTET STRING (SIZE (3)) |  |
| } |  |  |  |
| mbs-FSAI-InterFreqList-r17 | Not present |  |  |
| mbs-FSAI-InterFreqList-r17 SEQUENCE (SIZE (1..maxFreq)) OF MBS-FSAI-InterFreq-r17 { | 1 entry |  | MBS\_interFreq |
| MBS-FSAI-InterFreq-r17[1] SEQUENCE { |  | entry 1 |  |
| dl-CarrierFreq-r17 | ARFCN-ValueNR with condition DL\_SSB |  |  |
| mbs-FSAI-List-r17 SEQUENCE (SIZE (1..maxFSAI-MBS-r17)) OF MBS-FSAI-r17 { | 1 entry |  |  |
| MBS-FSAI-r17[1] | ‘000001’H | entry 1  OCTET STRING (SIZE (3)) |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| MBS\_interFreq | SIB21 transmitted for a MBS inter-frequency cell environment (MBS service provided on multiple frequencies within a band). |

### 4.6.2A Positioning System information blocks

#### *– PosSystemInformation-r16-IEs*

Table 4.6.2a-1: *PosSystemInformation-r16-IEs*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1a | | | |
| Information Element | Value/remark | Comment | Condition |
| PosSystemInformation-r16-IEs ::= SEQUENCE { |  |  |  |
| posSIB-TypeAndInfo-r16 SEQUENCE (SIZE (1..maxSIB)) | n entries | The number of entries depends on the sub-test, as specified in TS 37.571-2 [40] |  |
| lateNonCriticalExtension | Not present |  |  |
| nonCriticalExtension | Not present |  |  |
| } |  |  |  |

#### *– PosSI-SchedulingInfo*

Table 4.6.2a-2: *PosSI-SchedulingInfo*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1a | | | |
| Information Element | Value/remark | Comment | Condition |
| PosSI-SchedulingInfo-r16 ::= SEQUENCE { |  |  |  |
| posSchedulingInfoList-r16 SEQUENCE (SIZE (1..maxSI-Message)) OF PosSchedulingInfo-r16 { | n entries | The size of PosSchedulingInfo-r16 is depending on the sub-tests, as specified in TS 37.571-2 [40] |  |
| PosSchedulingInfo-r16[n] SEQUENCE { |  | entry n |  |
| offsetToSI-Used-r16 | Not present |  |  |
| posSI-Periodicity-r16 | rf32 |  |  |
| posSI-BroadcastStatus-r16 | broadcasting |  |  |
| posSIB-MappingInfo-r16 SEQUENCE (SIZE (1..maxSIB)) OF PosSIB-Type-r16 { | n entries | The number of entries depends on the sub-test, as specified in TS 37.571-2 [40] |  |
| PosSIB-Type-r16[n] |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| posSI-RequestConfig-r16 | Not present |  |  |
| posSI-RequestConfigSUL-r16 | Not present |  |  |
| } |  |  |  |

#### *– SIBpos*

Table 4.6.2a-3: *SIBpos*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.1a | | | |
| Information Element | Value/remark | Comment | Condition |
| SIBpos-r16 ::= SEQUENCE { |  |  |  |
| assistanceDataSIB-Element-r16 | OCTET STRING containing AssistanceDataSIBelement as spepcified in TS 37.571-2 [40] |  |  |
| lateNonCriticalExtension | Not present |  |  |
| } |  |  |  |

### 4.6.3 Radio resource control information elements

#### *– AdditionalSpectrumEmission*

Table 4.6.3-1: *AdditionalSpectrumEmission*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| AdditionalSpectrumEmission | 0 |  |  |

#### *– Alpha*

Table 4.6.3-2: *Alpha*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| Alpha | alpha0 |  |  |

#### *– AMF-Identifier*

Table 4.6.3-3: *AMF-Identifier*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| AMF-Identifier | FFS |  |  |

#### *– ARFCN-ValueEUTRA*

Table 4.6.3-4: *ARFCN-ValueEUTRA*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ARFCN-ValueEUTRA | FFS |  |  |

#### *– ARFCN-ValueNR*

Table 4.6.3-5: *ARFCN-ValueNR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ARFCN-ValueNR | absoluteFrequencySSB as defined for the frequency of the cell | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. | DL\_SSB |
| absoluteFrequencyPointA as defined for the DL frequency of the cell | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. | DL\_PointA |
| absoluteFrequencyPointA as defined for the UL frequency of the cell | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. | UL\_PointA |
| sl-absoluteFrequencySSB as defined for the SL NRf1 carrier | For signalling test cases see subclause 6.2.3.7. Otherwise, see subclause 4.3.1.8. | SL\_SSB |
| sl-AbsoluteFrequencyPointA as defined for the SL NRf1 carrier | For signalling test cases see subclause 6.2.3.7. Otherwise, see subclause 4.3.1.8. | SL\_PointA |

|  |  |
| --- | --- |
| Condition | Explanation |
| DL\_SSB | IE absoluteFrequencySSB for downlink |
| SL\_SSB | IE sl-absoluteFrequencySSB for sidelink |
| DL\_PointA | IE absoluteFrequencyPointA for downlink |
| UL\_PointA | IE absoluteFrequencyPointA for uplink |
| SL\_PointA | IE sl-absoluteFrequencyPointA for sidelink |

#### *– ARFCN-ValueUTRA-FDD*

Table 4.6.3-5A: *ARFCN-ValueUTRA-FDD*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ARFCN-ValueUTRA-FDD-r16 | FFS |  |  |

#### *– AvailabilityCombinationsPerCell*

Table 4.6.3-5B: *AvailabilityCombinationsPerCell*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| AvailabilityCombinationsPerCell-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– AvailabilityIndicator*

Table 4.6.3-5C: *AvailabilityIndicator*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| AvailabilityIndicator-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– BAP-Routing-ID*

Table 4.6.3-5D: *BAP-Routing-ID*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BAP-Routing-ID-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– BeamFailureRecoveryConfig*

Table 4.6.3-6: *BeamFailureRecoveryConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BeamFailureRecoveryConfig SEQUENCE { |  |  |  |
| rootSequenceIndex-BFR | Set according to the PRACH-rootSequenceIndex given in Table 4.4.2-2 |  |  |
| rach-ConfigBFR | RACH-ConfigGeneric |  |  |
| rsrp-ThresholdSSB | 57 | Actual value = 100 dBm |  |
| candidateBeamRSList SEQUENCE (SIZE(1..maxNrofCandidateBeams)) OF PRACH-ResourceDedicatedBFR { | 1 entry |  |  |
| PRACH-ResourceDedicatedBFR[1] CHOICE { |  | entry 1 |  |
| ssb SEQUENCE { |  |  | SSB |
| ssb | SSB-Index for BFR |  |  |
| ra-PreambleIndex | 56 |  |  |
| } |  |  |  |
| } |  |  |  |
| csi-rs[1] SEQUENCE { |  |  | CSI-RS |
| csi-rs | NZP-CSI-RS-ResourceId for BFR |  |  |
| ra-OccasionList | Not present | The RA occasion associated with the SSB that is QCLed with this CSI-RS is used |  |
| ra-PreambleIndex | Not present | The preamble index associated with the SSB that is QCLed with CSI-RS is used |  |
| } |  |  |  |
| } |  |  |  |
| ssb-perRACH-Occasion | one |  |  |
| ra-ssb-OccasionMaskIndex | 0 |  |  |
| recoverySearchSpaceId | searchSpaceId for BFR search space | The CORESET associated with the BFR search space can not be associated with another search space according to 38.331 [6] |  |
| ra-Prioritization | RA-Prioritization |  |  |
| beamFailureRecoveryTimer | ms200 |  |  |
| msg1-SubcarrierSpacing | SubcarrierSpacing |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SSB | SSB is used as reference signal for BFR |
| CSI-RS | CSI-RS is used as reference signal for BFR |

#### *– BeamFailureRecoverySCellConfig*

Table 4.6.3-6AA: *BeamFailureRecoverySCellConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BeamFailureRecoverySCellConfig-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– BeamFailureRecoveryServingCellConfig*

Table 4.6.3-6AB: *BeamFailureRecoveryServingCellConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BeamFailureRecoveryServingCellConfig-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– BetaOffsets*

Table 4.6.3-6A: *BetaOffsets*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BetaOffsets ::= SEQUENCE { |  |  |  |
| betaOffsetACK-Index1 | 9 |  |  |
| betaOffsetACK-Index2 | 9 |  |  |
| betaOffsetACK-Index3 | 9 |  |  |
| betaOffsetCSI-Part1-Index1 | 6 |  |  |
| betaOffsetCSI-Part1-Index2 | 6 |  |  |
| betaOffsetCSI-Part2-Index1 | 6 |  |  |
| betaOffsetCSI-Part2-Index2 | 6 |  |  |
| } |  |  |  |

#### *– BetaOffsetsCrossPri*

Table 4.6.3-6BA: *BetaOffsetsCrossPri*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BetaOffsetsCrossPri-r17 | FFS |  |  |

#### *– BH-RLC-ChannelConfig*

Table 4.6.3-6B: *BH-RLC-ChannelConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BH-RLC-ChannelConfig-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– BH-LogicalChannelIdentity*

Table 4.6.3-6C: *BH-LogicalChannelIdentity*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BH-LogicalChannelIdentity-r16 ::= CHOICE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– BH-LogicalChannelIdentity-Ext*

Table 4.6.3-6D: *BH-LogicalChannelIdentity-Ext*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BH-LogicalChannelIdentity-Ext-r16 | FFS |  |  |

#### *– BH-RLC-ChannelID*

Table 4.6.3-6E: *BH-RLC-ChannelID*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BH-RLC-ChannelID-r16 | FFS |  |  |

#### *– BSR-Config*

Table 4.6.3-7: *BSR-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BSR-Config ::= SEQUENCE { |  |  |  |
| periodicBSR-Timer | sf1 |  |  |
| retxBSR-Timer | sf80 |  |  |
| logicalChannelSR-DelayTimer | Not present |  |  |
| } |  |  |  |

#### *– BWP*

Table 4.6.3-8: *BWP*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BWP ::= SEQUENCE { |  |  |  |
| locationAndBandwidth | Set to value of locationAndBandwidth in Table 4.3.1.0D-1 for the bandwidth and subcarrier spacing under test |  | FR1 |
|  | Set to value of locationAndBandwidth in Table 4.3.1.0D-2 for the bandwidth and subcarrier spacing under test |  | FR2 |
| subcarrierSpacing | SubcarrierSpacing |  |  |
| cyclicPrefix | Not present |  |  |
| } |  |  |  |

#### *– BWP-Downlink*

Table 4.6.3-9: *BWP-Downlink*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BWP-Downlink ::= SEQUENCE { |  |  |  |
| bwp-Id | BWP-Id with condition BWP-Id1 |  |  |
| bwp-Common | BWP-DownlinkCommon with condition BWP-Id1 |  |  |
| bwp-Dedicated | BWP-DownlinkDedicated |  |  |
| } |  |  |  |

#### *– BWP-DownlinkCommon*

Table 4.6.3-10: *BWP-DownlinkCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BWP-DownlinkCommon ::= SEQUENCE { |  |  |  |
| genericParameters | BWP |  |  |
| pdcch-ConfigCommon CHOICE { |  |  |  |
| setup | PDCCH-ConfigCommon |  |  |
| PDCCH-ConfigCommon with condition SCell\_add |  | SCell\_Add |
| PDCCH-ConfigCommon with condition InitialBWP\_SIB |  | InitialBWP\_SIB |
|  | PDCCH-ConfigCommon with condition BWP-Id1 |  | BWP-Id1 |
| } |  |  |  |
| pdsch-ConfigCommon CHOICE { |  |  |  |
| setup | PDSCH-ConfigCommon |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| InitialBWP\_SIB | Configured via DownlinkConfigCommonSIB |
| BWP-Id1 | Additional BWP 1 |

#### *– BWP-DownlinkDedicated*

Table 4.6.3-11: *BWP-DownlinkDedicated*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BWP-DownlinkDedicated ::= SEQUENCE { |  |  |  |
| pdcch-Config CHOICE { |  |  |  |
| setup | PDCCH-Config |  |  |
| } |  |  |  |
| pdsch-Config CHOICE { |  |  |  |
| setu | PDSCH-Config |  |  |
| } |  |  |  |
| sps-Config | Not present |  |  |
| radioLinkMonitoringConfig | Not present |  | Scell\_Add |
| radioLinkMonitoringConfig CHOICE { |  |  |  |
| setup | RadioLinkMonitoringConfig |  |  |
| } |  |  |  |
| sps-ConfigToAddModList-r16 | Not present |  |  |
| sps-ConfigToReleaseList-r16 | Not present |  |  |
| sps-ConfigDeactivationStateList-r16 | Not present |  |  |
| beamFailureRecoverySCellConfig-r16 | Not present |  |  |
| sl-PDCCH-Config-r16 | Not present |  |  |
| sl-PDCCH-Config-r16 CHOICE { |  |  | SIDELINK |
| setup | PDCCH-Config |  |  |
| } |  |  |  |
| sl-V2X-PDCCH-Config-r16 | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SIDELINK | Used for sidelink communication |
| Scell\_Add | Add SCell |

#### *– BWP-Id*

Table 4.6.3-12: *BWP-Id*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BWP-Id | 0 | Initial BWP |  |
|  | 1 |  | BWP-Id1 |

|  |  |
| --- | --- |
| Condition | Explanation |
| BWP-Id1 | Additional BWP 1 |

#### *– BWP-Uplink*

Table 4.6.3-13: *BWP-Uplink*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BWP-Uplink ::= SEQUENCE { |  |  |  |
| bwp-Id | BWP-Id with condition BWP-Id1 |  |  |
| bwp-Common | BWP-UplinkCommon |  |  |
| bwp-Dedicated | BWP-UplinkDedicated |  |  |
| } |  |  |  |

#### *– BWP-UplinkCommon*

Table 4.6.3-14: *BWP-UplinkCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BWP-UplinkCommon ::= SEQUENCE { |  |  |  |
| genericParameters | BWP |  |  |
| rach-ConfigCommon CHOICE { |  |  |  |
| setup | RACH-ConfigCommon |  |  |
| } |  |  |  |
| rach-ConfigCommon | Not present |  | SUL\_SUL AND (RF OR RRM),  RF AND SCell\_Add |
| pusch-ConfigCommon CHOICE { |  |  |  |
| setup | PUSCH-ConfigCommon |  |  |
| } |  |  |  |
| pucch-ConfigCommon CHOICE { |  |  |  |
| setup | PUCCH-ConfigCommon |  |  |
| } |  |  |  |
| pucch-ConfigCommon | Not present |  | RF AND SCell\_Add |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SUL\_SUL | On the SUL carrier when supplementary carrier is configured |
| SCell\_Add | Add SCell |

#### *– BWP-UplinkDedicated*

Table 4.6.3-15: *BWP-UplinkDedicated*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| BWP-UplinkDedicated ::= SEQUENCE { |  |  |  |
| pucch-Config CHOICE { |  |  |  |
| setup | PUCCH-Config |  |  |
| } |  |  |  |
| pucch-Config | Not present |  | SUL\_NUL,  RF AND Scell\_Add |
| pusch-Config | Not present |  | RESUME |
| pusch-Config CHOICE { |  |  |  |
| setup | PUSCH-Config |  |  |
| } |  |  |  |
| configuredGrantConfig | Not present |  |  |
| srs-Config | Not present |  | Short\_DCI |
|  | SRS-Config |  |  |
| beamFailureRecoveryConfig | Not present |  |  |
| sl-PUCCH-Config-r16 | Not present |  |  |
| sl-PUCCH-Config-r16 CHOICE { |  |  | SIDELINK |
| setup | PUCCH-Config |  |  |
| } |  |  |  |
| cp-ExtensionC2-r16 | Not present |  |  |
| cp-ExtensionC3-r16 | Not present |  |  |
| useInterlacePUCCH-PUSCH-r16 | Not present |  |  |
| pucch-ConfigurationList-r16 | Not present |  |  |
| lbt-FailureRecoveryConfig-r16 | Not present |  |  |
| configuredGrantConfigToAddModList-r16 | Not present |  |  |
| configuredGrantConfigToReleaseList-r16 | Not present |  |  |
| configuredGrantConfigType2DeactivationStateList-r16 | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Short\_DCI | Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS |
| SUL\_NUL | On the NUL carrier when supplementary carrier is configured |
| RESUME | Used in RRCResume Message |
| SIDELINK | Used for sidelink communication |
| SCell\_add | Add Scell |

#### *– CandidateBeamRS*

Table 4.6.3-15A: *CandidateBeamRS*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CandidateBeamRS-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– CellAccessRelatedInfo*

Table 4.6.3-16: *CellAccessRelatedInfo*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CellAccessRelatedInfo ::= SEQUENCE { |  |  |  |
| plmn-IdentityInfoList | PLMN-IdentityInfoList |  |  |
| cellReservedForOtherUse | Not present |  |  |
|  | true |  | SNPN, CAG |
| cellReservedForFutureUse-r16 | Not present |  |  |
| npn-IdentityInfoList-r16 | Not present |  |  |
|  | NPN-IdentityInfoList-r16 |  | SNPN, CAG |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SNPN | Standalone NPN cell |
| CAG | PNI-NPN |

#### *– CellAccessRelatedInfo-EUTRA-5GC*

Table 4.6.3-17: *CellAccessRelatedInfo-EUTRA-5GC*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CellAccessRelatedInfo-EUTRA-5GC ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– CellAccessRelatedInfo-EUTRA-EPC*

Table 4.6.3-18: *CellAccessRelatedInfo-EUTRA-EPC*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CellAccessRelatedInfo-EUTRA-EPC ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– CellGroupConfig*

Table 4.6.3-19: *CellGroupConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CellGroupConfig ::= SEQUENCE { |  |  |  |
| cellGroupId | CellGroupId |  |  |
|  | CellGroupId condition NR-DC\_SCG |  | NR-DC\_SCG |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 1 entry |  | EN-DC |
| RLC-BearerConfig[1] | RLC-BearerConfig with conditions AM and DRB2 | entry 1 |  |
|  | RLC-BearerConfig with conditions AM and DRB2 and Re-establish\_RLC |  | PSCell\_change |
| } |  |  |  |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 1 entry |  | SRB1 |
| RLC-BearerConfig[1] | RLC-BearerConfig with condition SRB1 | entry 1 |  |
| } |  |  |  |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 2 entries |  | SRB2\_DRB1 |
| RLC-BearerConfig[1] | RLC-BearerConfig with condition SRB2 | entry 1 |  |
| RLC-BearerConfig[2] | RLC-BearerConfig with conditions AM and DRB1 | entry 2 |  |
| } |  |  |  |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 2 entries |  | SRB2\_DRB2 |
| RLC-BearerConfig[1] | RLC-BearerConfig with condition SRB2 | entry 1 |  |
| RLC-BearerConfig[2] | RLC-BearerConfig with conditions AM and DRB2 | entry 2 |  |
| } |  |  |  |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 1 entry |  | DRBn, NR-DC\_SCG |
| RLC-BearerConfig[1] | RLC-BearerConfig with conditions AM and DRBn | entry 1  DRBn is allocated according to internal TTCN mapping |  |
| } |  |  |  |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 3 entries |  | PCell\_change |
| RLC-BearerConfig[1] | RLC-BearerConfig with conditions SRB1 and Re-establish\_RLC | entry 1 |  |
| RLC-BearerConfig[2] | RLC-BearerConfig with conditions SRB2 and Re-establish\_RLC | entry 2 |  |
| RLC-BearerConfig[3] | RLC-BearerConfig with conditions AM, DRB1 and Re-establish\_RLC | entry 3 |  |
| } |  |  |  |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 1+n entries | n is the number of DRBs established before RRC resume | RESUME |
| RLC-BearerConfig[1] | RLC-BearerConfig with condition SRB2 and RESUME | entry 1 |  |
| RLC-BearerConfig[k+1, k=1..n] | RLC-BearerConfig with condition DRBk and RESUME | entry [k+1, k=1..n] |  |
| } |  |  |  |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 2+n entries | n is the number of DRBs established before RRC re-establishement | REEST |
| RLC-BearerConfig[1] | RLC-BearerConfig with condition SRB1 | entry 1 |  |
| RLC-BearerConfig[2] | RLC-BearerConfig with condition SRB2 and Re-establish\_RLC | entry 2 |  |
| RLC-BearerConfig[k+2, k=1..n] | RLC-BearerConfig with condition DRBk and Re-establish\_RLC | entry [k+2, k=1..n] |  |
| } |  |  |  |
| rlc-BearerToAddModList | Not present |  |  |
| rlc-BearerToReleaseList | Not present |  |  |
| mac-CellGroupConfig | MAC-CellGroupConfig |  |  |
|  | Not present |  | SRB2\_DRB1, MEAS, SRB2\_DRB2, SCell\_add |
| physicalCellGroupConfig | PhysicalCellGroupConfig |  |  |
|  | Not present |  | SRB2\_DRB1, MEAS, SRB2\_DRB2, SCell\_add |
| spCellConfig | Not present |  | SRB2\_DRB1, SRB2\_DRB2, SCell\_add |
| spCellConfig SEQUENCE { |  |  |  |
| servCellIndex | Not present |  |  |
| ServCellIndex |  | EN-DC, EN-DC AND MEAS |
|  | ServCellIndex with condition NR-DC\_SCG |  | NR-DC\_SCG |
| reconfigurationWithSync | Not present |  |  |
| reconfigurationWithSync SEQUENCE { |  |  | EN-DC, PCell\_change, PSCell\_change, NR-DC\_SCG |
| spCellConfigCommon | ServingCellConfigCommon |  |  |
| newUE-Identity | RNTI-Value |  |  |
|  | RNTI-Value with condition NR-DC\_SCG |  | NR-DC\_SCG |
| t304 | ms1000 |  |  |
| rach-ConfigDedicated | Not present |  |  |
| rach-ConfigDedicated CHOICE { |  |  | CFRA |
| uplink | RACH-ConfigDedicated |  |  |
| supplementaryUplink | RACH-ConfigDedicated |  | SUL AND SIG |
| } |  |  |  |
| } |  |  |  |
| rlf-TimersAndConstants CHOICE { |  |  |  |
| setup | RLF-TimersAndConstants |  |  |
| } |  |  |  |
| rlf-TimersAndConstants | Not present |  | MEAS, RESUME |
| rlmInSyncOutOfSyncThreshold | Not present |  |  |
| spCellConfigDedicated | ServingCellConfig |  | EN-DC, SRB1, PCell\_change, PSCell\_change, NR-DC\_SCG, REEST |
|  | Not present |  |  |
|  | ServingCellConfig with condition MEAS |  | MEAS |
|  | ServingCellConfig with condition RESUME |  | RESUME |
| } |  |  |  |
| sCellToAddModList | Not present |  |  |
| sCellToAddModList SEQUENCE (SIZE (1..maxNrofSCells)) OF SCellConfig { | 1 entry |  | SCell\_add |
| SCellConfig[1] SEQUENCE { |  | entry 1 |  |
| sCellIndex | SCellIndex |  |  |
| sCellConfigCommon | ServingCellConfigCommon with condition No\_UL |  |  |
|  | ServingCellConfigCommon |  | RF AND UL\_CA |
| sCellConfigDedicated | ServingCellConfig with condition No\_UL and Scell\_Add |  |  |
|  | ServingCellConfig with condition Scell\_Add |  | RF AND UL\_CA |
| } |  |  |  |
| } |  |  |  |
| sCellToReleaseList | Not present |  |  |
| reportUplinkTxDirectCurrent | Not present |  |  |
| bap-Address-r16 | Not present |  |  |
| bh-RLC-ChannelToAddModList-r16 | Not present |  |  |
| bh-RLC-ChannelToReleaseList-r16 | Not present |  |  |
| f1c-TransferPath-r16 | Not present |  |  |
| simultaneousTCI-UpdateList1-r16 | Not present |  |  |
| simultaneousTCI-UpdateList2-r16 | Not present |  |  |
| simultaneousSpatial-UpdatedList1-r16 | Not present |  |  |
| simultaneousSpatial-UpdatedList2-r16 | Not present |  |  |
| uplinkTxSwitchingOption-r16 | Not present |  |  |
| uplinkTxSwitchingPowerBoosting-r16 | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| EN-DC | E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC |
| CFRA | This condition applies when CFRA is configured |
| SUL | Supplementary Uplink |
| SRB1 | Establishment of SRB1 |
| SRB2\_DRB1 | Establishment of SRB2 and DRB1 |
| SRB2\_DRB2 | Establishment of SRB2 and DRB2 |
| DRBn | Establishment of DRBn |
| PCell\_change | Intra-NR PCell change NR) |
| PSCell\_change | NR PSCell change (EN-DC) |
| SCell\_add | Add SCell |
| MEAS | A NR or EN-DC measurement is configured |
| NR-DC\_SCG | Add SCG (NR-DC) |
| RESUME | Used in RRCResume Message |
| REEST | The first RRCReconfiguration message after successful completion of the RRC re-establishment procedure. |
| UL\_CA | Uplink CA |

#### *– CellGroupId*

Table 4.6.3-20: *CellGroupId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CellGroupId | 0 |  |  |
| 1 |  | EN-DC, NR-DC\_SCG |

|  |  |
| --- | --- |
| **Condition** | **Explanation** |
| EN-DC | E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC |
| NR-DC\_SCG | Add SCG (NR-DC) |

#### *– CellIdentity*

Table 4.6.3-21: *CellIdentity*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CellIdentity | Set to NR Cell Identifier defined in table 4.4.2-2 | BIT STRING (SIZE (36)) |  |

#### *– CellReselectionPriority*

Table 4.6.3-22: *CellReselectionPriority*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CellReselectionPriority | FFS |  |  |

#### *– CellReselectionSubPriority*

Table 4.6.3-23: *CellReselectionSubPriority*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CellReselectionSubPriority | FFS |  |  |

#### *– CFR-ConfigMulticast*

Table 4.6.3-23AA: *CFR-ConfigMulticast*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CFR-ConfigMulticast-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– CGI-InfoEUTRA*

Table 4.6.3-23A: *CGI-InfoEUTRA*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CGI-InfoEUTRA | FFS |  |  |

#### *– CGI-InfoEUTRALogging*

Table 4.6.3-23B: *CGI-InfoEUTRALogging*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CGI-InfoEUTRALogging ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– CGI-InfoNR*

Table 4.6.3-24: *CGI-InfNRo*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CGI-InfoNR | FFS |  |  |

#### *– CGI-Info-Logging*

Table 4.6.3-24A: *CGI-Info-Logging*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CGI-Info-Logging-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– CLI-RSSI-Range*

Table 4.6.3-24B: *CLI-RSSI-Range*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CLI-RSSI-Range-r16 | FFS |  |  |

#### *– CodebookConfig*

Table 4.6.3-25: *CodebookConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CodebookConfig ::= SEQUENCE { |  |  |  |
| codebookType CHOICE { |  |  |  |
| type1 SEQUENCE { |  |  |  |
| subType CHOICE { |  |  |  |
| typeI-SinglePanel SEQUENCE { |  |  |  |
| nrOfAntennaPorts CHOICE { |  |  |  |
| two SEQUENCE { |  |  | 2TX |
| twoTX-CodebookSubsetRestriction | 111111 |  |  |
| } |  |  |  |
| moreThanTwo SEQUENCE { |  |  |  |
| n1-n2 CHOICE { |  |  |  |
| two-one-TypeI-SinglePanel-Restriction | 11111111 |  | FR2 |
| four-one-TypeI-SinglePanel-Restriction | 11111111 11111111 |  | FR1 |
| } |  |  |  |
| typeI-SinglePanel-codebookSubsetRestriction-i2 | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| typeI-SinglePanel-ri-Restriction | 11111111 |  |  |
| } |  |  |  |
| } |  |  |  |
| codebookMode | 1 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| 2TX | 2 Tx CSI-RS configuration. |

#### *– CommonLocationInfo*

Table 4.6.3-25A: *CommonLocationInfo*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CommonLocationInfo-r16 ::= SEQUENCE { |  |  |  |
| gnss-TOD-msec-r16 | Not checked | OCTET STRING |  |
| locationTimestamp-r16 | Not checked | OCTET STRING |  |
| locationCoordinate-r16 | Not checked | OCTET STRING |  |
| locationError-r16 | Not checked | OCTET STRING |  |
| locationSource-r16 | Not checked | OCTET STRING |  |
| velocityEstimate-r16 | Not checked | OCTET STRING |  |
| } |  |  |  |

#### *– CondReconfigId*

Table 4.6.3-25B: *CondReconfigId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CondReconfigId-r16 | 1 |  |  |

#### *– CondReconfigToAddModList*

Table 4.6.3-25C: *CondReconfigToAddModList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CondReconfigToAddModList-r16 ::= SEQUENCE (SIZE (1.. maxNrofCondCells-r16)) OF CondReconfigToAddMod-r16 { | 1 entry |  |  |
| CondReconfigToAddMod-r16[1] ::= SEQUENCE { |  | entry 1 |  |
| condReconfigId-r16 | CondReconfigId-r16 |  |  |
| condExecutionCond-r16::= SEQUENCE { |  |  |  |
| MeasId [1] | 1 | identify a measurement configuration |  |
| } |  |  |  |
| condRRCReconfig-r16 | RRCReconfiguration-HO | Table 4.8.1-1A |  |
| } |  |  |  |

#### *– ConditionalReconfiguration*

Table 4.6.3-25D: *ConditionalReconfiguration*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ConditionalReconfiguration-r16::= SEQUENCE { |  |  |  |
| attemptCondReconfig-r16 | true |  |  |
| condReconfigToRemoveList-r16 | Not present |  |  |
| condReconfigToAddModList-r16 | CondReconfigToAddModList-r16 |  |  |
| } |  |  |  |

#### *– ConfiguredGrantConfig*

Table 4.6.3-26: *ConfiguredGrantConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ConfiguredGrantConfig ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– ConfiguredGrantConfigIndex*

Table 4.6.3-26A: *ConfiguredGrantConfigIndex*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ConfiguredGrantConfigIndex-r16 | FFS |  |  |

#### *– ConfiguredGrantConfigIndexMAC*

Table 4.6.3-26B: *ConfiguredGrantConfigIndexMAC*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ConfiguredGrantConfigIndexMAC-r16 | FFS |  |  |

#### *– ConnEstFailureControl*

Table 4.6.3-27: *ConnEstFailureControl*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ConnEstFailureControl ::= SEQUENCE { |  |  |  |
| connEstFailCount | n1 |  |  |
| connEstFailOffsetValidity | s30 |  |  |
| connEstFailOffset | 1 |  |  |
| } |  |  |  |

#### *– ControlResourceSet*

Table 4.6.3-28: *ControlResourceSet*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ControlResourceSet ::= SEQUENCE { |  |  |  |
| controlResourceSetId | ControlResourceSetId |  |  |
| frequencyDomainResources | 11110000 00000000 00000000 00000000 00000000 00000 | CORESET to use the least significant 24 RBs of the BWP |  |
| duration | 2 | SearchSpace duration of 2 symbols |  |
| cce-REG-MappingType CHOICE { |  |  |  |
| nonInterleaved | null |  |  |
| } |  |  |  |
| precoderGranularity | sameAsREG-bundle |  |  |
| tci-StatesPDCCH-ToAddList | Not present |  |  |
| tci-StatesPDCCH-ToReleaseList | Not present |  |  |
| tci-PresentInDCI | Not present |  |  |
| pdcch-DMRS-ScramblingID | Not present |  |  |
| rb-Offset-r16 | Not present |  |  |
| tci-PresentDCI-1-2-r16 | Not present |  |  |
| coresetPoolIndex-r16 | Not present |  |  |
| controlResourceSetId-v1610 | Not present |  |  |
| } |  |  |  |

#### *– ControlResourceSetId*

Table 4.6.3-29: *ControlResourceSetId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ControlResourceSetId | 1 |  |  |
|  | 0 |  | Common0 |

|  |  |
| --- | --- |
| **Condition** | **Explanation** |
| Common0 | CommonCORESET#0 |

#### *– ControlResourceSetZero*

Table 4.6.3-30: *ControlResourceSetZero*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ControlResourceSetZero | Set to CORESET#0 Index as defined for the frequency of the cell | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. |  |

#### *– CrossCarrierSchedulingConfig*

Table 4.6.3-31: *CrossCarrierSchedulingConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CrossCarrierSchedulingConfig ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– CSI-AperiodicTriggerStateList*

Table 4.6.3-32: *CSI-AperiodicTriggerStateList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-AperiodicTriggerStateList ::= SEQUENCE (SIZE (1..maxNrOfCSI-AperiodicTriggers)) OF CSI-AperiodicTriggerState { | 1 entry |  |  |
| CSI-AperiodicTriggerState[1] SEQUENCE { |  | entry 1 |  |
| associatedReportConfigInfoList SEQUENCE (SIZE(1..maxNrofReportConfigPerAperiodicTrigger)) OF CSI-AssociatedReportConfigInfo { | 1 entry |  |  |
| CSI-AssociatedReportConfigInfo[1] SEQUENCE { |  | entry 1 |  |
| reportConfigId | CSI-ReportConfigId |  |  |
| resourcesForChannel CHOICE { |  |  |  |
| nzp-CSI-RS SEQUENCE { |  |  |  |
| resourceSet | 8 |  | FR1 |
|  | 16 |  | FR2 |
| qcl-info SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF TCI-StateId { | 1 entry |  |  |
| TCI-StateId[1] | TCI-StateId | entry 1 |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| csi-IM-ResourcesforInteference | 8 |  | FR1 |
|  | 16 |  | FR2 |
| nzp-CSI-RS-ResourcesforInterference | 8 |  | FR1 |
|  | 16 |  | FR2 |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– CSI-FrequencyOccupation*

Table 4.6.3-33: *CSI-FrequencyOccupation*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-FrequencyOccupation ::= SEQUENCE { |  |  |  |
| startingRB | 0 |  |  |
| nrofRBs | 160 |  | FR1 AND BW60 |
|  | 216 |  | FR1 AND BW80 |
|  | 108 |  | FR1 AND BW40 |
|  | 52 |  | FR1 AND BW10 |
|  | 276 |  | FR1 AND BW100 |
|  | 64 |  | FR2 AND BW100 |
|  | 52 |  | TRS |
|  | 40 |  | TRS AND ((FR1 AND BW15 AND SCS30) OR (FR1 AND BW30AND SCS60)) |
|  | 32 |  | TRS AND ((FR1 AND BW25 AND SCS60) OR (FR2 AND BW50 AND SCS120)) |
|  | 28 |  | TRS AND FR1 AND BW5 AND SCS15 |
|  | 24 |  | TRS AND ((FR1 AND BW5 AND SCS30) OR (FR1 AND BW10 AND SCS30) OR (FR1 AND BW10 AND SCS60) OR (FR1 AND BW15 AND SCS60) OR (FR1 AND BW20 AND SCS60)) |
|  | 64 |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| TRS | Tracking-Reference Signal |

#### *– CSI-IM-Resource*

Table 4.6.3-34: *CSI-IM-Resource*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-IM-Resource ::= SEQUENCE { |  |  |  |
| csi-IM-ResourceId | CSI-IM-ResourceId |  |  |
| csi-IM-ResourceElementPattern CHOICE { |  |  |  |
| pattern1 SEQUENCE { |  |  |  |
| subcarrierLocation-p1 | s4 |  |  |
| symbolLocation-p1 | 3 |  | FR1 |
|  | 4 |  | FR2 |
| } |  |  |  |
| } |  |  |  |
| freqBand | CSI-FrequencyOccupation |  |  |
| periodicityAndOffset | Not present |  |  |
| } |  |  |  |

#### *– CSI-IM-ResourceId*

Table 4.6.3-35: *CSI-IM-ResourceId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-IM-ResourceId | 7 |  | FR1 |
|  | 31 |  | FR2 |

#### *– CSI-IM-ResourceSet*

Table 4.6.3-36: *CSI-IM-ResourceSet*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-IM-ResourceSet ::= SEQUENCE { |  |  |  |
| csi-IM-ResourceSetId | CSI-IM-ResourceSetId |  |  |
| csi-IM-Resources SEQUENCE (SIZE(1..maxNrofCSI-IM-ResourcesPerSet)) OF CSI-IM-ResourceId { | 1 entry |  |  |
| CSI-IM-ResourceId[1] | CSI-IM-ResourceId | entry 1 |  |
| } |  |  |  |
| } |  |  |  |

#### *– CSI-IM-ResourceSetId*

Table 4.6.3-37: *CSI-IM-ResourceSetId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-IM-ResourceSetId | 0 |  |  |

#### *– CSI-MeasConfig*

Table 4.6.3-38: *CSI-MeasConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-MeasConfig::= SEQUENCE { |  |  |  |
| nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource { | 1 entry |  |  |
| NZP-CSI-RS-Resource[1] | NZP-CSI-RS-Resource | entry 1 |  |
| } |  |  |  |
| nzp-CSI-RS-ResourceToReleaseList | Not present |  |  |
| nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSetId { | 1 entry |  |  |
| NZP-CSI-RS-ResourceSet[1] | NZP-CSI-RS-ResourceSet | entry 1 |  |
| } |  |  |  |
| nzp-CSI-RS-ResourceSetToReleaseList | Not present |  |  |
| csi-IM-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-Resources)) OF CSI-IM-Resource { | 1 entry |  |  |
| CSI-IM-Resource[1] | CSI-IM-Resource | entry 1 |  |
| } |  |  |  |
| csi-IM-ResourceToReleaseList | Not present |  |  |
| csi-IM-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourceSets)) OF CSI-SSB-ResourceSet { | 1 entry |  |  |
| CSI-IM-ResourceSet[1] | CSI-IM-ResourceSet | entry 1 |  |
| } |  |  |  |
| csi-IM-ResourceSetToReleaseList | Not present |  |  |
| csi-SSB-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourceSets)) OF CSI-SSB-ResourceSet { | 1 entry |  |  |
| CSI-SSB-ResourceSet[1] | CSI-SSB-ResourceSet | entry 1 |  |
| } |  |  |  |
| csi-SSB-ResourceSetToReleaseList | Not present |  |  |
| csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig { | 1 entry |  |  |
| CSI-ResourceConfig[1] | CSI-ResourceConfig | entry 1 |  |
| } |  |  |  |
| csi-ResourceConfigToReleaseList | Not present |  |  |
| csi-ReportConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ReportConfigurations)) OF CSI-ReportConfig { | 1 entry |  |  |
| CSI-ReportConfig[1] | CSI-ReportConfig | entry 1 |  |
| } |  |  |  |
| csi-ReportConfigToReleaseList | Not present |  |  |
| reportTriggerSize | 0 |  |  |
| aperiodicTriggerStateList CHOICE { |  |  |  |
| setup | CSI-AperiodicTriggerStateList |  |  |
| } |  |  |  |
| semiPersistentOnPUSCH-TriggerStateList | Not present |  |  |
| reportTriggerSizeDCI-0-2-r16 | Not present |  |  |
| } |  |  |  |

#### *– CSI-ReportConfig*

Table 4.6.3-39: *CSI-ReportConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-ReportConfig ::= SEQUENCE { |  |  |  |
| reportConfigId | CSI-ReportConfigId |  |  |
| carrier | ServCellIndex |  |  |
| resourcesForChannelMeasurement | CSI-ResourceConfigId |  |  |
| csi-IM-ResourcesForInterference | CSI-ResourceConfigId |  |  |
| nzp-CSI-RS-ResourcesForInterference | CSI-ResourceConfigId |  |  |
| reportConfigType CHOICE { |  |  |  |
| aperiodic SEQUENCE { |  |  |  |
| reportSlotOffsetList SEQUENCE (SIZE (1..maxNrofUL-Allocations)) OF INTEGER { | 1 entry |  |  |
| INTEGER[1] | 14 | entry 1 |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| reportQuantity CHOICE { |  |  |  |
| cri-RI-PMI-CQI | NULL, |  | FR1 |
| cri-RI-LI-PMI-CQI | NULL |  | FR2 |
| } |  |  |  |
| reportFreqConfiguration SEQUENCE { |  |  |  |
| cqi-FormatIndicator | widebandCQI |  |  |
| pmi-FormatIndicator | widebandPMI |  |  |
| csi-ReportingBand | Not present |  |  |
| } |  |  |  |
| timeRestrictionForChannelMeasurements | notConfigured |  |  |
| timeRestrictionForInterferenceMeasurements | notConfigured |  |  |
| codebookConfig | CodebookConfig |  |  |
| dummy | Not present |  |  |
| groupBasedBeamReporting CHOICE { |  |  |  |
| disabled SEQUENCE { |  |  |  |
| nrofReportedRS | n1 |  |  |
| } |  |  |  |
| } |  |  |  |
| cqi-Table | table1 | 64QAM |  |
|  | table2 |  | 256QAM |
| subbandSize | value2 |  |  |
| non-PMI-PortIndication | Not present |  |  |
| semiPersistentOnPUSCH-v1530 | Not present |  |  |
| semiPersistentOnPUSCH-v1610 | Not present |  |  |
| aperiodic-v1610 | Not present |  |  |
| reportQuantity-r16 | Not present |  |  |
| codebookConfig-r16 | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| 256QAM | Test cases using 256QAM for PDSCH |

#### *– CSI-ReportConfigId*

Table 4.6.3-40: *CCSI-ReportConfigId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-ReportConfigID | 0 |  |  |

#### *– CSI-ResourceConfig*

Table 4.6.3-41: *CSI-ResourceConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-ResourceConfig ::= SEQUENCE { |  |  |  |
| csi-ResourceConfigId | CSI-ResourceConfigId |  |  |
| csi-RS-ResourceSetList CHOICE { |  |  |  |
| nzp-CSI-RS-SSB SEQUENCE { |  |  |  |
| nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId { | 2 entries |  |  |
| NZP-CSI-RS-ResourceSetId[1] | 0 | entry 1 |  |
| NZP-CSI-RS-ResourceSetId[2] | 1 | entry 2 |  |
| } |  |  |  |
| csi-SSB-ResourceSetList | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| bwp-Id | BWP-Id |  |  |
| resourceType | periodic |  |  |
| } |  |  |  |

#### *– CSI-ResourceConfigId*

Table 4.6.3-42: *CSI-ResourceConfigId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-ResourceConfigId | 0 |  |  |

#### *– CSI-ResourcePeriodicityAndOffset*

Table 4.6.3-43: *CSI-ResourcePeriodicityAndOffset*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-ResourcePeriodicityAndOffset ::= CHOICE { |  |  |  |
| slots80 | 10 |  | FR1 |
| slots320 | 40 |  | FR2 |
| } |  |  |  |

#### *– CSI-RS-ResourceConfigMobility*

Table 4.6.3-44: *CSI-RS-ResourceConfigMobility*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-RS-ResourceConfigMobility ::= SEQUENCE { |  |  |  |
| subcarrierSpacing | SubcarrierSpacing |  |  |
| csi-RS-CellList-Mobility | FFS |  |  |
| } |  |  |  |

#### *– CSI-RS-ResourceMapping*

Table 4.6.3-45: *CSI-RS-ResourceMapping*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |  |  |  |
| frequencyDomainAllocation CHOICE { |  |  |  |
| row1 | 1000 |  | (FR1 AND TRS) OR (FR2 AND TRS) |
| row4 | 010 |  | FR2 |
| other | 011110 |  | FR1 |
| } |  |  |  |
| nrofPorts | p8 |  | FR1 |
|  | p4 |  | FR2 |
|  | p1 |  | (FR1 AND TRS) OR (FR2 AND TRS) |
| firstOFDMSymbolInTimeDomain | 3 |  | FR1 |
|  | 13 |  | FR2 |
|  | 4 |  | (FR1 AND TRS) OR (FR2 AND TRS) |
| firstOFDMSymbolInTimeDomain2 | Not present |  |  |
| cdm-Type | fd-CDM2 |  |  |
|  | noCDM |  | TRS |
| density CHOICE { |  |  |  |
| one | NULL |  |  |
| three | NULL |  | TRS |
| } |  |  |  |
| freqBand | CSI-FrequencyOccupation |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| TRS | Tracking-Reference Signal is configured. |

#### *– CSI-SemiPersistentOnPUSCH-TriggerStateList*

Table 4.6.3-46: *CSI-SemiPersistentOnPUSCH-TriggerStateList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-SemiPersistentOnPUSCH-TriggerStateList ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– CSI-SSB-ResourceSet*

Table 4.6.3-47: *CSI-SSB-ResourceSet*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-SSB-ResourceSet ::= SEQUENCE { |  |  |  |
| csi-SSB-ResourceSetId | CSI-SSB-ResourceSetId |  |  |
| csi-SSB-ResourceList SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourcePerSet)) OF SSB-Index { | 1 entry |  |  |
| SSB-Index[1] | SSB-Index | entry 1 |  |
| } |  |  |  |
| } |  |  |  |

#### *– CSI-SSB-ResourceSetId*

Table 4.6.3-48: *CSI-SSB-ResourceSetId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| CSI-SSB-ResourceSetId | 0 |  |  |

Table 4.6.3-48A:*Void*

#### *– DedicatedNAS-Message*

Table 4.6.3-49: *DedicatedNAS-Message*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| DedicatedNAS-Message | Set according to specific message content |  |  |

#### *– DL-PRS-ProcessingWindowPreConfig*

Table 4.6.3-49A: *DL-PRS-ProcessingWindowPreConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| DL-PRS-ProcessingWindowPreConfig-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– DMRS-BundlingPUCCH-Config*

Table 4.6.3-49B: *DMRS-BundlingPUCCH-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| DMRS-BundlingPUCCH-Config-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– DMRS-BundlingPUSCH-Config*

Table 4.6.3-49C: *DMRS-BundlingPUSCH-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| DMRS-BundlingPUSCH-Config-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– DMRS-DownlinkConfig*

Table 4.6.3-50: *DMRS-DownlinkConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| DMRS-DownlinkConfig ::= SEQUENCE { |  |  |  |
| dmrs-Type | Not present | DMRS type 1 |  |
| dmrs-AdditionalPosition | pos1 |  | FR1 |
|  | pos0 |  | FR2 |
| maxLength | Not present | len1 |  |
| scramblingID0 | Not present |  |  |
| scramblingID1 | Not present |  |  |
| phaseTrackingRS | Not present |  | FR1 |
| phaseTrackingRS CHOICE { |  |  | FR2 |
| setup | PTRS-DownlinkConfig |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– DMRS-UplinkConfig*

Table 4.6.3-51: *DMRS-UplinkConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| DMRS-UplinkConfig ::= SEQUENCE { |  |  |  |
| dmrs-Type | Not present | DMRS type 1 |  |
| dmrs-AdditionalPosition | pos1 |  | FR1 |
|  | pos0 |  | FR2 |
| phaseTrackingRS | Not present |  |  |
| phaseTrackingRS CHOICE { |  |  | PTRS\_UL\_CONFIG |
| setup | PTRS-UplinkConfig |  |  |
| } |  |  |  |
| maxLength | Not present | len1 |  |
| transformPrecodingDisabled SEQUENCE { |  |  |  |
| scramblingID0 | Not present |  |  |
| scramblingID1 | Not present |  |  |
| } |  |  |  |
| transformPrecodingEnabled | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| PTRS\_UL\_CONFIG | When PTRS Uplink is configured |

#### *– DownlinkConfigCommon*

Table 4.6.3-52: *DownlinkConfigCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| **Information Element** | **Value/remark** | **Comment** | **Condition** |
| DownlinkConfigCommon ::= SEQUENCE { |  |  |  |
| frequencyInfoDL | FrequencyInfoDL |  |  |
| initialDownlinkBWP | BWP-DownlinkCommon |  |  |
|  | BWP-DownlinkCommon with condition SCell\_add |  | SCell\_Add |
| } |  |  |  |

#### *– DownlinkConfigCommonSIB*

Table 4.6.3-53: *DownlinkConfigCommonSIB*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| DownlinkConfigCommonSIB ::= SEQUENCE { |  |  |  |
| frequencyInfoDL | FrequencyInfoDL-SIB |  |  |
| initialDownlinkBWP | BWP-DownlinkCommon with condition InitialBWP\_SIB |  |  |
| bcch-Config SEQUENCE { |  |  |  |
| modificationPeriodCoeff | n4 |  |  |
| } |  |  |  |
| pcch-Config SEQUENCE { |  |  |  |
| defaultPagingCycle | rf128 |  |  |
| nAndPagingFrameOffset CHOICE { |  |  |  |
| halfT | 0 |  |  |
| } |  |  |  |
| ns | one |  |  |
| firstPDCCH-MonitoringOccasionOfPO | Not present |  |  |
| nrofPDCCH-MonitoringOccasionPerSSB-InPO-r16 | Not present |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– DownlinkPreemption*

Table 4.6.3-54: *DownlinkPreemption*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| DownlinkPreemption ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– DRB-Identity*

Table 4.6.3-55: *DRB-Identity*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| DRB-Identity | n |  | DRBn |

|  |  |
| --- | --- |
| Condition | Explanation |
| DRBn | DRB-Identity n |

#### *– DRX-Config*

Table 4.6.3-56: *DRX-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| DRX-Config ::= SEQUENCE { |  |  |  |
| drx-onDurationTimer CHOICE { |  |  |  |
| milliSeconds | ms6 |  |  |
| } |  |  |  |
| drx-InactivityTimer | ms1280 |  |  |
| drx-HARQ-RTT-TimerDL | 56 |  |  |
| drx-HARQ-RTT-TimerUL | 56 |  |  |
| drx-RetransmissionTimerDL | sl16 |  | FR1 |
|  | sl64 |  | FR2 |
| drx-RetransmissionTimerUL | sl16 |  | FR1 |
|  | sl64 |  | FR2 |
| drx-LongCycleStartOffset CHOICE { |  |  |  |
| ms10240 | 0 |  |  |
| } |  |  |  |
| shortDRX | not present |  |  |
| drx-SlotOffset | 0 |  |  |
| } |  |  |  |

#### *– DRX-ConfigSecondaryGroup*

Table 4.6.3-56A: *DRX-ConfigSecondaryGroup*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| DRX-ConfigSecondaryGroup ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– DRX-ConfigSL*

Table 4.6.3-56B: *DRX-ConfigSL*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RX-ConfigSL-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– EphemerisInfo*

Table 4.6.3-56C: *EphemerisInfo*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| EphemerisInfo-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– FeatureCombination*

Table 4.6.3-56D: *FeatureCombination*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| FeatureCombination-r17 ::= SEQUENCE { |  |  |  |
| redCap-r17 | Not present |  |  |
| smallData-r17 | Not present |  |  |
| nsag-r17 SEQUENCE (SIZE (1..maxSliceInfo-r17)) OF NSAG-ID-r17{ | n entries | n is the number of NSAG values associated with the preambles indicated in FeatureCombinationPreambles | Slice\_RACH |
| NSAG-ID-r17[k, k=1..n] | Set to the corresponding NSAG value used in the test case | entry [k, k=1..n] |  |
| } |  |  |  |
| msg3-Repetitions-r17 | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Slice\_RACH | Slice specific RACH configuration |

#### *– FeatureCombinationPreambles*

Table 4.6.3-56E: *FeatureCombinationPreambles*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| FeatureCombinationPreambles-r17 ::= SEQUENCE { |  |  |  |
| featureCombination-r17 | FeatureCombination-r17 |  |  |
| startPreambleForThisPartition-r17 | FFS |  |  |
| numberOfPreamblesPerSSB-ForThisPartition-r17 | FFS |  |  |
| ssb-SharedRO-MaskIndex-r17 | Not present |  |  |
| groupBconfigured-r17 | Not present |  |  |
| separateMsgA-PUSCH-Config-r17 | Not present |  |  |
| msgA-RSRP-Threshold-r17 | RSRP-Range |  |  |
| rsrp-ThresholdSSB-r17 | RSRP-Range |  |  |
| deltaPreamble-r17 | Not present |  |  |
| } |  |  |  |

#### *– FilterCoefficient*

Table 4.6.3-57: *FilterCoefficient*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| FilterCoefficient | fc4 |  |  |

#### *– FreqBandIndicatorNR*

Table 4.6.3-58: *FreqBandIndicatorNR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| FreqBandIndicatorNR | Operating band of the frequency as specified in Table 4.4.2-1 |  |  |
| Secondary band under test |  | CA-InterBand, NR-DC-SecondaryBand |

|  |  |
| --- | --- |
| Condition | Explanation |
| CA-InterBand | Used in CA interBand test cases |
| NR-DC-SecondaryBand | Used in NR-DC test cases |

#### *– FreqPriorityListNRSlicing*

Table 4.6.3-58A: *FreqPriorityListNRSlicing*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| FreqPriorityListNRSlicing-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– FrequencyInfoDL*

Table 4.6.3-59: *FrequencyInfoDL*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| FrequencyInfoDL::= SEQUENCE { |  |  |  |
| absoluteFrequencySSB | ARFCN-ValueNR with condition DL\_SSB |  |  |
| frequencyBandList | MultiFrequencyBandListNR |  |  |
| absoluteFrequencyPointA | ARFCN-ValueNR with condition DL\_PointA |  |  |
| scs-SpecificCarrierList SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier { | 1 entry |  |  |
| SCS-SpecificCarrier[1] | SCS-SpecificCarrier with condition DL\_PointA | entry 1 |  |
| } |  |  |  |
| } |  |  |  |

#### *– FrequencyInfoDL-SIB*

Table 4.6.3-60: *FrequencyInfoDL-SIB*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| FrequencyInfoDL-SIB ::= SEQUENCE { |  |  |  |
| frequencyBandList | MultiFrequencyBandListNR-SIB |  |  |
| offsetToPointA | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. |  |  |
| scs-SpecificCarrierList SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier { | 1 entry |  |  |
| SCS-SpecificCarrier[1] | SCS-SpecificCarrier with condition DL\_PointA | entry 1 |  |
| } |  |  |  |
| } |  |  |  |

#### *– FrequencyInfoUL*

Table 4.6.3-61: *FrequencyInfoUL*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| FrequencyInfoUL::= SEQUENCE { |  |  |  |
| frequencyBandList | MultiFrequencyBandListNR |  | FDD |
|  | Not present |  | TDD |
| absoluteFrequencyPointA | ARFCN-ValueNR with condition UL\_PointA |  | FDD |
|  | Not present |  | TDD |
| scs-SpecificCarriers SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier { | 1 entry |  |  |
| SCS-SpecificCarrier1 | SCS-SpecificCarrier with condition UL\_PointA | entry 1 |  |
| } |  |  |  |
| additionalSpectrumEmission | AdditionalSpectrumEmission |  |  |
| p-Max | P-Max |  |  |
| frequencyShift7p5khz | Not present |  |  |
|  | true |  | DSS |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| DSS | Dynamic Spectrum Sharing |

#### *– FrequencyInfoUL-SIB*

Table 4.6.3-62: *FrequencyInfoUL-SIB*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| FrequencyInfoUL-SIB ::= SEQUENCE { |  |  |  |
| frequencyBandList | MultiFrequencyBandListNR-SIB |  | FDD |
|  | Not present |  | TDD |
| absoluteFrequencyPointA | ARFCN-ValueNR with condition UL\_PointA |  | FDD |
|  | Not present |  | TDD |
| scs-SpecificCarrierList SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier { | 1 entry |  |  |
| SCS-SpecificCarrier[1] | SCS-SpecificCarrier with condition UL\_PointA | entry 1 |  |
| } |  |  |  |
| p-Max | P-Max |  |  |
| frequencyShift7p5khz | Not present |  |  |
|  | true |  | DSS |
| } |  |  |  |

#### *– GapPriority*

Table 4.6.3-62AA: *GapPriority*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| GapPriority-r17 | FFS |  |  |

#### *– HighSpeedConfig*

Table 4.6.3-62A: *HighSpeedConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| HighSpeedConfig-r16 ::= SEQUENCE { |  |  |  |
| highSpeedMeasFlag-r16 | Not present |  |  |
| highSpeedDemodFlag-r16 | Not present |  |  |
| } |  |  |  |

#### *– Hysteresis*

Table 4.6.3-63: *Hysteresis*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| Hysteresis | 4 |  |  |

#### *– HysteresisLocation*

Table 4.6.3-63AA: *HysteresisLocation*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| HysteresisLocation-r17 | FFS |  |  |

#### *– InvalidSymbolPattern*

Table 4.6.3-63A: *InvalidSymbolPattern*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| InvalidSymbolPattern-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– I-RNTI-Value*

Table 4.6.3-64: *I-RNTI-Value*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| I-RNTI-Value | SS arbitrarily selects a value between ’00 0000 0001’H and ‘FF FFFF FFFF’H. | BIT STRING (SIZE(40)) |  |

#### *– LBT-FailureRecoveryConfig*

Table 4.6.3-64A: *LBT-FailureRecoveryConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| LBT-FailureRecoveryConfig-r16 ::= SEQUENCE { |  |  |  |
| lbt-FailureInstanceMaxCount-r16 | n8 |  |  |
| lbt-FailureDetectionTimer-r16 | ms20 |  |  |
| } |  |  |  |

#### *– LocationInfo*

Table 4.6.3-64B: *LocationInfo*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| LocationInfo-r16 ::= SEQUENCE { |  |  |  |
| commonLocationInfo-r16 | CommonLocationInfo-r16 |  | MDT\_LocationInfo |
| bt-LocationInfo-r16 | LogMeasResultListBT-r16 |  | MDT\_BT |
| wlan-LocationInfo-r16 | LogMeasResultListWLAN-r16 |  | MDT\_WLAN |
| sensor-LocationInfo-r16 | Sensor-LocationInfo-r16 |  | MDT\_Sensor |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| MDT\_LocationInfo | Used for CommonLocationInfo included in MDT (Minimized Driving Test) |
| MDT\_BT | Used for Bluetooth measurement in MDT (Minimized Driving Test) services |
| MDT\_WLAN | Used for WLAN measurement in MDT (Minimized Driving Test) services |
| MDT\_Sensor | Used for Sensor measurement in MDT (Minimized Driving Test) services |

#### *– LocationMeasurementInfo*

Table 4.6.3-65: *LocationMeasurementInfo*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| LocationMeasurementInfo ::= CHOICE { |  |  |  |
| eutra-RSTD SEQUENCE (SIZE (1..maxInterRAT-RSTD-Freq)) OF EUTRA-RSTD-Info { | 1 entry |  |  |
| EUTRA-RSTD-Info[1] SEQUENCE { |  | entry 1 |  |
| carrierFreq | ARFCN-ValueEUTRA |  |  |
| measPRS-Offset | FFS |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– LoggedMeasurementConfiguration*

Table 4.6.3-65A: *LoggedMeasurementConfiguration-v1700-IEs*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| LoggedMeasurementConfiguration-v1700-IEs::= SEQUENCE { | |  |  |  |
| sigLoggedMeasType-r17 | | Not present |  |  |
|  | | true |  | SigLogMDT |
| earlyMeasIndication-r17 | | Not present |  |  |
|  | | true |  | EarlyMeas |
| areaConfiguration-v1700 | | Not present |  |  |
| nonCriticalExtension | | Not present |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SigLogMDT | Signalling based logged measurements |
| EarlyMeas | Log measurements on early measurement |

#### *– LogicalChannelConfig*

Table 4.6.3-66: *LogicalChannelConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| LogicalChannelConfig ::= SEQUENCE { |  |  |  |
| ul-SpecificParameters SEQUENCE { |  |  |  |
| priority | 1 |  |  |
|  | 3 |  | SRB2 |
| prioritisedBitRate | infinity |  |  |
| bucketSizeDuration | ms50 |  |  |
| allowedServingCells | Not present |  |  |
| allowedSCS-List | Not present |  |  |
| maxPUSCH-Duration | Not present |  |  |
| configuredGrantType1Allowed | Not present |  |  |
| logicalChannelGroup | 1 |  | HI |
|  | 2 |  | LO |
|  | 0 |  | SRB1, SRB2, SRB3 |
| schedulingRequestID | SchedulingRequestId |  |  |
| logicalChannelSR-Mask | false |  |  |
| logicalChannelSR-DelayTimerApplied | false |  |  |
| bitRateQueryProhibitTimer | Not present |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| HI | Used for DRBs with high logical channel priority |
| LO | Used for DRBs with low logical channel priority |
| SRB1 | Establishment of SRB1 |
| SRB2 | Establishment of SRB2 |
| SRB3 | Establishment of SRB3 |

#### *– LogicalChannelIdentity*

Table 4.6.3-67: *LogicalChannelIdentity*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| LogicalChannelIdentity | 1 |  | SRB1 |
| LogicalChannelIdentity | 2 |  | SRB2 |
| LogicalChannelIdentity | 3 |  | SRB3 |
| LogicalChannelIdentity | n+3 |  | DRBn |

|  |  |
| --- | --- |
| Condition | Explanation |
| SRB1 | Establishment of SRB1 |
| SRB2 | Establishment of SRB2 |
| SRB3 | Establishment of SRB3 |
| DRBn | Establishment of DRBn; n=1..29 |

#### *– MAC-CellGroupConfig*

Table 4.6.3-68: *MAC-CellGroupConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MAC-CellGroupConfig ::= SEQUENCE { |  |  |  |
| drx-Config | Not present |  |  |
| drx-Config CHOICE { |  |  | DRX |
| setup | DRX-Config |  |  |
| } |  |  |  |
| schedulingRequestConfig | SchedulingRequest-Config |  |  |
| bsr-Config | BSR-Config |  |  |
| tag-Config | TAG-Config |  |  |
| phr-Config CHOICE { |  |  |  |
| setup | PHR-Config |  |  |
| } |  |  |  |
| skipUplinkTxDynamic | false |  |  |
| csi-Mask | Not present |  |  |
| dataInactivityTimer | Not present |  |  |
| usePreBSR-r16 | Not present |  |  |
| schedulingRequestID-LBT-SCell-r16 | Not present |  |  |
| lch-BasedPrioritization-r16 | Not present |  |  |
| schedulingRequestID-BFR-SCell-r16 | Not present |  |  |
| drx-ConfigSecondaryGroup-r16 | Not present |  |  |
| enhancedSkipUplinkTxDynamic-r16 | Not present |  |  |
| enhancedSkipUplinkTxConfigured-r16 | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| DRX | This condition applies when DRX is configured |

#### *– MeasConfig*

Table 4.6.3-69: *MeasConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasConfig ::= SEQUENCE { |  |  |  |
| measObjectToRemoveList | Not present |  |  |
| measObjectToAddModList | MeasObjectToAddModList |  |  |
| reportConfigToRemoveList | Not present |  |  |
| reportConfigToAddModList | ReportConfigToAddModList |  |  |
| measIdToRemoveList | Not present |  |  |
| measIdToAddModList | MeasIdToAddModList |  |  |
| s-MeasureConfig | Not present |  |  |
| quantityConfig | QuantityConfig |  |  |
| measGapConfig | Not present |  |  |
| measGapSharingConfig | Not present |  |  |
| } |  |  |  |

#### *– MeasGapConfig*

Table 4.6.3-70: *MeasGapConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasGapConfig ::= SEQUENCE { |  |  |  |
| gapFR2 | Not present |  |  |
| gapFR2 CHOICE { |  |  | GAP\_FR2 |
| setup SEQUENCE { |  |  |  |
| gapOffset | 159 |  |  |
| mgl | ms3dot5 |  |  |
| mgrp | ms160 |  |  |
| mgta | ms0 |  |  |
| } |  |  |  |
| } |  |  |  |
| gapFR1 | Not present |  |  |
| gapFR1 CHOICE { |  |  | GAP\_FR1 |
| setup SEQUENCE { |  |  |  |
| gapOffset | 39 |  |  |
|  | 9 |  | SIG AND INTER-FREQ\_ODD |
| mgl | ms6 |  |  |
| mgrp | ms40 |  |  |
| mgta | ms0 |  |  |
| } |  |  |  |
| gapUE | Not present |  | GAP\_FR1 OR GAP\_FR2 |
| gapUE CHOICE { |  |  |  |
| setup SEQUENCE { |  |  |  |
| gapOffset | 39 |  |  |
|  | 9 |  | SIG AND INTER-FREQ\_ODD |
| mgl | ms6 |  |  |
| mgrp | ms40 |  |  |
| mgta | ms0 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| GAP\_FR1 | Configuration for FR1 per-FR gaps |
| GAP\_FR2 | Configuration for FR2 per-FR gaps |
| INTER-FREQ\_ODD | When the SFNoffset of inter frequency neighbour cell is odd number. SFNoffset is defined in TS 38.523-3 [23]Table 7.1.5.2-1 |

#### *– MeasGapId*

Table 4.6.3-70A: *MeasGapId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasGapId-r17 | FFS |  |  |

#### *– MeasGapSharingConfig*

Table 4.6.3-71: *MeasGapSharingConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasGapSharingConfig ::= SEQUENCE { |  |  |  |
| gapSharingFR2 | Not present |  |  |
| } |  |  |  |

#### *– MeasId*

Table 4.6.3-72: *MeasId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasId | 1 |  |  |

#### *– MeasIdleConfig*

Table 4.6.3-72A: *MeasIdleConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasIdleConfigSIB-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– MeasIdToAddModList*

Table 4.6.3-73: *MeasIdToAddModList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasIdToAddModList::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF MeasIdToAddMod { | 1 entry |  |  |
| MeasIdToAddMod[1] SEQUENCE { |  | entry 1 |  |
| measId | MeasId |  |  |
| measObjectId | MeasObjectId |  |  |
| reportConfigId | ReportConfigId |  |  |
| } |  |  |  |

#### *– MeasObjectCLI*

Table 4.6.3-73A: *MeasObjectCLI*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasObjectCLI-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– MeasObjectEUTRA*

Table 4.6.3-74: *MeasObjectEUTRA*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasObjectEUTRA ::= SEQUENCE { |  |  |  |
| carrierFreq | Downlink EARFCN for Freq |  |  |
| allowedmeasBandwidth | Set according to TS 36.508 [2] Table 4.4.3.4-1 for E-UTRA cell | row ‘measurement Bandwidth’ |  |
| cellsToRemoveListEUTRAN | Not present |  |  |
| cellsToAddModListEUTRAN | Not present |  |  |
| blackCellsToRemoveListEUTRAN | Not present |  |  |
| blackCellsToAddModListEUTRAN | Not present |  |  |
| eutra-PresenceAntennaPort1 | false |  |  |
|  | true | at least two cell-specific antenna ports are used in all neighbouring cells | All neighCells with port1 |
| eutra-Q-OffsetRange | Not present |  |  |
| widebandRSRQ-Meas | false |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| All neighCells with port1 | Used for all neighbouring cells with at least two cell-specific antenna ports |

#### *– MeasObjectId*

Table 4.6.3-75: *MeasObjectId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasObjectId | 1 |  |  |

#### *– MeasObjectNR*

Table 4.6.3-76: *MeasObjectNR*(Thres)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasObjectNR ::= SEQUENCE { |  |  |  |
| ssbFrequency | ARFCN-ValueNR with condition DL\_SSB |  |  |
| ssbSubcarrierSpacing | SubcarrierSpacing |  |  |
| smtc1 | SSB-MTC |  |  |
| smtc2 | Not present |  |  |
| refFreqCSI-RS | Not present |  |  |
| referenceSignalConfig SEQUENCE { |  |  |  |
| ssb-ConfigMobility SEQUENCE { |  |  |  |
| ssb-ToMeasure CHOICE { |  |  |  |
| setup | SSB-ToMeasure |  |  |
| } |  |  |  |
| deriveSSB-IndexFromCell | false |  | FDD |
|  | true |  | TDD |
| ssb-PositionQCL-Common-r16 | Not present |  |  |
|  | SSB-PositionQCL-Relation |  | SharedSpectrum |
| ssb-PositionQCL-CellsToAddModList-r16 | Not present |  |  |
| ssb-PositionQCL-CellsToRemoveList-r16 | Not present |  |  |
| ss-RSSI-Measurement | Not present |  |  |
| } |  |  |  |
| csi-rs-ResourceConfigMobility | Not present |  |  |
| } |  |  |  |
| absThreshSS-BlocksConsolidation SEQUENCE { |  |  |  |
| thresholdRSRP | Thres | Thres is an entry value into a mapping table in TS 38.133 [13]. |  |
| thresholdRSRQ | Not present |  |  |
| thresholdSINR | Not present |  |  |
| } |  |  |  |
| absThreshCSI-RS-Consolidation | Not present |  |  |
| nrofSS-BlocksToAverage | 2 |  |  |
| nrofCSI-RS-ResourcesToAverage | Not present |  |  |
| quantityConfigIndex | 1 |  |  |
| offsetMO SEQUENCE { |  |  |  |
| rsrpOffsetSSB | dB0 |  |  |
| rsrqOffsetSSB | dB0 |  |  |
| sinrOffsetSSB | dB0 |  |  |
| rsrpOffsetCSI-RS | dB0 |  |  |
| rsrqOffsetCSI-RS | dB0 |  |  |
| sinrOffsetCSI-RS | dB0 |  |  |
| } |  |  |  |
| cellsToRemoveList | Not present |  |  |
| cellsToAddModList | Not present |  |  |
| blackCellsToRemoveList | Not present |  |  |
| blackCellsToAddModList | Not present |  |  |
| whiteCellsToRemoveList | Not present |  |  |
| whiteCellsToAddModList | Not present |  |  |
| freqBandIndicatorNR | FreqBandIndicatorNR |  |  |
| rmtc-Config-r16 | Not present |  |  |
|  | RMTC-Config |  | SharedSpectrum |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SharedSpectrum | Operation with shared spectrum channel access |

#### *– MeasObjectNR-SL*

Table 4.6.3-76A: *MeasObjectNR-SL*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasObjectNR-SL-r16 ::= SEQUENCE { |  |  |  |
| tx-PoolMeasToRemoveList-r16 | Not present |  |  |
| tx-PoolMeasToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSL-PoolToMeasureNR-r16)) OF SL-ResourcePoolID-r16{ | 1 entry |  |  |
| SL-ResourcePoolID-r16[1] | 1 | entry 1 |  |
| } |  |  |  |
| } |  |  |  |

#### *– MeasObjectRxTxDiff*

Table 4.6.3-76B: *MeasObjectRxTxDiff*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasObjectRxTxDiff-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– MeasObjectToAddModList*

Table 4.6.3-77: *MeasObjectToAddModList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasObjectToAddModList::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF MeasObjectToAddMod { | 1 entry |  |  |
| MeasObjectToAddMod[1] SEQUENCE { |  | entry 1 |  |
| measObjectId | MeasObjectId |  |  |
| measObject CHOICE { |  |  |  |
| measObjectNR | MeasObjectNR |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| MeasObjectToAddModList::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF MeasObjectToAddMod { | 2 entries |  | InterRAT |
| MeasObjectToAddMod[1] SEQUENCE { |  | entry 1 |  |
| measObjectId | 1 |  |  |
| measObject CHOICE { |  |  |  |
| measObjectNR | MeasObjectNR |  |  |
| } |  |  |  |
| } |  |  |  |
| MeasObjectToAddMod[2] SEQUENCE { |  | entry 2 |  |
| measObjectId | 2 |  |  |
| measObject CHOICE { |  |  |  |
| measObjectEUTRA | MeasObjectEUTRA |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| InterRAT | Configuration with at least one NR PCell and one or more E-UTRA neighbour cell(s) |

#### *– MeasObjectUTRA-FDD*

Table 4.6.3-77A: *MeasObjectUTRA-FDD*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasObjectUTRA-FDD-r16 ::= SEQUENCE { |  |  |  |
| carrierFreq-r16 | ARFCN-ValueUTRA-FDD-r16 |  |  |
| utra-FDD-Q-OffsetRange-r16 | UTRA-FDD-Q-OffsetRange-r16 |  |  |
| cellsToRemoveList-r16 | Not present |  |  |
| cellsToAddModList-r16 | Not present |  |  |
| } |  |  |  |

#### *– MeasResultCellListSFTD-NR*

Table 4.6.3-78: *MeasResultCellListSFTD-NR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasResultCellListSFTD-NR ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– MeasResultCellListSFTD-EUTRA*

Table 4.6.3-78A: *MeasResultCellListSFTD-EUTRA*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasResultCellListSFTD-EUTRA ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– MeasResultForRSSI*

Table 4.6.3-78AA: *MeasResultForRSSI*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasResultForRSSI ::= SEQUENCE { |  |  |  |
| rssi-Result-r16 | FFS |  |  |
| channelOccupancy-r16 | FFS |  |  |
| } |  |  |  |

#### *– MeasResults*

Table 4.6.3-79: *MeasResults*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasResults ::= SEQUENCE { |  |  |  |
| measId | MeasId |  |  |
| measResultServingMOList | Not checked |  | SFTD\_NEIGHBOUR or SFTD\_PSCELL |
| measResultServingMOList SEQUENCE (SIZE (1.. maxNrofServingCells)) OF MeasResultServMO { | 1 entry |  |  |
| MeasResultServMO[1] SEQUENCE { |  | entry 1 |  |
| servCellId | ServCellIndex |  |  |
| measResultServingCell SEQUENCE { |  |  |  |
| physCellId | PhysCellId |  |  |
| measResult SEQUENCE { |  |  |  |
| cellResults SEQUENCE { |  |  |  |
| resultsSSB-Cell SEQUENCE { |  |  |  |
| rsrp | Not checked |  |  |
| rsrq | Not checked |  |  |
| sinr | Not checked |  |  |
| } |  |  |  |
| resultsCSI-RS-Cell | Not present |  |  |
| } |  |  |  |
| rsIndexResults | Not present |  |  |
| } |  |  |  |
| cgi-Info | Not present |  |  |
| } |  |  |  |
| measResultBestNeighCell | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| measResultNeighCells | Not present |  | A1, A2, SFTD\_NEIGHBOUR or SFTD\_PSCELL |
| measResultNeighCells CHOICE { |  |  |  |
| measResultListNR | Set according to specific message content |  | A3, A4, A5, A6 |
| measResultListEUTRA | Set according to specific message content |  | B1, B2 |
| measResultListUTRA-FDD-r16 | Set according to specific message content |  | B1\_UTRA, B2\_UTRA |
| } |  |  |  |
|  |  |  |  |
|  |  |  |
| measResultServFreqListEUTRA-SCG | Not present |  |  |
| measResultServFreqListNR-SCG | Not checked |  |  |
| measResultSFTD-EUTRA | Not present |  |  |
| measResultSFTD-NR | Not present |  |  |
| measResultSFTD-NR SEQUENCE { |  |  | SFTD\_PSCELL |
| physCellId | PhysCellId of PSCell |  |  |
| sfn-OffsetResult | Not checked |  |  |
| frameBoundaryOffsetResult | Not checked |  |  |
| rsrp-Result | Not checked |  |  |
| } |  |  |  |
| measResultCellListSFTD-NR | Not present |  |  |
| measResultCellListSFTD-NR SEQUENCE (SIZE (1..maxCellSFTD)) OF MeasResultCellSFTD-NR { | 1 entry |  | SFTD\_NEIGHBOUR |
| MeasResultCellSFTD-NR[1] SEQUENCE { |  | entry 1 |  |
| physCellId | PhysCellId |  |  |
| sfn-OffsetResult | Not checked |  |  |
| frameBoundaryOffsetResult | Not checked |  |  |
| rsrp-Result | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| measResultForRSSI-r16 | Not present |  |  |
|  | MeasResultForRSSI |  | SharedSpectrum |
| locationInfo-r16 | Not present |  |  |
| ul-PDCP-DelayValueResultList-r16 | Not present |  |  |
| measResultsSL-r16 | Not present |  |  |
| measResultCLI-r16 | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| A1 | If event trigger Id in corresponding Measurement Configuration was Event A1 |
| A2 | If event trigger Id in corresponding Measurement Configuration was Event A2 |
| A3 | If event trigger Id in corresponding Measurement Configuration was Event A3 |
| A4 | If event trigger Id in corresponding Measurement Configuration was Event A4 |
| A5 | If event trigger Id in corresponding Measurement Configuration was Event A5 |
| A6 | If event trigger Id in corresponding Measurement Configuration was Event A6 |
| B1 | If event trigger Id in corresponding Measurement Configuration was Event B1 |
| B2 | If event trigger Id in corresponding Measurement Configuration was Event B2 |
| B1\_UTRA | If event trigger Id in corresponding Measurement Configuration was Event B1-UTRA-FDD |
| B2\_UTRA | If event trigger Id in corresponding Measurement Configuration was Event B2-UTRA-FDD |
| SFTD\_NEIGHBOUR | Measurement reporting triggered by SFTD measurement on NR neighbour |
| SFTD\_PSCELL | Measurement reporting triggered by SFTD measurement on NR PSCell |
| SharedSpectrum | Operation with shared spectrum channel access |

#### *– MeasResult2EUTRA*

Table 4.6.3-79A: *MeasResult2EUTRA*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasResult2EUTRA ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– MeasResult2NR*

Table 4.6.3-79B: *MeasResult2NR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasResult2NR ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– MeasResultIdleEUTRA*

Table 4.6.3-79C: *MeasResultIdleEUTRA*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasResultIdleEUTRA-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– MeasResultIdleNR*

Table 4.6.3-79D: *MeasResultIdleNR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasResultIdleNR-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– MeasResultRxTxTimeDiff*

Table 4.6.3-79E: *MeasResultRxTxTimeDiff*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasResultRxTxTimeDiff-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– MeasResultSCG-Failure*

Table 4.6.3-80: *MeasResultSCG-Failure*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasResultSCG-Failure ::= SEQUENCE { |  | *measResultPerMOList*  for each *MeasOjectNR* for which a *measId* is configured (by the NR *RRCConfiguration message*) and measurement results are available include an entry |  |
| measResultPerMOList SEQUENCE (SIZE (1..maxFreq)) OF MeasResult2NR { | *n* entries of MeasResult2NR | MOList [1]  *n* denotes the number of non-serving frequencies being measured |  |
| MeasResult2NR[1] SEQUENCE { |  | entry 1 |  |
| ssbFrequency | ARFCN-ValueNR with condition DL\_SSB | the ARFCN  if there is a *measId* configured with the *MeasObjectNR* and a *reportConfig* which has *rsType* set to *ssb* |  |
| refFreqCSI-RS | INTEGER (0..3279165) | the ARFCN  if there is a *measId* configured with the *MeasObjectNR* and a *reportConfig* which has *rsType* set to *csi-rs* |  |
| measResultServingCell SEQUENCE { |  | if a serving cell is associated with the *MeasObjectNR* |  |
| physCellId | INTEGER (0..1007) | the *physCellId* configured for this serving cell |  |
| measResult SEQUENCE { |  |  |  |
| cellResults SEQUENCE { |  |  |  |
| resultsSSB-Cell SEQUENCE { |  |  |  |
| rsrp | as specified in Table 4.6.3-152 | Integer value for RSRP measurements |  |
| rsrq | as specified in Table 4.6.3-153 | Integer value for RSRQ measurements |  |
| sinr | as specified in Table 4.6.3-172 | Integer value for SINR measurements |  |
| } |  |  |  |
| resultsCSI-RS-Cell SEQUENCE { |  |  |  |
| rsrp | as specified in Table 4.6.3-152 | Integer value for RSRP measurements |  |
| rsrq | as specified in Table 4.6.3-153 | Integer value for RSRQ measurements |  |
| sinr | as specified in Table 4.6.3-172 | Integer value for SINR measurements |  |
| } |  |  |  |
| } |  |  |  |
| rsIndexResults SEQUENCE { |  |  |  |
| resultsSSB-Indexes SEQUENCE (SIZE (1..maxNrofSSBs)) OF ResultsPerSSB-Index { | *n* entires of ResultsPerSSB-Index | *ResultsPerSSB-IndexList* |  |
| ResultsPerSSB-Index[1] SEQUENCE { |  | entry 1 |  |
| ssb-Index | SSB-Index | an SS-Block within an SS-Burst |  |
| ssb-Results SEQUENCE { |  | *MeasQuantityResults* |  |
| rsrp | as specified in Table 4.6.3-152 | Integer value for RSRP measurements |  |
| rsrq | as specified in Table 4.6.3-153 | Integer value for RSRQ measurements |  |
| sinr | as specified in Table 4.6.3-172 | Integer value for SINR measurements |  |
| } |  |  |  |
| } |  |  |  |
|  |  | *ResultsPerSSB-Index* entry [x] if any |  |
| } |  |  |  |
| resultsCSI-RS-Indexes SEQUENCE (SIZE (1..maxNrofCSI-RS)) OF ResultsPerCSI-RS-Index { | *n* entires of ResultsPerCSI-RS-Index | *ResultsPerCSI-RS-IndexList* |  |
| ResultsPerCSI-RS-Index[1] SEQUENCE { |  | entry 1 |  |
| csi-RS-Index | INTEGER (0..maxNrofCSI-RS-ResourcesRRM-1) | CSI-RS resource index associated to the measurement information to be reported |  |
| csi-RS-Results SEQUENCE { |  | *MeasQuantityResults* |  |
| rsrp | as specified in Table 4.6.3-152 | Integer value for RSRP measurements |  |
| rsrq | as specified in Table 4.6.3-153 | Integer value for RSRQ measurements |  |
| sinr | as specified in Table 4.6.3-172 | Integer value for SINR measurements |  |
| } |  |  |  |
| } |  |  |  |
|  |  | *ResultsPerCSI-RS-Index* entry [x] if any |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| measResultNeighCellListNR SEQUENCE (SIZE (1..maxCellReport)) OF MeasResultNR { | *n* entires of MeasResultNR | include the best measured cells, ordered such that the best cell is listed first, and based on measurements collected up to the moment the UE detected the failure |  |
| MeasResultNR[1] SEQUENCE { |  | entry 1 |  |
| physCellId | INTEGER (0..1007) | the *physCellId* configured for the measured cell |  |
| measResult SEQUENCE { |  |  |  |
| cellResults SEQUENCE { |  |  |  |
| resultsSSB-Cell SEQUENCE { |  |  |  |
| rsrp | as specified in Table 4.6.3-152 | Integer value for RSRP measurements |  |
| rsrq | as specified in Table 4.6.3-153 | Integer value for RSRQ measurements |  |
| sinr | as specified in Table 4.6.3-172 | Integer value for SINR measurements |  |
| } |  |  |  |
| resultsCSI-RS-Cell SEQUENCE { |  |  |  |
| rsrp | as specified in Table 4.6.3-152 | Integer value for RSRP measurements |  |
| rsrq | as specified in Table 4.6.3-153 | Integer value for RSRQ measurements |  |
| sinr | as specified in Table 4.6.3-172 | Integer value for SINR measurements |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
|  |  | *MeasResultNR* entry [x] if any |  |
| } |  |  |  |
|  |  | *MeasResult2NR* entry [x] if any |  |
| } |  |  |  |
|  |  | MOList [x] if any |  |
| } |  |  |  |
| } |  |  |  |

#### *– MeasResultsSL*

Table 4.6.3-80A: *MeasResultsSL*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasResultsSL-r16 ::= SEQUENCE { |  |  |  |
| measResultsListSL-r16 CHOICE { |  |  |  |
| measResultNR-SL-r16 SEQUENCE { |  |  |  |
| measResultListCBR-NR-r16 SEQUENCE (SIZE (1.. maxNrofSL-PoolToMeasureNR-r16)) OF MeasResultCBR-NR-r16 { | 1 entry |  |  |
| MeasResultCBR-NR-r16[1] SEQUENCE { |  | entry 1 |  |
| sl-poolReportIdentity-r16 | 1 |  |  |
| sl-CBR-ResultsNR-r16 | (0..100) |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– MeasRSSI-ReportConfig*

Table 4.6.3-80AA: *MeasRSSI-ReportConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasRSSI-ReportConfig-r16 ::= SEQUENCE { |  |  |  |
| channelOccupancyThreshold-r16 | FFS |  |  |
| } |  |  |  |

#### *– MeasTriggerQuantityEUTRA*

Table 4.6.3-80B: *MeasTriggerQuantityEUTRA*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasTriggerQuantityEUTRA-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– MobilityStateParameters*

Table 4.6.3-81: *MobilityStateParameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MobilityStateParameters ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– MRB-Identity*

Table 4.6.3-81AA: *MRB-Identity*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MRB-Identity-r17 | FFS |  |  |

#### *– MsgA-ConfigCommon*

Table 4.6.3-81A: *MsgA-ConfigCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MsgA-ConfigCommonL-r16 ::= SEQUENCE { |  |  |  |
| rach-ConfigCommonTwoStepRA-r16 | RACH-ConfigCommonTwoStepRA |  |  |
| msgA-PUSCH-Config-r16 | MsgA-PUSCH-Config |  |  |
| } |  |  |  |

#### *– MsgA-PUSCH-Config*

Table 4.6.3-81B: *MsgA-PUSCH-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MsgA-PUSCH-Config-r16 ::= SEQUENCE { |  |  |  |
| MsgA-PUSCH-Resource-r16 SEQUENCE { |  |  |  |
| msgA-MCS-r16 | 1 |  |  |
| nrofSlotsMsgA-PUSCH-r16 | 1 |  |  |
| nrofMsgA-PO-PerSlot-r16 | one |  |  |
| msgA-PUSCH-TimeDomainOffset-r16 | 4 |  |  |
| msgA-PUSCH-TimeDomainAllocation-r16 | Not present |  |  |
| startSymbolAndLengthMsgA-PO-r16 | 32 |  |  |
| mappingTypeMsgA-PUSCH-r16 | typeA |  |  |
| guardPeriodMsgA-PUSCH-r16 | 0 |  |  |
| guardBandMsgA-PUSCH-r16 | 0 |  |  |
| frequencyStartMsgA-PUSCH-r16 | 1 |  |  |
| nrofPRBs-PerMsgA-PO-r16 | 1 |  |  |
| nrofMsgA-PO-FDM-r16 | one |  |  |
| msgA-IntraSlotFrequencyHopping-r16 | Not present |  |  |
| msgA-HoppingBits-r16 | Not present |  |  |
| MsgA-DMRS-Config-r16 SEQUENCE { |  |  |  |
| msgA-DMRS-AdditionalPosition-r16 | pos0 |  |  |
| msgA-MaxLength-r16 | Len2 |  |  |
| msgA-PUSCH-DMRS-CDM-Group-r16 | 0 |  |  |
| msgA-PUSCH-NrofPorts-r16 | 0 |  |  |
| msgA-ScramblingID0-r16 | Not present |  |  |
| msgA-ScramblingID1-r16 | Not present |  |  |
| } |  |  |  |
| nrofDMRS-Sequences-r16 | 1 |  |  |
| msgA-Alpha-r16 | alpha0 |  |  |
| interlaceIndexFirstPO-MsgA-PUSCH-r16 | 1 |  |  |
| nrofInterlacesPerMsgA-PO-r16 | 1 |  |  |
| } |  |  |  |
| msgA-PUSCH-ResourceGroupB-r16 | Not present |  |  |
| msgA-TransformPrecoder-r16 | enabled |  |  |
| msgA-DataScramblingIndex-r16 | Not present |  |  |
| msgA-DeltaPreamble-r16 | 1 |  |  |
| } |  |  |  |

#### *– MultiFrequencyBandListNR*

Table 4.6.3-82: *MultiFrequencyBandListNR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MultiFrequencyBandListNR ::= SEQUENCE (SIZE (1..maxNrofMultiBands)) OF FreqBandIndicatorNR { | 1 entry |  |  |
| FreqBandIndicatorNR[1] | FreqBandIndicatorNR | entry 1 |  |
| } |  |  |  |

#### *– MultiFrequencyBandListNR-SIB*

Table 4.6.3-82A: *MultiFrequencyBandListNR-SIB*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| **Information Element** | **Value/remark** | **Comment** | **Condition** |
| MultiFrequencyBandListNR-SIB ::= SEQUENCE (SIZE (1.. maxNrofMultiBands)) OF NR-MultiBandInfo { | 1 entry |  |  |
| NR-MultiBandInfo[1] SEQUENCE { |  | entry 1 |  |
| freqBandIndicatorNR | FreqBandIndicatorNR |  |  |
| nr-NS-PmaxList | NR-NS-PmaxList |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– MUSIM-GapConfig*

Table 4.6.3-82BA: *MUSIM-GapConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MUSIM-GapConfig-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– MUSIM-GapID*

Table 4.6.3-82BB: *MUSIM-GapID*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MUSIM-GapID-r17 | FFS |  |  |

#### *– MUSIM-GapInfo*

Table 4.6.3-82BC: *MUSIM-GapInfo*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| MUSIM-GapInfo-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– NeedForGapsConfigNR*

Table 4.6.3-82B: *NeedForGapsConfigNR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NeedForGapsConfigNR-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– NeedForGapsInfoNR*

Table 4.6.3-82C: *NeedForGapsInfoNR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NeedForGapsInfoNR-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– NeedForGapNCSG-ConfigEUTRA*

Table 4.6.3-82D: *NeedForGapNCSG-ConfigEUTRA*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NeedForGapNCSG-ConfigEUTRA-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– NeedForGapNCSG-ConfigNR*

Table 4.6.3-82E: *NeedForGapNCSG-ConfigNR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NeedForGapNCSG-ConfigNR-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– NeedForGapNCSG-InfoEUTRA*

Table 4.6.3-82F: *NeedForGapNCSG-InfoEUTRA*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NeedForGapNCSG-InfoEUTRA-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– NeedForGapNCSG-InfoNR*

Table 4.6.3-82G: *NeedForGapNCSG-InfoNR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NeedForGapNCSG-InfoNR-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– NextHopChainingCount*

Table 4.6.3-83: *NextHopChainingCount*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NextHopChainingCount | 0 |  |  |

#### *– NG-5G-S-TMSI*

Table 4.6.3-84: *NG-5G-S-TMSI*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NG-5G-S-TMSI | Set to the value of the NG-5G-S-TMSI of the UE | BIT STRING (SIZE(40)) |  |

#### *– NonCellDefiningSSB*

Table 4.6.3-84AAA: *NonCellDefiningSSB*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NonCellDefiningSSB-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– NPN-Identity*

Table 4.6.3-84AA: *NPN-Identity*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NPN-Identity-r16 ::= CHOICE { |  |  |  |
| pni-npn-r16 SEQUENCE { |  |  | CAG |
| plmn-Identity-r16 | PLMN-Identity |  |  |
| cag-IdentityList-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF CAG-IdentityInfo-r16 { | 1 entry |  |  |
| cag-Identity-r16[1] | 1 | cag-Identity is coded as a 32 bit BITSTRING |  |
| manualCAGselectionAllowed-r16 | true |  |  |
| } |  |  |  |
| snpn-r16 SEQUENCE { |  |  | SNPN |
| plmn-Identity-r16 | PLMN-Identity |  |  |
| nid-List-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF NID-r16{ | 1 entry |  |  |
| NID-r16[1] | See table 4.4.2-4 | NID is coded as a BITSTRING based on TS 38.508-1 Table 4.4.2-4 |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| CAG | PNI-NPN |
| SNPN | Standalone NPN cell |

#### *– NPN-IdentityInfoList*

Table 4.6.3-84AB: *NPN-IdentityInfoList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NPN-IdentityInfoList-r16 ::= SEQUENCE (SIZE (1..maxNPN-r16)) OF NPN-IdentityInfo-r16 { | 1 entry |  |  |
| NPN-IdentityInfo-r16[1] SEQUENCE { |  |  |  |
| npn-IdentityList-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF NPN-Identity-r16 { | 1 entry |  |  |
| NPN-Identity-r16[1] | NPN-Identity with condition CAG |  | CAG |
|  | NPN-Identity with condition SNPN |  | SNPN |
| } |  |  |  |
| trackingAreaCode-r16 | TrackingAreaCode |  |  |
| ranac-r16 | RAN-AreaCode |  |  |
| cellIdentity-r16 | CellIdentity |  |  |
| cellReservedForOperatorUse-r16 | notReserved |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| CAG | PNI-NPN |
| SNPN | Standalone NPN cell |

#### *– NR-DL-PRS-PDC-Info*

Table 4.6.3-84AC: *NR-DL-PRS-PDC-Info*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NR-DL-PRS-PDC-Info-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– NR-NS-PmaxList*

Table 4.6.3-84A: *NR-NS-PmaxList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NR-NS-PmaxList ::= SEQUENCE (SIZE (1.. maxNrofMultiBands)) OF NR-NS-PmaxValue { | 1 entry |  |  |
| NR-NS-PmaxValue[1] SEQUENCE { |  | entry 1 |  |
| additionalPmax | Not present |  |  |
| additionalSpectrumEmission | AdditionalSpectrumEmission |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– NSAG-IdentityInfo*

Table 4.6.3-84B: *NSAG-IdentityInfo*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NSAG-IdentityInfo-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– NTN-Config*

Table 4.6.3-84C: *NTN-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NTN-Config-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– NZP-CSI-RS-Resource*

Table 4.6.3-85: *NZP-CSI-RS-Resource*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NZP-CSI-RS-Resource ::= SEQUENCE { |  |  |  |
| nzp-CSI-RS-ResourceId | NZP-CSI-RS-ResourceId |  |  |
| resourceMapping | CSI-RS-ResourceMapping |  |  |
| powerControlOffset | -3 |  |  |
| powerControlOffsetSS | Not present |  |  |
| scramblingID | ScramblingId |  |  |
| periodicityAndOffset | CSI-ResourcePeriodicityAndOffset |  |  |
| qcl-InfoPeriodicCSI-RS | TCI-StateId |  |  |
| } |  |  |  |

#### *– NZP-CSI-RS-ResourceId*

Table 4.6.3-86: *NZP-CSI-RS-ResourceId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NZP-CSI-RS-ResourceId | 0 |  |  |

#### *– NZP-CSI-RS-ResourceSet*

Table 4.6.3-87: *NZP-CSI-RS-ResourceSet*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NZP-CSI-RS-ResourceSet ::= SEQUENCE { |  |  |  |
| nzp-CSI-ResourceSetId | NZP-CSI-RS-ResourceSetId |  |  |
| nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId { | 1 entry |  |  |
| NZP-CSI-RS-ResourceId[1] | NZP-CSI-RS-ResourceId | entry 1 |  |
| } |  |  |  |
| repetition | off |  |  |
|  | Not present |  | TRS |
| aperiodicTriggeringOffset | Not present |  |  |
| trs-Info | Not present |  |  |
|  | true |  | TRS |
|  |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| TRS | Tracking-Reference Signal |

#### *– NZP-CSI-RS-ResourceSetId*

Table 4.6.3-88: *NZP-CSI-RS-ResourceSetId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| NZP-CSI-RS-ResourceSetId | 0 |  |  |

#### *– P-Max*

NOTE: Exceptions in clause 5.4.1 shall be appied for RF test cases.

Table 4.6.3-89: *P-Max*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| P-Max | 23 |  | NR OR (EN-DC AND pc\_dynamicPowerSharing) |
|  | 20 |  | EN-DC AND (NOT pc\_dynamicPowerSharing) |

|  |  |
| --- | --- |
| Condition | Explanation |
| NR | NR connected to 5GC |
| EN-DC | E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC |

#### *– PCI-List*

Table 4.6.3-90: *PCI-List*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PCI-List ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– PCI-Range*

Table 4.6.3-91: *PCI-Range*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PCI-Range ::= SEQUENCE { |  |  |  |
| start | PhysCellId |  |  |
| range | FFS |  |  |
| } |  |  |  |

#### *– PCI-RangeElement*

Table 4.6.3-92: *PCI-RangeElement*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PCI-RangeElement ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– PCI-RangeIndex*

Table 4.6.3-93: *PCI-RangeIndex*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PCI-RangeIndex | 0 |  |  |

#### *– PCI-RangeIndexList*

Table 4.6.3-94: *PCI-RangeIndexList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PCI-RangeIndexList ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– PDCCH-Config*

Table 4.6.3-95: *PDCCH-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PDCCH-Config ::= SEQUENCE { |  |  |  |
| controlResourceSetToAddModList | Not present |  | EN-DC |
| controlResourceSetToAddModList SEQUENCE(SIZE (1..3)) OF ControlResourceSet { | 1 entry |  |  |
| ControlResourceSet[1] | ControlResourceSet | entry 1 |  |
| } |  |  |  |
| controlResourceSetToReleaseList | Not present |  |  |
| searchSpacesToAddModList SEQUENCE(SIZE (1..10)) OF SearchSpace { | 1 entry |  |  |
| SearchSpace[1] | SearchSpace with condition USS | entry 1 |  |
| } |  |  |  |
| searchSpacesToReleaseList | Not present |  |  |
| downlinkPreemption | Not present |  |  |
| tpc-PUSCH | Not present |  |  |
| tpc-PUCCH | Not present |  |  |
| tpc-SRS | Not present |  |  |
| controlResourceSetToAddModListSizeExt-v1610 | Not present |  |  |
| controlResourceSetToReleaseListSizeExt-r16 | Not present |  |  |
| searchSpacesToAddModListExt-r16 | Not present |  |  |
| uplinkCancellation-r16 | Not present |  |  |
| monitoringCapabilityConfig-r16 | Not present |  |  |
| searchSpaceSwitchConfig-r16 | Not present |  |  |
| } |  |  |  |

#### *– PDCCH-ConfigCommon*

Table 4.6.3-96: *PDCCH-ConfigCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PDCCH-ConfigCommon ::= SEQUENCE { |  |  |  |
| controlResourceSetZero | ControlResourceSetZero | Initial BWP |  |
|  | Not present |  | SCell\_Add  InitialBWP\_SIB, BWP-Id1 |
| commonControlResourceSet | ControlResourceSet |  | EN-DC |
|  | Not present |  |  |
| searchSpaceZero | SearchSpaceZero | Initial BWP |  |
|  | Not present |  | SCell\_Add  InitialBWP\_SIB, BWP-Id1 |
| commonSearchSpaceList SEQUENCE (SIZE (1..4)) OF SearchSpace { | 2 entries |  |  |
| SearchSpace[1] | SearchSpace with condition CSS | entry 1 |  |
| SearchSpace[2] | SearchSpace with condition SISS | entry 2 |  |
| } |  |  |  |
| commonSearchSpaceList SEQUENCE (SIZE (1..4)) OF SearchSpace { | 1 entry |  | EN-DC |
| SearchSpace[1] | SearchSpace with condition CSS | entry 1 |  |
| } |  |  |  |
| commonSearchSpaceList | Not present |  | SCell\_Add |
| searchSpaceSIB1 | 0 |  |  |
|  | Not present |  | EN-DC, SCell\_Add |
| searchSpaceOtherSystemInformation | SearchSpaceId with condition SISS |  |  |
|  | Not present |  | EN-DC, SCell\_Add |
| pagingSearchSpace | 0 |  |  |
|  | Not present |  | EN-DC, SCell\_Add |
| ra-SearchSpace | SearchSpaceId with condition CSS |  |  |
|  | Not present |  | SCell\_Add |
| firstPDCCH-MonitoringOccasionOfPO | Not present |  |  |
| commonSearchSpaceListExt-r16 | Not present |  |  |
| sdt-SearchSpace-r17 | Not present |  |  |
| sdt-SearchSpace-r17 CHOICE { |  |  | SDT |
| existingSearchSpace | SearchSpaceId with condition CSS |  |  |
| } |  |  |  |
| searchSpaceMCCH-r17 | Not present |  |  |
| searchSpaceMTCH-r17 | Not present |  |  |
| commonSearchSpaceListExt2-r17 | Not present |  |  |
| firstPDCCH-MonitoringOccasionOfPO-v1710 | Not present |  |  |
| pei-ConfigBWP-r17 | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| EN-DC | E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC |
| SCell\_Add | Add SCell |
| InitialBWP\_SIB | Configured via DownlinkConfigCommonSIB |
| BWP-Id1 | Additional BWP 1 |
| SDT | For SDT test cases |

#### *– PDCCH-ConfigSIB1*

Table 4.6.3-97: *PDCCH-ConfigSIB1*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PDCCH-ConfigSIB1 ::= SEQUENCE { |  |  |  |
| controlResourceSetZero | ControlResourceSetZero |  |  |
| searchSpaceZero | SearchSpaceZero |  |  |
| } |  |  |  |

#### *– PDCCH-ServingCellConfig*

Table 4.6.3-98: *PDCCH-ServingCellConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PDCCH-ServingCellConfig ::= SEQUENCE { |  |  |  |
| slotFormatIndicator | Not present |  |  |
| } |  |  |  |

#### *– PDCP-Config*

Table 4.6.3-99: *PDCP-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PDCP-Config ::= SEQUENCE { |  |  |  |
| drb SEQUENCE { |  |  |  |
| discardTimer | infinity |  |  |
| pdcp-SN-Size-UL | len18bits |  |  |
|  | len12bits |  | pc\_RedCap\_r17 |
| pdcp-SN-Size-DL | len18bits |  |  |
|  | len12bits |  | pc\_RedCap\_r17 |
| headerCompression CHOICE { |  |  |  |
| notUsed | NULL |  |  |
| } |  |  |  |
| integrityProtection | Not present |  |  |
| statusReportRequired | true | AM is default |  |
|  | Not present |  | UM |
| outOfOrderDelivery | Not present |  |  |
| } |  |  |  |
| drb | Not present |  | SRB, Split\_SRB |
| moreThanOneRLC | Not present |  |  |
| moreThanOneRLC SEQUENCE { |  |  | Split, Split\_SRB, NR\_split |
| primaryPath SEQUENCE { |  |  |  |
| cellGroup | CellGroupId |  |  |
|  | 0 | MCG path | Split\_SRB, NR\_split |
| logicalChannel | LogicalChannelIdentity |  |  |
| } |  |  |  |
| ul-DataSplitThreshold | infinity |  |  |
|  | Not present |  | Split\_SRB |
| pdcp-Duplication | false |  |  |
|  | Not present | one UL path | Split\_SRB |
| } |  |  |  |
| t-Reordering | Not present |  |  |
|  | 80ms |  | UM |
| cipheringDisabled | Not present |  |  |
| discardTimerExt-r16 | Not present |  |  |
| moreThanTwoRLC-DRB-r16 | Not present |  |  |
| ethernetHeaderCompression-r16 | Not present |  |  |
| survivalTimeStateSupport-r17 | Not present |  |  |
| uplinkDataCompression-r17 | Not present |  |  |
| uplinkDataCompression-r17 CHOICE { |  |  | UDC |
| setup CHOICE { |  |  |  |
| newSetup CHOICE { |  |  |  |
| bufferSize-r17 | kbyte2 |  |  |
| dictionary-r17 | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| discardTimerExt2-r17 | Not present |  |  |
| multicastHFN-AndRefSN-r17 | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Split | More than one RLC |
| SRB | SRB |
| UM | RLC UM DRB |
| Split\_SRB | SRB with more than one RLC |
| NR\_split | MCG and split for NR-DC. |
| UDC | RLC AM DRB with uplinkDataCompression |

#### *– PDSCH-Config*

Table 4.6.3-100: *PDSCH-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PDSCH-Config ::= SEQUENCE { |  |  |  |
| dataScramblingIdentityPDSCH | 0 |  |  |
| dmrs-DownlinkForPDSCH-MappingTypeA CHOICE { |  |  |  |
| setup | DMRS-DownlinkConfig |  |  |
| } |  |  |  |
| dmrs-DownlinkForPDSCH-MappingTypeB | Not present |  |  |
| tci-StatesToAddModList SEQUENCE(SIZE (1.. maxNrofTCI-States)) OF TCI-State { | 1 entry |  |  |
| TCI-State[1] | TCI-State | entry 1 |  |
| } |  |  |  |
| tci-StatesToReleaseList | Not present |  |  |
| vrb-ToPRB-Interleaver | Not present |  |  |
| resourceAllocation | resourceAllocationType1 |  |  |
|  | resourceAllocationType0 |  | Used\_for\_Type0 |
| pdsch-TimeDomainAllocationList | Not present |  |  |
| pdsch-AggregationFactor | Not present |  |  |
| rateMatchPatternToAddModList | Not present |  |  |
| rateMatchPatternToReleaseList | Not present |  |  |
| rateMatchPatternGroup1 | Not present |  |  |
| rateMatchPatternGroup2 | Not present |  |  |
| rbg-Size | config1 |  |  |
| mcs-Table | Not present | qam64 per default |  |
| maxNrofCodeWordsScheduledByDCI | Not present |  |  |
| prb-BundlingType CHOICE { |  |  |  |
| staticBundling SEQUENCE { |  |  |  |
| bundleSize | wideband |  |  |
| } |  |  |  |
| } |  |  |  |
| zp-CSI-RS-ResourceToAddModList | Not present |  |  |
| zp-CSI-RS-ResourceToReleaseList | Not present |  |  |
| aperiodic-ZP-CSI-RS-ResourceSetsToAddModList | Not present |  |  |
| aperiodic-ZP-CSI-RS-ResourceSetsToReleaseList | Not present |  |  |
| sp-ZP-CSI-RS-ResourceSetsToAddModList | Not present |  |  |
| sp-ZP-CSI-RS-ResourceSetsToReleaseList | Not present |  |  |
| p-ZP-CSI-RS-ResourceSet | Not present |  |  |
| maxMIMO-Layers-r16 | Not present |  |  |
| minimumSchedulingOffsetK0-r16 | Not present |  |  |
| antennaPortsFieldPresenceDCI-1-2-r16 | Not present |  |  |
| aperiodicZP-CSI-RS-ResourceSetsToAddModListDCI-1-2-r16 | Not present |  |  |
| aperiodicZP-CSI-RS-ResourceSetsToReleaseListDCI-1-2-r16 | Not present |  |  |
| dmrs-DownlinkForPDSCH-MappingTypeA-DCI-1-2-r16 | Not present |  |  |
| dmrs-DownlinkForPDSCH-MappingTypeB-DCI-1-2-r16 | Not present |  |  |
| dmrs-SequenceInitializationDCI-1-2-r16 | Not present |  |  |
| harq-ProcessNumberSizeDCI-1-2-r16 | Not present |  |  |
| mcs-TableDCI-1-2-r16 | Not present |  |  |
| numberOfBitsForRV-DCI-1-2-r16 | Not present |  |  |
| pdsch-TimeDomainAllocationListDCI-1-2-r16 | Not present |  |  |
| prb-BundlingTypeDCI-1-2-r16 | Not present |  |  |
| priorityIndicatorDCI-1-2-r16 | Not present |  |  |
| rateMatchPatternGroup1DCI-1-2-r16 | Not present |  |  |
| rateMatchPatternGroup2DCI-1-2-r16 | Not present |  |  |
| resourceAllocationType1GranularityDCI-1-2-r16 | Not present |  |  |
| vrb-ToPRB-InterleaverDCI-1-2-r16 | Not present |  |  |
| referenceOfSLIVDCI-1-2-r16 | Not present |  |  |
| resourceAllocationDCI-1-2-r16 | Not present |  |  |
| priorityIndicatorDCI-1-1-r16 | Not present |  |  |
| dataScramblingIdentityPDSCH2-r16 | Not present |  |  |
| pdsch-TimeDomainAllocationList-r16 | Not present |  |  |
| repetitionSchemeConfig-r16 | Not present |  |  |
| repetitionSchemeConfig-v1630 | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Used\_for\_Type0 | Used for RF performance test cases |

#### *– PDSCH-ConfigCommon*

Table 4.6.3-101: *PDSCH-ConfigCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PDSCH-ConfigCommon ::= SEQUENCE { |  |  |  |
| pdsch-TimeDomainAllocationList | PDSCH-TimeDomainResourceAllocationList |  |  |
| } |  |  |  |

#### *– PDSCH-ServingCellConfig*

Table 4.6.3-102: *PDSCH-ServingCellConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PDSCH-ServingCellConfig ::= SEQUENCE { |  |  |  |
| codeBlockGroupTransmission | Not present |  |  |
| xOverhead | Not present |  |  |
| nrofHARQ-ProcessesForPDSCH | n4 |  | RF AND FDD |
|  | n16 |  | RRM AND FDD |
|  | Not present | Default value: 8 HARQ processes |  |
| pucch-Cell | Not present |  |  |
| maxMIMO-Layers | Not present |  |  |
| processingType2Enabled | Not present |  |  |
| pdsch-CodeBlockGroupTransmissionList-r16 | Not present |  |  |
| } |  |  |  |

#### *– PDSCH-TimeDomainResourceAllocationList*

Table 4.6.3-103: *PDSCH-TimeDomainResourceAllocationList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PDSCH-TimeDomainResourceAllocationList ::= SEQUENCE(SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation { | 2 entries |  | FR1 |
| PDSCH-TimeDomainResourceAllocation[1] SEQUENCE { |  | entry 1 |  |
| k0 | Not present |  |  |
| mappingType | typeA |  |  |
| startSymbolAndLength | 53 | Start symbol(S)=2, Length(L)=12 |  |
| } |  |  |  |
| PDSCH-TimeDomainResourceAllocation[2] SEQUENCE { |  | entry 2 |  |
| k0 | Not present |  |  |
| mappingType | typeA |  |  |
| startSymbolAndLength | 72 | S=2, L=6 |  |
| } |  |  |  |
| } |  |  |  |
| PDSCH-TimeDomainResourceAllocationList SEQUENCE (SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation { | 1 entry |  | FR2 |
| PDSCH-TimeDomainResourceAllocation[1] SEQUENCE { |  | entry 1 |  |
| k0 | Not present |  |  |
| mappingType | typeA |  |  |
| startSymbolAndLength | 53 | S=2, L=12 |  |
| } |  |  |  |
| } |  |  |  |

#### *– PHR-Config*

Table 4.6.3-104: *PHR-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PHR-Config ::= CHOICE { |  |  |  |
| setup SEQUENCE { |  |  |  |
| phr-PeriodicTimer | sf10 |  |  |
| phr-ProhibitTimer | sf0 |  |  |
| phr-Tx-PowerFactorChange | dB1 |  |  |
| multiplePHR | false |  |  |
|  | true |  | MR-DC OR NR-CA |
| dummy | false |  |  |
| Phr-Type2OtherCell | false |  |  |
| phr-ModeOtherCG | real |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| MR-DC | EN-DC, NGEN-DC, NE-DC or NR-DC. |
| NR-CA | UL CA for NR |

#### *– PhysCellId*

Table 4.6.3-105: *PhysCellId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PhysCellId | Set according to table 4.4.2-2 for the NR Cell. |  |  |

#### *– PhysicalCellGroupConfig*

Table 4.6.3-106: *PhysicalCellGroupConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PhysicalCellGroupConfig ::= SEQUENCE { |  |  |  |
| harq-ACK-SpatialBundlingPUCCH | Not present |  |  |
| harq-ACK-SpatialBundlingPUSCH | Not present |  |  |
| p-NR-FR1 | P-Max |  |  |
| pdsch-HARQ-ACK-Codebook | dynamic |  |  |
| tpc-SRS-RNTI | Not present |  |  |
| tpc-PUCCH-RNTI | Not present |  |  |
| tpc-PUSCH-RNTI | Not present |  |  |
| sp-CSI-RNTI | Not present |  |  |
| cs-RNTI | Not present |  |  |
| dcp-Config-r16 | Not present |  |  |
| dcp-Config-r16 CHOICE { |  |  | DCP |
| setup SEQUENCE { |  |  |  |
| ps-RNTI-r16 | RNTI-Value |  |  |
| ps-Offset-r16 | 120 |  |  |
| sizeDCI-2-6-r16 | 6 |  |  |
| ps-PositionDCI-2-6-r16 | 0 |  |  |
| ps-WakeUp-r16 | Not present |  |  |
| ps-TransmitPeriodicL1-RSRP-r16 | Not present |  |  |
| ps-TransmitOtherPeriodicCSI-r16 | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| harq-ACK-SpatialBundlingPUCCH-secondaryPUCCHgroup-r16 | Not present |  |  |
| harq-ACK-SpatialBundlingPUSCH-secondaryPUCCHgroup-r16 | Not present |  |  |
| pdsch-HARQ-ACK-Codebook-secondaryPUCCHgroup-r16 | Not present |  |  |
| p-NR-FR2-r16 | Not present |  |  |
| p-UE-FR2-r16 | Not present |  |  |
| nrdc-PCmode-FR1-r16 | Not present |  |  |
| nrdc-PCmode-FR2-r16 | Not present |  |  |
| pdsch-HARQ-ACK-Codebook-r16 | Not present |  |  |
| nfi-TotalDAI-Included-r16 | Not present |  |  |
| ul-TotalDAI-Included-r16 | Not present |  |  |
| pdsch-HARQ-ACK-OneShotFeedback-r16 | Not present |  |  |
| pdsch-HARQ-ACK-OneShotFeedbackNDI-r16 | Not present |  |  |
| pdsch-HARQ-ACK-OneShotFeedbackCBG-r16 | Not present |  |  |
| downlinkAssignmentIndexDCI-0-2-r16 | Not present |  |  |
| downlinkAssignmentIndexDCI-1-2-r16 | Not present |  |  |
| pdsch-HARQ-ACK-CodebookList-r16 | Not present |  |  |
| ackNackFeedbackMode-r16 | Not present |  |  |
| pdcch-BlindDetectionCA-CombIndicator-r16 | Not present |  |  |
| pdcch-BlindDetection2-r16 | Not present |  |  |
| pdcch-BlindDetection3-r16 | Not present |  |  |
| bdFactorR-r16 | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| DCP | This condition applies when DCP is configured |

#### *– PLMN-Identity*

Table 4.6.3-107: *PLMN-Identity*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PLMN-Identity ::= SEQUENCE { |  |  |  |
| mcc SEQUENCE (SIZE (3)) OF MCC-MNC-Digit | See table 4.4.2-3 |  |  |
| mnc SEQUENCE (SIZE (2..3)) OF MCC-MNC-Digit | See table 4.4.2-3 |  |  |
| } |  |  |  |

#### *– PLMN-IdentityInfoList*

Table 4.6.3-108: *PLMN-IdentityInfoList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PLMN-IdentityInfoList ::= SEQUENCE (SIZE (1..maxPLMN)) OF PLMN-IdentityInfo { | 1 entry |  |  |
| PLMN-IdentityInfo[1] SEQUENCE { |  | entry 1 |  |
| plmn-IdentityList SEQUENCE (SIZE (1..maxPLMN)) OF PLMN-Identity { | 1 entry |  |  |
| PLMN-Identity[1] | PLMN-Identity | entry 1 |  |
| } |  |  |  |
| trackingAreaCode | TrackingAreaCode |  |  |
| ranac | RAN-AreaCode |  |  |
| cellIdentity | CellIdentity |  |  |
| cellReservedForOperatorUse | notReserved |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– PLMN-IdentityList2*

Table 4.6.3-108A: *PLMN-IdentityList2*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PLMN-IdentityList2-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– PRB-Id*

Table 4.6.3-109: *PRB-Id*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PRB-Id | 0 |  |  |
| Set to value of the *L\_RBs* - *nrofPRBs* where *L\_RBs* is found in Table 4.3.1.0D-1 or Table 4.3.1.0D-2 for the bandwidth and SCS configured and *nrofPRBs* is defined for the corresponding *PUCCH-Resource* (1 otherwise). |  | secondHopPRB |

|  |  |
| --- | --- |
| Condition | Explanation |
| secondHopPRB | The IE secondHopPRB in PUCCH-Resource is now set. |

#### *– PTRS-DownlinkConfig*

Table 4.6.3-110: *PTRS-DownlinkConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PTRS-DownlinkConfig ::= SEQUENCE { |  |  |  |
| frequencyDensity | Not present |  |  |
| timeDensity | Not present |  |  |
| epre-Ratio | 0 |  |  |
| resourceElementOffset | Not present |  |  |
| } |  |  |  |

#### *– PTRS-UplinkConfig*

Table 4.6.3-111: *PTRS-UplinkConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PTRS-UplinkConfig ::= SEQUENCE { |  |  |  |
| transformPrecoderDisabled SEQUENCE { |  |  |  |
| frequencyDensity | Not present |  |  |
| timeDensity | Not present |  |  |
| maxNrofPorts | n1 |  |  |
| resourceElementOffset | Not present |  |  |
| ptrs-Power | p00 |  |  |
| } |  |  |  |
| transformPrecoderEnabled SEQUENCE { |  |  |  |
| sampleDensity SEQUENCE (SIZE (5)) OF INTEGER { | 5 entries |  |  |
| INTEGER[1] | 1 | entry 1 |  |
| INTEGER[2] | 8 | entry 2 |  |
| INTEGER[3] | 32 | entry 3 |  |
| INTEGER[4] | 32 | entry 4 |  |
| INTEGER[5] | 108 | entry 5 |  |
| } |  |  |  |
| timeDensityTransformPrecoding | Not present |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– PUCCH-Config*

Table 4.6.3-112: *PUCCH-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PUCCH-Config ::= SEQUENCE { |  |  |  |
| resourceSetToAddModList SEQUENCE (SIZE (1..maxNrofPUCCH-ResourceSets)) OF PUCCH-ResourceSet { | 2 entries |  |  |
| PUCCH-ResourceSet[1] SEQUENCE { |  | entry 1 |  |
| pucch-ResourceSetId | 0 |  |  |
| resourceList SEQUENCE (SIZE (0..maxNrofPUCCH-ResourcesPerSet)) OF PUCCH-ResourceId { | 8 entries |  |  |
| PUCCH-ResourceId[1] | 0 | entry 1 |  |
| PUCCH-ResourceId[2] | 1 | entry 2 |  |
| PUCCH-ResourceId[3] | 2 | entry 3 |  |
| PUCCH-ResourceId[4] | 3 | entry 4 |  |
| PUCCH-ResourceId[5] | 4 | entry 5 |  |
| PUCCH-ResourceId[6] | 5 | entry 6 |  |
| PUCCH-ResourceId[7] | 6 | entry 7 |  |
| PUCCH-ResourceId[8] | 7 | entry 8 |  |
| } |  |  |  |
| maxPayloadSize | Not present |  |  |
| } |  |  |  |
| PUCCH-ResourceSet[2] SEQUENCE { |  | entry 2 |  |
| pucch-ResourceSetId | 1 |  |  |
| resourceList SEQUENCE (SIZE (8..maxNrofPUCCH-ResourcesPerSet)) OF PUCCH-ResourceId { | 8 entries |  |  |
| PUCCH-ResourceId[1] | 8 | entry 1 |  |
| PUCCH-ResourceId[2] | 9 | entry 2 |  |
| PUCCH-ResourceId[3] | 10 | entry 3 |  |
| PUCCH-ResourceId[4] | 11 | entry 4 |  |
| PUCCH-ResourceId[5] | 12 | entry 5 |  |
| PUCCH-ResourceId[6] | 13 | entry 6 |  |
| PUCCH-ResourceId[7] | 14 | entry 7 |  |
| PUCCH-ResourceId[8] | 15 | entry 8 |  |
| } |  |  |  |
| maxPayloadSize | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| resourceSetToReleaseList | Not present |  |  |
| resourceToAddModList SEQUENCE (SIZE (1..maxNrofPUCCH-Resources)) OF PUCCH-Resource { | 16 entries |  |  |
| PUCCH-Resource[1] SEQUENCE { |  | entry 1 |  |
| pucch-ResourceId | 0 |  |  |
| startingPRB | PRB-Id |  |  |
| intraSlotFrequencyHopping | enabled |  |  |
| secondHopPRB | PRB-Id with condition secondHopPRB |  |  |
| format CHOICE { |  |  |  |
| format0 SEQUENCE { |  |  |  |
| initialCyclicShift | 0 |  |  |
| nrofSymbols | 2 |  |  |
| startingSymbolIndex | 0 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| PUCCH-Resource[2] SEQUENCE { |  | entry 2 |  |
| pucch-ResourceId | 1 |  |  |
| startingPRB | PRB-Id |  |  |
| intraSlotFrequencyHopping | enabled |  |  |
| secondHopPRB | PRB-Id with condition secondHopPRB |  |  |
| format CHOICE { |  |  |  |
| format0 SEQUENCE { |  |  |  |
| initialCyclicShift | 0 |  |  |
| nrofSymbols | 2 |  |  |
| startingSymbolIndex | 2 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| PUCCH-Resource[3] SEQUENCE { |  | entry 3 |  |
| pucch-ResourceId | 2 |  |  |
| startingPRB | PRB-Id |  |  |
| intraSlotFrequencyHopping | enabled |  |  |
| secondHopPRB | PRB-Id with condition secondHopPRB |  |  |
| format CHOICE { |  |  |  |
| format0 SEQUENCE { |  |  |  |
| initialCyclicShift | 0 |  |  |
| nrofSymbols | 2 |  |  |
| startingSymbolIndex | 4 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| PUCCH-Resource[4] SEQUENCE { |  | entry 4 |  |
| pucch-ResourceId | 3 |  |  |
| startingPRB | PRB-Id |  |  |
| intraSlotFrequencyHopping | enabled |  |  |
| secondHopPRB | PRB-Id with condition secondHopPRB |  |  |
| format CHOICE { |  |  |  |
| format0 SEQUENCE { |  |  |  |
| initialCyclicShift | 0 |  |  |
| nrofSymbols | 2 |  |  |
| startingSymbolIndex | 6 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| PUCCH-Resource[5] SEQUENCE { |  | entry 5 |  |
| pucch-ResourceId | 4 |  |  |
| startingPRB | PRB-Id |  |  |
| intraSlotFrequencyHopping | enabled |  |  |
| secondHopPRB | PRB-Id with condition secondHopPRB |  |  |
| format CHOICE { |  |  |  |
| format0 SEQUENCE { |  |  |  |
| initialCyclicShift | 0 |  |  |
| nrofSymbols | 2 |  |  |
| startingSymbolIndex | 8 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| PUCCH-Resource[6] SEQUENCE { |  | entry 6 |  |
| pucch-ResourceId | 5 |  |  |
| startingPRB | PRB-Id |  |  |
| intraSlotFrequencyHopping | enabled |  |  |
| secondHopPRB | PRB-Id with condition secondHopPRB |  |  |
| format CHOICE { |  |  |  |
| format0 SEQUENCE { |  |  |  |
| initialCyclicShift | 0 |  |  |
| nrofSymbols | 2 |  |  |
| startingSymbolIndex | 10 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| PUCCH-Resource[7] SEQUENCE { |  | entry 7 |  |
| pucch-ResourceId | 6 |  |  |
| startingPRB | PRB-Id |  |  |
| intraSlotFrequencyHopping | enabled |  |  |
| secondHopPRB | PRB-Id with condition secondHopPRB |  |  |
| format CHOICE { |  |  |  |
| format0 SEQUENCE { |  |  |  |
| initialCyclicShift | 0 |  |  |
| nrofSymbols | 2 |  |  |
| startingSymbolIndex | 12 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| PUCCH-Resource[8] SEQUENCE { |  | entry 8 |  |
| pucch-ResourceId | 7 |  |  |
| startingPRB | PRB-Id |  |  |
| intraSlotFrequencyHopping | enabled |  |  |
| secondHopPRB | PRB-Id with condition secondHopPRB |  |  |
| format CHOICE { |  |  |  |
| format1 SEQUENCE { |  |  |  |
| initialCyclicShift | 0 |  |  |
| nrofSymbols | 14 |  |  |
| startingSymbolIndex | 0 |  |  |
| timeDomainOCC | 0 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| PUCCH-Resource[9] SEQUENCE { |  | entry 9 |  |
| pucch-ResourceId | 8 |  |  |
| startingPRB | PRB-Id |  |  |
| intraSlotFrequencyHopping | enabled |  |  |
| secondHopPRB | PRB-Id with condition secondHopPRB |  |  |
| format CHOICE { |  |  |  |
| format2 SEQUENCE { |  |  |  |
| nrofPRBs | 6 |  |  |
| nrofSymbols | 2 |  |  |
| startingSymbolIndex | 0 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| PUCCH-Resource[10] SEQUENCE { |  | entry 10 |  |
| pucch-ResourceId | 9 |  |  |
| startingPRB | PRB-Id |  |  |
| intraSlotFrequencyHopping | enabled |  |  |
| secondHopPRB | PRB-Id with condition secondHopPRB |  |  |
| format CHOICE { |  |  |  |
| format2 SEQUENCE { |  |  |  |
| nrofPRBs | 6 |  |  |
| nrofSymbols | 2 |  |  |
| startingSymbolIndex | 2 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| PUCCH-Resource[11] SEQUENCE { |  | entry 11 |  |
| pucch-ResourceId | 10 |  |  |
| startingPRB | PRB-Id |  |  |
| intraSlotFrequencyHopping | enabled |  |  |
| secondHopPRB | PRB-Id with condition secondHopPRB |  |  |
| format CHOICE { |  |  |  |
| format2 SEQUENCE { |  |  |  |
| nrofPRBs | 6 |  |  |
| nrofSymbols | 2 |  |  |
| startingSymbolIndex | 4 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| PUCCH-Resource[12] SEQUENCE { |  | entry 12 |  |
| pucch-ResourceId | 11 |  |  |
| startingPRB | PRB-Id |  |  |
| intraSlotFrequencyHopping | enabled |  |  |
| secondHopPRB | PRB-Id with condition secondHopPRB |  |  |
| format CHOICE { |  |  |  |
| format2 SEQUENCE { |  |  |  |
| nrofPRBs | 6 |  |  |
| nrofSymbols | 2 |  |  |
| startingSymbolIndex | 6 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| PUCCH-Resource[13] SEQUENCE { |  | entry 13 |  |
| pucch-ResourceId | 12 |  |  |
| startingPRB | PRB-Id |  |  |
| intraSlotFrequencyHopping | enabled |  |  |
| secondHopPRB | PRB-Id with condition secondHopPRB |  |  |
| format CHOICE { |  |  |  |
| format2 SEQUENCE { |  |  |  |
| nrofPRB | 6 |  |  |
| nrofSymbols | 2 |  |  |
| startingSymbolIndex | 8 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| PUCCH-Resource[14] SEQUENCE { |  | entry 14 |  |
| pucch-ResourceId | 13 |  |  |
| startingPRB | PRB-Id |  |  |
| intraSlotFrequencyHopping | enabled |  |  |
| secondHopPRB | PRB-Id with condition secondHopPRB |  |  |
| format CHOICE { |  |  |  |
| format2 SEQUENCE { |  |  |  |
| nrofPRBsinitial | 6 |  |  |
| nrofSymbols | 2 |  |  |
| startingSymbolIndex | 10 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| PUCCH-Resource[15] SEQUENCE { |  | entry 15 |  |
| pucch-ResourceId | 14 |  |  |
| startingPRB | PRB-Id |  |  |
| intraSlotFrequencyHopping | enabled |  |  |
| secondHopPRB | PRB-Id with condition secondHopPRB |  |  |
| format CHOICE { |  |  |  |
| format2 SEQUENCE { |  |  |  |
| nrofPRB | 6 |  |  |
| nrofSymbols | 2 |  |  |
| startingSymbolIndex | 12 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| PUCCH-Resource[16] SEQUENCE { |  | entry 16 |  |
| pucch-ResourceId | 15 |  |  |
| startingPRB | PRB-Id |  |  |
| intraSlotFrequencyHopping | enabled |  |  |
| secondHopPRB | PRB-Id with condition secondHopPRB |  |  |
| format CHOICE { |  |  |  |
| format3 SEQUENCE { |  |  |  |
| nrofPRBs | 1 |  |  |
| nrofSymbols | 14 |  |  |
| startingSymbolIndex | 0 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| resourceToReleaseList | Not present |  |  |
| format1CHOICE { |  |  |  |
| setup SEQUENCE { |  |  |  |
| interslotFrequencyHopping | enabled |  |  |
| additionalDMRS | Not Present |  |  |
| maxCodeRate | Not Present |  |  |
| nrofSlots | Not present |  |  |
| pi2BPSK | Not present |  |  |
| simultaneousHARQ-ACK-CSI | Not Present |  |  |
| } |  |  |  |
| } |  |  |  |
| format2 CHOICE { |  |  |  |
| setup SEQUENCE { |  |  |  |
| interslotFrequencyHopping | Not Present |  |  |
| additionalDMRS | Not Present |  |  |
| maxCodeRate | zeroDot25 |  |  |
| nrofSlots | Not present |  |  |
| pi2BPSK | Not present |  |  |
| simultaneousHARQ-ACK-CSI | True |  |  |
| } |  |  |  |
| } |  |  |  |
| format3 CHOICE { |  |  |  |
| setup SEQUENCE { |  |  |  |
| interslotFrequencyHopping | enabled |  |  |
| additionalDMRS | True |  |  |
| maxCodeRate | zeroDot25 |  |  |
| nrofSlots | Not present |  |  |
| pi2BPSK | Not present |  |  |
| simultaneousHARQ-ACK-CSI | true |  |  |
| } |  |  |  |
| } |  |  |  |
| format4 | Not present |  |  |
| schedulingRequestResourceToAddModList SEQUENCE (SIZE (1..maxNrofSR-Resources)) OF SchedulingRequestResourceConfig { | 1 entry |  |  |
| SchedulingRequestResourceConfig[1] | SchedulingRequestResourceConfig | entry 1 |  |
| } |  |  |  |
| schedulingRequestResourceToReleaseList | Not present |  |  |
| multi-CSI-PUCCH-ResourceList | Not present |  |  |
| dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER { | 8 entries |  |  |
| INTEGER[1] | 2 | entry 1 |  |
| INTEGER[2] | 3 | entry 2 |  |
| INTEGER[3] | 4 | entry 3 |  |
| INTEGER[4] | 5 | entry 4 |  |
| INTEGER[5] | 6 | entry 5 |  |
| INTEGER[6] | 7 | entry 6 |  |
| INTEGER[7] | 8 | entry 7 |  |
| INTEGER[8] | 9 | entry 8 |  |
| } |  |  |  |
| dl-DataToUL-ACK | Not present |  | Short\_DCI |
| spatialRelationInfoToAddModList | Not present |  |  |
| spatialRelationInfoToReleaseList | Not present |  |  |
| pucch-PowerControl | PUCCH-PowerControl |  |  |
| resourceToAddModListExt-r16 | Not present |  |  |
| dl-DataToUL-ACK-r16 | Not present |  |  |
| ul-AccessConfigListDCI-1-1-r16 | Not present |  |  |
| subslotLengthForPUCCH-r16 | Not present |  |  |
| dl-DataToUL-ACK-DCI-1-2-r16 | Not present |  |  |
| numberOfBitsForPUCCH-ResourceIndicatorDCI-1-2-r16 | Not present |  |  |
| dmrs-UplinkTransformPrecodingPUCCH-r16 | Not present |  |  |
| spatialRelationInfoToAddModListSizeExt-v1610 | Not present |  |  |
| spatialRelationInfoToReleaseListSizeExt-v1610 | Not present |  |  |
| spatialRelationInfoToAddModListExt-v1610 | Not present |  |  |
| spatialRelationInfoToReleaseListExt-v1610 | Not present |  |  |
| resourceGroupToAddModList-r16 | Not present |  |  |
| resourceGroupToReleaseList-r16 | Not present |  |  |
| sps-PUCCH-AN-List-r16 | Not present |  |  |
| schedulingRequestResourceToAddModListExt-v1610 | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Short\_DCI | Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS |

#### *– PUCCH-ConfigCommon*

Table 4.6.3-113: *PUCCH-ConfigCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PUCCH-ConfigCommon ::= SEQUENCE { |  |  |  |
| pucch-ResourceCommon | 0 |  |  |
| pucch-GroupHopping | enable |  |  |
| hoppingId | Not present |  |  |
| p0-nominal | -90 |  |  |
| } |  |  |  |

#### *– PUCCH-ConfigurationList*

Table 4.6.3-113A: *PUCCH-ConfigurationList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PUCCH-ConfigurationList-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– PUCCH-PathlossReferenceRS-Id*

Table 4.6.3-114: *PUCCH-PathlossReferenceRS-Id*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PUCCH-PathlossReferenceRS-Id | 0 |  |  |

#### *– PUCCH-PowerControl*

Table 4.6.3-115: *PUCCH-PowerControl*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PUCCH-PowerControl ::= SEQUENCE { |  |  |  |
| deltaF-PUCCH-f0 | 0 |  |  |
| deltaF-PUCCH-f1 | 0 |  |  |
| deltaF-PUCCH-f2 | 0 |  |  |
| deltaF-PUCCH-f3 | 0 |  |  |
| deltaF-PUCCH-f4 | 0 |  |  |
| p0-Set | Not present |  |  |
| pathlossReferenceRSs SEQUENCE (SIZE (1..maxNrofPUCCH-PathlossReferenceRSs)) OF PUCCH-PathlossReferenceRS { | 1 entry |  |  |
| PUCCH-PathlossReferenceRS[1] SEQUENCE { |  | entry 1 |  |
| pucch-PathlossReferenceRS-Id | PUCCH-PathlossReferenceRS-Id |  |  |
| referenceSignal CHOICE { |  |  |  |
| ssb-Index | SSB-Index |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| twoPUCCH-PC-AdjustmentStates | Not present |  |  |
| } |  |  |  |

#### *– PUCCH-SpatialRelationInfo*

Table 4.6.3-116: *PUCCH-SpatialRelationInfo*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PUCCH-SpatialRelationInfo ::= SEQUENCE { |  |  |  |
| pucch-SpatialRelationInfoId | 1 |  |  |
| servingCellId | ServCellIndex |  |  |
| referenceSignal CHOICE { |  |  |  |
| ssb-Index | SSB-Index |  |  |
| } |  |  |  |
| pucch-PathlossReferenceRS-Id | PUCCH-PathlossReferenceRS-Id |  |  |
| p0-PUCCH-Id | 1 |  |  |
| closedLoopIndex | i0 |  |  |
| } |  |  |  |

#### *– PUCCH-SpatialRelationInfo-Id*

Table 4.6.3-116A: *PUCCH-SpatialRelationInfo-Id*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PUCCH-SpatialRelationInfoId ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– PUCCH-TPC-CommandConfig*

Table 4.6.3-117: *PUCCH-TPC-CommandConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PUCCH-TPC-CommandConfig ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– PUSCH-Config*

Table 4.6.3-118: *PUSCH-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PUSCH-Config ::= SEQUENCE { |  |  |  |
| dataScramblingIdentityPUSCH | Not present |  |  |
| txConfig | Not Present |  | Short\_DCI |
|  | codebook |  |  |
| dmrs-UplinkForPUSCH-MappingTypeA CHOICE { |  |  |  |
| setup | DMRS-UplinkConfig |  |  |
| } |  |  |  |
| dmrs-UplinkForPUSCH-MappingTypeB | Not present |  |  |
| pusch-PowerControl | PUSCH-PowerControl |  |  |
| frequencyHopping | Not present |  |  |
| frequencyHoppingOffsetLists | Not present |  |  |
| resourceAllocation | resourceAllocationType1 |  |  |
| pusch-TimeDomainAllocationList | Not present |  |  |
| pusch-AggregationFactor | Not present |  |  |
| mcs-Table | Not present |  |  |
| mcs-TableTransformPrecoder | Not present |  |  |
| transformPrecoder | enabled |  | TRANSFORM\_PRECODER\_ENABLED |
|  | Not present | TRANSFORM\_PRECODER\_DISABLED |  |
| codebookSubset | Not present |  | Short\_DCI |
|  | nonCoherent |  |  |
| maxRank | Not present |  | Short\_DCI |
|  | 1 |  |  |
|  | 2 |  | 2TX\_UL\_MIMO |
| rbg-Size | Not present |  |  |
| uci-OnPUSCH CHOICE { |  |  |  |
| setup SEQUENCE { |  |  |  |
| betaOffsets CHOICE { |  |  |  |
| semiStatic | BetaOffsets |  |  |
| } |  |  |  |
| scaling | f1 |  |  |
| } |  |  |  |
| } |  |  |  |
| tp-pi2BPSK | Not present |  |  |
| minimumSchedulingOffsetK2-r16 | Not present |  |  |
| ul-AccessConfigListDCI-0-1-r16 | Not present |  |  |
| harq-ProcessNumberSizeDCI-0-2-r16 | Not present |  |  |
| dmrs-SequenceInitializationDCI-0-2-r1 | Not present |  |  |
| numberOfBitsForRV-DCI-0-2-r16 | Not present |  |  |
| antennaPortsFieldPresenceDCI-0-2-r16 | Not present |  |  |
| dmrs-UplinkForPUSCH-MappingTypeA-DCI-0-2-r16 | Not present |  |  |
| dmrs-UplinkForPUSCH-MappingTypeB-DCI-0-2-r16 | Not present |  |  |
| frequencyHoppingDCI-0-2-r16 | Not present |  |  |
| frequencyHoppingOffsetListsDCI-0-2-r16 | Not present |  |  |
| codebookSubsetDCI-0-2-r16 | Not present |  |  |
| invalidSymbolPatternIndicatorDCI-0-2-r16 | Not present |  |  |
| maxRankDCI-0-2-r16 | Not present |  |  |
| mcs-TableDCI-0-2-r16 | Not present |  |  |
| mcs-TableTransformPrecoderDCI-0-2-r16 | Not present |  |  |
| priorityIndicatorDCI-0-2-r16 | Not present |  |  |
| pusch-RepTypeIndicatorDCI-0-2-r16 | Not present |  |  |
| resourceAllocationDCI-0-2-r16 | Not present |  |  |
| resourceAllocationType1GranularityDCI-0-2-r16 | Not present |  |  |
| uci-OnPUSCH-ListDCI-0-2-r16 | Not present |  |  |
| pusch-TimeDomainAllocationListDCI-0-2-r16 | Not present |  |  |
| pusch-TimeDomainAllocationListDCI-0-1-r16 | Not present |  |  |
| invalidSymbolPatternIndicatorDCI-0-1-r16 | Not present |  |  |
| priorityIndicatorDCI-0-1-r16 | Not present |  |  |
| pusch-RepTypeIndicatorDCI-0-1-r16 | Not present |  |  |
| frequencyHoppingDCI-0-1-r16 | Not present |  |  |
| uci-OnPUSCH-ListDCI-0-1-r16 | Not present |  |  |
| invalidSymbolPattern-r16 | Not present |  |  |
| pusch-PowerControl-v1610 | Not present |  |  |
| ul-FullPowerTransmission-r16 | Not present |  |  |
| pusch-TimeDomainAllocationListForMultiPUSCH-r16 | Not present |  |  |
| numberOfInvalidSymbolsForDL-UL-Switching-r16 | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| TRANSFORM\_PRECODER\_ENABLED | Transform precoding is enabled (DFT-s-OFDM UL waveform is configured) |
| 2TX\_UL\_MIMO | UL-MIMO test cases with 2 Tx antenna ports |
| Short\_DCI | Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS |

#### *– PUSCH-ConfigCommon*

Table 4.6.3-119: *PUSCH-ConfigCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PUSCH-ConfigCommon ::= SEQUENCE { |  |  |  |
| groupHoppingEnabledTransformPrecoding | Not present |  |  |
| pusch-TimeDomainAllocationList | PUSCH-TimeDomainResourceAllocationList |  |  |
| msg3-DeltaPreamble | 1 |  |  |
| p0-NominalWithGrant | -90 |  |  |
| } |  |  |  |

#### *– PUSCH-PowerControl*

Table 4.6.3-120: *PUSCH-PowerControl*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PUSCH-PowerControl ::= SEQUENCE { |  |  |  |
| tpc-Accumulation | Not present |  |  |
| msg3-Alpha | alpha08 |  |  |
| p0-NominalWithoutGrant | -90 |  |  |
| p0-AlphaSets SEQUENCE (SIZE (1..maxNrofP0-PUSCH-AlphaSets)) OF P0-PUSCH-AlphaSet { | 1 entry |  |  |
| P0-PUSCH-AlphaSet[1] SEQUENCE { |  | entry 1 |  |
| p0-PUSCH-AlphaSetId | 0 |  |  |
| p0 | 0 |  |  |
| alpha | alpha08 |  |  |
| } |  |  |  |
| } |  |  |  |
| pathlossReferenceRSToAddModList SEQUENCE (SIZE (1..maxNrofPUSCH-PathlossReferenceRSs)) OF PUSCH-PathlossReferenceRS { | 1 entry |  |  |
| PUSCH-PathlossReferenceRS[1] SEQUENCE { |  | entry 1 |  |
| pusch-PathlossReferenceRS-Id | 0 |  |  |
| referenceSignal CHOICE{ |  |  |  |
| ssb-Index | SSB-Index |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| pathlossReferenceRSToReleaseList | Not present |  |  |
| twoPUSCH-PC-AdjustmentStates | Not present |  |  |
| deltaMCS | Not present |  |  |
| sri-PUSCH-MappingToAddModList SEQUENCE (SIZE (1..maxNrofSRI-PUSCH-Mappings)) OF SRI-PUSCH-PowerControl { | 1 entry |  |  |
| SRI-PUSCH-PowerControl[1] SEQUENCE { |  | entry 1 |  |
| sri-PUSCH-PowerControlId | 0 |  |  |
| sri-PUSCH-PathlossReferenceRS-Id | 0 |  |  |
| sri-P0-PUSCH-AlphaSetId | 0 |  |  |
| sri-PUSCH-ClosedLoopIndex | i0 |  |  |
| } |  |  |  |
| } |  |  |  |
| sri-PUSCH-MappingToReleaseList | Not present |  |  |
| } |  |  |  |

#### *– PUSCH-ServingCellConfig*

Table 4.6.3-121: *PUSCH-ServingCellConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PUSCH-ServingCellConfig ::= SEQUENCE { |  |  |  |
| codeBlockGroupTransmission | Not present |  |  |
| rateMatching | Not present |  |  |
| xOverhead | Not present |  |  |
| maxMIMO-Layers | Not present |  |  |
| processingType2Enabled | Not present |  |  |
| maxMIMO-LayersDCI-0-2-r16 | Not present |  |  |
| } |  |  |  |

#### *– PUSCH-TimeDomainResourceAllocationList*

Table 4.6.3-122: *PUSCH-TimeDomainResourceAllocationList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PUSCH-TimeDomainResourceAllocationList ::= SEQUENCE (SIZE(1..maxNrofUL-Allocations)) OF PUSCH-TimeDomainResourceAllocation { | 2 entries |  |  |
| PUSCH-TimeDomainResourceAllocation[1] SEQUENCE { |  | entry 1 |  |
| k2 | 4 |  |  |
|  | 2 |  | (RF OR RRM) AND (FR1 AND (SCS15 OR SCS30)) OR (FR2 AND SCS60 AND (DL OR RRM)) |
|  | 3 |  | ((RF AND DL) OR RRM) AND FR2 AND SCS120 |
|  | 6 |  | ((RF AND DL) OR RRM) AND FR1 AND SCS60 |
|  | 4 |  | RF AND FR2 AND SCS60 AND UL |
|  | 8 |  | RF\_FR2\_120kHz\_UL |
| mappingType | typeA |  |  |
| startSymbolAndLength | 27 | Start symbol(S)=0, Length(L)=14 |  |
| } |  |  |  |
| PUSCH-TimeDomainResourceAllocation[2] SEQUENCE { |  | entry 2  addressed by Msg3 PUSCH time resource allocation field of the Random Access Response acc. to TS 38.213 [22] Table 8.2-1. |  |
| k2 | Not present |  |  |
|  | 2 | K2+ Δ=4 acc. to TS 38.214 [21] Table 6.1.2.1.1-5  (NOTE 1) | FR1 AND SCS15 |
|  | 6 | K2+ Δ=9 acc. to TS 38.214 [21] Table 6.1.2.1.1-5  (NOTE 1) | FR1 AND SCS30 |
|  | 3 | K2+ Δ=9 acc. to TS 38.214 [21] Table 6.1.2.1.1-5  (NOTE 1) | FR2 |
| mappingType | typeA |  |  |
| startSymbolAndLength | 27 | Start symbol(S)=0, Length(L)=14 |  |
| } |  |  |  |
| } |  |  |  |
| NOTE 1: Values are chosen so that first slot of a TDD-UL-DL slot configuration period can be used for the Random Access Response and the last slot (of the same or another period) for the corresponding Msg3. | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| DL | RF Rx measurements. |
| UL | RF UL measurements. |

#### *– PUSCH-TPC-CommandConfig*

Table 4.6.3-123: *PUSCH-TPC-CommandConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| PUSCH-TPC-CommandConfig ::= SEQUENCE { |  |  |  |
| tpc-Index | Not present |  |  |
| tpc-IndexSUL | Not present |  |  |
| targetCell | Not present |  |  |
| } |  |  |  |

#### *– Q-OffsetRange*

Table 4.6.3-124: *Q-OffsetRange*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| Q-OffsetRange | dB0 |  |  |

#### *– Q-QualMin*

Table 4.6.3-125: *Q-QualMin*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| Q-QualMin | FFS |  |  |

#### *– Q-RxLevMin*

Table 4.6.3-126: *Q-RxLevMin*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| Q-RxLevMin | FFS |  |  |

#### *– QuantityConfig*

Table 4.6.3-127: *QuantityConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| QuantityConfig ::= SEQUENCE { |  |  |  |
| quantityConfigNR-List SEQUENCE (SIZE (1..maxNrofQuantityConfig)) OF QuantityConfigNR { | 2 entries |  |  |
| QuantityConfigNR[1] SEQUENCE { |  | entry 1 |  |
| quantityConfigCell SEQUENCE { |  |  |  |
| ssb-FilterConfig SEQUENCE { |  |  |  |
| filterCoefficientRSRP | FilterCoefficient |  |  |
| filterCoefficientRSRQ | FilterCoefficient |  |  |
| filterCoefficientRS-SINR | FilterCoefficient |  |  |
| } |  |  |  |
| csi-RS-FilterConfig SEQUENCE { |  |  |  |
| filterCoefficientRSRP | FilterCoefficient |  |  |
| filterCoefficientRSRQ | FilterCoefficient |  |  |
| filterCoefficientRS-SINR | FilterCoefficient |  |  |
| } |  |  |  |
| } |  |  |  |
| quantityConfigRS-Index SEQUENCE { |  |  |  |
| ssb-FilterConfig SEQUENCE { |  |  |  |
| filterCoefficientRSRP | FilterCoefficient |  |  |
| filterCoefficientRSRQ | FilterCoefficient |  |  |
| filterCoefficientRS-SINR | FilterCoefficient |  |  |
| } |  |  |  |
| csi-RS-FilterConfig SEQUENCE { |  |  |  |
| filterCoefficientRSRP | FilterCoefficient |  |  |
| filterCoefficientRSRQ | FilterCoefficient |  |  |
| filterCoefficientRS-SINR | FilterCoefficient |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| QuantityConfigNR[2] SEQUENCE { |  | entry 2 |  |
| quantityConfigCell SEQUENCE { |  |  |  |
| ssb-FilterConfig SEQUENCE { |  |  |  |
| filterCoefficientRSRP | FilterCoefficient |  |  |
| filterCoefficientRSRQ | FilterCoefficient |  |  |
| filterCoefficientRS-SINR | FilterCoefficient |  |  |
| } |  |  |  |
| csi-RS-FilterConfig SEQUENCE { |  |  |  |
| filterCoefficientRSRP | FilterCoefficient |  |  |
| filterCoefficientRSRQ | FilterCoefficient |  |  |
| filterCoefficientRS-SINR | FilterCoefficient |  |  |
| } |  |  |  |
| } |  |  |  |
| quantityConfigRS-Index SEQUENCE { |  |  |  |
| ssb-FilterConfig SEQUENCE { |  |  |  |
| filterCoefficientRSRP | FilterCoefficient |  |  |
| filterCoefficientRSRQ | FilterCoefficient |  |  |
| filterCoefficientRS-SINR | FilterCoefficient |  |  |
| } |  |  |  |
| csi-RS-FilterConfig SEQUENCE { |  |  |  |
| filterCoefficientRSRP | FilterCoefficient |  |  |
| filterCoefficientRSRQ | FilterCoefficient |  |  |
| filterCoefficientRS-SINR | FilterCoefficient |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| quantityConfigEUTRA | Not present |  |  |
| quantityConfigEUTRA SEQUENCE { |  |  | INTER-RAT |
| filterCoefficientRSRP | FilterCoefficient |  |  |
| filterCoefficientRSRQ | FilterCoefficient |  |  |
| filterCoefficientRS-SINR | FilterCoefficient |  |  |
| } |  |  |  |
| quantityConfigUTRA-FDD-r16 | Not present |  |  |
| quantityConfigUTRA-FDD-r16 SEQUENCE { |  |  | INTER-RAT\_UTRA |
| filterCoefficientRSCP-r16 | FilterCoefficient |  |  |
| filterCoefficientEcNO-r16 | FilterCoefficient |  |  |
| } |  |  |  |
| quantityConfigCLI-r16 | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| INTER-RAT | Configuration for EUTRA inter-RAT measurements |
| INTER-RAT\_UTRA | Configuration for UTRA inter-RAT measurements |

#### *– RACH-ConfigCommon*

Table 4.6.3-128: *RACH-ConfigCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RACH-ConfigCommon ::= SEQUENCE { |  |  |  |
| rach-ConfigGeneric | RACH-ConfigGeneric |  |  |
| totalNumberOfRA-Preambles | Not present |  |  |
| ssb-perRACH-OccasionAndCB-PreamblesPerSSB CHOICE { |  |  |  |
| one | n8 |  | FR1 |
|  | n4 |  | FR2 |
| } |  |  |  |
| groupBconfigured | Not present |  |  |
| ra-ContentionResolutionTimer | sf64 |  |  |
| rsrp-ThresholdSSB | RSRP-Range |  |  |
| rsrp-ThresholdSSB-SUL | Not present |  |  |
| RSRP-Range |  | SUL |
| prach-RootSequenceIndex CHOICE { |  |  |  |
| l139 | Set according to table 4.4.2-2 for the NR Cell. |  |  |
| } |  |  |  |
| msg1-SubcarrierSpacing | SubcarrierSpacing |  |  |
| restrictedSetConfig | unrestrictedSet |  |  |
| msg3-transformPrecoder | Not present | transform precoding is disabled for Msg3 PUSCH transmission and any PUSCH transmission scheduled with DCI format 0\_0 |  |
| ra-PrioritizationForAccessIdentity-r16 | Not present |  |  |
| prach-RootSequenceIndex-r16 | Not present |  |  |
| ra-PrioritizationForSlicing-r17 | Not present |  |  |
|  | RA-PrioritizationForSlicing-r17 |  | Slice\_RACH |
| featureCombinationPreambles-r17 SEQUENCE (SIZE(1..maxFeatureCombPreamblesPerRACHResource-r17)) OF FeatureCombinationPreambles-r17{} | Not present |  |  |
|  | FeatureCombinationPreambles-r17 |  | Slice\_RACH |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SUL | Supplementary uplink |
| Slice\_RACH | Slice specific RACH configuration |

#### *– RACH-ConfigCommonTwoStepRA*

Table 4.6.3-128A: *RACH-ConfigCommonTwoStepRA*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RACH-ConfigCommonTwoStepRA-r16 ::= SEQUENCE { |  |  |  |
| rach-ConfigGenericTwoStepRA-r16 | RACH-ConfigGenericTwoStepRA |  |  |
| msgA-TotalNumberOfRA-Preambles-r16 | Not present |  |  |
| msgA-SSB-PerRACH-OccasionAndCB-PreamblesPerSSB-r16 CHOICE { | Not present |  |  |
| one | n8 |  | FR1 |
|  | n4 |  | FR2 |
| } |  |  |  |
| msgA-CB-PreamblesPerSSB-PerSharedRO-r16 | Not present |  |  |
| msgA-SSB-SharedRO-MaskIndex-r16 | Not present |  |  |
| groupB-ConfiguredTwoStepRA-r16 | Not present |  |  |
| msgA-PRACH-RootSequenceIndex-r16 CHOICE {} | Not present |  |  |
| msgA-TransMax-r16 | N8 |  |  |
| msgA-RSRP-Threshold-r16 | RSRP-Range |  |  |
| msgA-RSRP-ThresholdSSB-r16 | RSRP-Range |  |  |
| msgA-SubcarrierSpacing-r16 | Not present |  |  |
| msgA-RestrictedSetConfig-r16 | Not present |  |  |
| ra-PrioritizationForAccessIdentityTwoStep-r16 SEQUENCE { |  |  |  |
| ra-Prioritization-r16 | RA-Prioritization |  |  |
| ra-PrioritizationForAI-r16 | '10'B |  |  |
| } |  |  |  |
| ra-ContentionResolutionTimer-r16 | sf32 |  |  |
| } |  |  |  |

#### *– RACH-ConfigDedicated*

Table 4.6.3-129: *RACH-ConfigDedicated*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RACH-ConfigDedicated ::= SEQUENCE { |  |  |  |
| cfra SEQUENCE { |  |  |  |
| occasions SEQUENCE { |  |  |  |
| rach-ConfigGeneric | RACH-ConfigGeneric |  |  |
| ssb-perRACH-Occasion | one |  |  |
| } |  |  |  |
| resources CHOICE { |  |  |  |
| ssb SEQUENCE { |  |  |  |
| ssb-ResourceList SEQUENCE (SIZE(1..maxRA-SSB-Resources)) OF CFRA-SSB-Resource { | 1 entry |  |  |
| CFRA-SSB-Resource[1] SEQUENCE { |  | entry 1 |  |
| ssb | SSB-Index |  |  |
| ra-PreambleIndex | 8 |  |  |
| } |  |  |  |
| } |  |  |  |
| ra-ssb-OccasionMaskIndex | 0 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| ra-Prioritization | Not present |  |  |
| ra-PrioritizationTwoStep-r16 | Not present |  |  |
| cfra-TwoStep-r16 SEQUENCE { | Not present |  |  |
|  |  |  | 2-step RA |
| occasionsTwoStepRA-r16 SEQUENCE { |  |  |  |
| rach-ConfigGenericTwoStepRA-r16 | RACH-ConfigGenericTwoStepRA |  |  |
| ssb-PerRACH-OccasionTwoStepRA-r16 |  |  |  |
| } |  |  |  |
| msgA-CFRA-PUSCH-r16 | MsgA-PUSCH-Resource |  |  |
| msgA-TransMax-r16 | N10 |  |  |
| resourcesTwoStep-r16 SEQUENCE { |  |  |  |
| ssb-ResourceList SEQUENCE (SIZE(1..maxRA-SSB-Resources)) OF CFRA-SSB-Resource { |  |  |  |
| ssb | 0 |  |  |
| ra-PreambleIndex | 52 | Randomly selected |  |
| msgA-PUSCH-Resource-Index-r16 | Not present |  |  |
| } |  |  |  |
| ra-ssb-OccasionMaskIndex | 0 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| 2-step RA | 2-step RA type Random Access |

#### *– RACH-ConfigGeneric*

Table 4.6.3-130: *RACH-ConfigGeneric*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RACH-ConfigGeneric ::= SEQUENCE { |  |  |  |
| prach-ConfigurationIndex | 160 |  | FR1 |
|  | 149 |  | FR2 |
| msg1-FDM | four |  | FR1 |
|  | one |  | FR2 |
| msg1-FrequencyStart | 0 |  |  |
| zeroCorrelationZoneConfig | 15 |  |  |
| preambleReceivedTargetPower | -118 |  |  |
| preambleTransMax | n7 |  |  |
| powerRampingStep | dB4 |  |  |
| ra-ResponseWindow | sl20 |  |  |
|  | sl10 |  | FR1 AND SCS15 |
| } |  |  |  |

#### *– RACH-ConfigGenericTwoStepRA*

Table 4.6.3-130A: *RACH-ConfigGenericTwoStepRA*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RACH-ConfigGenericTwoStepRA-r16 ::= SEQUENCE { |  |  |  |
| msgA-PRACH-ConfigurationIndex-r16 | 120 |  |  |
| msgA-RO-FDM-r16 | four |  |  |
| msgA-RO-FrequencyStart-r16 | 0 |  |  |
| msgA-ZeroCorrelationZoneConfig-r16 | 15 |  |  |
| msgA-PreamblePowerRampingStep-r16 | dB0 |  |  |
| msgA-PreambleReceivedTargetPower-r16 | -118 |  |  |
| msgB-ResponseWindow-r16 | sl2 |  |  |
| preambleTransMax-r16 | n10 |  |  |
| } |  |  |  |

#### *– RA-Prioritization*

Table 4.6.3-131: *RA-Prioritization*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | | |
| Information Element | Value/remark | | Comment | Condition |
| RA-Prioritization::= SEQUENCE { | 0 | |  |  |
| powerRampingStepHighPriority | dB0 |  | |  |
|  | FFS |  | | Slice\_RACH |
| scalingFactorBI | zero | zero corresponds to 0 | |  |
|  | FFS |  | | Slice\_RACH |
| } |  |  | |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Slice\_RACH | Slice specific RACH configuration |

#### *– RA-PrioritizationForSlicing*

Table 4.6.3-131A: *RA-PrioritizationForSlicing*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RA-PrioritizationForSlicing-r17::= SEQUENCE { |  |  |  |
| ra-PrioritizationSliceInfoList-r17 SEQUENCE (SIZE (1..maxSliceInfo-r17)) OF RA-PrioritizationSliceInfo-r17 { | 1 entry |  |  |
| RA-PrioritizationSliceInfo-r17[1] SEQUENCE{ |  | entry 1 |  |
| nsagIDList-r17 SEQUENCE (SIZE (1..maxSliceInfo-r17)) OF NSAG-ID-r17 { | n entries | n is the number of NSAG values associated with the configured set of RA resources |  |
| NSAG-ID-r17[k, k=1..n] | Set to the corresponding NSAG value used in the test case | entry [k, k=1..n] |  |
| } |  |  |  |
| ra-Prioritization-r17 | RA-Prioritization |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– RadioBearerConfig*

Table 4.6.3-132: *RadioBearerConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RadioBearerConfig ::= SEQUENCE { |  |  |  |
| srb-ToAddModList | Not present |  |  |
| srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod { | 1 entry |  | SRB1 |
| SRB-ToAddMod[1] SEQUENCE { |  | entry 1 |  |
| SRB-Identity | SRB-Identity with condition SRB1 |  |  |
| reestablishPDCP | Not present |  |  |
| discardOnPDCP | Not present |  |  |
| pdcp-Config | Not present | Default |  |
| } |  |  |  |
| } |  |  |  |
| srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod { | 1 entry |  | SRB2, RESUME |
| SRB-ToAddMod[1] SEQUENCE { |  | entry 1 |  |
| SRB-Identity | SRB-Identity with condition SRB2 |  |  |
| reestablishPDCP | Not present |  |  |
|  | true |  | RESUME |
| discardOnPDCP | Not present |  |  |
| pdcp-Config | Not present | Default |  |
| } |  |  |  |
| } |  |  |  |
| srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod { | 1 entry |  | SRB3 |
| SRB-ToAddMod[1] SEQUENCE { |  | entry 1 |  |
| srb-Identity | SRB-Identity with condition SRB3 |  |  |
| reestablishPDCP | Not present |  |  |
| discardOnPDCP | Not present |  |  |
| pdcp-Config | Not present | Default |  |
| } |  |  |  |
| } |  |  |  |
| srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod { | 2 entries |  | SRB\_NR\_PDCP  REEST |
| SRB-ToAddMod[1] SEQUENCE { |  | entry 1 |  |
| SRB-Identity | SRB-Identity with condition SRB1 |  |  |
| reestablishPDCP | Not present |  |  |
|  | true |  | SRB\_NR\_PDCP AND Re-establish\_PDCP |
| discardOnPDCP | Not present |  |  |
| pdcp-Config | Not present | Default |  |
| } |  |  |  |
| SRB-ToAddMod[2] SEQUENCE { |  | entry 2 |  |
| SRB-Identity | SRB-Identity with condition SRB2 |  |  |
| reestablishPDCP | Not present |  |  |
|  | true |  | SRB\_NR\_PDCP AND Re-establish\_PDCP,  REEST |
| discardOnPDCP | Not present |  |  |
| pdcp-Config | Not present | Default |  |
| } |  |  |  |
| } |  |  |  |
| srb3-ToRelease | Not present |  |  |
| drb-ToAddModList | Not present |  |  |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod { | 1 entry |  | EN-DC\_DRB |
| DRB-ToAddMod[1] SEQUENCE { |  | entry 1 |  |
| cnAssociation CHOICE { |  |  |  |
| eps-BearerIdentity | 6 |  |  |
| } |  |  |  |
| drb-Identity | DRB-Identity using condition DRB2 |  |  |
| reestablishPDCP | Not present |  |  |
|  | true |  | EN-DC\_DRB AND Re-establish\_PDCP |
| recoverPDCP | Not present |  |  |
|  | true |  | EN-DC\_DRB AND Recover\_PDCP |
| pdcp-Config | PDCP-Config |  |  |
| } |  |  |  |
| } |  |  |  |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod { | 1 entry |  | MCG\_NR\_PDCP |
| DRB-ToAddMod[1] SEQUENCE { |  | entry 1 |  |
| cnAssociation CHOICE { |  |  |  |
| eps-BearerIdentity | 12 | EPS Bearer Id of default MCG DRB |  |
| } |  |  |  |
| drb-Identity | 8 | DRB Id of default MCG DRB |  |
| reestablishPDCP | Not present |  |  |
| recoverPDCP | Not present |  |  |
| pdcp-Config | PDCP-Config |  |  |
| } |  |  |  |
| } |  |  |  |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod { | 1 entry |  | DRB1 |
| DRB-ToAddMod[1] SEQUENCE { |  | entry 1 |  |
| cnAssociation CHOICE { |  |  |  |
| sdap-Config | SDAP-Config |  |  |
| } |  |  |  |
| drb-Identity | DRB-Identity using condition DRB1 |  |  |
| reestablishPDCP | Not present |  |  |
|  | true |  | DRB1 AND Re-establish\_PDCP |
| recoverPDCP | Not present |  |  |
|  | true |  | DRB1 AND Recover\_PDCP |
| pdcp-Config | PDCP-Config |  |  |
| daps-Config-r16 | Not present |  |  |
| true |  | DRB1 AND DAPS\_PDCP |
| } |  |  |  |
| } |  |  |  |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod { | 1 entry |  | DRB2 |
| DRB-ToAddMod[1] SEQUENCE { |  | entry 1 |  |
| cnAssociation CHOICE { |  |  |  |
| sdap-Config | SDAP-Config |  |  |
| } |  |  |  |
| drb-Identity | DRB-Identity using condition DRB2 |  |  |
| reestablishPDCP | Not present |  |  |
|  | true |  | DRB2 AND Re-establish\_PDCP |
| recoverPDCP | Not present |  |  |
|  | true |  | DRB2 AND Recover\_PDCP |
| pdcp-Config | PDCP-Config |  |  |
| daps-Config-r16 | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod { | n entries | n is the number of DRBs established before RRC resume or RRC re-establishment | RESUME, REEST |
| DRB-ToAddMod[k, k=1..n] SEQUENCE { |  | entry [k, k=1..n] |  |
| cnAssociation | Not present |  |  |
| drb-Identity | DRB-Identity with condition DRBk |  |  |
| reestablishPDCP | true |  |  |
| recoverPDCP | Not present |  |  |
| pdcp-Config | Not present |  |  |
| daps-Config-r16 | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod { | 1 entry |  | DRBn |
| DRB-ToAddMod[1] SEQUENCE { |  | entry 1 |  |
| cnAssociation CHOICE { |  |  |  |
| sdap-Config | SDAP-Config |  |  |
| SDAP-Config with conditionNo-defaultDRB |  | SCG\_DRB |
| } |  |  |  |
| drb-Identity | DRB-Identity with condition DRBn |  |  |
| reestablishPDCP | Not present |  |  |
| recoverPDCP | Not present |  |  |
| pdcp-Config | PDCP-Config |  |  |
|  | PDCP-Config with condition Split |  | Split |
| } |  |  |  |
| } |  |  |  |
| drb-ToReleaseList | Not present |  |  |
| securityConfig | Not present |  | SRB1 |
| securityConfig SEQUENCE { |  |  |  |
| securityAlgorithmConfig | SecurityAlgorithmConfig |  |  |
| keyToUse | master |  |  |
| secondary |  | SRB3, EN-DC\_DRB, SecondaryKeys |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SRB3 | Establishment of SRB3 |
| MCG\_NR\_PDCP | EN-DC MCG DRB configured or reconfigured with NR PDCP |
| SRB\_NR\_PDCP | EN-DC SRB1 and SRB2 configured with NR PDCP |
| SRB1 | Establishment of SRB1 |
| SRB2 | Establishment of SRB2 |
| DRB1 | Establishment of DRB1 |
| DRB2 | Establishment of DRB2 |
| DRBn | Establishment of DRBn |
| EN-DC\_DRB | EN-DC DRB configured on SCG |
| Re-establish\_PDCP | Re-establishment of PDCP |
| Recover\_PDCP | Recovery of PDCP |
| RESUME | Used in RRCResume Message |
| REEST | The first RRCReconfiguration message after successful completion of the RRC re-establishment procedure. |
| SecondaryKeys | NR-DC SCG or MCG DRB configured or reconfigured with secondary security keys |
| Split | Split PDCP: more than one RLC |
| DAPS\_PDCP | Used when the bearer is configured as DAPS bearer |
| SCG\_DRB | Used when the bearer is configured as an SCG bearer in either NR-DC or NE-DC |

#### *– RadioLinkMonitoringConfig*

Table 4.6.3-133: *RadioLinkMonitoringConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RadioLinkMonitoringConfig ::= SEQUENCE { |  |  |  |
| failureDetectionResourcesToAddModList SEQUENCE (SIZE(1..maxNrofFailureDetectionResources)) OF RadioLinkMonitoringRS { | 1 entry |  |  |
| RadioLinkMonitoringRS[1] SEQUENCE { |  | entry 1 |  |
| radioLinkMonitoringRS-Id | RadioLinkMonitoringRS-Id |  |  |
| purpose | rlf |  |  |
| detectionResource CHOICE { |  |  |  |
| ssb-Index | SSB-Index |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
|  |  |  |  |
| failureDetectionResourcesToReleaseList | Not present |  |  |
| beamFailureInstanceMaxCount | Not present |  |  |
| beamFailureDetectionTimer | Not present |  |  |
| } |  |  |  |

#### *– RadioLinkMonitoringRS-Id*

Table 4.6.3-134: *RadioLinkMonitoringRS-Id*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RadioLinkMonitoringRS-Id | 0 |  |  |

#### *– RAN-AreaCode*

Table 4.6.3-135: *RAN-AreaCode*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RAN-AreaCode | 1 |  |  |

#### *– RateMatchPattern*

Table 4.6.3-136: *RateMatchPattern*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RateMatchPattern ::= SEQUENCE { |  |  |  |
| rateMatchPatternId | RateMatchPatternId |  |  |
| patternType CHOICE { |  |  |  |
| controlResourceSet | ControlResourceSetId |  |  |
| } |  |  |  |
| subcarrierSpacing | SubcarrierSpacing |  |  |
| dummy | semiStatic | Dummy IE value |  |
| } |  |  |  |

#### *– RateMatchPatternId*

Table 4.6.3-137: *RateMatchPatternId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RateMatchPatternId | 0 |  |  |

#### *– RateMatchPatternLTE-CRS*

Table 4.6.3-138: *RateMatchPatternLTE-CRS*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RateMatchPatternLTE-CRS ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– ReferenceTimeInfo*

Table 4.6.3-138A: *ReferenceTimeInfo*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ReferenceTimeInfo-r16 ::= SEQUENCE { |  |  |  |
| time-r16 ::= SEQUENCE { |  |  |  |
| refDays-r16 | obtained from the local clock |  |  |
| refSeconds-r16 | obtained from the local clock |  |  |
| refMilliSeconds-r16 | obtained from the local clock |  |  |
| refTenNanoSeconds-r16 | obtained from the local clock |  |  |
| } |  |  |  |
| uncertainty-r16 | not present |  |  |
| timeInfoType-r16 | localClock |  |  |
| referenceSFN-r16 | SFN of PCell |  |  |
| } |  |  |  |

#### *– RejectWaitTime*

Table 4.6.3-139: *RejectWaitTime*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RejectWaitTime | 1 |  |  |

#### *– RepetitionSchemeConfig*

Table 4.6.3-139A: *RepetitionSchemeConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RepetitionSchemeConfig-r16 ::= CHOICE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– ReportConfigId*

Table 4.6.3-140: *ReportConfigId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ReportConfigId | 1 |  |  |

#### *– ReportConfigInterRAT*

Table 4.6.3-141: *ReportConfigInterRAT (InterRAT-Thres, NR-Thres)*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ReportConfigInterRAT ::= SEQUENCE { |  |  |  |
| reportType CHOICE { |  |  |  |
| periodical SEQUENCE { |  |  | PERIODICAL  OR PERIODICAL\_UTRA |
| reportInterval | ReportInterval |  |  |
| reportAmount | infinity |  |  |
| reportQuantity SEQUENCE { |  | UE shall ignore the value(s) provided in reportQuantity if reportQuantityUTRA-FDD-r16 is configured. |  |
| rsrp | true |  |  |
| rsrq | true |  |  |
| sinr | false |  |  |
| } |  |  |  |
| maxReportCells | 8 |  |  |
| reportQuantityUTRA-FDD-r16 | Not present |  |  |
| reportQuantityUTRA-FDD-r16 SEQUENCE { |  |  | PERIODICAL\_UTRA |
| cpich-RSCP | true |  |  |
| cpich-EcN0 | false |  |  |
| } |  |  |  |
| includeCommonLocationInfo-r16 | Not present |  |  |
| includeBT-Meas-r16 | Not present |  |  |
| includeWLAN-Meas-r16 | Not present |  |  |
| } |  |  |  |
| eventTriggered SEQUENCE { |  |  | EVENT\_B1 OR EVENT\_B2 OR EVENT\_B1\_UTRA OR EVENT\_B2\_UTRA |
| eventId CHOICE { |  |  |  |
| eventB1 SEQUENCE { |  |  | EVENT\_B1 |
| b1-ThresholdEUTRACHOICE { |  |  |  |
| rsrp | InterRAT-Thres | INTEGER (0..97) |  |
| } |  |  |  |
| reportOnLeave | false |  |  |
| Hysteresis | 0 (0 dB) | The actual value is field value \* 0.5 dB |  |
| timeToTrigger | ms0 |  |  |
| } |  |  |  |
| eventB2 SEQUENCE { |  |  | EVENT\_B2 |
| b2-Threshold1 CHOICE { |  |  |  |
| rsrp | *NR-Thres* | INTEGER(0..127) |  |
| } |  |  |  |
| b2-Threshold2EUTRA CHOICE { |  |  |  |
| rsrp | InterRAT-Thres | INTEGER (0..97) |  |
| } |  |  |  |
| reportOnLeave | FALSE |  |  |
| Hysteresis | 3 (1.5dB) | The actual value is field value \* 0.5 dB |  |
| timeToTrigger | ms1024 |  |  |
| } |  |  |  |
| eventB1-UTRA-FDD-r16 SEQUENCE { |  |  | EVENT\_B1\_UTRA |
| b1-ThresholdUTRA-FDD-r16 CHOICE { |  |  |  |
| utra-FDD-EcN0-r16 | InterRAT-Thres |  |  |
| } |  |  |  |
| reportOnLeave-r16 | false |  |  |
| hysteresis-r16 | 0 |  |  |
| timeToTrigger-r16 | ms0 |  |  |
| } |  |  |  |
| eventB2-UTRA-FDD-r16 SEQUENCE { |  |  | EVENT\_B2\_UTRA |
| b2-Threshold1-r16 CHOICE { |  |  |  |
| rsrp | NR-Thres | INTEGER(0..127) |  |
| } |  |  |  |
| b2-Threshold2UTRA-FDD-r16 CHOICE { |  |  |  |
| utra-FDD-EcN0-r16 | InterRAT-Thres |  |  |
| } |  |  |  |
| reportOnLeave-r16 | false |  |  |
| hysteresis-r16 | 0 |  |  |
| timeToTrigger-r16 | ms0 |  |  |
| } |  |  |  |
| } |  |  |  |
| rsType | ssb |  |  |
| reportInterval | ms120 |  |  |
| reportAmount | r2 |  |  |
| reportQuantity SEQUENCE { |  | UE shall ignore the value(s) provided in reportQuantity if reportQuantityUTRA-FDD-r16 is configured. |  |
| Rsrp | true |  |  |
| rsrq | true |  |  |
| sinr | false |  |  |
| } |  |  |  |
| maxReportCells | 8 |  |  |
| reportQuantityUTRA-FDD-r16 | Not present |  |  |
| reportQuantityUTRA-FDD-r16 SEQUENCE { |  |  | EVENT\_B1\_UTRA OR EVENT\_B2\_UTRA |
| cpich-RSCP | false |  |  |
| cpich-EcN0 | true |  |  |
| } |  |  |  |
| includeCommonLocationInfo-r16 | Not present |  |  |
| includeBT-Meas-r16 | Not present |  |  |
| includeWLAN-Meas-r16 | Not present |  |  |
| includeSensor-Meas-r16 | Not present |  |  |
| } |  |  |  |
| reportCGI SEQUENCE { |  |  | CGI |
| cellForWhichToReportCGI | EUTRA-PhysCellId |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| EVENT\_B1 | Configuration of Event B1 on E-UTRA carrier |
| EVENT\_B2 | Configuration of Event B2 on E-UTRA carrier |
| EVENT\_B1\_UTRA | Configuration of Event B1 on UTRA carrier |
| EVENT\_B2\_UTRA | Configuration of Event B2 on UTRA carrier |
| CGI | Configuration of CGI measurement |
| PERIODICAL | Configuration of periodical reporting on E-UTRA carrier |
| PERIODICAL\_UTRA | Configuration of periodical reporting on UTRA carrier |

#### *– ReportConfigNR*

Table 4.6.3-142: *ReportConfigNR*(Thres1, Thres2)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ReportConfigNR ::= SEQUENCE { |  |  |  |
| reportType CHOICE { |  |  |  |
| periodical SEQUENCE { |  |  | PERIODICAL |
| rsType | ssb |  |  |
| reportInterval | ReportInterval |  |  |
| reportAmount | infinity |  |  |
| reportQuantityCell SEQUENCE { |  |  |  |
| rsrp | true |  |  |
| rsrq | true |  |  |
| sinr | false |  |  |
|  | true |  | pc\_ss\_SINR\_Meas |
| } |  |  |  |
| maxReportCells | 8 |  |  |
| reportQuantityRS-Indexes | Not present |  |  |
| maxNrofRS-IndexesToReport | Not present |  |  |
| includeBeamMeasurements | false |  |  |
| useWhiteCellList | false |  |  |
| measRSSI-ReportConfig-r16 | Not present |  |  |
| includeCommonLocationInfo-r16 | Not present |  |  |
| includeBT-Meas-r16 | Not present |  |  |
| includeBT-Meas-r16 CHOICE { |  |  | MDT\_BT |
| setup | BT-NameList |  |  |
| } |  |  |  |
| includeWLAN-Meas-r16 | Not present |  |  |
| includeWLAN-Meas-r16 CHOICE { |  |  | MDT\_WLAN |
| setup | WLAN-NameList |  |  |
| } |  |  |  |
| includeSensor-Meas-r16 | Not present |  |  |
| includeSensor-Meas-r16 CHOICE { |  |  | MDT\_SENSOR |
| setup | Sensor-NameList |  |  |
| } |  |  |  |
| ul-DelayValueConfig-r16 | Not present |  |  |
| ul-DelayValueConfig-r16 CHOICE { |  |  | MDT\_DELAY |
| setup | UL-DelayValueConfig |  |  |
| } |  |  |  |
| reportAddNeighMeas-r16 | Not present |  |  |
| } |  |  |  |
| eventTriggered SEQUENCE { |  |  |  |
| eventId CHOICE { |  |  |  |
| eventA1 SEQUENCE { |  |  | EVENT\_A1 |
| a1-ThresholdCHOICE { |  |  |  |
| rsrp | Thres1 | Thres is an entry value into a mapping table in TS 38.133 [13]. |  |
| } |  |  |  |
| reportOnLeave | false |  |  |
| hysteresis | Hysteresis |  |  |
| timeToTrigger | TimeToTrigger |  |  |
| } |  |  |  |
| eventA2 SEQUENCE { |  |  | EVENT\_A2 |
| a2-Threshold CHOICE { |  |  |  |
| rsrp | Thres1 | Thres is an entry value into a mapping table in TS 38.133 [13]. |  |
| } |  |  |  |
| reportOnLeave | false |  |  |
| hysteresis | Hysteresis |  |  |
| timeToTrigger | TimeToTrigger |  |  |
| } |  |  |  |
| eventA3 SEQUENCE { |  |  | EVENT\_A3 |
| a3-Offset CHOICE { |  |  |  |
| rsrp | Thres1 | Thres is an entry value into a mapping table in TS 38.133 [13]. |  |
| } |  |  |  |
| reportOnLeave | false |  |  |
| hysteresis | Hysteresis |  |  |
| timeToTrigger | TimeToTrigger |  |  |
| useWhiteCellList | false |  |  |
| } |  |  |  |
| eventA4 SEQUENCE { |  |  | EVENT\_A4 |
| a4-Threshold CHOICE { |  |  |  |
| rsrp | Thres1 | Thres is an entry value into a mapping table in TS 38.133 [13]. |  |
| } |  |  |  |
| reportOnLeave | false |  |  |
| hysteresis | Hysteresis |  |  |
| timeToTrigger | TimeToTrigger |  |  |
| useWhiteCellList | false |  |  |
| } |  |  |  |
| eventA5 SEQUENCE { |  |  | EVENT\_A5 |
| a5-Threshold1 CHOICE { |  |  |  |
| rsrp | Thres1 | Thres is an entry value into a mapping table in TS 38.133 [13]. |  |
| } |  |  |  |
| a5-Threshold2 CHOICE { |  |  |  |
| rsrp | Thres2 | Thres is an entry value into a mapping table in TS 38.133 [13]. |  |
| } |  |  |  |
| reportOnLeave | false |  |  |
| hysteresis | Hysteresis |  |  |
| timeToTrigger | TimeToTrigger |  |  |
| useWhiteCellList | false |  |  |
| } |  |  |  |
| eventA6 SEQUENCE { |  |  | EVENT\_A6 |
| a6-Offset CHOICE { |  |  |  |
| rsrp | Thres1 | Thres is an entry value into a mapping table in TS 38.133 [13]. |  |
| } |  |  |  |
| reportOnLeave | false |  |  |
| hysteresis | Hysteresis |  |  |
| timeToTrigger | TimeToTrigger |  |  |
| useWhiteCellList | false |  |  |
| } |  |  |  |
| } |  |  |  |
| rsType | ssb |  |  |
| reportInterval | ReportInterval |  |  |
| reportAmount | r2 |  |  |
| reportQuantityCell SEQUENCE { |  |  |  |
| rsrp | true |  |  |
| rsrq | true |  |  |
| sinr | false |  |  |
|  | true |  | pc\_ss\_SINR\_Meas |
| } |  |  |  |
| maxReportCells | 8 |  |  |
| reportQuantityRS-Indexes | Not present |  |  |
| maxNrofRS-IndexesToReport | Not present |  |  |
| includeBeamMeasurements | false |  |  |
| reportAddNeighMeas | Not present |  |  |
| measRSSI-ReportConfig-r16 | Not present |  |  |
|  | MeasRSSI-ReportConfig |  | SharedSpectrum |
| useT312-r16 | Not present |  |  |
| includeCommonLocationInfo-r16 | Not present |  | MDT |
| includeBT-Meas-r16 | Not present |  |  |
| includeBT-Meas-r16 CHOICE { |  |  | MDT\_BT |
| setup | BT-NameList |  |  |
| } |  |  |  |
| includeWLAN-Meas-r16 | Not present |  |  |
| includeWLAN-Meas-r16 CHOICE { |  |  | MDT\_WLAN |
| setup | WLAN-NameList |  |  |
| } |  |  |  |
| includeSensor-Meas-r16 | Not present |  |  |
| includeSensor-Meas-r16 CHOICE { |  |  | MDT\_SENSOR |
| setup | Sensor-NameList |  |  |
| } |  |  |  |
| } |  |  |  |
| reportCGI SEQUENCE { |  |  | CGI |
| cellForWhichToReportCGI | PhysCellId |  |  |
| } |  |  |  |
| reportSFTD SEQUENCE { |  |  | SFTD\_NEIGHBOUR or SFTD\_PSCELL |
| reportSFTD-Meas | false |  | SFTD\_NEIGHBOUR |
|  | true |  | SFTD\_PSCELL |
| reportRSRP | false |  |  |
| reportSFTD-NeighMeas | true |  | SFTD\_NEIGHBOUR |
|  | Not present |  | SFTD\_PSCELL |
| drx-SFTD-NeighMeas | Not present |  |  |
| cellsForWhichToReportSFTD | Not present |  |  |
| } |  |  |  |
| condTriggerConfig SEQUENCE { |  |  | CHO, CPC |
| condEventId CHOICE { |  |  |  |
| condEventA3 SEQUENCE { |  |  | CHO AND EVENT\_A3 |
| a3-Offset CHOICE { |  |  |  |
| rsrp | Thres1 | Thres is an entry value into a mapping table in TS 38.133 [13]. |  |
| } |  |  |  |
| hysteresis | Hysteresis |  |  |
| timeToTrigger | TimeToTrigger |  |  |
| } |  |  |  |
| condEventA5 SEQUENCE { |  |  | CHO AND EVENT\_A5 |
| a5-Threshold1 CHOICE { |  |  |  |
| rsrp | Thres1 | Thres is an entry value into a mapping table in TS 38.133 [13]. |  |
| } |  |  |  |
| a5-Threshold2 CHOICE { |  |  |  |
| rsrp | Thres2 | Thres is an entry value into a mapping table in TS 38.133 [13]. |  |
| } |  |  |  |
| hysteresis | Hysteresis |  |  |
| timeToTrigger | TimeToTrigger |  |  |
| } |  |  |  |
| } |  |  |  |
| rsType-r16 | ssb |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| EVENT\_A1 | Configuration of Event A1 |
| EVENT\_A2 | Configuration of Event A2 |
| EVENT\_A3 | Configuration of Event A3 |
| EVENT\_A4 | Configuration of Event A4 |
| EVENT\_A5 | Configuration of Event A5 |
| EVENT\_A6 | Configuration of Event A6 |
| PERIODICAL | Configuration of periodical reporting |
| CGI | Configuration of CGI measurement |
| CHO | Configuration of conditional handover |
| CPC | Conditional PScell change |
| MDT | Configuration of MDT |
| MDT\_BT | Configuration of MDT including Bluetooth measurements |
| MDT\_WLAN | Configuration of MDT including WLAN measurements |
| MDT\_SENSOR | Configuration of MDT including Sensor measurements |
| MDT\_DELAY | Configuration of UL PDCP Packet Delay per DRB |
| SFTD\_NEIGHBOUR | Configurations of SFTD measurement on NR neighbour |
| SFTD\_PSCELL | Configurations of SFTD measurement on NR PSCell |
| SharedSpectrum | Operation with shared spectrum channel access |

#### *– ReportConfigNR-SL*

Table 4.6.3-142A: *ReportConfigNR-SL*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ReportConfigNR-SL-r16 ::= SEQUENCE { |  |  |  |
| reportType-r16 CHOICE { |  |  |  |
| periodical-r16 SEQUENCE { |  |  | PERIODICAL |
| reportInterval-r16 | ReportInterval |  |  |
| reportAmount-r16 | r2 |  |  |
| reportQuantity-r16 SEQUENCE { |  |  |  |
| cbr-r16 | true |  |  |
| } |  |  |  |
| eventTriggered-r16 SEQUENCE { |  |  | EVENT\_C1, EVENT\_C2 |
| eventId-r16 CHOICE { |  |  |  |
| eventC1 SEQUENCE { |  |  | EVENT\_C1 |
| c1-Threshold-r16 | SL-CBR-r16 |  |  |
| hysteresis-r16 | Hysteresis |  |  |
| timeToTrigger-r16 | TimeToTrigger |  |  |
| } |  |  |  |
| eventC2 SEQUENCE { |  |  | EVENT\_C2 |
| c2-Threshold-r16 | SL-CBR-r16 |  |  |
| hysteresis-r16 | Hysteresis |  |  |
| timeToTrigger-r16 | TimeToTrigger |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| PERIODICAL | Configuration of periodical reporting |
| EVENT\_C1 | Configuration of Event C1 |
| EVENT\_C2 | Configuration of Event C2 |

#### *– ReportConfigToAddModList*

Table 4.6.3-143: *ReportConfigToAddModList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ReportConfigToAddModList ::= SEQUENCE(SIZE (1..maxReportConfigId)) OF ReportConfigToAddMod { | 1 entry |  |  |
| ReportConfigToAddMod[1] SEQUENCE { |  | entry 1 |  |
| reportConfigId | ReportConfigId |  |  |
| reportConfig CHOICE { |  |  |  |
| reportConfigNR | ReportConfigNR |  |  |
| reportConfigInterRAT | ReportConfigInterRAT |  | InterRAT |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| InterRAT | Configuration with at least one NR PCell and one or more E-UTRA neighbour cell(s) |

#### *– ReportInterval*

Table 4.6.3-144: *ReportInterval*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ReportInterval | ms480 |  |  |

#### *– ReselectionThreshold*

Table 4.6.3-145: *ReselectionThreshold*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ReselectionThreshold | FFS |  |  |

#### *– ReselectionThresholdQ*

Table 4.6.3-146: *ReselectionThresholdQ*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ReselectionThresholdQ | FFS |  |  |

#### *– ResumeCause*

Table 4.6.3-147: *ResumeCause*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ResumeCause | mt-Access |  |  |

#### *– RLC-BearerConfig*

Table 4.6.3-148: *RLC-BearerConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RLC-BearerConfig ::= SEQUENCE { |  |  |  |
| logicalChannelIdentity | LogicalChannelIdentity with condition DRBn |  | DRBn |
|  | LogicalChannelIdentity with condition SRB1 |  | SRB1 |
|  | LogicalChannelIdentity with condition SRB2 |  | SRB2 |
|  | LogicalChannelIdentity with condition SRB3 |  | SRB3 |
| servedRadioBearer CHOICE { |  |  |  |
| srb-Identity | SRB-Identity with condition SRB1 |  | SRB1 |
|  | SRB-Identity with condition SRB2 |  | SRB2 |
|  | SRB-Identity with condition SRB3 |  | SRB3 |
| drb-Identity | DRB-Identity with condition DRBn |  | DRBn |
| } |  |  |  |
| servedRadioBearer | Not present |  | RESUME |
| reestablishRLC | Not present |  |  |
|  | true |  | Re-establish\_RLC, RESUME |
| rlc-Config | RLC-Config using condition AM |  | AM |
| RLC-Config using condition UM. |  | UM |
| Not present | Use default parameters as per TS 38.331 [6] clause 9.2.1 | SRB1, SRB2, SRB3, RESUME |
| mac-LogicalChannelConfig | LogicalChannelConfig using condition HI |  | AM |
| LogicalChannelConfig using condition LO |  | UM |
| LogicalChannelConfig using condition SRBn | n= 1, 2, 3 for SRB1, SRB2, SRB3 resp. | SRB1, SRB2, SRB3, RESUME |
| rlc-Config-v1610 | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| AM | RLC AM DRB |
| UM | RLC UM DRB |
| SRB1 | Establishment of SRB1 |
| SRB2 | Establishment of SRB2 |
| SRB3 | Establishment of SRB3 |
| DRBn | Establishment of DRBn |
| Re-establish\_RLC | Re-establishment of RLC |
| RESUME | Used in RRCResume Message |

#### *– RLC-Config*

Table 4.6.3-149: *RLC-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RLC-Config ::= CHOICE { |  |  |  |
| am SEQUENCE { |  |  | AM |
| ul-AM-RLC SEQUENCE { |  |  |  |
| sn-FieldLength | size18 |  |  |
|  | size12 |  | pc\_RedCap\_r17 |
| t-PollRetransmit | ms80 |  | FR1 |
|  | ms30 |  | FR2 |
| pollPDU | p32768 |  |  |
| pollByte | kB750 |  |  |
| maxRetxThreshold | t8 |  |  |
| } |  |  |  |
| dl-AM-RLC SEQUENCE { |  |  |  |
| sn-FieldLength | size18 |  |  |
| t-Reassembly | ms80 |  | FR1 |
|  | ms30 |  | FR2 |
| t-StatusProhibit | ms30 |  |  |
| } |  |  |  |
| } |  |  |  |
| um-Bi-Directional SEQUENCE { |  |  | UM |
| ul-UM-RLC SEQUENCE { |  |  |  |
| sn-FieldLength | size12 |  | pc\_um\_WIthLongSN |
|  | size6 |  | NOT pc\_um\_WIthLongSN AND pc\_um\_WithShortSN |
| } |  |  |  |
| dl-UM-RLC SEQUENCE { |  |  |  |
| sn-FieldLength | size12 |  | pc\_um\_WIthLongSN |
|  | size6 |  | NOT pc\_um\_WIthLongSN AND pc\_um\_WithShortSN |
| t-Reassembly | ms80 |  | FR1 |
|  | ms30 |  | FR2 |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| **Condition** | **Explanation** |
| AM | RLC AM |
| UM | RLC UM |

#### *– RLF-TimersAndConstants*

Table 4.6.3-150: *RLF-TimersAndConstants*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RLF-TimersAndConstants ::= SEQUENCE { |  |  |  |
| t310 | ms1000 |  |  |
| n310 | n1 |  |  |
| n311 | n1 |  |  |
| t311 | ms1000 |  |  |
| } |  |  |  |

#### *– RMTC-Config*

Table 4.6.3-150A: RMTC-Config

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RMTC-Config-r16 ::= SEQUENCE { |  |  |  |
| rmtc-Periodicity-r16 | FFS |  |  |
| rmtc-SubframeOffset-r16 | FFS |  |  |
| } |  |  |  |

#### *– RNTI-Value*

Table 4.6.3-151: *RNTI-Value*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RNTI-Value | SS arbitrarily selects a value between ‘0001’H and ‘FFEF’H |  |  |
|  | SS arbitrarily selects a value between ‘0001’H and ‘FFEF’H different from the MCG RNTI-Value. |  | NR-DC\_SCG |

|  |  |
| --- | --- |
| Condition | Explanation |
| NR-DC\_SCG | Add SCG (NR-DC) |

#### *– RSRP-Range*

Table 4.6.3-152: *RSRP-Range*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RSRP-Range | 0 | For measurements, 0 means L3 SS-RSRP<-156dBm according to Table 10.1.6.1-1 in TS 38.133 [13]. For thresholds, 0 means -156dBm. |  |

#### *– RSRQ-Range*

Table 4.6.3-153: *RSRQ-Range*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RSRQ-Range | 0 | For measurements, 0 means SS-RSRQ<-43dB according to Table 10.1.11.1-1 in TS 38.133 [14]. For thresholds, 0 means -43.5dB. |  |

#### *– RSSI-Range*

Table 4.6.3-153A: *RSSI-Range*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RSSI-Range-r16 | FFS |  |  |

#### *– RxTxTimeDiff*

Table 4.6.3-153B: *RxTxTimeDiff*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| RxTxTimeDiff-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SCellActivationRS-Config*

Table 4.6.3-153C: *SCellActivationRS-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SCellActivationRS-Config-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SCellActivationRS-ConfigId*

Table 4.6.3-153D: *SCellActivationRS-ConfigId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SCellActivationRS-ConfigId-r17 | FFS |  |  |

#### *– SCellIndex*

Table 4.6.3-154: *SCellIndex*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SCellIndex | 1 |  |  |
|  | 2 |  | EN-DC |

|  |  |
| --- | --- |
| Condition | Explanation |
| EN-DC | E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC |

#### *– SchedulingRequestConfig*

Table 4.6.3-155: *SchedulingRequestConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SchedulingRequestConfig ::= SEQUENCE { |  |  |  |
| schedulingRequestToAddModList SEQUENCE (SIZE(1..maxNrofSR-ConfigPerCellGroup)) OF SSchedulingRequestToAddMod { | 1 entry |  |  |
| SchedulingRequestToAddMod[1] SEQUENCE { |  | entry 1 |  |
| schedulingRequestId | SchedulingRequestId |  |  |
| sr-ProhibitTimer | Not present |  |  |
| sr-TransMax | n16 |  |  |
| } |  |  |  |
| } |  |  |  |
| schedulingRequestToReleaseList | Not present |  |  |
| } |  |  |  |

#### *– SchedulingRequestId*

Table 4.6.3-156: *SchedulingRequestId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SchedulingRequestId | 0 |  |  |

#### *– SchedulingRequestResourceConfig*

Table 4.6.3-157: *SchedulingRequestResourceConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SchedulingRequestResourceConfig ::= SEQUENCE { |  |  |  |
| schedulingRequestResourceId | SchedulingRequestResourceId |  |  |
| schedulingRequestID | SchedulingRequestId |  |  |
| periodicityAndOffset CHOICE { |  |  |  |
| sl10 | 9 | With SCS = kHz15 results in repetition every 10 ms | SCS15 |
| sl20 | 9 | With SCS = kHz30 results in repetition every 10 ms | SCS30 |
| sl40 | 19 | With SCS = kHz60 results in repetition every 10 ms | FR1 AND SCS60 |
|  | 9 | With SCS = kHz60 results in repetition every 10 ms | FR2 AND SCS60 |
| sl80 | 9 | With SCS = kHz120 results in repetition every 10 ms | SCS120 |
| } |  |  |  |
| resource | 0 | ID of the PUCCH resource as configured by PUCCH-Config (Table 4.6.3-84) |  |
| } |  |  |  |

#### *– SchedulingRequestResourceId*

Table 4.6.3-158: *SchedulingRequestResourceId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SchedulingRequestResourceId | 1 |  |  |

#### *– ScramblingId*

Table 4.6.3-159: *ScramblingId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ScramblingId | 0 |  |  |

#### *– SCS-SpecificCarrier*

Table 4.6.3-160: *SCS-SpecificCarrier*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SCS-SpecificCarrier ::= SEQUENCE { |  |  |  |
| offsetToCarrier | offsetToCarrier as defined for the DL frequency of the cell | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. | DL\_PointA |
|  | offsetToCarrier as defined for the UL frequency of the cell | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. | UL\_PointA |
|  | offsetToCarrier as defined for the SL NRf1 frequency | For signalling test cases see subclause 6.2.3.7. Otherwise, see subclause 4.3.1.8. | SL\_PointA |
| subcarrierSpacing | SubcarrierSpacing |  |  |
| carrierBandwidth | carrierBandwidth as defined for the frequency of the cell | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. |  |
| txDirectCurrentLocation | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| DL\_PointA | IE absoluteFrequencyPointA for downlink |
| UL\_PointA | IE absoluteFrequencyPointA for uplink |
| SL\_PointA | IE absoluteFrequencyPointA for sidelink |

#### *– SDAP-Config*

Table 4.6.3-161: *SDAP-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SDAP-Config ::= SEQUENCE { |  |  |  |
| pdu-Session | The same value as the PDU session ID IE of the contained message |  |  |
| sdap-HeaderDL | absent |  |  |
| sdap-HeaderUL | present |  |  |
| defaultDRB | true |  |  |
|  | false |  | No-defaultDRB |
| mappedQoS-FlowsToAdd SEQUENCE (SIZE (1..maxNrofQFIs)) OF QFI { | n entries |  |  |
| QFI[n] | The list of QFIs of the Authorized QoS flow descriptions IE of the contained 5GSM message | entry n |  |
| } |  |  |  |
| mappedQoS-FlowsToRelease | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| No-defaultDRB | The defaultDRB value is false. |

#### *– SearchSpace*

Table 4.6.3-162: *SearchSpace*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SearchSpace ::= SEQUENCE { |  |  |  |
| searchSpaceId | SearchSpaceId with condition CSS |  | CSS |
|  | SearchSpaceId with condition USS |  | USS |
|  | SearchSpaceId with condition SISS |  | SISS |
| controlResourceSetId | ControlResourceSetId |  |  |
|  | ControlResourceSetId with condition Common0 |  | CSS, SISS |
| monitoringSlotPeriodicityAndOffset CHOICE { |  |  |  |
| sl1 | NULL |  |  |
| sl10 | 5 |  | SISS |
| } |  |  |  |
| duration | Not present | 1 slot per default |  |
|  | 2 |  | SISS |
| monitoringSymbolsWithinSlot | 10000000000000 |  |  |
| nrofCandidates SEQUENCE { |  |  |  |
| aggregationLevel1 | n0 |  |  |
| aggregationLevel2 | n4 |  | FR1 |
| n3 |  | FR2 |
| aggregationLevel4 | n2 |  |  |
| aggregationLevel8 | n1 |  |  |
| aggregationLevel16 | n0 |  |  |
| } |  |  |  |
| searchSpaceType CHOICE { |  |  |  |
| common SEQUENCE { |  |  | CSS, SISS |
| dci-Format0-0-AndFormat1-0 SEQUENCE { |  |  |  |
| } |  |  |  |
| dci-Format2-0 | Not present |  |  |
| dci-Format2-1 | Not present |  |  |
| dci-Format2-2 | Not present |  |  |
| dci-Format2-3 | Not present |  |  |
| } |  |  |  |
| ue-Specific SEQUENCE { |  |  | USS |
| dci-Formats | formats0-0-And-1-0 |  | Short\_DCI |
| dci-Formats | formats0-1-And-1-1 |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| CSS | Common SearchSpace |
| USS | UE-Specific SearchSpace |
| Short\_DCI | Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS |
| SISS | SearchSpace for SI |

#### *– SearchSpaceId*

Table 4.6.3-163: *SearchSpaceId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SearchSpaceID | 1 |  | CSS |
|  | 2 |  | USS |
|  | 3 |  | SISS |

|  |  |
| --- | --- |
| Condition | Explanation |
| CSS | Common SearchSpace |
| USS | UE-Specific SearchSpace |
| SISS | SearchSpace for SI |

#### *– SearchSpaceZero*

Table 4.6.3-164: *SearchSpaceZero*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SearchSpaceZero | 0 | Index addressing SearchSpace#0 parameter set in Tables 13.11 .. 13.15 of TS 38.213 [22] |  |

#### *– SecurityAlgorithmConfig*

Table 4.6.3-165: *SecurityAlgorithmConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SecurityAlgorithmConfig ::= SEQUENCE { |  |  |  |
| cipheringAlgorithm | nea0 |  | RF OR RRM |
|  | Set according to PIXIT px\_NR\_CipheringAlgorithm | see TS 38.523-3 [23] | SIG |
| integrityProtAlgorithm | nia2 |  |  |
|  | Set according to PIXIT px\_NR\_IntegrityProtAlgorithm | see TS 38.523-3 [23] | SIG |
| } |  |  |  |

#### *– SemiStaticChannelAccessConfig*

Table 4.6.3-165A: *SemiStaticChannelAccessConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SemiStaticChannelAccessConfig-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SemiStaticChannelAccessConfigUE*

Table 4.6.3-165BA: *SemiStaticChannelAccessConfigUE*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SemiStaticChannelAccessConfigUE-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– Sensor-LocationInfo*

Table 4.6.3-165B: *Sensor-LocationInfo*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| Sensor-LocationInfo-r16 ::= SEQUENCE { |  |  |  |
| sensor-MeasurementInformation-r16 | Not checked | OCTET STRING |  |
| sensor-MotionInformation-r16 | Not checked | OCTET STRING |  |
| } |  |  |  |

#### *– ServCellIndex*

Table 4.6.3-166: *ServCellIndex*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ServCellIndex | 0 |  |  |
|  | 1 |  | EN-DC, NR-DC\_SCG |

|  |  |
| --- | --- |
| Condition | Explanation |
| EN-DC | E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC |
| NR-DC\_SCG | Add SCG (NR-DC) |

#### *– ServingCellConfig*

Table 4.6.3-167: *ServingCellConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ServingCellConfig ::= SEQUENCE { |  |  |  |
| tdd-UL-DL-ConfigurationDedicated | Not present |  |  |
| initialDownlinkBWP | BWP-DownlinkDedicated |  |  |
|  | BWP-DownlinkDedicated with condition Scell\_Add |  | Scell\_Add |
|  | Not present |  | MEAS, RESUME |
| downlinkBWP-ToReleaseList | Not present |  |  |
| downlinkBWP-ToAddModList | Not present |  |  |
| firstActiveDownlinkBWP-Id | BWP-Id |  |  |
|  | Not present |  | MEAS |
| bwp-InactivityTimer | Not present |  |  |
| defaultDownlinkBWP-Id | BWP-Id |  |  |
|  | Not present |  | MEAS, RESUME |
| uplinkConfig | Not present |  | MEAS, No\_UL |
| uplinkConfig SEQUENCE { |  |  |  |
| initialUplinkBWP | BWP-UplinkDedicated |  |  |
|  | BWP-UplinkDedicated with condition SUL\_NUL |  | PUSCH\_PUCCH\_ON\_SUL |
|  | BWP-UplinkDedicated with condition RESUME |  | RESUME |
| uplinkBWP-ToReleaseList | Not present |  |  |
| uplinkBWP-ToAddModList | Not present |  |  |
| firstActiveUplinkBWP-Id | BWP-Id |  |  |
| pusch-ServingCellConfig | Not present |  | RESUME |
| pusch-ServingCellConfig CHOICE { |  |  |  |
| setup | PUSCH-ServingCellConfig |  |  |
| } |  |  |  |
| carrierSwitching | Not present |  |  |
| powerBoostPi2BPSK | Not present |  |  |
| uplinkChannelBW-PerSCS-List | Not present |  |  |
| enablePL-RS-UpdateForPUSCH-SRS-r16 | Not present |  |  |
| enableDefaultBeamPL-ForPUSCH0-0-r16 | Not present |  |  |
| enableDefaultBeamPL-ForPUCCH-r16 | Not present |  |  |
| enableDefaultBeamPL-ForSRS-r16 | Not present |  |  |
| uplinkTxSwitching-r16 | Not present |  |  |
| mpr-PowerBoost-FR2-r16 | Not present |  |  |
| } |  |  |  |
| supplementaryUplink | Not present |  |  |
| supplementaryUplink SEQUENCE { |  |  | PUSCH\_PUCCH\_ON\_SUL |
| initialUplinkBWP | BWP-UplinkDedicated |  |  |
|  | BWP-UplinkDedicated with condition RESUME |  | RESUME |
| uplinkBWP-ToReleaseList | Not present |  |  |
| uplinkBWP-ToAddModList | Not present |  |  |
| firstActiveUplinkBWP-Id | BWP-Id |  |  |
| pusch-ServingCellConfig CHOICE { |  |  |  |
| setup | PUSCH-ServingCellConfig |  |  |
| } |  |  |  |
| carrierSwitching | Not present |  |  |
| powerBoostPi2BPSK | Not present |  |  |
| uplinkChannelBW-PerSCS-List | Not present |  |  |
| enablePL-RS-UpdateForPUSCH-SRS-r16 | Not present |  |  |
| enableDefaultBeamPL-ForPUSCH0-0-r16 | Not present |  |  |
| enableDefaultBeamPL-ForPUCCH-r16 | Not present |  |  |
| enableDefaultBeamPL-ForSRS-r16 | Not present |  |  |
| uplinkTxSwitching-r16 | Not present |  |  |
| mpr-PowerBoost-FR2-r16 | Not present |  |  |
| } |  |  |  |
| pdcch-ServingCellConfig CHOICE { |  |  |  |
| setup | PDCCH-ServingCellConfig |  |  |
| } |  |  |  |
| pdcch-ServingCellConfig | Not present |  | MEAS, RESUME |
| pdsch-ServingCellConfig CHOICE { |  |  |  |
| setup | PDSCH-ServingCellConfig |  |  |
| } |  |  |  |
| pdsch-ServingCellConfig | Not present |  | MEAS, RESUME |
| csi-MeasConfig | Not present |  |  |
| sCellDeactivationTimer | Not present |  |  |
| crossCarrierSchedulingConfig | Not present |  |  |
| tag-Id | 0 |  |  |
| dummy1 | Not present |  |  |
| pathlossReferenceLinking | Not present |  |  |
| servingCellMO | Not present |  |  |
|  | MeasObjectId |  | MEAS |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| PUSCH\_PUCCH\_ON\_SUL | For the purpose of SUL test under condition that supplementary uplink is configured with both PUSCH and PUCCH on SUL carrier. |
| MEAS | A NR or EN-DC measurement is configured. |
| No\_UL | No uplink CA |
| RESUME | Used in RRCResume Message |
| Scell\_Add | Add SCell |

#### *– ServingCellConfigCommon*

Table 4.6.3-168: *ServingCellConfigCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ServingCellConfigCommon ::= SEQUENCE { |  |  |  |
| physCellId | PhysCellId |  |  |
| downlinkConfigCommon | DownlinkConfigCommon |  |  |
|  | DownlinkConfigCommon with condition SCell\_add |  | SCell\_add |
| uplinkConfigCommon | UplinkConfigCommon |  |  |
|  | Not present |  | No\_UL |
| supplementaryUplinkConfig | Not present |  |  |
| n-TimingAdvanceOffset | Not present |  |  |
| ssb-PositionsInBurst CHOICE { |  |  |  |
| shortBitmap | 0100 |  | FR1 AND SSB#1 AND  (2.3GHz<FREQ<=3GHz  AND (FDD OR (TDD AND SCS15)) OR  FREQ<=2.3GHZ) |
|  | 1000 |  | FR1 AND SSB#0 AND  (2.3GHz<FREQ<=3GHz  AND (FDD OR (TDD AND SCS15)) OR  FREQ<=2.3GHz) |
| mediumBitmap | 01000000 |  | FR1 AND SSB#1 AND  (2.3GHz<FREQ<=3GHz  AND (TDD AND SCS30) OR FREQ>3GHz) |
|  | 10000000 |  | FR1 AND SSB#0 AND  (2.3GHz<FREQ<=3GHz  AND (TDD AND SCS30) OR FREQ>3GHz) |
| longBitmap | 0100000000000000000000000000000000000000000000000000000000000000 |  | FR2 AND SSB#1 |
|  | 1000000000000000000000000000000000000000000000000000000000000000 |  | FR2 AND SSB#0 |
| } |  |  |  |
| ssb-periodicityServingCell | ms20 |  |  |
| dmrs-TypeA-Position | pos2 |  |  |
| lte-CRS-ToMatchAround | Not present |  |  |
| rateMatchPatternToAddModList | Not present |  |  |
| rateMatchPatternToReleaseList | Not present |  |  |
| ssbSubcarrierSpacing | SubcarrierSpacing | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. Value SS block SCS. |  |
| tdd-UL-DL-ConfigurationCommon | TDD-UL-DL-ConfigCommon |  | TDD |
|  | Not present |  | FDD |
| ss-PBCH-BlockPower | 0 |  |  |
| channelAccessMode-r16 | Not present |  |  |
| channelAccessMode-r16 CHOICE { |  |  | SharedSpectrum |
| dynamic | NULL |  |  |
| } |  |  |  |
| discoveryBurstWindowLength-r16 | Not present |  |  |
| ssb-PositionQCL-r16 | Not present |  |  |
|  | SSB-PositionQCL-Relation-r16 |  | SharedSpectrum |
| highSpeedConfig-r16 | Not present |  |  |
|  | HighSpeedConfig-r16 |  | HST |
| } |  |  |  |

|  |  |
| --- | --- |
| **Condition** | **Explanation** |
| FREQ<=2.3GHz | Frequency range <= 2.3GHz |
| 2.3GHz<FREQ<=3GHz | Frequency range > 2.3GHz and <= 3GHz |
| FREQ>3GHz | Frequency range > 3GHz |
| No\_UL | No uplink CA |
| SSB#N | Cell configured with SSB-Index set to N as defined in Table 4.4.2-2 |
| SharedSpectrum | Operation with shared spectrum channel access |
| HST | For HST test |

#### *– ServingCellConfigCommonSIB*

Table 4.6.3-169: *ServingCellConfigCommonSIB*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ServingCellConfigCommonSIB ::= SEQUENCE { |  |  |  |
| downlinkConfigCommon | DownlinkConfigCommonSIB |  |  |
| uplinkConfigCommon | UplinkConfigCommonSIB |  |  |
| supplementaryUplink | Not present |  |  |
|  | UplinkConfigCommonSIB with condition SUL\_SUL |  | SUL |
| n-TimingAdvanceOffset | Not present |  |  |
| ssb-PositionsInBurst SEQUENCE { |  |  |  |
| inOneGroup | ’0100 0000’B | When carrier frequency is smaller than or equal to 3 GHz, only the 4 leftmost bits are valid | SSB#1 |
|  | ’1000 0000’B |  | SSB#0 |
| groupPresence | Not present |  | FR1 |
|  | ’1000 0000’B |  | FR2 |
| } |  |  |  |
| ssb-PeriodicityServingCell | ms20 |  |  |
| tdd-UL-DL-ConfigurationCommon | TDD-UL-DL-ConfigCommon |  | TDD |
|  | Not present |  | FDD |
| ss-PBCH-BlockPower | 0 |  |  |
| channelAccessMode-r16 | Not present |  |  |
| channelAccessMode-r16 CHOICE { |  |  | SharedSpectrum |
| dynamic | NULL |  |  |
| } |  |  |  |
| discoveryBurstWindowLength-r16 | Not present |  |  |
| highSpeedConfig-r16 | Not present |  |  |
|  | HighSpeedConfig-r16 |  | HST |
| } |  |  |  |

|  |  |
| --- | --- |
| **Condition** | **Explanation** |
| SUL | Supplementary uplink |
| SSB#N | Cell configured with SSB-Index set to N as defined in Table 4.4.2-2 |
| SharedSpectrum | Operation with shared spectrum channel access |
| HST | For HST test |

#### *– ShortI-RNTI-Value*

Table 4.6.3-170: *ShortI-RNTI-Value*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ShortI-RNTI-Value | SS arbitrarily selects a value between ’00 0001’H and ‘FF FFFF’H. | BIT STRING (SIZE(24)) |  |

#### *– ShortMAC-I*

Table 4.6.3-171: *ShortMAC-I*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ShortMAC-I | The 16 least significant bits of the MAC-I calculated using the security configuration of the source PCell. |  |  |

#### *– SINR-Range*

Table 4.6.3-172: *SINR-Range*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SINR-Range | 0 | For measurements, 0 means SS-SINR<-23dB according to Table 10.1.16.1-1 in TS 38.133 [14]. For thresholds, 0 means -23dB. |  |

#### *– SI-RequestConfig*

Table 4.6.3-172A: *SI-RequestConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SI-RequestConfig ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SI-SchedulingInfo*

Table 4.6.3-173: *SI-SchedulingInfo*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SI-SchedulingInfo ::= SEQUENCE { |  |  |  |
| schedulingInfoList SEQUENCE (SIZE (1..maxSI-Message)) OF SchedulingInfo { | n entries  See subclause 4.4.3.1 |  |  |
| SchedulingInfo[n] SEQUENCE { |  | entry n |  |
| si-BroadcastStatus | broadcasting |  |  |
| si-Periodicity | See subclause 4.4.3.1 |  |  |
| sib-MappingInfo SEQUENCE (SIZE (1..maxSIB)) OF SIB-TypeInfo { | n entries |  |  |
| SIB-TypeInfo[1] SEQUENCE { |  | entry n |  |
| type | See subclause 4.4.3.1 |  |  |
| valueTag | 0 |  |  |
| areaScope | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| si-WindowLength | s80 |  | FR1 |
|  | s160 |  | FR2 |
| si-RequestConfig | Not present |  |  |
| si-RequestConfigSUL | Not present |  |  |
| systemInformationAreaID | ’0000 0000 0000 0000 0000 0001’B |  |  |
| } |  |  |  |

#### *– SK-Counter*

Table 4.6.3-173A: *SK-Counter*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SK-Counter | 0 |  |  |

#### *– SlotFormatCombinationsPerCell*

Table 4.6.3-174: *SlotFormatCombinationsPerCell*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SlotFormatCombinationsPerCell ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SlotFormatIndicator*

Table 4.6.3-175: *SlotFormatIndicator*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SlotFormatIndicator ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– S-NSSAI*

Table 4.6.3-176: *S-NSSAI*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| S-NSSAI ::= CHOICE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SpeedStateScaleFactors*

Table 4.6.3-177: *SpeedStateScaleFactors*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SpeedStateScaleFactors ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SPS-Config*

Table 4.6.3-179: *SPS-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SPS-Config ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SPS-ConfigIndex*

Table 4.6.3-179A: *SPS-ConfigIndex*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SPS-ConfigIndex-r16 | FFS |  |  |

#### *– SPS-PUCCH-AN*

Table 4.6.3-179B: *SPS-PUCCH-AN*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SPS-PUCCH-AN-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SPS-PUCCH-AN-List*

Table 4.6.3-179C: *SPS-PUCCH-AN-List*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SPS-PUCCH-AN-List-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SRB-Identity*

Table 4.6.3-180: *SRB-Identity*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SRB-Identity | 1 |  | SRB1 |
| 2 |  | SRB2 |
| 3 |  | SRB3 |

|  |  |
| --- | --- |
| Condition | Explanation |
| SRB1 | SRB1 |
| SRB2 | SRB2 |
| SRB3 | SRB3 |

#### *– SRS-CarrierSwitching*

Table 4.6.3-181: *SRS-CarrierSwitching*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SRS-CarrierSwitching ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SRS-Config*

Table 4.6.3-182: *SRS-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SRS-Config ::= SEQUENCE { |  |  |  |
| srs-ResourceSetToReleaseList | Not present |  |  |
| srs-ResourceSetToAddModList SEQUENCE (SIZE(0..maxNrofSRS-ResourceSets)) OF SRS-ResourceSet { | 1 entry |  |  |
| SRS-ResourceSet[1] SEQUENCE { |  | entry 1 |  |
| srs-ResourceSetId | 0 |  |  |
| srs-ResourceIdList SEQUENCE (SIZE(1..maxNrofSRS-ResourcesPerSet)) OF SRS-ResourceId { | 1 entry |  |  |
| SRS-ResourceId[1] | 0 | entry 1 |  |
| } |  |  |  |
| resourceType CHOICE { |  |  |  |
| aperiodic SEQUENCE { |  |  |  |
| aperiodicSRS-ResourceTrigger | 1 |  |  |
| csi-RS | Not present |  |  |
| slotOffset | 7 |  | FR1 |
|  | 4 |  | FR2 |
| } |  |  |  |
| } |  |  |  |
| usage | codebook |  |  |
| alpha | Alpha |  |  |
| p0 | 0 |  |  |
| pathlossReferenceRS CHOICE { |  |  |  |
| ssb-Index | SSB-Index |  |  |
| } |  |  |  |
| srs-PowerControlAdjustmentStates | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| srs-ResourceToReleaseList | Not present |  |  |
| srs-ResourceToAddModList SEQUENCE (SIZE(1..maxNrofSRS-Resources)) OF SRS-Resource { | 1 entry |  |  |
| SRS-Resource[1] SEQUENCE { |  | entry 1 |  |
| srs-ResourceId | 0 |  |  |
| nrofSRS-Ports | ports2 |  | 2TX\_UL\_MIMO |
|  | port1 |  |  |
| ptrs-PortIndex | Not present |  |  |
| transmissionComb CHOICE { |  |  |  |
| n2 SEQUENCE { |  |  |  |
| combOffset-n2 | 0 |  |  |
| cyclicShift-n2 | 0 |  |  |
| } |  |  |  |
| } |  |  |  |
| resourceMapping SEQUENCE { |  |  |  |
| startPosition | 0 |  |  |
| nrofSymbols | n1 |  |  |
| repetitionFactor | n1 |  |  |
| } |  |  |  |
| freqDomainPosition | 0 |  |  |
| freqDomainShift | 0 |  |  |
| freqHopping SEQUENCE { |  |  |  |
| c-SRS | 0 |  |  |
|  | 63 |  | FR1\_100MHz |
|  | 17 |  | FR2\_100MHz |
| b-SRS | 0 |  |  |
| b-hop | 0 |  |  |
| } |  |  |  |
| groupOrSequenceHopping | groupHopping |  |  |
| resourceType CHOICE { |  |  |  |
| aperiodic SEQUENCE { |  |  |  |
| } |  |  |  |
| } |  |  |  |
| sequenceId | 0 |  |  |
| spatialRelationInfo SEQUENCE { | SRS-SpatialRelationInfo |  |  |
| servingCellId | Not present |  |  |
| referenceSignal CHOICE { |  |  |  |
| ssb-Index | SSB-Index |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| tpc-Accumulation | Not present |  |  |
| srs-RequestDCI-1-2-r16 | Not present |  |  |
| srs-RequestDCI-0-2-r16 | Not present |  |  |
| srs-ResourceSetToAddModListDCI-0-2-r16 | Not present |  |  |
| srs-ResourceSetToReleaseListDCI-0-2-r16 | Not present |  |  |
| srs-PosResourceSetToReleaseList-r16 | Not present |  |  |
| srs-PosResourceSetToAddModList-r16 | Not present |  |  |
| srs-PosResourceToReleaseList-r16 | Not present |  |  |
| srs-PosResourceToAddModList-r16 | Not present |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| 2TX\_UL\_MIMO | UL-MIMO test cases with 2 Tx antenna ports |
| FR1\_100MHz | FR1 is used under the test. CBW is set to 100MHz. |
| FR2\_100MHz | FR2 is used under the test. CBW is set to 100MHz. |

#### *– SRS-RSRP-Range*

Table 4.6.3-182A: *SRS-RSRP-Range*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SRS-RSRP-Range-r16 | FFS |  |  |

#### *– SRS-TPC-CommandConfig*

Table 4.6.3-183: *SRS-TPC-CommandConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SRS-TPC-CommandConfig ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SSB-Index*

Table 4.6.3-184: *SSB-Index*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SSB-Index | Set according to Table 4.4.2-2 for the NR Cell |  |  |

#### *– SSB-MTC*

Table 4.6.3-185: *SSB-MTC*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SSB-MTC ::= SEQUENCE { |  |  |  |
| periodicityAndOffset CHOICE { |  |  |  |
| sf20 | 0 |  |  |
|  | 10 |  | SIG AND INTER-FREQ\_ODD |
| } |  |  |  |
| duration | sf2 |  | FR1 |
|  | sf3 |  | FR2 |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| INTER-FREQ\_ODD | When the (SFNoffset of inter frequency neighbour cell - SFNoffset of serving cell) is odd number. SFNoffset is defined in TS 38.523-3 [23] Table 7.1.5.2-1 |

Table 4.6.3-186: *SSB-MTC2*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SSB-MTC2 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SSB-PositionQCL-Relation*

Table 4.6.3-186A: *SSB-PositionQCL-Relation*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SSB-PositionQCL-Relation-r16 | n1 |  |  |

#### *– SSB-ToMeasure*

Table 4.6.3-187: *SSB-ToMeasure*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SSB-ToMeasure ::= CHOICE { |  |  |  |
| shortBitmap | 1100 |  | FR1 AND (2.3GHz<FREQ<=3GHz AND (FDD OR (TDD AND SCS15)) OR FREQ<=2.3GHZ) |
| mediumBitmap | 11000000 |  | FR1 AND (2.3GHz<FREQ<=3GHz AND (TDD AND SCS30) OR FREQ>3GHz) |
| longBitmap | 11000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 |  | FR2 |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| FREQ<=2.3GHz | Frequency range <= 2.4GHz |
| 2.3GHz<FREQ<=3GHz | Frequency range > 2.3GHz and <= 3GHz |
| FREQ>3GHz | Frequency range > 3GHz |

#### *– SS-RSSI-Measurement*

Table 4.6.3-187A: *SS-RSSI-Measurement*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SS-RSSI-Measurement ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SubcarrierSpacing*

Table 4.6.3-188: *SubcarrierSpacing*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| SubcarrierSpacing | According to clause 6.2.3 for signalling test cases and clause 4.3.1 otherwise. |  |  |

#### *– TAG-Config*

Table 4.6.3-189: *TAG-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| TAG-Config ::= SEQUENCE { |  |  |  |
| tag-ToReleaseList | Not present |  |  |
| tag-ToAddModList SEQUENCE (SIZE (1..maxNrofTAGs)) OF TAG { | 1 entry |  |  |
| TAG[1] SEQUENCE { |  | entry 1 |  |
| tag-Id | 0 |  |  |
| timeAlignmentTimer | infinity |  |  |
| } |  |  |  |
|  |  |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– TCI-Info*

Table 4.6.3-189A: *TCI-Info*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| TCI-Info ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– TCI-State*

Table 4.6.3-190: *TCI-State*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| TCI-State ::= SEQUENCE { |  |  |  |
| tci-StateId | TCI-StateId |  |  |
| qcl-Type1 SEQUENCE { |  |  |  |
| cell | Not present |  |  |
| bwp-Id | Not present |  |  |
| referenceSignal CHOICE { |  |  |  |
| ssb | SSB-Index |  |  |
| } |  |  |  |
| qcl-Type | typeD |  |  |
| } |  |  |  |
| qcl-Type2 | Not present |  |  |
| } |  |  |  |

#### *– TCI-StateId*

Table 4.6.3-191: *TCI-StateId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| TCI-StateId | 0 |  |  |

#### *– TDD-UL-DL-ConfigCommon*

Table 4.6.3-192: *TDD-UL-DL-ConfigCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| TDD-UL-DL-ConfigCommon ::= SEQUENCE { |  |  |  |
| referenceSubcarrierSpacing | SubcarrierSpacing |  |  |
| pattern1 SEQUENCE { |  |  |  |
| dl-UL-TransmissionPeriodicity | ms5 |  | FR1 |
|  | ms0p625 |  | SIG AND FR2 |
|  | ms2 |  | RF AND FR2 |
| nrofDownlinkSlots | 7 |  | (FR1 AND SCS30) OR (RF AND FR2 AND SCS120) |
|  | 3 |  | (FR1 AND SCS15) OR (FR2 AND SCS60) OR (SIG AND FR2 AND SCS120) |
|  | 14 |  | FR1 AND SCS60 |
| nrofDownlinkSymbols | 6 |  | FR1 AND SCS30 |
|  | 10 |  | (FR1 AND SCS15) OR (SIG AND FR2 AND (SCS60 OR SCS120)) |
|  | 12 |  | (FR1 AND SCS60) OR (RF AND FR2 AND SCS120) |
|  | 4 |  | RF AND FR2 AND SCS60 |
| nrofUplinkSlots | 2 |  | FR1 AND SCS30 |
|  | 1 |  | (FR1 AND SCS15) OR (SIG AND FR2 AND (SCS60 OR SCS120)) |
|  | 4 |  | (FR1 AND SCS60) OR ((RF AND FR2 AND SCS60) |
|  | 8 |  | RF AND FR2 AND SCS120 |
| nrofUplinkSymbols | 4 |  | (FR1 AND SCS30) OR (RF AND FR2 AND SCS60) |
|  | 2 |  | (FR1 AND SCS15) OR (SIG AND FR2 AND (SCS60 OR SCS120)) |
|  | 8 |  | FR1 AND SCS60 |
|  | 0 |  | RF AND FR2 AND SCS120 |
| } |  |  |  |
| pattern2 | Not present |  |  |
| } |  |  |  |

#### *– TDD-UL-DL-ConfigDedicated*

Table 4.6.3-192A: *TDD-UL-DL-ConfigDedicated*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| TDD-UL-DL-ConfigDedicated ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– TrackingAreaCode*

Table 4.6.3-193: *TrackingAreaCode*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| TrackingAreaCode | See table 4.4.2-3 | BIT STRING (SIZE (24)) |  |

#### *– T-Reselection*

Table 4.6.3-194: *T-Reselection*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| T-Reselection | FFS |  |  |

#### *– TimeToTrigger*

Table 4.6.3-195: *TimeToTrigger*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| TimeToTrigger | ms320 |  |  |

#### *– UAC-BarringInfoSetIndex*

Table 4.6.3-196: *UAC-BarringInfoSetIndex*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| UAC-BarringInfoSetIndex | FFS |  |  |

#### *– UAC-BarringInfoSetList*

Table 4.6.3-197: *UAC-BarringInfoSetList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| UAC-BarringInfoSetList | FFS |  |  |

#### *– UAC-BarringPerCatList*

Table 4.6.3-198: *UAC-BarringPerCatList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| UAC-BarringPerCatList | FFS |  |  |

#### *– UAC-BarringPerPLMN-List*

Table 4.6.3-199: *UAC-BarringPerPLMN-List*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| UAC-BarringPerPLMN-List | FFS |  |  |

#### *– UE-TimersAndConstants*

Table 4.6.3-200: *UE-TimersAndConstants*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| UE-TimersAndConstants ::= SEQUENCE { |  |  |  |
| t300 | ms1000 |  |  |
| t301 | ms1000 |  |  |
| t310 | ms1000 |  |  |
| n310 | n1 |  |  |
| t311 | ms30000 |  |  |
| n311 | n1 |  |  |
| t319 | ms1000 |  |  |
| } |  |  |  |

#### *– UE-TimersAndConstantsRemoteUE*

Table 4.6.3-200AA: *UE-TimersAndConstantsRemoteUE*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| UE-TimersAndConstantsRemoteUE-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– UL-DelayValueConfig*

Table 4.6.3-200A: *UL-DelayValueConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| UL-DelayValueConfig-r16 ::= SEQUENCE { |  |  |  |
| delay-DRBlist | Set according to specific message content |  |  |
| } |  |  |  |

#### *– UL-ExcessDelayConfig*

Table 4.6.3-200BA: *UL-ExcessDelayConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| UL-ExcessDelayConfig-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– UL-GapFR2-Config*

Table 4.6.3-200BB: *UE* *UL-GapFR2-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| UL-GapFR2-Config-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– UplinkCancellation*

Table 4.6.3-200B: *UplinkCancellation*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| UplinkCancellation-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– UplinkConfigCommon*

Table 4.6.3-201: *UplinkConfigCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| UplinkConfigCommon ::= SEQUENCE { |  |  |  |
| frequencyInfoUL | FrequencyInfoUL |  |  |
| initialUplinkBWP | BWP-UplinkCommon |  |  |
| timeAlignmentTimerCommon | infinity |  |  |
| } |  |  |  |

#### *– UplinkConfigCommonSIB*

Table 4.6.3-202: *UplinkConfigCommonSIB*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| UplinkConfigCommonSIB SEQUENCE { |  |  |  |
| frequencyInfoUL | FrequencyInfoUL-SIB |  |  |
| initialUplinkBWP | BWP-UplinkCommon |  |  |
|  | BWP-UplinkCommon with confition SUL\_SUL |  | SUL\_SUL |
| timeAlignmentTimerCommon | infinity |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SUL\_SUL | On the SUL carrier when supplementary carrier is configured |

#### *– Uplink-PowerControl*

Table 4.6.3-202A: *Uplink-PowerControl*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| Uplink-PowerControl-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– Uu-RelayRLC-ChannelConfig*

Table 4.6.3-202B: *Uu-RelayRLC-ChannelConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| Uu-RelayRLC-ChannelConfig-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– Uu-RelayRLC-ChannelID*

Table 4.6.3-202C: *Uu-RelayRLC-ChannelID*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| Uu-RelayRLC-ChannelID-r17 | FFS |  |  |

#### *– UplinkTxDirectCurrentList*

Table 4.6.3-203: *UplinkTxDirectCurrentList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| UplinkTxDirectCurrentList ::= SEQUENCE (SIZE (1..maxNrofServingCells)) OF UplinkTxDirectCurrentCell { | 1 entry |  |  |
| UplinkTxDirectCurrentCell[1] SEQUENCE { |  | entry 1 |  |
| FFS |  |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– ZP-CSI-RS-Resource*

Table 4.6.3-204: *ZP-CSI-RS-Resource*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ZP-CSI-RS-Resource ::= SEQUENCE { |  |  |  |
| zp-CSI-RS-ResourceId | ZP-CSI-RS-ResourceId |  |  |
| resourceMapping | CSI-RS-ResourceMapping |  |  |
| periodicityAndOffset | CSI-ResourcePeriodicityAndOffset |  |  |
| } |  |  |  |

#### *– ZP-CSI-RS-ResourceId*

Table 4.6.3-204A: ZP-CSI-RS-ResourceId

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ZP-CSI-RS-ResourceId | 0 |  |  |

#### *– ZP-CSI-RS-ResourceSet*

Table 4.6.3-205: *ZP-CSI-RS-ResourceSet*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ZP-CSI-RS-ResourceSet ::= SEQUENCE { |  |  |  |
| zp-CSI-RS-ResourceSetId | ZP-CSI-RS-ResourceSetId |  |  |
| zp-CSI-RS-ResourceIdList SEQUENCE (SIZE(1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-ResourceId { | 1 entry |  |  |
| ZP-CSI-RS-ResourceId[1] | FFS | entry 1 |  |
| } |  |  |  |
| } |  |  |  |

#### *– ZP-CSI-RS-ResourceSetId*

Table 4.6.3-206: ZP-CSI-RS-ResourceSetId

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| ZP-CSI-RS-ResourceSetId | 0 |  |  |

### 4.6.4 UE capability information elements

#### *– AccessStratumRelease*

Table 4.6.4-1: AccessStratumRelease

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| AccessStratumRelease | Same as indicated in TC applicability in TS 38.523-2 [19] |  |  |

#### *– AppLayerMeasParameters*

Table 4.6.4-1A: *AppLayerMeasParameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| AppLayerMeasParameters-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– BandCombinationList*

Table 4.6.4-2: BandCombinationList

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| BandCombinationList::= SEQUENCE (SIZE (1..maxBandComb)) OF BandCombination { | At least 1 entry |  |  |
| BandCombination[1] SEQUENCE { |  | entry 1 |  |
| bandList SEQUENCE (SIZE (1..maxSimultaneousBands)) OF BandParameters { | 1 entry |  |  |
| BandParameters[1] CHOICE { |  | entry 1 |  |
| eutra SEQUENCE { |  |  |  |
| bandEUTRA | FreqBandIndicatorEUTRA |  |  |
| ca-BandwidthClassDL-EUTRA | Not checked |  |  |
| ca-BandwidthClassUL-EUTRA | Not checked |  |  |
| } |  |  |  |
| nr SEQUENCE { |  |  |  |
| bandNR | FreqBandIndicatorNR |  |  |
| ca-BandwidthClassDL-NR | Not checked |  |  |
| ca-BandwidthClassUL-NR | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| featureSetCombination | Not checked |  |  |
| ca-ParametersEUTRA | Not checked |  |  |
| ca-ParametersNR | Not checked |  |  |
| mrdc-Parameters | Not checked |  |  |
| supportedBandwidthCombinationSet | BIT STRING (SIZE (1..32)) |  |  |
| powerClass-v1530 | Not Checked |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– BandCombinationListSidelinkEUTRA-NR*

Table 4.6.4-2A: *BandCombinationListSidelinkEUTRA-NR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| BandParametersSidelinkEUTRA-NR-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– CA-BandwidthClassEUTRA*

Table 4.6.4-3: CA-BandwidthClassEUTRA

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| CA-BandwidthClassEUTRA | Not checked |  |  |

#### *– CA-BandwidthClassNR*

Table 4.6.4-4: CA-BandwidthClassNR

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| CA-BandwidthClassNR | Not checked |  |  |

#### *– CA-ParametersEUTRA*

Table 4.6.4-5: CA- ParametersEUTRA

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| CA-ParametersEUTRA ::= SEQUENCE { |  |  |  |
| multipleTimingAdvance | Not checked |  |  |
| simultaneousRx-Tx | Not checked |  |  |
| supportedNAICS-2CRS-AP | Not checked |  |  |
| additionalRx-Tx-PerformanceReq | Not checked |  |  |
| ue-CA-PowerClass-N | Not checked |  |  |
| supportedBandwidthCombinationSetEUTRA-v1530 | Not checked |  |  |
| } |  |  |  |

#### *– CA-ParametersNR*

Table 4.6.4-6: CA- ParametersNR

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| CA-ParametersNR ::= SEQUENCE { |  |  |  |
| dummy | Not checked |  |  |
| parallelTxSRS-PUCCH-PUSCH | Not checked |  |  |
| parallelTxPRACH-SRS-PUCCH-PUSCH | Not checked |  |  |
| simultaneousRxTxInterBandCA | Not checked |  |  |
| simultaneousRxTxSUL | Not checked |  |  |
| diffNumerologyAcrossPUCCH-Group | Not checked |  |  |
| diffNumerologyWithinPUCCH-GroupSmallerSCS | Not checked |  |  |
| supportedNumberTAG | Not checked |  |  |
| } |  |  |  |

#### *– CA-ParametersNRDC*

Table 4.6.4-6AA: CA- ParametersNRDC

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| CA-ParametersNRDC ::= SEQUENCE { |  |  |  |
| ca-ParametersNR-ForDC | Not checked |  |  |
| ca-ParametersNR-ForDC-v1540 | Not checked |  |  |
| ca-ParametersNR-ForDC-v1550 | Not checked |  |  |
| ca-ParametersNR-ForDC-v1560 | Not checked |  |  |
| featureSetCombinationDC | Not checked |  |  |
| } |  |  |  |

#### *– CarrierAggregationVariant*

Table 4.6.4-6AB: *CarrierAggregationVariant*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| CarrierAggregationVariant ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– CodebookParameters*

Table 4.6.4-6A: CodebookParameters

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| CodebookParameters ::= SEQUENCE { |  |  |  |
| type1 SEQUENCE { |  |  |  |
| singlePanel SEQUENCE { |  |  |  |
| supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource { | 1 entry |  |  |
| SupportedCSI-RS-Resource[1] SEQUENCE { |  | entry 1 |  |
| maxNumberTxPortsPerResource | Not checked |  |  |
| maxNumberResourcesPerBand | Not checked |  |  |
| totalNumberTxPortsPerBand | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| modes | Not checked |  |  |
| maxNumberCSI-RS-PerResourceSet | Not checked |  |  |
| } |  |  |  |
| multiPanel SEQUENCE { |  |  |  |
| supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource { | 1 entry |  |  |
| SupportedCSI-RS-Resource[1] SEQUENCE { |  | entry 1 |  |
| maxNumberTxPortsPerResource | Not checked |  |  |
| maxNumberResourcesPerBand | Not checked |  |  |
| totalNumberTxPortsPerBand | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| modes | Not checked |  |  |
| nrofPanels | Not checked |  |  |
| maxNumberCSI-RS-PerResourceSet | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| type2 SEQUENCE { |  |  |  |
| supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource { | 1 entry |  |  |
| SupportedCSI-RS-Resource[1] SEQUENCE { |  | entry 1 |  |
| maxNumberTxPortsPerResource | Not checked |  |  |
| maxNumberResourcesPerBand | Not checked |  |  |
| totalNumberTxPortsPerBand | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| parameterLx | Not checked |  |  |
| amplitudeScalingType | Not checked |  |  |
| amplitudeSubsetRestriction | Not checked |  |  |
| } |  |  |  |
| type2-PortSelection SEQUENCE { |  |  |  |
| supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource { | 1 entry |  |  |
| SupportedCSI-RS-Resource[1] SEQUENCE { |  | entry 1 |  |
| maxNumberTxPortsPerResource | Not checked |  |  |
| maxNumberResourcesPerBand | Not checked |  |  |
| totalNumberTxPortsPerBand | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| parameterLx | Not checked |  |  |
| amplitudeScalingType | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– FeatureSetCombination*

Table 4.6.4-7: FeatureSetCombination

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FeatureSetCombination ::= SEQUENCE (SIZE (1..maxSimultaneousBands)) OF FeatureSetsPerBand { | 1 entry |  |  |
| FeatureSetsPerBand[1] SEQUENCE (SIZE (1..maxFeatureSetsPerBand)) OF FeatureSet { | 1 entry | entry 1 |  |
| FeatureSet[1] CHOICE { |  | entry 1 |  |
| nr SEQUENCE { |  |  |  |
| downlinkSetNR | Not checked |  |  |
| uplinkSetNR | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– FeatureSetCombinationId*

Table 4.6.4-8: FeatureSetCombinationId

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FeatureSetCombinationId | Not checked |  |  |

#### *– FeatureSetDownlink*

Table 4.6.4-9: FeatureSetDownlink

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FeatureSetDownlink ::= SEQUENCE { |  |  |  |
| featureSetListPerDownlinkCC SEQUENCE (SIZE (1..maxNrofServingCells)) OF FeatureSetDownlinkPerCC-Id { | 1 entry |  |  |
| FeatureSetDownlinkPerCC-Id[1] | Not checked | entry 1 |  |
| } |  |  |  |
| intraBandFreqSeparationDL | FreqSeparationClass |  |  |
| scalingFactor | Not checked |  |  |
| crossCarrierSchedulingDL-OtherSCS | Not checked |  |  |
| scellWithoutSSB | Not checked |  |  |
| csi-RS-MeasSCellWithoutSSB | Not checked |  |  |
| dummy1 | Not checked |  |  |
| type1-3-CSS | Not checked |  |  |
| pdcchMonitoringAnyOccasions | Not checked |  |  |
| dummy2 | Not checked |  |  |
| ue-SpecificUL-DL-Assignment | Not checked |  |  |
| searchSpaceSharingCA-DL | Not checked |  |  |
| timeDurationForQCL SEQUENCE { |  |  |  |
| scs-60kHz | Not checked |  |  |
| scsh-120kHz | Not checked |  |  |
| } |  |  |  |
| pdsch- ProcessingType1-DifferentTB-PerSlot SEQUENCE { |  |  |  |
| scs-15kHz | Not checked |  |  |
| scs-30kHz | Not checked |  |  |
| scs-60kHz | Not checked |  |  |
| scs-120kHz | Not checked |  |  |
| } |  |  |  |
| dummy3 | Not checked |  |  |
| dummy4 | Not checked |  |  |
| dummy5 | Not checked |  |  |
| dummy6 | Not checked |  |  |
| dummy7 | Not checked |  |  |
| } |  |  |  |

#### *– FeatureSetDownlinkId*

Table 4.6.4-10: FeatureSetDownlinkId

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FeatureSetDownlinkId | Not checked |  |  |

#### *– FeatureSetDownlinkPerCC*

Table 4.6.4-11: FeatureSetDownlinkPerCC

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FeatureSetDownlinkPerCC ::= SEQUENCE { |  |  |  |
| supportedSubcarrierSpacingDL | Not checked |  |  |
| supportedBandwidthDL | SupportedBandwidth |  |  |
| channelBW-90mhz | Not checked |  |  |
| maxNumberMIMO-LayersPDSCH | MIMO-LayersDL |  |  |
| supportedModulationOrderDL | ModulationOrder |  |  |
| } |  |  |  |

#### *– FeatureSetDownlinkPerCC-Id*

Table 4.6.4-12: FeatureSetDownlinkPerCC-Id

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FeatureSetDownlinkPerCC-Id | Not checked |  |  |

#### *– FeatureSetEUTRA-DownlinkId*

Table 4.6.4-13: FeatureSetEUTRA-DownlinkId

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FeatureSetEUTRA-DownlinkId | Not checked |  |  |

#### *– FeatureSetEUTRA-UplinkId*

Table 4.6.4-14: FeatureSetEUTRA-UplinkId

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FeatureSetEUTRA-UplinkId | Not checked |  |  |

#### *– FeatureSets*

Table 4.6.4-15: *FeatureSets*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FeatureSets ::= SEQUENCE { |  |  |  |
| featureSetsDownlink SEQUENCE (SIZE (1..maxDownlinkFeatureSets)) OF FeatureSetDownlink { | 1 entry |  |  |
| FeatureSetDownlink[1] | FeatureSetDownlink | entry 1 |  |
| } |  |  |  |
| featureSetsDownlinkPerCC SEQUENCE (SIZE (1..maxPerCC-FeatureSets)) OF FeatureSetDownlinkPerCC { | 1 entry |  |  |
| FeatureSetDownlinkPerCC[1] | FeatureSetDownlinkPerCC | entry 1 |  |
| } |  |  |  |
| featureSetsUplink SEQUENCE (SIZE (1..maxUplinkFeatureSets)) OF FeatureSetUplink { | 1 entry |  |  |
| FeatureSetUplink[1] | FeatureSetUplink | entry 1 |  |
| } |  |  |  |
| featureSetsUplinkPerCC SEQUENCE (SIZE (1..maxPerCC-FeatureSets)) OF FeatureSetUplinkPerCC { | 1 entry |  |  |
| FeatureSetUplinkPerCC[1] | FeatureSetUplinkPerCC | entry 1 |  |
| } |  |  |  |
| } |  |  |  |

#### *– FeatureSetUplink*

Table 4.6.4-16: FeatureSetUplink

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FeatureSetUplink ::= SEQUENCE { |  |  |  |
| featureSetListPerUplinkCC SEQUENCE (SIZE (1.. maxNrofServingCells)) OF FeatureSetUplinkPerCC-Id { | 1 entry |  |  |
| FeatureSetUplinkPerCC-Id[1] | Not checked | entry 1 |  |
| } |  |  |  |
| scalingFactor | Not checked |  |  |
| crossCarrierSchedulingUL-OtherSCS | Not checked |  |  |
| intraBandFreqSeparationUL | FreqSeparationClass |  |  |
| searchSpaceSharingCA-UL | Not checked |  |  |
| dummy1 | Not checked |  |  |
| supportedSRS-Resources SEQUENCE { |  |  |  |
| maxNumberAperiodicSRS-PerBWP | Not Checked |  |  |
| maxNumberAperiodicSRS-PerBWP-PerSlot | Not Checked |  |  |
| maxNumberPeriodicSRS-PerBWP | Not Checked |  |  |
| maxNumberPeriodicSRS-PerBWP-PerSlot | Not Checked |  |  |
| maxNumberSemiPersistentSRS-PerBWP | Not Checked |  |  |
| maxNumberSemiPersistentSRS-PerBWP-PerSlot | Not Checked |  |  |
| maxNumberSRS-Ports-PerResource | Not Checked |  |  |
| } |  |  |  |
| twoPUCCH-Group | Not checked |  |  |
| dynamicSwitchSUL | Not checked |  |  |
| pusch- ProcessingType1-DifferentTB-PerSlot SEQUENCE { |  |  |  |
| scs-15kHz | Not checked |  |  |
| scs-30kHz | Not checked |  |  |
| scs-60kHz | Not checked |  |  |
| scs-120kHz | Not checked |  |  |
| } |  |  |  |
| dummy2 | Not checked |  |  |
| } |  |  |  |

#### *– FeatureSetUplinkId*

Table 4.6.4-17: FeatureSetUplinkId

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FeatureSetUplinkId | Not checked |  |  |

#### *– FeatureSetUplinkPerCC*

Table 4.6.4-18: FeatureSetUplinkPerCC

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FeatureSetUplinkPerCC ::= SEQUENCE { |  |  |  |
| supportedSubcarrierSpacingUL | Not checked |  |  |
| supportedBandwidthUL | SupportedBandwidth |  |  |
| channelBW-90mhz | Not checked |  |  |
| mimo-CB-PUSCH SEQUENCE { |  |  |  |
| maxNumberMIMO-LayersCB-PUSCH | MIMO-LayersUL |  |  |
| maxNumberSRS-ResourcePerSet | Not checke |  |  |
| } |  |  |  |
| maxNumberMIMO-LayersNonCB-PUSCH | MIMO-LayersUL |  |  |
| supportedModulationOrderUL | ModulationOrder |  |  |
| } |  |  |  |

#### *– FeatureSetUplinkPerCC-Id*

Table 4.6.4-19: FeatureSetUplinkPerCC-Id

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FeatureSetUplinkPerCC-Id | Not checked |  |  |

#### *– FreqBandIndicatorEUTRA*

Table 4.6.4-20: FreqBandIndicatorEUTRA

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FreqBandIndicatorEUTRA | EUTRA Operating band under test |  |  |

#### *– FreqBandList*

Table 4.6.4-21: *FreqBandList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FreqBandList::= SEQUENCE (SIZE (1..maxBandsMRDC)) OF FreqBandInformation { | Number of entries depends on the conditions |  |  |
| FreqBandInformation[1] CHOICE { |  | entry 1 | EN-DC, NE-DC |
| bandInformationEUTRA SEQUENCE { |  |  |  |
| bandEUTRA | FreqBandIndicatorEUTRA |  |  |
| ca-BandwidthClassDL-EUTRA | Not checked |  |  |
| ca-BandwidthClassUL-EUTRA | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| FreqBandInformation[2] CHOICE { |  | entry 2 |  |
| bandInformationNR SEQUENCE { |  |  |  |
| bandNR | FreqBandIndicatorNR |  |  |
| maxBandwidthRequestedDL | Not checked |  |  |
| maxBandwidthRequestedUL | Not checked |  |  |
| maxCarriersRequestedDL | Not checked |  |  |
| maxCarriersRequestedUL | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| FreqBandInformation[3] CHOICE { |  | entry 3 | EN-DC AND CA-InterBand |
| bandInformationNR SEQUENCE { |  |  |  |
| bandNR | FreqBandIndicatorNR with condition CA-InterBand |  |  |
| maxBandwidthRequestedDL | Not checked |  |  |
| maxBandwidthRequestedUL | Not checked |  |  |
| maxCarriersRequestedDL | Not checked |  |  |
| maxCarriersRequestedUL | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| FreqBandInformation[1] CHOICE { |  | entry 1 | NR |
| bandInformationNR SEQUENCE { |  |  |  |
| bandNR | FreqBandIndicatorNR |  |  |
| maxBandwidthRequestedDL | Not checked |  |  |
| maxBandwidthRequestedUL | Not checked |  |  |
| maxCarriersRequestedDL | Not checked |  |  |
| maxCarriersRequestedUL | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| FreqBandInformation[2] CHOICE { |  | entry 2 | NR AND CA-InterBand |
| bandInformationNR SEQUENCE { |  |  |  |
| bandNR | FreqBandIndicatorNR with condition CA-InterBand |  |  |
| maxBandwidthRequestedDL | Not checked |  |  |
| maxBandwidthRequestedUL | Not checked |  |  |
| maxCarriersRequestedDL | Not checked |  |  |
| maxCarriersRequestedUL | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| FreqBandInformation[2] CHOICE { |  | entry 2 | NR-DC |
| bandInformationNR SEQUENCE { |  |  |
| bandNR | FreqBandIndicatorNR with condition NR-DC-SecondaryBand |  |
| maxBandwidthRequestedDL | Not checked |  |
| maxBandwidthRequestedUL | Not checked |  |
| maxCarriersRequestedDL | Not checked |  |
| maxCarriersRequestedUL | Not checked |  |
| } |  |  |
| } |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| EN-DC | E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC |
| CA-InterBand | Used in NR CA Inter-band test cases |
| NR | NG-RAN NR Radio Access |
| NR-DC | NR-NR Dual Connectivity |
| NE-DC | NR E-UTRA Dual Connectivity |

#### *– FreqSeparationClass*

Table 4.6.4-22: *FreqSeparationClass*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FreqSeparationClass | Not checked |  |  |

#### *– FreqSeparationClassDL-Only*

Table 4.6.4-22A: *FreqSeparationClassDL-Only*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FreqSeparationClassDL-Only-r16 | FFS |  |  |

#### *– FR2-2-AccessParamsPerBand*

Table 4.6.4-22BA: *FR2-2-AccessParamsPerBand*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| FR2-2-AccessParamsPerBand-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– HighSpeedParameters*

Table 4.6.4-22B: *HighSpeedParameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| HighSpeedParameters-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– IMS-Parameters*

Table 4.6.4-23: *IMS-Parameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| IMS-Parameters ::= SEQUENCE { |  |  |  |
| ims-ParametersCommon SEQUENCE { |  |  |  |
| voiceOverEUTRA-5GC | Not Checked |  |  |
| } |  |  |  |
| ims-ParametersFRX-Diff SEQUENCE { |  |  |  |
| voiceOverNR | Not Checked |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– InterRAT-Parameters*

Table 4.6.4-24: *InterRAT-Parameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| InterRAT-Parameters ::= SEQUENCE { |  |  |  |
| eutra SEQUENCE { |  |  |  |
| supportedBandListEUTRA SEQUENCE (SIZE (1..maxBandsEUTRA)) OF FreqBandIndicatorEUTRA { | 1 entry |  |  |
| FreqBandIndicatorEUTRA[1] | FreqBandIndicatorEUTRA | entry 1 |  |
| } |  |  |  |
| eutra-ParametersCommon SEQUENCE { |  |  |  |
| mfbi-EUTRA | Not Checked |  |  |
| modifiedMPR-BehaviorEUTRA | Not Checked |  |  |
| multiNS-Pmax-EUTRA | Not Checked |  |  |
| rs-SINR-MeasEUTRA | Not Checked |  |  |
| ne-DC | Not Checked |  |  |
| nr-HO-ToEN-DC-r16 | Not Checked |  | >=Rel16 |
| } |  |  |  |
| eutra-ParametersXDD-Diff SEQUENCE { |  |  |  |
| rsrqMeasWidebandEUTRA | Not Checked |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– MAC-Parameters*

Table 4.6.4-25: *MAC-Parameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| MAC-Parameters ::= SEQUENCE { |  |  |  |
| mac-ParametersCommon SEQUENCE { |  |  |  |
| lcp-Restriction | Not checked |  |  |
| dummy | Not checked |  |  |
| lch-ToSCellRestriction | Not checked |  |  |
| } |  |  |  |
| mac-ParametersXDD-Diff SEQUENCE { |  |  |  |
| skipUplinkTxDynamic | Not checked |  |  |
| logicalChannelSR-DelayTimer | Not checked |  |  |
| longDRX-Cycle | Not checked |  |  |
| shortDRX-Cycle | Not checked |  |  |
| multipleSR-Configurations | Not checked |  |  |
| multipleConfiguredGrants | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– MeasAndMobParameters*

Table 4.6.4-26: *MeasAndMobParameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasAndMobParameters::= SEQUENCE { |  |  |  |
| measAndMobParametersCommon SEQUENCE { |  |  |  |
| supportedGapPattern | Not checked |  |  |
| ssb-RLM | Not checked |  |  |
| ssb-AndCSI-RS-RLM | Not checked |  |  |
| } |  |  |  |
| measAndMobParametersXDD-Diff SEQUENCE { |  |  |  |
| intraAndInterF-MeasAndReport | Not checked |  |  |
| eventA-MeasAndReport | Not checked |  |  |
| } |  |  |  |
| MeasAndMobParametersFRX-Diff SEQUENCE { |  |  |  |
| ss-SINR-Meas | Not checked |  |  |
| csi-RSRP-AndRSRQ-MeasWithSSB | Not checked |  |  |
| csi-RSRP-AndRSRQ-MeasWithoutSSB | Not checked |  |  |
| csi-SINR-Meas | Not checked |  |  |
| csi-RS-RLM | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– MeasAndMobParametersMRDC*

Table 4.6.4-27: *MeasAndMobParametersMRDC*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasAndMobParametersMRDC::= SEQUENCE { |  |  |  |
| measAndMobParametersMRDC-Common SEQUENCE { |  |  |  |
| independentGapConfig | Not checked |  |  |
| } |  |  |  |
| measAndMobParametersMRDC-XDD-Diff SEQUENCE { |  |  |  |
| sftd-MeasPSCell | Not checked |  |  |
| sftd-MeasNR-Cell | Not checked |  |  |
| } |  |  |  |
| measAndMobParametersMRDC-FRX-Diff SEQUENCE { |  |  |  |
| simultaneousRxDataSSB-DiffNumerology | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– MIMO-Layers*

Table 4.6.4-28: *MIMO-Layers*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| MIMO-LayersDL | Not checked |  |  |
| MIMO-LayersUL | Not checked |  |  |

#### *– MIMO-ParametersPerBand*

Table 4.6.4-29: *MIMO-ParametersPerBand*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| MIMO-ParametersPerBand ::= SEQUENCE { |  |  |  |
| tci-StatePDSCH SEQUENCE { |  |  |  |
| maxNumberConfiguredTCIstatesPerCC | Not checked |  |  |
| maxNumberActiveTCI-PerBWP | Not checked |  |  |
| } |  |  |  |
| additionalActiveTCI-StatePDCCH | Not checked |  |  |
| pusch-TransCoherence | Not checked |  |  |
| beamCorrespondenceWithoutUL-BeamSweeping | Not checked |  |  |
| periodicBeamReport | Not checked |  |  |
| aperiodicBeamReport | Not checked |  |  |
| sp-BeamReportPUCCH | Not checked |  |  |
| sp-BeamReportPUSCH | Not checked |  |  |
| dummy1 | Not checked |  |  |
| maxNumberRxBeam | Not checked |  |  |
| maxNumberRxTxBeamSwitchDL SEQUENCE { |  |  |  |
| scs-15kHz | Not checked |  |  |
| scs-30kHz | Not checked |  |  |
| scs-60kHz | Not checked |  |  |
| scs-120kHz | Not checked |  |  |
| scs-240kHz | Not checked |  |  |
| } |  |  |  |
| maxNumberNonGroupBeamReporting | Not checked |  |  |
| groupBeamReporting | Not checked |  |  |
| uplinkBeamManagement SEQUENCE { |  |  |  |
| maxNumberSRS-ResourcePerSet | Not checked |  |  |
| maxNumberSRS-ResourceSet | Not checked |  |  |
| } |  |  |  |
| maxNumberCSI-RS-BFD | Not checked |  |  |
| maxNumbeSSB-BFD | Not checked |  |  |
| maxNumberCSI-RS-SSB-CBD | Not checked |  |  |
| dummy2 | Not checked |  |  |
| twoPortsPTRS-UL | Not checked |  |  |
| dummy5 | Not checked |  |  |
| dummy3 | Not checked |  |  |
| beamReportTiming SEQUENCE { |  |  |  |
| scs-15kHz | Not checked |  |  |
| scs-30kHz | Not checked |  |  |
| scs-60kHz | Not checked |  |  |
| scs-120kHz | Not checked |  |  |
| } |  |  |  |
| ptrs-DensityRecommendationSetDL SEQUENCE { |  |  |  |
| scs-15kHz |  |  |  |
| frequencyDensity1 | Not checked |  |  |
| frequencyDensity2 | Not checked |  |  |
| timeDensity1 | Not checked |  |  |
| timeDensity2 | Not checked |  |  |
| timeDensity3 | Not checked |  |  |
| } |  |  |  |
| scs-30kHz |  |  |  |
| frequencyDensity1 | Not checked |  |  |
| frequencyDensity2 | Not checked |  |  |
| timeDensity1 | Not checked |  |  |
| timeDensity2 | Not checked |  |  |
| timeDensity3 | Not checked |  |  |
| } |  |  |  |
| scs-60kHz |  |  |  |
| frequencyDensity1 | Not checked |  |  |
| frequencyDensity2 | Not checked |  |  |
| timeDensity1 | Not checked |  |  |
| timeDensity2 | Not checked |  |  |
| timeDensity3 | Not checked |  |  |
| } |  |  |  |
| scs-120kHz |  |  |  |
| frequencyDensity1 | Not checked |  |  |
| frequencyDensity2 | Not checked |  |  |
| timeDensity1 | Not checked |  |  |
| timeDensity2 | Not checked |  |  |
| timeDensity3 | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| ptrs-DensityRecommendationSetUL SEQUENCE { |  |  |  |
| scs-15kHz SEQUENCE { |  |  |  |
| frequencyDensity1 | Not checked |  |  |
| frequencyDensity2 | Not checked |  |  |
| timeDensity1 | Not checked |  |  |
| timeDensity2 | Not checked |  |  |
| timeDensity3 | Not checked |  |  |
| sampleDensity1 | Not checked |  |  |
| sampleDensity2 | Not checked |  |  |
| sampleDensity3 | Not checked |  |  |
| sampleDensity4 | Not checked |  |  |
| sampleDensity5 | Not checked |  |  |
| } |  |  |  |
| scs-30kHz SEQUENCE { |  |  |  |
| frequencyDensity1 | Not checked |  |  |
| frequencyDensity2 | Not checked |  |  |
| timeDensity1 | Not checked |  |  |
| timeDensity2 | Not checked |  |  |
| timeDensity3 | Not checked |  |  |
| sampleDensity1 | Not checked |  |  |
| sampleDensity2 | Not checked |  |  |
| sampleDensity3 | Not checked |  |  |
| sampleDensity4 | Not checked |  |  |
| sampleDensity5 | Not checked |  |  |
| scs-60kHz SEQUENCE { |  |  |  |
| frequencyDensity1 | Not checked |  |  |
| frequencyDensity2 | Not checked |  |  |
| timeDensity1 | Not checked |  |  |
| timeDensity2 | Not checked |  |  |
| timeDensity3 | Not checked |  |  |
| sampleDensity1 | Not checked |  |  |
| sampleDensity2 | Not checked |  |  |
| sampleDensity3 | Not checked |  |  |
| sampleDensity4 | Not checked |  |  |
| sampleDensity5 | Not checked |  |  |
| scs-120kHz SEQUENCE { |  |  |  |
| frequencyDensity1 | Not checked |  |  |
| frequencyDensity2 | Not checked |  |  |
| timeDensity1 | Not checked |  |  |
| timeDensity2 | Not checked |  |  |
| timeDensity3 | Not checked |  |  |
| sampleDensity1 | Not checked |  |  |
| sampleDensity2 | Not checked |  |  |
| sampleDensity3 | Not checked |  |  |
| sampleDensity4 | Not checked |  |  |
| sampleDensity5 | Not checked |  |  |
| } |  |  |  |
| dummy4 | Not checked |  |  |
| aperiodicTRS | Not checked |  |  |
| } |  |  |  |

#### *– ModulationOrder*

Table 4.6.4-30: *ModulationOrder*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| ModulationOrder | Not checked |  |  |

#### *– MRDC-Parameters*

Table 4.6.4-31: *MRDC-Parameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| MRDC-Parameters ::= SEQUENCE { |  |  |  |
| singleUL-Transmission | Not checked |  |  |
| dynamicPowerSharingENDC | Not checked |  |  |
| tdm-Pattern | Not checked |  |  |
| ul-SharingEUTRA-NR | Not checked |  |  |
| ul-SwitchingTimeEUTRA-NR | Not checked |  |  |
| simultaneousRxTxInterBandENDC | Not checked |  |  |
| asyncIntraBandENDC | Not checked |  |  |
| } |  |  |  |

#### *– NRDC-Parameters*

Table 4.6.4-31A: *NRDC-Parameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| NRDC-Parameters ::= SEQUENCE { |  |  |  |
| measAndMobParametersNRDC | Not checked |  |  |
| generalParametersNRDC SEQUENCE { |  |  |  |
| splitSRB-WithOneUL-Path | Not checked |  |  |
| splitDRB-withUL-Both-MCG-SCG | Not checked |  |  |
| srb3 | Not checked |  |  |
| v2x-EUTRA | Not checked |  |  |
| } |  |  |  |
| fdd-Add-UE-NRDC-Capabilities SEQUENCE { |  |  |  |
| measAndMobParametersMRDC-XDD-Diff SEQUENCE { |  |  |  |
| sftd-MeasPSCell | Not checked |  |  |
| sftd-MeasNR-Cell | Not checked |  |  |
| } |  |  |  |
| generalParametersMRDC SEQUENCE { |  |  |  |
| splitSRB-WithOneUL-Path | Not checked |  |  |
| splitDRB-withUL-Both-MCG-SCG | Not checked |  |  |
| srb3 | Not checked |  |  |
| v2x-EUTRA-v1530 | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| tdd-Add-UE-NRDC-Capabilities SEQUENCE { |  |  |  |
| measAndMobParametersMRDC-XDD-Diff SEQUENCE { |  |  |  |
| sftd-MeasPSCell | Not checked |  |  |
| sftd-MeasNR-Cell | Not checked |  |  |
| } |  |  |  |
| generalParametersMRDC SEQUENCE { |  |  |  |
| splitSRB-WithOneUL-Path | Not checked |  |  |
| splitDRB-withUL-Both-MCG-SCG | Not checked |  |  |
| srb3 | Not checked |  |  |
| v2x-EUTRA-v1530 | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| fr1-Add-UE-NRDC-Capabilities SEQUENCE { | UE-MRDC-CapabilityAddFRX-Mode |  |  |
| measAndMobParametersMRDC-FRX-Diff SEQUENCE { |  |  |  |
| simultaneousRxDataSSB-DiffNumerology | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| fr2-Add-UE-NRDC-Capabilities SEQUENCE { |  |  |  |
| measAndMobParametersMRDC-FRX-Diff SEQUENCE { |  |  |  |
| simultaneousRxDataSSB-DiffNumerology | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| lateNonCriticalExtension | Not checked |  |  |
| nonCriticalExtension | Not checked |  |  |
| } |  |  |  |

#### *– NTN-Parameters*

Table 4.6.4-31BA: *NTN-Parameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| NTN-Parameters-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– OLPC-SRS-Pos*

Table 4.6.4-31B: *OLPC-SRS-Pos*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| OLPC-SRS-Pos-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– PDCP-Parameters*

Table 4.6.4-32: *PDCP-Parameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| PDCP-Parameters ::= SEQUENCE { |  |  |  |
| supportedROHC-Profiles SEQUENCE { |  |  |  |
| profile0x0000 | Not checked |  |  |
| profile0x0001 | Not checked |  |  |
| profile0x0002 | Not checked |  |  |
| profile0x0003 | Not checked |  |  |
| profile0x0004 | Not checked |  |  |
| profile0x0006 | Not checked |  |  |
| profile0x0101 | Not checked |  |  |
| profile0x0102 | Not checked |  |  |
| profile0x0103 | Not checked |  |  |
| profile0x0104 | Not checked |  |  |
| } |  |  |  |
| maxNumberROHC-ContextSessions | Not checked |  |  |
| uplinkOnlyROHC-Profiles | Not checked |  |  |
| continueROHC-Context | Not checked |  |  |
| outOfOrderDelivery | Not checked |  |  |
| shortSN | Not checked |  |  |
| pdcp-DuplicationSRB | Not checked |  |  |
| pdcp-DuplicationMCG-OrSCG-DRB | Not checked |  |  |
| } |  |  |  |

#### *– PDCP-ParametersMRDC*

Table 4.6.4-33: *PDCP-ParametersMRDC*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| PDCP-ParametersMRDC ::= SEQUENCE { |  |  |  |
| pdcp-DuplicationSplitSRB | Not checked |  |  |
| pdcp-DuplicationSplitDRB | Not checked |  |  |
| } |  |  |  |

#### *– Phy-Parameters*

Table 4.6.4-34: *Phy-Parameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| Phy-Parameters ::= SEQUENCE { |  |  |  |
| phy-ParametersCommon SEQUENCE { |  |  |  |
| csi-RS-CFRA-ForHO | Not checked |  |  |
| dynamicPRB-BundlingDL | Not checked |  |  |
| sp-CSI-ReportPUCCH | Not checked |  |  |
| sp-CSI-ReportPUSCH | Not checked |  |  |
| nzp-CSI-RS-IntefMgmt | Not checked |  |  |
| type2-SP-CSI-Feedback-LongPUCCH | Not checked |  |  |
| precoderGranularityCORESET | Not checked |  |  |
| dynamicHARQ-ACK-Codebook | Not checked |  |  |
| semiStaticHARQ-ACK-Codebook | Not checked |  |  |
| spatialBundlingHARQ-ACK | Not checked |  |  |
| dynamicBetaOffsetInd-HARQ-ACK-CSI | Not checked |  |  |
| pucch-Repetition-F1-3-4 | Not checked |  |  |
| ra-Type0-PUSCH | Not checked |  |  |
| dynamicSwitchRA-Type0-1-PDSCH | Not checked |  |  |
| dynamicSwitchRA-Type0-1-PUSCH | Not checked |  |  |
| pdsch-MappingTypeA | Not checked |  |  |
| pdsch-MappingTypeB | Not checked |  |  |
| interleavingVRB-ToPRB-PDSCH | Not checked |  |  |
| interSlotFreqHopping-PUSCH | Not checked |  |  |
| type1-PUSCH-RepetitionMultiSlots | Not checked |  |  |
| type2-PUSCH-RepetitionMultiSlots | Not checked |  |  |
| pusch-RepetitionMultiSlots | Not checked |  |  |
| pdsch-RepetitionMultiSlots | Not checked |  |  |
| downlinkSPS | Not checked |  |  |
| configuredUL-GrantType1 | Not checked |  |  |
| configuredUL-GrantType2 | Not checked |  |  |
| pre-EmptIndication-DL | Not checked |  |  |
| cbg-TransIndication-DL | Not checked |  |  |
| cbg-TransIndication-UL | Not checked |  |  |
| cbg-FlushIndication-DL | Not checked |  |  |
| dynamicHARQ-ACK-CodeB-CBG-Retx-DL | Not checked |  |  |
| rateMatchingResrcSetSemi-Static | Not checked |  |  |
| rateMatchingResrcSetDynamic | Not checked |  |  |
| bwp-SwitchingDelay | Not checked |  |  |
| } |  |  |  |
| phy-ParametersXDD-Diff SEQUENCE { |  |  |  |
| dynamicSFI | Not checked |  |  |
| twoPUCCH-F0-2-ConsecSymbols | Not checked |  |  |
| twoDifferentTPC-Loop-PUSCH | Not checked |  |  |
| twoDifferentTPC-Loop-PUCCH | Not checked |  |  |
| } |  |  |  |
| phy-ParametersFRX-Diff SEQUENCE { |  |  |  |
| dynamicSFI | Not checked |  |  |
| dummy1 | Not checked |  |  |
| twoFL-DMRS | Not checked |  |  |
| dummy2 | Not checked |  |  |
| dummy3 | Not checked |  |  |
| supportedDMRS-TypeDL | Not checked |  |  |
| supportedDMRS-TypeUL | Not checked |  |  |
| semiOpenLoopCSI | Not checked |  |  |
| csi-ReportWithoutPMI | Not checked |  |  |
| csi-ReportWithoutCQI | Not checked |  |  |
| onePortsPTRS | Not checked |  |  |
| twoPUCCH-F0-2-ConsecSymbols | Not checked |  |  |
| pucch-F2-WithFH | Not checked |  |  |
| pucch-F3-WithFH | Not checked |  |  |
| pucch-F4-WithFH | Not checked |  |  |
| freqHoppingPUCCH-F0-2 | Not checked |  |  |
| freqHoppingPUCCH-F1-3-4 | Not checked |  |  |
| mux-SR-HARQ-ACK-CSI-PUCCH- MultiPerSlot | Not checked |  |  |
| uci-CodeBlockSegmentation | Not checked |  |  |
| onePUCCH-LongAndShortFormat | Not checked |  |  |
| twoPUCCH-AnyOthersInSlot | Not checked |  |  |
| intraSlotFreqHopping-PUSCH | Not checked |  |  |
| pusch-LBRM | Not checked |  |  |
| pdcch-BlindDetectionCA | Not checked |  |  |
| tpc-PUSCH-RNTI | Not checked |  |  |
| tpc-PUCCH-RNTI | Not checked |  |  |
| tpc-SRS-RNTI | Not checked |  |  |
| absoluteTPC-Command | Not checked |  |  |
| twoDifferentTPC-Loop-PUSCH | Not checked |  |  |
| twoDifferentTPC-Loop-PUCCH | Not checked |  |  |
| pusch-HalfPi-BPSK | Not checked |  |  |
| pucch-F3-4-HalfPi-BPSK | Not checked |  |  |
| almostContiguousCP-OFDM-UL | Not checked |  |  |
| sp-CSI-RS | Not checked |  |  |
| sp-CSI-IM | Not checked |  |  |
| tdd-MultiDL-UL-SwitchPerSlot | Not checked |  |  |
| multipleCORESET | Not checked |  |  |
| } |  |  |  |
| phy-ParametersFR1 SEQUENCE { |  |  |  |
| pdcchMonitoringSingleOccasion | Not checked |  |  |
| scs-60kHz | Not checked |  |  |
| pdsch-256QAM-FR1 | Not checked |  |  |
| pdsch-RE-MappingFR1- PerSymbol | Not checked |  |  |
| } |  |  |  |
| phy-ParametersFR2 SEQUENCE { |  |  |  |
| dummy | Not checked |  |  |
| pdsch-RE-MappingFR2- PerSymbol | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– Phy-ParametersMRDC*

Table 4.6.4-35: *Phy-ParametersMRDC*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| Phy-ParametersMRDC ::= SEQUENCE { |  |  |  |
| naics-Capability-List SEQUENCE (SIZE (1..maxNrofNAICS-Entries)) OF NAICS-Capability-Entry { | 1 entry |  |  |
| NAICS-Capability-Entry[1] SEQUENCE { |  | entry 1 |  |
| numberOfNAICS-CapableCC | Not checked |  |  |
| numberOfAggregatedPRB | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– Phy-ParametersSharedSpectrumChAccess*

Table 4.6.4-35AA: *Phy-ParametersSharedSpectrumChAccess*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| Phy-ParametersSharedSpectrumChAccess-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– PosSRS-RRC-Inactive-OutsideInitialUL-BWP-r17*

Table 4.6.4-35AB: *PosSRS-RRC-Inactive-OutsideInitialUL-BWP-r17*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| PosSRS-RRC-Inactive-OutsideInitialUL-BWP-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– PowSav-Parameters*

Table 4.6.4-35A: *PowSav-Parameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| PowSav-Parameters-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– ProcessingParameters*

Table 4.6.4-36: *ProcessingParameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| ProcessingParameters ::= SEQUENCE { |  |  |  |
| fallback | Not checked |  |  |
| differentTB-PerSlot SEQUENCE { |  |  |  |
| upto1 | Not checked |  |  |
| upto2 | Not checked |  |  |
| upto4 | Not checked |  |  |
| upto7 | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– RAT-Type*

Table 4.6.4-37: *RAT-Type*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| RAT-Type | nr |  |  |
| eutra-nr |  | EN-DC, NE-DC |

|  |  |
| --- | --- |
| Condition | Explanation |
| EN-DC | E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC |
| NE-DC | NR E-UTRA Dual Connectivity |

#### *– RedCapParameters*

Table 4.6.4-37A: *RedCapParameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| RedCapParameters-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– RF-Parameters*

Table 4.6.4-38: *RF-Parameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| RF-Parameters ::= SEQUENCE { |  |  |  |
| supportedBandListNR SEQUENCE (SIZE (1..maxBands)) OF BandNR { | At least 1 entry |  |  |
| BandNR[1] SEQUENCE { |  | entry 1 |  |
| bandNR | FreqBandIndicatorNR with condition NR |  |  |
| modifiedMPR-Behaviour | Not checked |  |  |
| mimo-ParametersPerBand | Not checked |  |  |
| extendedCP | Not checked |  |  |
| multipleTCI | Not checked |  |  |
| bwp-WithoutRestriction | Not checked |  |  |
| bwp-SameNumerology | Not checked |  |  |
| bwp-DiffNumerology | Not checked |  |  |
| crossCarrierScheduling-SameSCS | Not checked |  |  |
| pdsch-256QAM-FR2 | Not checked |  |  |
| pusch-256QAM | Not checked |  |  |
| ue-PowerClass | Not checked |  |  |
| rateMatchingLTE-CRS | Not checked |  |  |
| channelBWs-DL CHOICE { |  |  |  |
| fr1 SEQUENCE { |  |  |  |
| scs-15kHz | Not checked |  |  |
| scs-30kHz | Not checked |  |  |
| scs-60kHz | Not checked |  |  |
| } |  |  |  |
| fr2 SEQUENCE { |  |  |  |
| scs-60kHz | Not checked |  |  |
| scs-120kHz | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| channelBWs-UL CHOICE { |  |  |  |
| fr1 SEQUENCE { |  |  |  |
| scs-15kHz | Not checked |  |  |
| scs-30kHz | Not checked |  |  |
| scs-60kHz | Not checked |  |  |
| } |  |  |  |
| fr2 SEQUENCE { |  |  |  |
| scs-60kHz | Not checked |  |  |
| scs-120kHz | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| BandNR[2] SEQUENCE { |  | entry 2 | NR-DC-SecondaryBand NR\_CA-InterBand | |
| bandNR | FreqBandIndicatorNR with condition NR-DC-SecondaryBand |  | NR-DC-SecondaryBand | |
|  | FreqBandIndicatorNR with condition NR\_CA-InterBand |  | NR\_CA-InterBand | |
| modifiedMPR-Behaviour | Not checked |  |  | |
| mimo-ParametersPerBand | Not checked |  |  | |
| extendedCP | Not checked |  |  | |
| multipleTCI | Not checked |  |  | |
| bwp-WithoutRestriction | Not checked |  |  | |
| bwp-SameNumerology | Not checked |  |  | |
| bwp-DiffNumerology | Not checked |  |  | |
| crossCarrierScheduling-SameSCS | Not checked |  |  | |
| pdsch-256QAM-FR2 | Not checked |  |  | |
| pusch-256QAM | Not checked |  |  | |
| ue-PowerClass | Not checked |  |  | |
| rateMatchingLTE-CRS | Not checked |  |  | |
| channelBWs-DL CHOICE { |  |  |  | |
| fr1 SEQUENCE { |  |  |  | |
| scs-15kHz | Not checked |  |  | |
| scs-30kHz | Not checked |  |  | |
| scs-60kHz | Not checked |  |  | |
| } |  |  |  | |
| fr2 SEQUENCE { |  |  |  | |
| scs-60kHz | Not checked |  |  | |
| scs-120kHz | Not checked |  |  | |
| } |  |  |  | |
| } |  |  |  | |
| channelBWs-UL CHOICE { |  |  |  | |
| fr1 SEQUENCE { |  |  |  | |
| scs-15kHz | Not checked |  |  | |
| scs-30kHz | Not checked |  |  | |
| scs-60kHz | Not checked |  |  | |
| } |  |  |  | |
| fr2 SEQUENCE { |  |  |  | |
| scs-60kHz | Not checked |  |  | |
| scs-120kHz | Not checked |  |  | |
| } |  |  |  | |
| } |  |  |  | |
| } |  |  |  | |
|  |  |  |  |
| } |  |  |  |
| maxUplinkDutyCycle-PC2-FR1 | Not checked |  |  |
| pucch-SpatialRelInfoMAC-CE | Not checked |  |  |
| powerBoosting-pi2BPSK | Not checked |  |  |
| maxUplinkDutyCycle-FR2 | Not checked |  |  |
| channelBWs-DL-v1590 | Not checked |  |  |
| channelBWs-UL-v1590 | Not checked |  |  |
| asymmetricBandwidthCombinationSet | Not checked |  |  |
| sharedSpectrumChAccessParamsPerBand-r16 | Not checked |  |  |
| cancelOverlappingPUSCH-r16 | Not checked |  |  |
| multipleRateMatchingEUTRA-CRS-r16 | Not checked |  |  |
| overlapRateMatchingEUTRA-CRS-r16 | Not checked |  |  |
| pdsch-MappingTypeB-Alt-r16 | Not checked |  |  |
| oneSlotPeriodicTRS-r16 | Not checked |  |  |
| olpc-SRS-Pos-r16 | Not checked |  |  |
| spatialRelationsSRS-Pos-r16 | Not checked |  |  |
| simulSRS-MIMO-TransWithinBand-r16 | Not checked |  |  |
| channelBW-DL-IAB-r16 | Not checked |  |  |
| channelBW-UL-IAB-r16 | Not checked |  |  |
| rasterShift7dot5-IAB-r16 | Not checked |  |  |
| ue-PowerClass-v1610 | Not checked |  |  |
| condHandover-r16 | Not checked |  |  |
| condHandoverFailure-r16 | Not checked |  |  |
| condHandoverTwoTriggerEvents-r16 | Not checked |  |  |
| condPSCellChange-r16 | Not checked |  |  |
| condPSCellChangeTwoTriggerEvents-r16 | Not checked |  |  |
| mpr-PowerBoost-FR2-r16 | Not checked |  |  |
| activeConfiguredGrant-r16 | Not checked |  |  |
| maxNumberConfigsPerBWP-r16 | Not checked |  |  |
| maxNumberConfigsAllCC-r16 | Not checked |  |  |
| jointReleaseConfiguredGrantType2-r16 | Not checked |  |  |
| sps-r16 | Not checked |  |  |
| maxNumberConfigsPerBWP-r16 | Not checked |  |  |
| maxNumberConfigsAllCC-r16 | Not checked |  |  |
| jointReleaseSPS-r16 | Not checked |  |  |
| simulSRS-TransWithinBand-r16 | Not checked |  |  |
| trs-AdditionalBandwidth-r16 | Not checked |  |  |
| handoverIntraF-IAB-r16 | Not checked |  |  |
| simulTX-SRS-AntSwitchingIntraBandUL-CA-r16 | Not checked |  |  |
| sharedSpectrumChAccessParamsPerBand-v1630 | Not checked |  |  |
| handoverUTRA-FDD-r16 | Not checked |  |  |
| enhancedUL-TransientPeriod-r16 | Not checked |  |  |
| sharedSpectrumChAccessParamsPerBand-v1640 | Not checked |  |  |
| type1-PUSCH-RepetitionMultiSlots-v1650 | Not checked |  |  |
| type2-PUSCH-RepetitionMultiSlots-v1650 | Not checked |  |  |
| pusch-RepetitionMultiSlots-v1650 | Not checked |  |  |
| configuredUL-GrantType1-v1650 | Not checked |  |  |
| configuredUL-GrantType2-v1650 | Not checked |  |  |
| sharedSpectrumChAccessParamsPerBand-v1650 | Not checked |  |  |
| enhancedSkipUplinkTxConfigured-v1660 | Not checked |  |  |
| enhancedSkipUplinkTxDynamic-v1660 | Not checked |  |  |
| maxUplinkDutyCycle-PC1dot5-MPE-FR1-r16 | Not checked |  |  |
| supportedBandCombinationList | Not checked |  |  |
| appliedFreqBandListFilter | Not present |  |  |
|  | FreqBandList |  | FILTER\_REQUESTED |
| } |  |  |  |

|  |  |
| --- | --- |
| **Condition** | **Explanation** |
| FILTER\_REQUESTED | This condition shall be set to true when UE is requested to filter the information via ‘capabilityRequestFilter’ IE in the NR5GC UECapabilityEnquiry message or via ‘requestedFreqBandsNR-MRDC’ IE in the EN-DC UECapabilityEnquiry message |
| NR-DC-SecondaryBand | Used in NR-DC test cases |
| NR\_CA-InterBand | NG-RAN NR Radio Access using NR CA Inter-band test cases |

#### *– RF-ParametersMRDC*

Table 4.6.4-39: RF-ParametersMRDC

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| RF-ParametersMRDC ::= SEQUENCE { |  |  |  |
| supportedBandCombinationList | BandCombinationList |  |  |
| appliedFreqBandListFilter | FreqBandList with condition EN-DC |  | EN-DC |
|  | FreqBandList with condition NE-DC |  | NE-DC |
|  | FreqBandList with condition EN-DC and CA-InterBand |  | ENDC\_CA-InterBand |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| EN-DC | E-UTRA-NR Dual Connectivity |
| EN-DC\_CA-InterBand | E-UTRA-NR Dual Connectivity used in NR CA Inter-band test cases |
| NE-DC | NR E-UTRA Dual Connectivity |

#### *– RLC-Parameters*

Table 4.6.4-40: *RLC-Parameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| RLC-Parameters ::= SEQUENCE { |  |  |  |
| am-WithShortSN | Not checked |  |  |
| um-WithShortSN | Not checked |  |  |
| um-WIthLongSN | Not checked |  |  |
| } |  |  |  |

#### *– SDAP-Parameters*

Table 4.6.4-41: *SDAP-Parameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| SDAP-Parameters::= SEQUENCE { |  |  |  |
| as-ReflectiveQoS | Not checked |  |  |
| } |  |  |  |

#### *– SidelinkParameters*

Table 4.6.4-41A: *SidelinkParameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| SidelinkParameters-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SON-Parameters*

Table 4.6.4-41B: *SON-Parameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| SON-Parameters-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SpatialRelationsSRS-Pos*

Table 4.6.4-41C: *SpatialRelationsSRS-Pos*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| SpatialRelationsSRS-Pos-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SRS-AllPosResourcesRRC-Inactive*

Table 4.6.4-41D: *SRS-AllPosResourcesRRC-Inactive*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| SRS-AllPosResourcesRRC-Inactive-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SRS-SwitchingTimeNR*

Table 4.6.4-42: *SRS-SwitchingTimeNR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| SRS-SwitchingTimeNR::= SEQUENCE { |  |  |  |
| switchingTimeDL | Not checked |  |  |
| switchingTimeUL | Not checked |  |  |
| } |  |  |  |

#### *– SRS-SwitchingTimeEUTRA*

Table 4.6.4-43: *SRS-SwitchingTimeEUTRA*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| SRS-SwitchingTimeEUTRA ::= SEQUENCE { |  |  |  |
| switchingTimeDL | Not checked |  |  |
| switchingTimeUL | Not checked |  |  |
| } |  |  |  |

#### *– SupportedBandwidth*

Table 4.6.4-44: SupportedBandwidth

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| SupportedBandwidth ::= CHOICE { |  |  |  |
| fr1 | Not checked |  | FR1 |
| fr2 | Not checked |  | FR2 |
| } |  |  |  |

#### *– UE-BasedPerfMeas-Parameters*

Table 4.6.4-44A: *UE-BasedPerfMeas-Parameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| UE-BasedPerfMeas-Parameters-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– UE-CapabilityRAT-ContainerList*

Table 4.6.4-45: UE-CapabilityRAT-ContainerList

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| UE-CapabilityRAT-ContainerList ::= SEQUENCE (SIZE (0.. maxRAT-CapabilityContainers)) OF UE-CapabilityRAT-Container { | n entries |  |  |
| UE-CapabilityRAT-Container[1] SEQUENCE { |  | entry 1 |  |
| rat-Type | RAT-Type |  |  |
| ue-CapabilityRAT-Container | UE-NR-Capability with condition NR |  |  |
|  | UE-NR-Capability with condition NR-DC |  | NR-DC |
|  | UE-NR-Capability with condition NR\_CA-InterBand |  | NR\_CA-InterBand |
| } |  |  |  |
| UE-CapabilityRAT-Container[2] SEQUENCE { |  | entry 2 | EN-DC, NE-DC, EN-DC\_CA-InterBand |
| rat-Type | RAT-Type with condition NE-DC |  |  |
| ue-CapabilityRAT-Container | UE-MRDC-Capability with condition EN-DC |  | EN-DC |
|  | UE-MRDC-Capability with condition NE-DC |  | NE-DC |
|  | UE-MRDC-Capability with condition EN-DC\_CA-InterBand |  | EN-DC\_CA-InterBand |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| EN-DC | E-UTRA-NR Dual Connectivity |
| EN-DC\_CA-InterBand | E-UTRA-NR Dual Connectivity using NR CA Inter-band test cases |
| NE-DC | NR E-UTRA Dual Connectivity |
| NR\_CA-InterBand | NG-RAN NR Radio Access using NR CA Inter-band test cases |
| NR-DC | Used in NR-DC test cases |

#### *– UE-CapabilityRAT-RequestList*

Table 4.6.4-46: *UE-CapabilityRAT-RequestList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| UE-CapabilityRAT-RequestList ::= SEQUENCE (SIZE (0.. maxRAT-CapabilityContainers)) OF UE-CapabilityRAT-Request { | n entries |  |  |
| UE-CapabilityRAT-Request[1] SEQUENCE { |  | entry 1 | NR, NR-DC, NR\_CA-InterBand |
| rat-Type | RAT-Type |  |  |
| capabilityRequestFilter | UE-CapabilityRequestFilterNR with condition NR | OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR) |  |
|  | UE-CapabilityRequestFilterNR with condition NR-DC | OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR) | NR-DC |
|  | UE-CapabilityRequestFilterNR with condition NR\_CA-InterBand | OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR) | NR\_CA-InterBand |
| } |  |  |  |
| UE-CapabilityRAT-Request[1] SEQUENCE { |  | entry 1 | NE-DC, EN-DC, EN-DC\_CA-InterBand |
| rat-Type | RAT-Type with condition NR |  |  |
| capabilityRequestFilter | UE-CapabilityRequestFilterNR with condition NR | OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR) |  |
| } |  |  |  |
| UE-CapabilityRAT-Request[2] SEQUENCE { |  | entry 2 | NE-DC |
| rat-Type | RAT-Type with condition NE-DC |  |  |
| capabilityRequestFilter | UE-CapabilityRequestFilterNR with condition NE-DC | OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR) |  |
| } |  |  |  |
| UE-CapabilityRAT-Request[2] SEQUENCE { |  | entry 2 | EN-DC, EN-DC\_CA-InterBand |
| rat-Type | RAT-Type with condition EN-DC |  |  |
| capabilityRequestFilter | UE-CapabilityRequestFilterNR with condition EN-DC | OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR) |  |
|  | UE-CapabilityRequestFilterNR with condition EN-DC\_CA-InterBand |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| EN-DC | E-UTRA-NR Dual Connectivity |
| EN-DC\_CA-InterBand | E-UTRA-NR Dual Connectivity using NR CA Inter-band test cases |
| NR | NG-RAN NR Radio Access |
| NR-DC | Used in NR-DC test cases |
| NR\_CA-InterBand | NG-RAN NR Radio Access using NR CA Inter-band test cases |
| NE-DC | NR E-UTRA Dual Connectivity |

#### *– UE-CapabilityRequestFilterCommon*

Table 4.6.4-46A: *UE-CapabilityRequestFilterCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| UE-CapabilityRequestFilterCommon ::= SEQUENCE { |  |  |  |
| mrdc-Request SEQUENCE { |  |  |  |
| omitEN-DC | Not checked |  |  |
| includeNR-DC | Not checked |  |  |
| includeNE-DC | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– UE-CapabilityRequestFilterNR*

Table 4.6.4-47: *UE-CapabilityRequestFilterNR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| UE-CapabilityRequestFilterNR ::= SEQUENCE { |  |  |  |
| frequencyBandListFilter | FreqBandList with condition NR |  | NR |
|  | FreqBandList with condition EN-DC |  | EN-DC |
|  | FreqBandList with condition EN-DC AND CA-InterBand |  | EN-DC\_CA-InterBand |
|  | FreqBandList with condition NR AND CA-InterBand |  | NR\_CA-InterBand |
|  | FreqBandList with condition NR and NR-DC |  | NR-DC |
|  | FreqBandList with condition NR and NE-DC |  | NE-DC |
| nonCriticalExtension SEQUENCE { | Not present |  |  |
| srs-SwitchingTimeRequest | Not present |  |  |
| nonCriticalExtension SEQUENCE { |  |  |  |
| srs-SwitchingTimeRequest | Not present |  |  |
| nonCriticalExtension | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| EN-DC | E-UTRA-NR Dual Connectivity |
| EN-DC\_CA-InterBand | E-UTRA-NR Dual Connectivity using NR CA Inter-band test cases |
| NR\_CA-InterBand | NG-RAN NR Radio Access using NR CA Inter-band test cases |
| NR | NG-RAN NR Radio Access |
| NR-DC | Used in NR-DC test cases |
| NE-DC | NR E-UTRA Dual Connectivity |

#### *– UE-MRDC-Capability*

Table 4.6.4-48: UE-MRDC-Capability

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| UE-MRDC-Capability ::= SEQUENCE { |  |  |  |
| measAndMobParametersMRDC | Not checked |  |  |
| phy-ParametersMRDC-v1530 | Not checked |  |  |
| rf-ParametersMRDC | RF-ParametersMRDC with condition EN-DC |  |  |
|  | RF-ParametersMRDC with condition NE-DC |  | NE-DC |
|  | RF-ParametersMRDC with condition EN-DC\_CA-InterBand |  | EN-DC\_CA-InterBand |
| generalParametersMRDC SEQUENCE { |  |  |  |
| splitSRB-WithOneUL-Path | Not checked |  |  |
| splitDRB-withUL-Both-MCG-SCG | Not checked |  |  |
| srb3 | Not checked |  |  |
| v2x-EUTRA | Not checked |  |  |
| } |  |  |  |
| fdd-Add-UE-MRDC-Capabilities SEQUENCE { |  |  |  |
| measAndMobParametersMRDC-XDD-Diff SEQUENCE { |  |  |  |
| sftd-MeasPSCell | Not checked |  |  |
| sftd-MeasNR-Cell | Not checked |  |  |
| } |  |  |  |
| generalParametersMRDC SEQUENCE { |  |  |  |
| splitSRB-WithOneUL-Path | Not checked |  |  |
| splitDRB-withUL-Both-MCG-SCG | Not checked |  |  |
| srb3 | Not checked |  |  |
| v2x-EUTRA-v1530 | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| tdd-Add-UE-MRDC-Capabilities SEQUENCE { |  |  |  |
| measAndMobParametersMRDC-XDD-Diff SEQUENCE { |  |  |  |
| sftd-MeasPSCell | Not checked |  |  |
| sftd-MeasNR-Cell | Not checked |  |  |
| } |  |  |  |
| generalParametersMRDC SEQUENCE { |  |  |  |
| splitSRB-WithOneUL-Path | Not checked |  |  |
| splitDRB-withUL-Both-MCG-SCG | Not checked |  |  |
| srb3 | Not checked |  |  |
| v2x-EUTRA-v1530 | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| fr1-Add-UE-MRDC-Capabilities SEQUENCE { |  |  |  |
| measAndMobParametersMRDC-FRX-Diff SEQUENCE { |  |  |  |
| simultaneousRxDataSSB-DiffNumerology | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| fr2-Add-UE-MRDC-Capabilities |  |  |  |
| measAndMobParametersMRDC-FRX-Diff SEQUENCE { |  |  |  |
| simultaneousRxDataSSB-DiffNumerology | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| featureSetCombinations | Not checked |  |  |
| pdcp-ParametersMRDC-v1530 | Not checked |  |  |
| lateNonCriticalExtension | Not checked |  |  |
| nonCriticalExtension SEQUENCE { |  |  |  |
| UE-MRDC-Capability-v1560 SEQUENCE { |  |  |  |
| receivedFilters | Not checked |  |  |
| measAndMobParametersMRDC-v1560 SEQUENCE { |  |  |  |
| measAndMobParametersMRDC-XDD-Diff-v1560 SEQUENCE { |  |  |  |
| sftd-MeasPSCell-NEDC | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| fdd-Add-UE-MRDC-Capabilities-v1560 SEQUENCE { |  |  |  |
| measAndMobParametersMRDC-XDD-Diff-v1560 SEQUENCE { |  |  |  |
| sftd-MeasPSCell-NEDC | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| tdd-Add-UE-MRDC-Capabilities-v1560 SEQUENCE { |  |  |  |
| measAndMobParametersMRDC-XDD-Diff-v1560 SEQUENCE { |  |  |  |
| sftd-MeasPSCell-NEDC | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| nonCriticalExtension | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| EN-DC | E-UTRA-NR Dual Connectivity |
| EN-DC\_CA-InterBand | E-UTRA-NR Dual Connectivity used in NR CA Inter-band test cases |
| NE-DC | NR E-UTRA Dual Connectivity |

#### *– UE-NR-Capability*

Table 4.6.4-49: UE-NR-Capability

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| UE-NR-Capability ::= SEQUENCE { |  |  |  |
| accessStratumRelease | AccessStratumRelease |  |  |
| pdcp-Parameters | Not checked |  |  |
| rlc-Parameters | Not checked |  |  |
| mac-Parameters | Not checked |  |  |
| phy-Parameters | Not checked |  |  |
| rf-Parameters | RF-Parameters |  |  |
|  | RF-Parameters with condition NR-DC |  | NR-DC |
|  | RF-Parameters with condition NR\_CA-InterBand |  | NR\_CA-InterBand |
| measAndMobParameters | Not checked |  |  |
| fdd-Add-UE-NR-Capabilities SEQUENCE { |  |  |  |
| phy-ParametersXDD-Diff SEQUENCE { |  |  |  |
| dynamicSFI | Not checked |  |  |
| twoPUCCH-F0-2-ConsecSymbols | Not checked |  |  |
| twoDifferentTPC-Loop-PUSCH | Not checked |  |  |
| twoDifferentTPC-Loop-PUCCH | Not checked |  |  |
| } |  |  |  |
| mac-ParametersXDD-Diff SEQUENCE { |  |  |  |
| skipUplinkTxDynamic | Not checked |  |  |
| logicalChannelSR-DelayTimer | Not checked |  |  |
| longDRX-Cycle | Not checked |  |  |
| shortDRX-Cycle | Not checked |  |  |
| multipleSR-Configurations | Not checked |  |  |
| multipleConfiguredGrants | Not checked |  |  |
| } |  |  |  |
| measAndMobParametersXDD-Diff SEQUENCE { |  |  |  |
| intraAndInterF-MeasAndReport | Not checked |  |  |
| eventA-MeasAndReport | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| tdd-Add-UE-NR-Capabilities SEQUENCE { |  |  |  |
| phy-ParametersXDD-Diff SEQUENCE { |  |  |  |
| dynamicSFI | Not checked |  |  |
| twoPUCCH-F0-2-ConsecSymbols | Not checked |  |  |
| twoDifferentTPC-Loop-PUSCH | Not checked |  |  |
| twoDifferentTPC-Loop-PUCCH | Not checked |  |  |
| } |  |  |  |
| mac-ParametersXDD-Diff SEQUENCE { |  |  |  |
| skipUplinkTxDynamic | Not checked |  |  |
| logicalChannelSR-DelayTimer | Not checked |  |  |
| longDRX-Cycle | Not checked |  |  |
| shortDRX-Cycle | Not checked |  |  |
| multipleSR-Configurations | Not checked |  |  |
| multipleConfiguredGrants | Not checked |  |  |
| } |  |  |  |
| measAndMobParametersXDD-Diff SEQUENCE { |  |  |  |
| intraAndInterF-MeasAndReport | Not checked |  |  |
| eventA-MeasAndReport | Not checked |  |  |
| } |  |  |  |
| fr1-Add-UE-NR-Capabilities SEQUENCE { |  |  |  |
| phy-ParametersFRX-Diff SEQUENCE { |  |  |  |
| dynamicSFI | Not checked |  |  |
| oneFL-DMRS-TwoAdditionalDMRS | Not checked |  |  |
| twoFL-DMRS | Not checked |  |  |
| twoFL-DMRS-TwoAdditionalDMRS | Not checked |  |  |
| oneFL-DMRS-ThreeAdditionalDMRS | Not checked |  |  |
| supportedDMRS-TypeDL | Not checked |  |  |
| supportedDMRS-TypeUL | Not checked |  |  |
| semiOpenLoopCSI | Not checked |  |  |
| csi-ReportWithoutPMI | Not checked |  |  |
| csi-ReportWithoutCQI | Not checked |  |  |
| onePortsPTRS | Not checked |  |  |
| twoPUCCH-F0-2-ConsecSymbols | Not checked |  |  |
| pucch-F2-WithFH | Not checked |  |  |
| pucch-F3-WithFH | Not checked |  |  |
| pucch-F4-WithFH | Not checked |  |  |
| freqHoppingPUCCH-F0-2 | Not checked |  |  |
| freqHoppingPUCCH-F1-3-4 | Not checked |  |  |
| mux-SR-HARQ-ACK-CSI-PUCCH | Not checked |  |  |
| uci-CodeBlockSegmentation | Not checked |  |  |
| onePUCCH-LongAndShortFormat | Not checked |  |  |
| twoPUCCH-AnyOthersInSlot | Not checked |  |  |
| intraSlotFreqHopping-PUSCH | Not checked |  |  |
| pusch-LBRM | Not checked |  |  |
| pdcch-BlindDetectionCA | Not checked |  |  |
| tpc-PUSCH-RNTI | Not checked |  |  |
| tpc-PUCCH-RNTI | Not checked |  |  |
| tpc-SRS-RNTI | Not checked |  |  |
| absoluteTPC-Command | Not checked |  |  |
| twoDifferentTPC-Loop-PUSCH | Not checked |  |  |
| twoDifferentTPC-Loop-PUCCH | Not checked |  |  |
| pusch-HalfPi-BPSK | Not checked |  |  |
| pucch-F3-4-HalfPi-BPSK | Not checked |  |  |
| almostContiguousCP-OFDM-UL | Not checked |  |  |
| sp-CSI-RS | Not checked |  |  |
| sp-CSI-IM | Not checked |  |  |
| tdd-MultiDL-UL-SwitchPerSlot | Not checked |  |  |
| multipleCORESET | Not checked |  |  |
| } |  |  |  |
| measAndMobParametersFRX-Diff SEQUENCE { |  |  |  |
| ss-SINR-Meas | Not checked |  |  |
| csi-RSRP-AndRSRQ-MeasWithSSB | Not checked |  |  |
| csi-RSRP-AndRSRQ-MeasWithoutSSB | Not checked |  |  |
| csi-SINR-Meas | Not checked |  |  |
| csi-RS-RLM | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| fr2-Add-UE-NR-Capabilities SEQUENCE { |  |  |  |
| phy-ParametersFRX-Diff SEQUENCE { | Not checked |  |  |
| dynamicSFI | Not checked |  |  |
| oneFL-DMRS-TwoAdditionalDMRS | Not checked |  |  |
| twoFL-DMRS | Not checked |  |  |
| twoFL-DMRS-TwoAdditionalDMRS | Not checked |  |  |
| oneFL-DMRS-ThreeAdditionalDMRS | Not checked |  |  |
| supportedDMRS-TypeDL | Not checked |  |  |
| supportedDMRS-TypeUL | Not checked |  |  |
| semiOpenLoopCSI | Not checked |  |  |
| csi-ReportWithoutPMI | Not checked |  |  |
| csi-ReportWithoutCQI | Not checked |  |  |
| onePortsPTRS | Not checked |  |  |
| twoPUCCH-F0-2-ConsecSymbols | Not checked |  |  |
| pucch-F2-WithFH | Not checked |  |  |
| pucch-F3-WithFH | Not checked |  |  |
| pucch-F4-WithFH | Not checked |  |  |
| freqHoppingPUCCH-F0-2 | Not checked |  |  |
| freqHoppingPUCCH-F1-3-4 | Not checked |  |  |
| mux-SR-HARQ-ACK-CSI-PUCCH | Not checked |  |  |
| uci-CodeBlockSegmentation | Not checked |  |  |
| onePUCCH-LongAndShortFormat | Not checked |  |  |
| twoPUCCH-AnyOthersInSlot | Not checked |  |  |
| intraSlotFreqHopping-PUSCH | Not checked |  |  |
| pusch-LBRM | Not checked |  |  |
| pdcch-BlindDetectionCA | Not checked |  |  |
| tpc-PUSCH-RNTI | Not checked |  |  |
| tpc-PUCCH-RNTI | Not checked |  |  |
| tpc-SRS-RNTI | Not checked |  |  |
| absoluteTPC-Command | Not checked |  |  |
| twoDifferentTPC-Loop-PUSCH | Not checked |  |  |
| twoDifferentTPC-Loop-PUCCH | Not checked |  |  |
| pusch-HalfPi-BPSK | Not checked |  |  |
| pucch-F3-4-HalfPi-BPSK | Not checked |  |  |
| almostContiguousCP-OFDM-UL | Not checked |  |  |
| sp-CSI-RS | Not checked |  |  |
| sp-CSI-IM | Not checked |  |  |
| tdd-MultiDL-UL-SwitchPerSlot | Not checked |  |  |
| multipleCORESET | Not checked |  |  |
| } |  |  |  |
| measAndMobParametersFRX-Diff SEQUENCE { |  |  |  |
| ss-SINR-Meas | Not checked |  |  |
| csi-RSRP-AndRSRQ-MeasWithSSB | Not checked |  |  |
| csi-RSRP-AndRSRQ-MeasWithoutSSB | Not checked |  |  |
| csi-SINR-Meas | Not checked |  |  |
| csi-RS-RLM | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| featureSets | Not checked |  |  |
| featureSetCombinations | Not checked |  |  |
| lateNonCriticalExtension | Not checked |  |  |
| nonCriticalExtension SEQUENCE { |  |  |  |
| fdd-Add-UE-NR-Capabilities-1530 SEQUENCE { |  |  |  |
| eutra-ParametersXDD-Diff SEQUENCE { |  |  |  |
| rsrqMeasWidebandEUTRA | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| tdd-Add-UE-NR-Capabilities-v1530 SEQUENCE { |  |  |  |
| eutra-ParametersXDD-Diff SEQUENCE { |  |  |  |
| rsrqMeasWidebandEUTRA Not Checked |  |  |  |
| } |  |  |  |
| } |  |  |  |
| dummy | Not checked |  |  |
| interRAT-Parameters | Not checked |  |  |
| inactiveState | Not checked |  |  |
| delayBudgetReporting | Not checked |  |  |
| nonCriticalExtension SEQUENCE { |  |  |  |
| sdap-Parameters | Not checked |  |  |
| overheatingInd | Not checked |  |  |
| ims-Parameters | Not checked |  |  |
| fr1-Add-UE-NR-Capabilities-v1540 SEQUENCE { |  |  |  |
| ims-ParametersFRX-Diff SEQUENCE { |  |  |  |
| voiceOverNR | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| fr2-Add-UE-NR-Capabilities-v1540 SEQUENCE { |  |  |  |
| ims-ParametersFRX-Diff SEQUENCE { |  |  |  |
| voiceOverNR | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| fr1-fr2-Add-UE-NR-Capabilities SEQUENCE { |  |  |  |
| phy-ParametersFRX-Diff SEQUENCE { |  |  |  |
| dynamicSFI | Not checked |  |  |
| dummy1 | Not checked |  |  |
| twoFL-DMRS | Not checked |  |  |
| dummy2 | Not checked |  |  |
| dummy3 | Not checked |  |  |
| supportedDMRS-TypeDL | Not checked |  |  |
| supportedDMRS-TypeUL | Not checked |  |  |
| semiOpenLoopCSI | Not checked |  |  |
| csi-ReportWithoutPMI | Not checked |  |  |
| csi-ReportWithoutCQI | Not checked |  |  |
| onePortsPTRS | Not checked |  |  |
| twoPUCCH-F0-2-ConsecSymbols | Not checked |  |  |
| pucch-F2-WithFH | Not checked |  |  |
| pucch-F3-WithFH | Not checked |  |  |
| pucch-F4-WithFH | Not checked |  |  |
| freqHoppingPUCCH-F0-2 | Not checked |  |  |
| freqHoppingPUCCH-F1-3-4 | Not checked |  |  |
| mux-SR-HARQ-ACK-CSI-PUCCH- MultiPerSlot | Not checked |  |  |
| uci-CodeBlockSegmentation | Not checked |  |  |
| onePUCCH-LongAndShortFormat | Not checked |  |  |
| twoPUCCH-AnyOthersInSlot | Not checked |  |  |
| intraSlotFreqHopping-PUSCH | Not checked |  |  |
| pusch-LBRM | Not checked |  |  |
| pdcch-BlindDetectionCA | Not checked |  |  |
| tpc-PUSCH-RNTI | Not checked |  |  |
| tpc-PUCCH-RNTI | Not checked |  |  |
| tpc-SRS-RNTI | Not checked |  |  |
| absoluteTPC-Command | Not checked |  |  |
| twoDifferentTPC-Loop-PUSCH | Not checked |  |  |
| twoDifferentTPC-Loop-PUCCH | Not checked |  |  |
| pusch-HalfPi-BPSK | Not checked |  |  |
| pucch-F3-4-HalfPi-BPSK | Not checked |  |  |
| almostContiguousCP-OFDM-UL | Not checked |  |  |
| sp-CSI-RS | Not checked |  |  |
| sp-CSI-IM | Not checked |  |  |
| tdd-MultiDL-UL-SwitchPerSlot | Not checked |  |  |
| multipleCORESET | Not checked |  |  |
| } |  |  |  |
| measAndMobParametersFRX-Diff SEQUENCE { |  |  |  |
| ss-SINR-Meas | Not checked |  |  |
| csi-RSRP-AndRSRQ-MeasWithSSB | Not checked |  |  |
| csi-RSRP-AndRSRQ-MeasWithoutSSB | Not checked |  |  |
| csi-SINR-Meas | Not checked |  |  |
| csi-RS-RLM | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| nonCriticalExtension SEQUENCE { | Not checked |  |  |
| reducedCP-Latency | Not checked |  |  |
| nonCriticalExtension SEQUENCE { |  |  |  |
| nrdc-Parameters | Not checked |  |  |
| receivedFilters | Not checked |  |  |
| nonCriticalExtension | Not checked |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| NR-DC | Used in NR-DC test cases |
| NR\_CA-InterBand | NG-RAN NR Radio Access using NR CA Inter-band test cases |

#### *– UE-RadioPagingInfo*

Table 4.6.4-49A: *UE-RadioPagingInfo*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| UE-RadioPagingInfo-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– SharedSpectrumChAccessParamsPerBand*

Table 4.6.4-50: *SharedSpectrumChAccessParamsPerBand*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| SharedSpectrumChAccessParamsPerBand-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

### 4.6.5 Other information elements

#### *– AbsoluteTimeInfo*

Table 4.6.5-0A: *AbsoluteTimeInfo*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| AbsoluteTimeInfo-r16 | FFS |  |  |

#### *– AppLayerMeasConfig*

Table 4.6.5-0BA: *AppLayerMeasConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| AppLayerMeasConfig-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– AreaConfiguration*

Table 4.6.5-0B: *AreaConfiguration*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| AreaConfiguration-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– BT-NameList*

Table 4.6.5-0C: *BT-NameList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| BT-NameList-r16 ::= SEQUENCE (SIZE (1..maxBT-Name-r16)) OF { | 1 entry |  |  |
| BT-Name-r16[1] | Set according to specific message content | OCTET STRING (SIZE (1..248)) |  |
| } |  |  |  |

#### *– DedicatedInfoF1c*

Table 4.6.5-0D: *DedicatedInfoF1c*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| DedicatedInfoF1c-r17 | FFS |  |  |

#### *– EUTRA-AllowedMeasBandwidth*

Table 4.6.5-1: *EUTRA-AllowedMeasBandwidth*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| EUTRA-AllowedMeasBandwidth | Set according to TS 36.508 [2] Table 4.4.3.4-1 for E-UTRA cell | row ‘measurement Bandwidth’ |  |

#### *– EUTRA-MBSFN-SubframeConfigList*

Table 4.6.5-2: *EUTRA-MBSFN-SubframeConfigList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| EUTRA-MBSFN-SubframeConfigList ::= SEQUENCE (SIZE (1..maxMBSFN-Allocations)) OF EUTRA-MBSFN-SubframeConfig { | 1 entry |  |  |
| MBSFN-SubframeConfig[1] SEQUENCE { |  | entry 1 |  |
| radioframeAllocationPeriod | FFS |  |  |
| radioframeAllocationOffset | FFS |  |  |
| subframeAllocation1 CHOICE { |  |  |  |
| oneFrame | FFS |  |  |
| fourFrames | FFS |  |  |
| } |  |  |  |
| subframeAllocation2 CHOICE { |  |  |  |
| oneFrame | FFS |  |  |
| fourFrames | FFS |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– EUTRA-MultiBandInfoList*

Table 4.6.5-3: *EUTRA-MultiBandInfoList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| EUTRA-MultiBandInfoList ::= SEQUENCE (SIZE (1..maxMultiBands)) OF EUTRA-MultiBandInfo { | 1 entry |  |  |
| EUTRA-MultiBandInfo[1] SEQUENCE { |  | entry 1 |  |
| eutra-FreqBandIndicator | FreqBandIndicatorEUTRA |  |  |
| eutra-NS-PmaxList | EUTRA-NS-PmaxList |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– EUTRA-NS-PmaxList*

Table 4.6.5-4: *EUTRA-NS-PmaxList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| EUTRA-NS-PmaxList ::= SEQUENCE (SIZE (1..maxEUTRA-NS-Pmax)) OF EUTRA-NS-PmaxValue { | 1 entry |  |  |
| EUTRA-NS-PmaxValue[1] SEQUENCE { |  | entry 1 |  |
| additionalPmax | FFS |  |  |
| additionalSpectrumEmission | FFS |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– EUTRA-PhysCellId*

Table 4.6.5-5: *EUTRA-PhysCellId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| EUTRA-PhysCellId | Set according to TS 36.508 [2] Table 4.4.2-1A for E-UTRA cell |  |  |

#### *– EUTRA-PhysCellIdRange*

Table 4.6.5-6: *EUTRA-PhysCellIdRange*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| EUTRA-PhysCellIdRange ::= SEQUENCE { |  |  |  |
| start | EUTRA-PhysCellId |  |  |
| Range | FFS |  |  |
| } |  |  |  |

#### *– EUTRA-PresenceAntennaPort1*

Table 4.6.5-7: *EUTRA-PresenceAntennaPort1*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| EUTRA-PresenceAntennaPort1 | FFS |  |  |

#### *– EUTRA-Q-OffsetRange*

Table 4.6.5-8: *EUTRA-Q-OffsetRange*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| EUTRA-Q-OffsetRange | FFS |  |  |

Table 4.6.5-9: *Void*

Table 4.6.5-10: *Void*

#### *– IAB-IP-Address*

Table 4.6.5-10A: *IAB-IP-Address*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| IAB-IP-Address-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– IAB-IP-AddressIndex*

Table 4.6.5-10B: *IAB-IP-AddressIndex*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| IAB-IP-AddressIndex-r16 | FFS |  |  |

#### *– IAB-IP-Usage*

Table 4.6.5-10C: *IAB-IP-Usage*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| IAB-IP-Usage-r16 | FFS |  |  |

#### *– LoggingDuration*

Table 4.6.5-10D: *LoggingDuration*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| LoggingDuration-r16 | FFS |  |  |

#### *– LoggingInterval*

Table 4.6.5-10E: *LoggingInterval*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| LoggingInterval-r16 | FFS |  |  |

#### *– LogMeasResultListBT*

Table 4.6.5-10F: *LogMeasResultListBT*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| LogMeasResultListBT-r16 ::= SEQUENCE { |  |  |  |
| LogMeasResultBT-r16 ::= SEQUENCE { |  |  |  |
| bt-Addr-r16 | Not checked | BIT STRING (SIZE (48)) |  |
| rssi-BT-r16 | Not checked | INTEGER (-128..127) |  |
| } |  |  |  |
| } |  |  |  |

#### *– LogMeasResultListWLAN*

Table 4.6.5-10G: *LogMeasResultListWLAN*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| LogMeasResultListWLAN-r16 ::= SEQUENCE {SIZE (1..maxWLAN-Id-Report-r16)) OF LogMeasResultWLAN-r16 { |  |  |  |
| LogMeasResultWLAN-r16 SEQUENCE { |  |  |  |
| wlan-Identifiers-r16 SEQUENCE { |  |  |  |
| ssid-r16 | Not checked | OCTET STRING (SIZE (1..32)) |  |
| bssid-r16 | Not checked | OCTET STRING (SIZE (6)) |  |
| hessid-r16 | Not checked | OCTET STRING (SIZE (6)) |  |
| } |  |  |  |
| rssiWLAN-r16 | Not checked | INTEGER(0..141) |  |
| rtt-WLAN-r16 SEQUENCE { |  |  |  |
| rttValue-r16 | Not checked | INTEGER (0..16777215) |  |
| rttUnits-r16 | Not checked |  |  |
| rttAccuracy-r16 | Not checked | INTEGER (0..255) |  |
| } |  |  |  |
| } |  |  |  |

#### *– MeasConfigAppLayerId*

Table 4.6.5-10H: *MeasConfigAppLayerId*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| MeasConfigAppLayerId-r17 | FFS |  |  |

#### *– OtherConfig*

Table 4.6.5-11: *OtherConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| OtherConfig ::=SEQUENCE { |  |  |  |
| delayBudgetReportingConfig CHOICE{ |  |  |  |
| release | FFS |  |  |
| setup SEQUENCE { |  |  |  |
| delayBudgetReportingProhibitTimer | FFS |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

#### *– PhysCellIdUTRA-FDD*

Table 4.6.5-11A: *PhysCellIdUTRA-FDD*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| PhysCellIdUTRA-FDD-r16 | FFS |  |  |

#### *– RRC-TransactionIdentifier*

Table 4.6.5-12: *RRC-TransactionIdentifier*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| RRC-TransactionIdentifier | 0 |  |  |

#### *– Sensor-NameList*

Table 4.6.5-13: *Sensor-NameList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| Sensor-NameList-r16 ::= SEQUENCE { |  |  |  |
| measUncomBarPre-r16 | Set according to specific message content |  |  |
| measUeSpeed | Set according to specific message content |  |  |
| measUeOrientation | Set according to specific message content |  |  |
| } |  |  |  |

#### *– TraceReference*

Table 4.6.5-14: *TraceReference*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| TraceReference-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– UE-MeasurementsAvailable-r16*

Table 4.6.5-15: *UE-MeasurementsAvailable-r16*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| UE-MeasurementsAvailable-r16 ::= SEQUENCE { |  |  |  |
| ..logMeasAvailable-r16 | Not checked |  |  |
|  | true |  | LOG |
| ..logMeasAvailableBT-r16 | Not checked |  |  |
|  | true |  | BT |
| ..logMeasAvailableWLAN-r16 | Not checked |  |  |
|  | true |  | WLAN |
| ..connEstFailInfoAvailable-r16 | Not checked |  |  |
|  | true |  | CEF |
| ..rlf-InfoAvailable-r16 | Not checked |  |  |
|  | true |  | RLF |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| LOG | Logged measurement information reporting |
| BT | Bluetooth measurement information reporting |
| WLAN | WLAN measurement information reporting |
| CEF | Connection failure information reporting |
| RLF | Radio link failure information reporting |

#### *– UTRA-FDD-Q-OffsetRange*

Table 4.6.5-16: *UTRA-FDD-Q-OffsetRange*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| UTRA-FDD-Q-OffsetRange-r16 | dB0 |  |  |

#### *– VisitedCellInfoList*

Table 4.6.5-17: *VisitedCellInfoList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| VisitedCellInfoList-r16 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– WLAN-NameList*

Table 4.6.5-18: *WLAN-NameList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| WLAN-NameList-r16 ::= SEQUENCE (SIZE (1..maxWLAN-Name-r16)) OF { | 1 entry |  |  |
| WLAN-Name-r16[1] | Set according to specific message content | OCTET STRING (SIZE (1..32)) |  |
| } |  |  |  |

### 4.6.6 Sidelink information elements

#### *– SL-BWP-Config*

Table 4.6.6-1: *SL-BWP-Config*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | | |
| Information Element | Value/remark | Comment | Condition | |
| SL-BWP-Config-r16 ::= SEQUENCE { |  |  |  | |
| sl-BWP-Id | BWP-Id |  |  |
| sl-BWP-Generic-r16 SEQUENCE { |  |  |  |
| sl-BWP-r16 | BWP |  |  |
| sl-LengthSymbols-r16 | sym14 | All symbols in slot are used for SL |  |
|  | sym12 | All symbols in slot are used for SL | EXTENDED |
| sl-StartSymbol-r16 | sym0 |  |  |
| sl-PSBCH-Config-r16 | Not present |  |  |
| sl-TxDirectCurrentLocation-r16 | Not present |  |  |
| } |  |  |  |
| sl-BWP-PoolConfig-r16 | SL-BWP-PoolConfig with condition SCHEDULING |  |  |
| } |  |  |  | |

|  |  |
| --- | --- |
| Condition | Explanation |
| EXTENDED | When cyclicPrefix is configured in sl-BWP-r16, i.e. extended CP is used |

#### *– SL-BWP-ConfigCommon*

Table 4.6.6-2: *SL-BWP-ConfigCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-BWP-ConfigCommon-r16 ::= SEQUENCE { | |  |  |  |
| sl-BWP-Generic-r16 SEQUENCE { | |  |  |  |
| sl-BWP-r16 | | BWP |  |  |
| sl-LengthSymbols-r16 | | sym14 | All symbols in slot are used for SL |  |
|  | | sym12 | All symbols in slot are used for SL | EXTENDED |
| sl-StartSymbol-r16 | | sym0 |  |  |
| sl-PSBCH-Config-r16 | | Not present |  |  |
| sl-TxDirectCurrentLocation-r16 | | Not present |  |  |
| } | |  |  |  |
| sl-BWP-PoolConfigCommon-r16 | | SL-BWP-PoolConfigCommon with RXPOOL and SELECTED |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| EXTENDED | When cyclicPrefix is configured in sl-BWP-r16, i.e. extended CP is used |

#### *– SL-BWP-PoolConfig*

Table 4.6.6-3: *SL-BWP-PoolConfig*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | | |
| Information Element | Value/remark | Comment | | Condition |
| SL-BWP-PoolConfig-r16 ::= SEQUENCE { |  |  | |  |
| sl-RxPool-r16 | Not present |  |  | |
| sl-TxPoolSelectedNormal-r16 | Not present |  |  | |
| sl-TxPoolSelectedNormal-r16 SEQUENCE { |  |  | SELECTED | |
| sl-PoolToReleaseList-r16 | Not present |  |  | |
| sl-PoolToAddModList-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 { | 1 entry |  |  | |
| SL-ResourcePoolConfig-r16[1] SEQUENCE { |  | entry 1 |  | |
| sl-ResourcePoolID-r16 | 1 | Index of the resource pool for normal case |  | |
| sl-ResourcePool-r16 | SL-ResourcePool with condition SL\_HARQ |  |  | |
| } |  |  |  | |
| } |  |  |  | |
| } |  |  |  | |
| sl-TxPoolScheduling-r16 | Not present |  |  | |
| sl-TxPoolScheduling-r16 SEQUENCE { |  |  | SCHEDULING | |
| sl-PoolToReleaseList-r16 | Not present |  |  | |
| sl-PoolToAddModList-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 { | 1 entry |  |  | |
| SL-ResourcePoolConfig-r16[1] SEQUENCE { |  | entry 1 |  | |
| sl-ResourcePoolID-r16 | 1 | Index of the resource pool used for normal case |  | |
| sl-ResourcePool-r16 | SL-ResourcePool with condition SL\_HARQ |  |  | |
| } |  |  |  | |
| } |  |  |  | |
| } |  |  |  | |
| sl-TxPoolExceptional-r16 | Not present |  |  | |
| sl-TxPoolExceptional-r16 SEQUENCE { |  |  | EXCEPTIONAL | |
| sl-ResourcePoolID-r16 | 2 | Index of the pool used during exceptional cases |  | |
| sl-ResourcePool-r16 | SL-ResourcePool with condition EXCEPTIONAL and SL\_HARQ |  |  | |
| } |  |  |  | |
| } |  |  | |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SCHEDULING | To configure Tx resource pool for Mode 1 SL transmission |
| SELECTED | To configure Tx resource pool for Mode 2 SL transmission |
| EXCEPTIONAL | To configure Tx resource pool for exceptional cases such as HO, re-establishment etc. |

#### *– SL-BWP-PoolConfigCommon*

Table 4.6.6-4: *SL-BWP-PoolConfigCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-BWP-PoolConfigCommon-r16 ::= SEQUENCE { | |  |  |  |
| sl-RxPool-r16 | | Not present |  |  |
| sl-RxPool-r16 SEQUENCE (SIZE (1..maxNrofRXPool-r16)) OF SL-ResourcePool-r16 { | | 1 entry |  | RXPOOL |
| SL-ResourcePool-r16[1] | | SL-ResourcePool with condition SL\_HARQ | entry 1 |  |
| } | |  |  |  |
| sl-TxPoolSelectedNormal-r16 | | Not present |  |  |
| sl-TxPoolSelectedNormal-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 { | | 1 entry |  | SELECTED |
| SL-ResourcePoolConfig-r16[1] SEQUENCE { | |  | entry 1 |  |
| sl-ResourcePoolID-r16 | | 1 | Index of the resource pool for normal case |  |
| sl-ResourcePool-r16 | | SL-ResourcePool with condition SL\_HARQ |  |  |
| } | |  |  |  |
| } | |  |  |  |
| sl-TxPoolExceptional-r16 | | Not present |  |  |
| sl-TxPoolExceptional-r16 SEQUENCE { | |  |  | EXCEPTIONAL |
| sl-ResourcePoolID-r16 | | 2 | Index of the resource pool used for normal case |  |
| sl-ResourcePool-r16 | | SL-ResourcePool with condition EXCEPTIONAL and SL\_HARQ |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| RXPOOL | To configure Rx resource pool |
| SELECTED | To configure Tx resource pool for Mode 2 SL transmission |
| EXCEPTIONAL | To configure Tx resource pool for exceptional cases such as HO, re-establishment etc. |

#### *– SL-CBR-PriorityTxConfigList*

Table 4.6.6-5: *SL-CBR-PriorityTxConfigList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-CBR-PriorityTxConfigList -r16 ::= SEQUENCE (SIZE (1..8)) OF SL-PriorityTxConfigIndex-r16 { | | 8 entries |  |  |
| SL-PriorityTxConfigIndex-r16[k, k=1..8] SEQUENCE { | |  | entry k |  |
| sl-PriorityThreshold-r16 | | k | priority value = k |  |
| sl-DefaultTxConfigIndex-r16 | | 0 | PSSCH Tx configuration corresponding to the first CBR level is used by UE when UE has no available CBR results. |  |
| sl-CBR-ConfigIndex-r16 | | 0 | 1st CBR level table is used |  |
| sl-Tx-ConfigIndexList-r16 SEQUENCE (SIZE (1.. maxCBR-Level-r16)) OF SL-TxConfigIndex-r16 { | | 2 entries |  |  |
| SL-TxConfigIndex-r16[1] | | 0 | entry 1  for CBR level corresponding to the first entry in sl-CBR-RangeConfigList |  |
| SL-TxConfigIndex-r16[2] | | 0 | entry 2  for CBR level corresponding to the second entry in sl-CBR-RangeConfigList |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– SL-CBR-CommonTxConfigList*

Table 4.6.6-6: *SL-CBR-CommonTxConfigList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-CBR-CommonTxConfigList-r16 ::= SEQUENCE { | |  |  |  |
| sl-CBR-RangeConfigList-r16 SEQUENCE (SIZE (1..maxCBR-Config-r16)) OF SL-CBR-LevelsConfig-r16 { | 1 entry |  |  |
| SL-CBR-LevelsConfig-r16[1] SEQUENCE (SIZE (1..maxCBR-Level-r16)) OF SL-CBR-r16 { | 2 entries |  |  |
| SL-CBR-r16[1] | 50 | entry 1  0<=CBR<0.5 |  |
| SL-CBR-r16[2] | 100 | entry 2  0.5<=CBR<1 |  |
| } |  |  |  |
| } |  |  |  |
| sl-CBR-PSSCH-TxConfigList-r16 SEQUENCE (SIZE (1.. maxTxConfig-r16)) OF SL-CBR-PSSCH-TxConfig-r16 { | 1 entry |  |  |
| SL-CBR-PSSCH-TxConfig-r16 SEQUENCE { |  |  |  |
| sl-CR-Limit-r16 | 10000 | CR limit = 100% |  |
| sl-TxParameters-r16 SEQUENCE { |  |  |  |
| sl-MinMCS-PSSCH-r16 | 0 |  |  |
| sl-MaxMCS-PSSCH-r16 | 26 |  |  |
| sl-MinSubChannelNumPSSCH-r16 | 1 |  |  |
| sl-MaxSubchannelNumPSSCH-r16 | 27 |  |  |
| sl-MaxTxTransNumPSSCH-r16 | 4 |  |  |
| sl-MaxTxPower-r16 | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } | |  |  |  |

#### *– SL-ConfigDedicatedNR*

Table 4.6.6-7: *SL-ConfigDedicatedNR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-ConfigDedicatedNR-r16 ::= SEQUENCE { | |  |  |  |
| sl-PHY-MAC-RLC-Config-r16 | | Not present |  |  |
| sl-PHY-MAC-RLC-Config-r16 SEQUENCE { | |  |  | SCHEDULING, SELECTED |
| sl-ScheduledConfig-r16 | | Not present |  |  |
| sl-ScheduledConfig-r16 CHOICE { | |  |  | SCHEDULING |
| setup | | SL-ScheduledConfig |  |  |
| } | |  |  |  |
| sl-UE-SelectedConfig-r16 | | Not present |  |  |
| sl-UE-SelectedConfig-r16 CHOICE { | |  |  | SELECTED |
| setup | | SL-UE-SelectedConfig |  |  |
| } | |  |  |  |
| sl-FreqInfoToReleaseList-r16 | | Not present |  |  |
| sl-FreqInfoToAddModList-r16 | | Not present |  |  |
| sl-FreqInfoToAddModList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfig-r16 { | | 1 entry |  | SCHEDULING, SELECTED |
| SL-FreqConfig-r16[1] | | SL-FreqConfig | entry 1 |  |
| } | |  |  |  |
| sl-RLC-BearerToReleaseList-r16 | | Not present |  |  |
| sl-RLC-BearerToAddModList-r16 | | Not present |  |  |
| sl-RLC-BearerToAddModList-r16 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF SL-RLC-BearerConfig-r16 { | | 1 entry |  | SL\_DRB |
| SL-RLC-BearerConfig-r16[1] | | SL-RLC-BearerConfig | entry 1 |  |
| } | |  |  |  |
| sl-MaxNumConsecutiveDTX-r16 | | Not present |  |  |
| sl-CSI-Acquisition-r16 | | Not present |  |  |
|  | | enabled |  | SL\_CSI\_REPORT |
| sl-CSI-SchedulingRequestId-r16 | | Not present |  |  |
| sl-SSB-PriorityNR-r16 | | 1 |  |  |
| networkControlledSyncTx-r16 | | off | UE doesn't send SL SSB by default |  |
| } | |  |  |  |
| sl-RadioBearerToReleaseList-r16 | | Not present |  |  |
| sl-RadioBearerToAddModList-r16 | | Not present |  |  |
| sl-RadioBearerToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SL-RadioBearerConfig-r16 { | | 1 entry |  | SL\_DRB |
| SL-RadioBearerConfig-r16[1] | | SL-RadioBearerConfig |  |  |
| } | |  |  |  |
| sl-MeasConfigInfoToReleaseList-r16 | | Not present |  |  |
| sl-MeasConfigInfoToAddModList-r16 | | Not present |  |  |
| sl-MeasConfigInfoToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-MeasConfigInfo-r16 { | | 1 entry |  | SL\_MEAS |
| SL-MeasConfigInfo-r16[1] | | SL-MeasConfigInfo |  |  |
| } | |  |  |  |
| t400-r16 | | ms2000 |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SCHEDULING | To configure UE performing mode 1 SL transmission |
| SELECTED | To configure UE performing mode 2 SL transmission |
| SL\_DRB | To establish SL DRB |
| SL\_MEAS | To configure UE performing measurements based on RS sent by peer UE |
| SL\_CSI\_REPORT | To configure UE performing SL CSI reporting |

#### *– SL-ConfiguredGrantConfig*

Table 4.6.6-8: *SL-ConfiguredGrantConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-ConfiguredGrantConfig-r16 ::= SEQUENCE { | |  |  |  |
| sl-ConfigIndexCG-r16 | | 1 |  |  |
| sl-PeriodCG-r16 CHOICE { | |  |  |  |
| sl-PeriodCG1-r16 | | ms100 |  |  |
| } | |  |  |  |
| sl-NrOfHARQ-Processes-r16 | | 4 |  |  |
| sl-HARQ-ProcID-offset-r16 | | 1 |  |  |
| sl-CG-MaxTransNumList-r16 SEQUENCE (SIZE (1..8)) OF SL-CG-MaxTransNum-r16 | | 8 entries |  |  |
| SL-CG-MaxTransNum-r16[k, k=1..8] SEQUENCE { | |  | entry k |  |
| sl-Priority-r16 | | k |  |  |
| sl-MaxTransNum-r16 | | 8 | max Tx number = 8 for all priorities |  |
| } | |  |  |  |
| } | |  |  |  |
| rrc-ConfiguredSidelinkGrant-r16 | | Not present | TYPE 2 CG is configured by default |  |
| rrc-ConfiguredSidelinkGrant-r16 SEQUENCE { | |  |  | TYPE 1 |
| sl-TimeResourceCG-Type1-r16 | | a TRIV chosen by SS from the range 0 to 496 as specified in 38.214 |  |  |
| sl-StartSubchannelCG-Type1-r16 | | 0 |  |  |
| sl-FreqResourceCG-Type1-r16 | | a FRIV chosen by SS from the range 0 to 6929 as specified in 38.214 |  |  |
| sl-TimeOffsetCG-Type1-r16 | | 0 |  |  |
| sl-N1PUCCH-AN-r16 | | Not present |  |  |
|  | | PUCCH-ResourceId |  | SL\_HARQ\_VIA\_UU |
| sl-PSFCH-ToPUCCH-CG-Type1-r16 | | Not present |  |  |
|  | | 1 |  | SL\_HARQ\_VIA\_UU |
| sl-ResourcePoolID-r16 | | 1 | Resource pool for normal case is used |  |
| sl-TimeReferenceSFN-Type1-r16 | | Not present | Default value sfn0 is used |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| TYPE 1 | To configure a type 1 SL configured grant for UE |
| SL HARQ\_VIA\_UU | to report HARQ-ACK information that the UE generates based on PSFCH reception via UL |

#### *– SL-DestinationIdentity*

Table 4.6.6-9: *SL-DestinationIdentity*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-DestinationIdentity-r16 | | 24 bits destination ID chosen by SS |  |  |

#### *– SL-FreqConfig*

Table 4.6.6-10: *SL-FreqConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-FreqConfig-r16 ::= SEQUENCE { | |  |  |  |
| sl-Freq-Id-r16 | | 1 |  |  |
| sl-SCS-SpecificCarrierList-r16 SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier { | | 1 entry |  |  |
| SCS-SpecificCarrier[1] | | SCS-SpecificCarrier with condition SL\_PointA | entry 1 | ` |
| } | |  |  |  |
| sl-AbsoluteFrequencyPointA-r16 | | ARFCN-ValueNR with condition SL\_PointA |  |  |
| sl-AbsoluteFrequencySSB-r16 | | ARFCN-ValueNR with condition SL\_SSB |  |  |
| frequencyShift7p5khzSL-r16 | | Not present |  |  |
| valueN-r16 | | 0 |  |  |
| sl-BWP-ToReleaseList-r16 | | Not present |  |  |
| sl-BWP-ToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSL-BWPs-r16)) OF SL-BWP-Config-r16 { | | 1 entry |  |  |
| SL-BWP-Config-r16[1] | | SL-BWP-Config | entry 1 |  |
| } | |  |  |  |
| sl-SyncConfigList-r16 SEQUENCE (SIZE (1..maxSL-SyncConfig-r16)) OF SL-SyncConfig-r16 { | | 1 entry |  |  |
| SL-SyncConfig-r16[1] | | SL-SyncConfig | entry 1 |  |
| } | |  |  |  |
| sl-SyncPriority-r16 | | gnss |  |  |
| } | |  |  |  |

#### *– SL-FreqConfigCommon*

Table 4.6.6-11: *SL-FreqConfigCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-FreqConfigCommon-r16 ::= SEQUENCE { | |  |  |  |
| sl-SCS-SpecificCarrierList-r16 SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier { | | 1 entry |  |  |
| SCS-SpecificCarrier[1] | | SCS-SpecificCarrier with condition SL\_PointA | entry 1 |  |
| } | |  |  |  |
| sl-AbsoluteFrequencyPointA-r16 | | ARFCN-ValueNR with condition SL\_PointA |  |  |
| sl-AbsoluteFrequencySSB-r16 | | ARFCN-ValueNR with condition SL\_SSB |  |  |
| frequencyShift7p5khzSL-r16 | | Not present |  |  |
| valueN-r16 | | 0 |  |  |
| sl-BWP-List-r16 SEQUENCE (SIZE (1..maxNrofSL-BWPs-r16)) OF SL-BWP-ConfigCommon-r16 { | | 1 entry |  |  |
| SL-BWP-ConfigCommon-r16[1] | | SL-BWP-ConfigCommon |  |  |
| } | |  |  |  |
| sl-SyncPriority-r16 | | gnss |  |  |
| sl-NbAsSync-r16 | | Not present |  |  |
| sl-SyncConfigList-r16 SEQUENCE (SIZE (1..maxSL-SyncConfig-r16)) OF SL-SyncConfig-r16 { | | 1 entry |  |  |
| SL-SyncConfig-r16[1] SEQUENCE (SIZE (1..maxSL-SyncConfig-r16)) OF SL-SyncConfig-r16 | | 1 entry | entry 1 |  |
| SL-SyncConfig-r16[1] | | SL-SyncConfig | entry 1 |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– SL-LogicalChannelConfig*

Table 4.6.6-12: *SL-LogicalChannelConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-LogicalChannelConfig-r16 ::= SEQUENCE { | |  |  |  |
| sl-Priority-r16 | | 1 |  |  |
| sl-PrioritisedBitRate-r16 | | infinity |  |  |
| sl-BucketSizeDuration-r16 | | ms50 |  |  |
| sl-ConfiguredGrantType1Allowed-r16 | | Not present |  |  |
| sl-HARQ-FeedbackEnabled-r16 | | enabled |  |  |
| sl-AllowedCG-List-r16 | | Not present |  |  |
| sl-AllowedSCS-List-r16 | | Not present |  |  |
| sl-MaxPUSCH-Duration-r16 | | Not present |  |  |
| sl-LogicalChannelGroup-r16 | | 1 | Avoiding using LCG #0, which is reserved for SL SRB |  |
|  | | 5 | Avoiding using LCG #0, which s reserved for SL SRB | LO |
| sl-SchedulingRequestId-r16 | | SchedulingRequestId |  |  |
| sl-LogicalChannelSR-DelayTimerApplied-r16 | | Not present |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| LO | LCG of the lower priority logical channels mapped to SL DRBs |

#### *– SL-MeasConfigCommon*

Table 4.6.6-13: *SL-MeasConfigCommon*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-MeasConfigCommon-r16 ::= SEQUENCE { | |  |  |  |
| sl-MeasObjectListCommon-r16 | | SL-MeasObjectList |  |  |
| sl-ReportConfigListCommon-r16 | | SL-ReportConfigList with condition PERIODICAL |  |  |
| sl-MeasIdListCommon-r16 | | SL-MeasIdList |  |  |
| sl-QuantityConfigCommon-r16 | | SL-QuantityConfig |  |  |
| } | |  |  |  |

#### *– SL-MeasConfigInfo*

Table 4.6.6-14: *SL-MeasConfigInfo*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-MeasConfigInfo-r16 ::= SEQUENCE { | |  |  |  |
| sl-DestinationIndex-r16 | | 0 | The first destination UE reported in sl-TxResourceReqList in SidelinkUEInformationNR |  |
| sl-MeasConfig-r16 SEQUENCE { | |  |  |  |
| sl-MeasObjectToRemoveList-r16 | | Not present |  |  |
| sl-MeasObjectToAddModList-r16 | | SL-MeasObjectList |  |  |
| sl-ReportConfigToRemoveList-r16 | | Not present |  |  |
| sl-ReportConfigToAddModList-r16 | | SL-ReportConfigList with condition PERIODICAL |  |  |
| sl-MeasIdToRemoveList-r16 | | Not present |  |  |
| sl-MeasIdToAddModList-r16 | | SL-MeasIdList |  |  |
| sl-QuantityConfig-r16 | | SL-QuantityConfig |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– SL-MeasIdList*

Table 4.6.6-15: *SL-MeasIdList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-MeasIdList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-MeasId-r16)) OF SL-MeasIdInfo-r16 | | 1 entry |  |  |
| SL-MeasIdInfo-r16[1] SEQUENCE { | |  | entry 1 |  |
| sl-MeasId-r16 | | 1 |  |  |
| sl-MeasObjectId-r16 | | 1 |  |  |
| sl-ReportConfigId-r16 | | 1 |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– SL-MeasObjectList*

Table 4.6.6-16: *SL-MeasObjectList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-MeasObjectList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-ObjectId-r16)) OF SL-MeasObjectInfo-r16 { | | 1 entry |  |  |
| SL-MeasObjectInfo-r16[1] SEQUENCE { | |  | entry 1 |  |
| sl-MeasObjectId-r16 | | 1 |  |  |
| sl-MeasObject-r16 SEQUENCE { | |  |  |  |
| frequencyInfoSL-r16 | | ARFCN-ValueNR of the DMRS used for SL-RSRP measurement  Note: How to set frequencyInfoSL-r16 is FFS. |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### *– SL-PDCP-Config*

Table 4.6.6-17: *SL-PDCP-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-PDCP-Config-r16 ::= SEQUENCE { | |  |  |  |
| sl-DiscardTimer-r16 | | infinity |  |  |
| sl-PDCP-SN-Size-r16 | | len12bits |  |  |
| sl-OutOfOrderDelivery | | Not present |  |  |
| } | |  |  |  |

#### *– SL-PSBCH-Config*

Table 4.6.6-18: *SL-PSBCH-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-PSBCH-Config-r16 ::= SEQUENCE { | |  |  |  |
| dl-P0-PSBCH-r16 | | 0 |  |  |
| dl-Alpha-PSBCH-r16 | | Not present | Default value 1 is used |  |
| } | |  |  |  |

#### *– SL-PSSCH-TxConfigList*

Table 4.6.6-19: *SL-PSSCH-TxConfigList*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | | |
| Information Element | | Value/remark | Comment | | Condition |
| SL-PSSCH-TxConfigList-r16 ::= SEQUENCE (SIZE (1..maxPSSCH-TxConfig-r16)) OF SL-PSSCH-TxConfig-r16 { | | 1 entry |  | |  |
| SL-PSSCH-TxConfig-r16[1] SEQUENCE { | |  | entry 1 | |  |
| sl-TypeTxSync-r16 | | | Not present | Applicable for all synchronization reference types |  | |
| sl-ThresUE-Speed-r16 | | | kmph60 |  |  | |
| sl-ParametersAboveThres-r16 SEQUENCE { | | |  |  |  | |
| sl-MinMCS-PSSCH-r16 | | | 0 |  |  | |
| sl-MaxMCS-PSSCH-r16 | | | 15 |  |  | |
| sl-MinSubChannelNumPSSCH-r16 | | | 1 |  |  | |
| sl-MaxSubchannelNumPSSCH-r16 | | | 27 |  |  | |
| sl-MaxTxTransNumPSSCH-r16 | | | 4 |  |  | |
| sl-MaxTxPower-r16 | | | Not present |  |  | |
| } | | |  |  |  | |
| sl-ParametersBelowThres-r16 SEQUENCE { | | |  |  |  | |
| sl-MinMCS-PSSCH-r16 | | | 16 |  |  | |
| sl-MaxMCS-PSSCH-r16 | | | 26 |  |  | |
| sl-MinSubChannelNumPSSCH-r16 | | | 1 |  |  | |
| sl-MaxSubchannelNumPSSCH-r16 | | | 27 |  |  | |
| sl-MaxTxTransNumPSSCH-r16 | | | 4 |  |  | |
| sl-MaxTxPower-r16 | | | Not present |  |  | |
| } | | |  |  |  | |
| } | | |  |  |  | |
| } | |  |  | |  |

#### *– SL-QoS-FlowIdentity*

Table 4.6.6-20: *SL-QoS-FlowIdentity*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-QoS-FlowIdentity-r16 | | 1 |  |  |

#### *– SL-QoS-Profile*

Table 4.6.6-21: *SL-QoS-Profile*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-QoS-Profile-r16 ::= SEQUENCE { | |  |  |  |
| sl-PQI-r16 CHOICE { | |  |  |  |
| sl-StandardizedPQI-r16 | | 0 |  |  |
| } | |  |  |  |
| sl-GFBR-r16 | | 500 |  |  |
| sl-MFBR-r16 | | 1000 |  |  |
| sl-Range-r16 | | Not present |  |  |
| } | |  |  |  |

#### *– SL-QuantityConfig*

Table 4.6.6-22: *SL-QuantityConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-QuantityConfig-r16 ::= SEQUENCE { | |  |  |  |
| sl-FilterCoefficientDMRS-r16 | | fc4 |  |  |
| } | |  |  |  |

#### *– SL-RadioBearerConfig*

Table 4.6.6-23: *SL-RadioBearerConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-RadioBearerConfig-r16 ::= SEQUENCE { | |  |  |  |
| slrb-Uu-ConfigIndex-r16 | | SLRB-Uu-ConfigIndex |  |  |
| sl-SDAP-Config-r16 | | SL-SDAP-Config |  |  |
| sl-PDCP-Config-r16 | | SL-PDCP-Config |  |  |
| sl-TransRange-r16 | | Not present |  |  |
| } | |  |  |  |

#### *– SL-ReportConfigList*

Table 4.6.6-24: *SL-ReportConfigList (Thres)*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | | | |
| Information Element | | Value/remark | | Comment | | Condition |
| SL-ReportConfigList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-ReportConfigId-r16)) OF SL-ReportConfigInfo-r16 { | | 1 entry | |  | |  |
| SL-ReportConfigInfo-r16[1] SEQUENCE { | |  | | entry 1 | |  |
| sl-ReportConfigId-r16 | | | 1 | |  |  |
| sl-ReportConfig-r16 SEQUENCE { | | |  | |  |  |
| sl-ReportType-r16 CHOICE { | | |  | |  |  |
| sl-Periodical-r16 SEQUENCE { | | |  | |  | PERIODICAL |
| sl-ReportInterval-r16 | | | ReportInterval | |  |  |
| sl-ReportAmount-r16 | | | infinity | |  |  |
| sl-ReportQuantity-r16 CHOICE { | | |  | |  |  |
| sl-RSRP-r16 | | | true | |  |  |
| } | | |  | |  |  |
| sl-RS-Type-r16 | | | dmrs | |  |  |
| } | | |  | |  |  |
| sl-EventTriggered-r16 SEQUENCE { | | |  | |  | EVENT\_S1, EVENT\_S2 |
| sl-EventId-r16 CHOICE { | | |  | |  |  |
| eventS1-r16 SEQUENCE { | | |  | |  | EVENT\_S1 |
| s1-Threshold-r16 CHOICE { | | |  | |  |  |
| sl-RSRP-r16 | | | Thres + 156 | | Thres is the actual value of event S1 thresold (in dBm) |  |
| } | | |  | |  |  |
| sl-ReportOnLeave-r16 | | | false | |  |  |
| sl-Hysteresis-r16 | | | Hysteresis | |  |  |
| sl-TimeToTrigger-r16 | | | TimeToTrigger | |  |  |
| } | | |  | |  |  |
| eventS2-r16 SEQUENCE { | | |  | |  | EVENT\_S2 |
| s2-Threshold-r16 CHOICE { | | |  | |  |  |
| sl-RSRP-r16 | | | Thres + 156 | | Thres is the actual value of event S2 thresold (in dBm) |  |
| } | | |  | |  |  |
| sl-ReportOnLeave-r16 | | | false | |  |  |
| sl-Hysteresis-r16 | | | Hysteresis | |  |  |
| sl-TimeToTrigger-r16 | | | TimeToTrigger | |  |  |
| } | | |  | |  |  |
| } | | |  | |  |  |
| sl-ReportInterval-r16 | | | ReportInterval | |  |  |
| sl-ReportAmount-r16 | | | r2 | |  |  |
| sl-ReportQuantity-r16 CHOICE { | | |  | |  |  |
| sl-RSRP-r16 | | | true | |  |  |
| } | | |  | |  |  |
| sl-RS-Type-r16 | | | dmrs | |  |  |
| } | | |  | |  |  |
| } | | |  | |  |  |
| } | | |  | |  |  |
| } | | |  | |  |  |
| } | |  | |  | |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| EVENT\_S1 | Configuration of event S1 triggered reprting |
| EVENT\_S2 | Configuration of event S2 triggered reprting |
| PERIODICAL | Configuration of periodical reporting |

#### *– SL-ResourcePool*

Table 4.6.6-25: *SL-ResourcePool*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-ResourcePool-r16 ::= SEQUENCE { | |  |  |  |
| sl-PSCCH-Config-r16 CHOICE { | |  |  |  |
| setup SEQUENCE { | |  |  |  |
| sl-TimeResourcePSCCH-r16 | | n2 |  |  |
| sl-FreqResourcePSCCH-r16 | | n10 |  |  |
| sl-DMRS-ScrambleID-r16 | | 0 |  |  |
| sl-NumReservedBits-r16 | | 2 |  |  |
| } | |  |  |  |
| } | |  |  |  |
| sl-PSSCH-Config-r16 CHOICE { | |  |  |  |
| setup SEQUENCE { | |  |  |  |
| sl-PSSCH-DMRS-TimePatternList-r16 SEQUENCE (SIZE (1..3)) OF INTEGER (2..4) { | | 2 entries |  |  |
| INTEGER[1] | | 2 | entry 1 |  |
| INTEGER[2] | | 4 | entry 2 |  |
| } | |  |  |  |
| sl-BetaOffsets2ndSCI-r16 SEQUENCE (SIZE (4)) OF SL-BetaOffsets-r16 { | | 4 entries |  |  |
| SL-BetaOffsets-r16[k, k=1..4] | | 1 | entry k |  |
| } | |  |  |  |
| sl-Scaling-r16 | | f1 |  |  |
| } | |  |  |  |
| } | |  |  |  |
| sl-PSFCH-Config-r16 | | Not present |  |  |
| sl-PSFCH-Config-r16 CHOICE { | |  |  | SL\_HARQ |
| setup SEQUENCE { | |  |  |  |
| sl-PSFCH-Period-r16 | | sl4 |  |  |
| sl-PSFCH-RB-Set-r16 | | bitstring of length n, The leftmost p\*floor(m/p)\*floor(n/m) bits are set to "1" and the rest are set to "0" | Note 1,  Note 2,  Note 3 |  |
| sl-NumMuxCS-Pair-r16 | | n2 |  |  |
| sl-MinTimeGapPSFCH-r16 | | sl2 |  |  |
| sl-PSFCH-HopID-r16 | | Not present | Default frequency hopping ID 0 is used |  |
| sl-PSFCH-CandidateResourceType-r16 | | startSubCH |  |  |
| } | |  |  |  |
| } | |  |  |  |
| sl-SyncAllowed-r16 SEQUENCE { | |  |  |  |
| gnss-Sync-r16 | | true |  |  |
| gnbEnb-Sync-r16 | | true |  |  |
| ue-Sync-r16 | | true |  |  |
| } | |  |  |  |
| sl-SubchannelSize-r16 | | n10 |  |  |
| dummy | | Not present |  |  |
| sl-StartRB-Subchannel-r16 | | 0 | start RB of BWP |  |
| sl-NumSubchannel-r16 | | floor(n/m) | Note 1,  Note 2 |  |
| sl-Additional-MCS-Table-r16 | | Not present |  |  |
| sl-ThreshS-RSSI-CBR-r16 | | 0 | actual value is -112 dBm |  |
| sl-TimeWindowSizeCBR-r16 | | slot100 |  |  |
| sl-TimeWindowSizeCR-r16 | | slot1000 |  |  |
| sl-PTRS-Config-r16 | | Not present |  |  |
| sl-UE-SelectedConfigRP-r16 SEQUENCE { | |  |  |  |
| sl-CBR-PriorityTxConfigList-r16 | | SL-CBR-PriorityTxConfigList |  |  |
| sl-Thres-RSRP-List-r16 | | SL-Thres-RSRP-List |  |  |
| sl-MultiReserveResource-r16 | | Not present |  |  |
| sl-MaxNumPerReserve-r16 | | n2 |  |  |
| sl-SensingWindow-r16 | | ms100 |  |  |
| sl-SelectionWindowList-r16 SEQUENCE (SIZE (8)) OF SL-SelectionWindowConfig-r16 { | | 8 entries |  |  |
| SL-SelectionWindowConfig-r16[k, k=1..8] SEQUENCE { | |  | entry k |  |
| sl-Priority-r16 | | k |  |  |
| sl-SelectionWindow-r16 | | n10 |  |  |
| } | |  |  |  |
| } | |  |  |  |
| sl-ResourceReservePeriodList-r16 | | Not present |  |  |
| sl-RS-ForSensing-r16 | | pssch |  |  |
| sl-CBR-PriorityTxConfigList-v1650 | | Not present |  |  |
| } | |  |  |  |
| sl-RxParametersNcell-r16 | | Not present |  |  |
| sl-ZoneConfigMCR-List-r16 | | Not present |  |  |
| sl-FilterCoefficient-r16 | | fc4 |  |  |
| sl-RB-Number-r16 | | 10\*floor(n/10) | Note 1 |  |
| sl-PreemptionEnable-r16 | | Not present |  |  |
| sl-PriorityThreshold-UL-URLLC-r16 | | Not present |  |  |
| sl-PriorityThreshold-r16 | | Not present |  |  |
| sl-X-Overhead-r16 | | Not present | Default value n0 is used |  |
| sl-PowerControl-r16 | | Not present |  |  |
| sl-TxPercentageList-r16 SEQUENCE (SIZE (8)) OF SL-TxPercentageConfig-r16 { | | 8 entries |  |  |
| SL-TxPercentageConfig-r16[k, k=1..8] SEQUENCE { | |  | entry k |  |
| sl-Priority-r16 | | k |  |  |
| sl-TxPercentage-r16 | | p50 |  |  |
| } | |  |  |  |
| } | |  |  |  |
| sl-MinMaxMCS-List-r16 | | Not present |  |  |
| sl-TimeResource-r16 | | 1111111100 | First 8 of every 10 logical slots |  |
|  | | 0000000011 | Last 2 of every 10 logical slots | EXCEPTIONAL |
| } | |  |  |  |
| Note 1: n is the bandwidth of active SL BWP (in RB). n is determined in Table 4.3.1.0D-1 and Table 4.3.1.0D-2 for FR1 and FR2 respectively.  Note 2: m is subchannel size configured by sl-SubchannelSize-r16.  Note 3: p is the PSFCH period configured by sl-PSFCH-Period-r16 | | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| SL\_HARQ | To enable SL HARQ feedback |
| EXCEPTIONAL | For exceptional resource pool |

#### *– SL-RLC-BearerConfig*

Table 4.6.6-26: *SL-RLC-BearerConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-RLC-BearerConfig-r16 ::= SEQUENCE { | |  |  |  |
| sl-RLC-BearerConfigIndex-r16 | | SL-RLC-BearerConfigIndex |  |  |
| sl-ServedRadioBearer-r16 | | SLRB-Uu-ConfigIndex |  |  |
| sl-RLC-Config-r16 | | SL-RLC-Config with condition AM |  |  |
| sl-MAC-LogicalChannelConfig-r16 | | SL-LogicalChannelConfig |  |  |
| } | |  |  |  |

#### *– SL-RLC-BearerConfigIndex*

Table 4.6.6-27: *SL-RLC-BearerConfigIndex*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-RLC-BearerConfigIndex-r16 | | 1 |  |  |

#### *– SL-RLC-Config*

Table 4.6.6-28: *SL-RLC-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-RLC-Config-r16 ::= CHOICE { | |  |  |  |
| sl-AM-RLC-r16 SEQUENCE { | |  |  | AM |
| sl-SN-FieldLengthAM-r16 | | size12 |  |  |
| sl-T-PollRetransmit-r16 | | ms80 |  |  |
| sl-PollPDU-r16 | | p32768 |  |  |
| sl-PollByte-r16 | | kB750 |  |  |
| sl-MaxRetxThreshold-r16 | | t8 |  |  |
| } | |  |  |  |
| sl-UM-RLC-r16 SEQUENCE { | |  |  | UM |
| sl-SN-FieldLengthUM-r16 | | size6 |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| AM | RLC AM |
| UM | RLC UM |

#### *– SL-ScheduledConfig*

Table 4.6.6-29: *SL-ScheduledConfig*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | | |
| Information Element | | Value/remark | Comment | | Condition |
| SL-ScheduledConfig-r16 ::= SEQUENCE { | |  |  | |  |
| sl-RNTI-r16 | RNTI-Value |  |  | | |
| mac-MainConfigSL-r16 SEQUENCE { |  |  |  | | |
| sl-BSR-Config-r16 | BSR-Config |  |  | | |
| ul-PrioritizationThres-r16 | Not present |  |  | | |
| sl-PrioritizationThres-r16 | Not present |  |  | | |
| } |  |  |  | | |
| sl-CS-RNTI-r16 | Not present |  |  | | |
|  | RNTI-Value which is different with sl-RNTI-r16 |  | SL\_CG | | |
| sl-PSFCH-ToPUCCH-r16 | Not present |  |  | | |
| sl-PSFCH-ToPUCCH-r16 SEQUENCE (SIZE (1..8)) OF INTEGER { | 1 entry |  | SL HARQ\_VIA\_UU | | |
| INTEGER[1] | 4 | entry 1 |  | | |
| } |  |  |  | | |
| sl-ConfiguredGrantConfigList-r16 | Not present |  |  | | |
| sl-ConfiguredGrantConfigList-r16 SEQUENCE { |  |  | SL\_CG | | |
| sl-ConfiguredGrantConfigToReleaseList-r16 | Not present |  |  | | |
| sl-ConfiguredGrantConfigToAddModList-r16 SEQUENCE (SIZE (1..maxNrofCG-SL-r16)) OF SL-ConfiguredGrantConfig-r16 { | 1 entry |  |  | | |
| SL-ConfiguredGrantConfig-r16[1] | SL-ConfiguredGrantConfig | entry 1 |  | | |
| } |  |  |  | | |
| } |  |  |  | | |
| sl-DCI-ToSL-Trans-r16 SEQUENCE (SIZE (1..8)) OF INTEGER { | 1 entry |  |  | | |
| INTEGER[1] | 4 | entry 1 |  | | |
| } |  |  |  | | |
| } | |  |  | |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SL\_CG | To provide UE SL configured grant |
| SL HARQ\_VIA\_UU | to report HARQ-ACK information that the UE generates based on PSFCH reception via PUCCH/PUSCH |

#### *– SL-SDAP-Config*

Table 4.6.6-30: *SL-SDAP-Config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-SDAP-Config-r16 ::= SEQUENCE { | |  |  |  |
| sl-SDAP-Header-r16 | | present |  |  |
| sl-DefaultRB-r16 | | true |  |  |
| sl-MappedQoS-Flows-r16 | | Not present | All PC5 QoS flows are mapped to default SL DRB |  |
| sl-CastType-r16 | | Unicast |  |  |
| } | |  |  |  |

#### *– SL-SyncConfig*

Table 4.6.6-31: *SL-SyncConfig*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | | |
| Information Element | Value/remark | Comment | Condition | |
| SL-SyncConfig-r16 ::= SEQUENCE { |  |  |  | |
| sl-SyncRefMinHyst-r16 | dB3 |  | |  | |
| sl-SyncRefDiffHyst-r16 | dB3 |  | |  | |
| sl-filterCoefficient-r16 | fc4 |  | |  | |
| sl-SSB-TimeAllocation1-r16 SEQUENCE { |  |  | |  | |
| sl-NumSSB-WithinPeriod-r16 | n1 |  | | SCS15 | |
|  | n2 |  | | SCS30, SCS60, SCS120 | |
| sl-TimeOffsetSSB-r16 | 0 |  | |  | |
| sl-TimeInterval-r16 | Not present |  | | SCS15 | |
|  | 1 |  | | SCS30, SCS60, SCS120 | |
| } |  |  | |  | |
| sl-SSB-TimeAllocation2-r16 SEQUENCE { |  |  | |  | |
| sl-NumSSB-WithinPeriod-r16 | n1 |  | | SCS15 | |
|  | n2 |  | | SCS30, SCS60, SCS120 | |
| sl-TimeOffsetSSB-r16 | 80 |  | |  | |
| sl-TimeInterval-r16 | Not present |  | | SCS15 | |
|  | 1 |  | | SCS30, SCS60, SCS120 | |
| } |  |  | |  | |
| sl-SSB-TimeAllocation3-r16 | Not present |  | |  | |
| sl-SSID-r16 | Arbitrarily chosen by SS from the range 1 to 335 |  | |  | |
| txParameters-r16 SEQUENCE { |  |  | |  | |
| syncTxThreshIC-r16 | Not present |  | |  | |
| syncTxThreshOoC-r16 | 4 | actual threshold is -100 dBm | |  | |
| syncInfoReserved-r16 | 00 |  | |  | |
| } |  |  | |  | |
| gnss-Sync-r16 | Not present |  | |  | |
|  |  |  |  | |
| } |  |  |  | |

#### *– SL-Thres-RSRP-List*

Table 4.6.6-32: *SL-Thres-RSRP-List*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-Thres-RSRP-List-r16 ::= SEQUENCE (SIZE (64)) OF INTEGER { | | 64 entries |  |  |
| INTEGER[k, k=1..64] | | 0 | entry k |  |
| } | |  |  |  |

#### *– SL-TxPower*

Table 4.6.6-33: *SL-TxPower*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-TxPower-r16 ::= CHOICE { | |  |  |  |
| txPower-r16 | | 23 | 23dBm |  |
| } | |  |  |  |

#### *– SL-TypeTxSync*

Table 4.6.6-34: *SL-TypeTxSync*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-TypeTxSync-r16 | | gnss |  |  |

#### *– SL-UE-SelectedConfig*

Table 4.6.6-35: *SL-UE-SelectedConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-UE-SelectedConfig-r16 ::= SEQUENCE { | |  |  |  |
| sl-PSSCH-TxConfigList-r16 | | SL-PSSCH-TxConfigList |  |  |
| sl-ProbResourceKeep-r16 | | v0 |  |  |
| sl-ReselectAfter-r16 | | n9 |  |  |
| sl-CBR-CommonTxConfigList-r16 | | SL-CBR-CommonTxConfigList |  |  |
| ul-PrioritizationThres-r16 | | Not present |  |  |
| sl-PrioritizationThres-r16 | | Not present |  |  |
| } | |  |  |  |

#### *– SL-ZoneConfig*

Table 4.6.6-36: *SL-ZoneConfig*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-ZoneConfig-r16 ::= SEQUENCE { | |  |  |  |
| sl-ZoneLength-r16 | | m50 |  |  |
| } | |  |  |  |

#### *– SLRB-Uu-ConfigIndex*

Table 4.6.6-37: *SLRB-Uu-ConfigIndex*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SLRB-Uu-ConfigIndex-r16 | | 1 |  |  |

### 4.6.7 MBS information elements

#### *– CarrierFreqListMBS*

Table 4.6.7-1: *CarrierFreqListMBS*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.6 | | | |
| Information Element | Value/remark | Comment | Condition |
| CarrierFreqListMBS-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– CFR-ConfigMCCH-MTCH*

Table 4.6.7-2: *CFR-ConfigMCCH-MTCH*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.6 | | | |
| Information Element | Value/remark | Comment | Condition |
| CFR-ConfigMCCH-MTCH-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– DRX-ConfigPTM*

Table 4.6.7-3: DRX-ConfigPTM

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.6 | | | |
| Information Element | Value/remark | Comment | Condition |
| DRX-ConfigPTM-r17 ::= SEQUENCE { |  |  |  |
| drx-onDurationTimerPTM-r17 CHOICE { |  |  |  |
| milliSeconds | ms6 |  |  |
| } |  |  |  |
| drx-InactivityTimerPTM-r17 | ms1280 |  |  |
| drx-HARQ-RTT-TimerDL-PTM-r17 | Not present |  |  |
|  | 56 |  | HARQ\_Feedback |
| drx-RetransmissionTimerDL-PTM-r17 | Not present |  |  |
|  | sl16 |  | FR1 and HARQ\_Feedback |
|  | sl64 |  | FR2 and HARQ\_Feedback |
| drx-LongCycleStartOffsetPTM-r17 CHOICE { |  |  |  |
| ms10240 | 0 |  |  |
| } |  |  |  |
| drx-SlotOffsetPTM-r17 | 0 |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| HARQ\_Feedback | HARQ feedback is enabled for a G-RNTI associated with this DRX configuration |

#### *– MBS-NeighbourCellList*

Table 4.6.7-4: *MBS-NeighbourCellList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.6 | | | |
| Information Element | Value/remark | Comment | Condition |
| MBS-NeighbourCellList-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– MBS-ServiceList*

Table 4.6.7-5: *MBS-ServiceList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.6 | | | |
| Information Element | Value/remark | Comment | Condition |
| MBS-ServiceList-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– MBS-SessionInfoList*

Table 4.6.7-6: *MBS-SessionInfoList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.6 | | | |
| Information Element | Value/remark | Comment | Condition |
| MBS-SessionInfoList-r17 ::= SEQUENCE (SIZE (0..maxNrofMBS-Session-r17)) OF MBS-SessionInfo-r17 { | 1 entry |  |  |
| MBS-SessionInfo-r17[1] SEQUENCE { |  |  |  |
| mbs-SessionId-r17 SEQUENCE { |  |  |  |
| plmn-Id-r17 CHOICE { |  |  |  |
| plmn-Index-r17 | 1 |  |  |
| } |  |  |  |
| serviceId-r17 | ‘000001’H | OCTET STRING (SIZE (3)) |  |
| } |  |  |  |
| g-RNTI-r17 | RNTI-Value |  |  |
| mrb-ListBroadcast-r17 SEQUENCE (SIZE (1..maxNrofMRB-Broadcast-r17)) OF MRB-InfoBroadcast-r17 { | 1 entry |  |  |
| MRB-InfoBroadcast-r17[1] SEQUENCE { |  | entry 1 |  |
| pdcp-Config-r17 SEQUENCE { |  |  |  |
| pdcp-SN-SizeDL-r17 | Not present |  |  |
| headerCompression-r17 CHOICE { |  |  |  |
| notUsed | NULL |  |  |
| } |  |  |  |
| t-Reordering-r17 | Not present |  |  |
| } |  |  |  |
| rlc-Config-r17 SEQUENCE { |  |  |  |
| logicalChannelIdentity-r17 | 1 |  |  |
| sn-FieldLength-r17 | Not present |  |  |
| t-Reassembly-r17 | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| mtch-SchedulingInfo-r17 | Not present |  |  |
|  | 0 |  | DRX\_MBS\_Broadcast |
| mtch-NeighbourCell-r17 | Not present |  |  |
| pdsch-ConfigIndex-r17 | Not present |  |  |
| mtch-SSB-MappingWindowIndex-r17 | Not present |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| DRX\_MBS\_Broadcast | DRX is used for MBS Broadcast test |

#### *– MTCH-SSB-MappingWindowList*

Table 4.6.7-7: *MTCH-SSB-MappingWindowList*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.6 | | | |
| Information Element | Value/remark | Comment | Condition |
| MTCH-SSB-MappingWindowList-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– PDSCH-ConfigBroadcast*

Table 4.6.7-8: *PDSCH-ConfigBroadcast*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.6 | | | |
| Information Element | Value/remark | Comment | Condition |
| PDSCH-ConfigBroadcast-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

#### *– TMGI*

Table 4.6.7-9: *TMGI*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.6 | | | |
| Information Element | Value/remark | Comment | Condition |
| TMGI-r17 ::= SEQUENCE { |  |  |  |
| FFS |  |  |  |
| } |  |  |  |

## 4.7 Default 5GC NAS message and information elements contents

### 4.7.0 General

#### *4.7.0.1 Interpretation of IE presence and values*

For Uplink NAS messages, the following terms and their meanings shall be used to determine how to test specific IEs:

- "Not present": test cases fail if IE is present.

- "Present but contents not checked": test cases fail if IE is not present. No requirements regarding contents of the IE.

- "If present: contents not checked": IE may or may not be present. No requirements regarding contents of the IE.

- "If present: <specific values>": IE may or may not be present. If present, its contents shall be as specified.

- "<specific values>": test cases fail if IE is not present. Its contents shall be as specified.

- "Present if <condition>: contents not checked: test cases fail if condition is fulfilled and IE is not present. Contents of IE are not checked, even if present.

- "Present if <condition>: <specific values>": test cases fail if condition is fulfilled and IE is not present. When IE shall be present, its contents shall be as specified.

#### *4.7.0.2 Security protected 5GS NAS messages*

In subclause 4.7.1, all 5GS NAS messages are described in the plain 5GS NAS message format.

When a 5GS NAS message is security protected, the message shall be contained by SECURITY PROTECTED 5GS NAS MESSAGE unless contained by another NAS message.

The default contents of SECURITY PROTECTED 5GS NAS MESSAGE message is defined in table 4.7.1-28.

### 4.7.1 Contents of 5GMM messages

#### *– Authentication request*

Table 4.7.1-1: AUTHENTICATION REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Authentication request message identity | | ‘0101 0110’B |  |  |
| ngKSI | |  |  |  |
| NAS key set identifier | | An arbitrarily selected value between '000'B and '110'B, different from the valid NAS key set identifier of the UE if such a value exists. |  |  |
| TSC | | '0'B | native security context (for KSIAMF) |  |
| Spare half octet | | '0000'B |  |  |
| ABBA | | ‘0000 0000 0000 0000’B |  |  |
| Authentication parameter RAND (5G authentication challenge) | | Not Present |  | EAP-AKA |
| An arbitrarily selected 128 bits value |  | 5G-AKA |
| Authentication parameter AUTN (5G authentication challenge) | | Not Present |  | EAP-AKA |
| 128 bits value generated according to TS 24.501 [28] subclause 9.11.3.15 |  | 5G-AKA |
| EAP message | | Not Present |  | 5G-AKA |
| EAP message | | EAP-request/AKA'-challenge | See Table 4.7.3.2-01 | EAP-AKA |

|  |  |
| --- | --- |
| Condition | Explanation |
| EAP\_AKA | EAP based primary authentication and key agreement procedure |
| 5G-AKA | 5G AKA based primary authentication and key agreement procedure |

NOTE: Within a test execution this message is sent without integrity protection before NAS security mode control procedure has been successfully completed; and sent integrity protected and ciphered within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed. SS does not maintain information for 5GS NAS security mode control procedure after a TC is completed.

#### *– Authentication response*

Table 4.7.1-2: AUTHENTICATION RESPONSE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | 5GMM |  |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Authentication response message identity | | ‘0101 0111’B |  |  |
| Authentication response parameter | | 16 octets RES\* value calculated according to TS 24.501 [28] subclause 9.11.3.17 |  | 5G-AKA |
| Not Present |  | EAP-AKA |
| EAP message | | EAP-response/AKA'-challenge | See Table 4.7.3.2-02 | EAP-AKA |

|  |  |
| --- | --- |
| Condition | Explanation |
| EAP-AKA | EAP based primary authentication and key agreement procedure |
| 5G-AKA | 5G AKA based primary authentication and key agreement procedure |

NOTE: When sent in response to an AUTHENTICATION REQUEST message which is not integrity protected and not ciphered, the AUTHENTICATION RESPONSE message is sent integrity protected when a valid security context exists and without integrity protection and ciphering otherwise.

#### *– Authentication result*

Table 4.7.1-3: AUTHENTICATION RESULT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.3 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | 5GMM |  |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Authentication result message identity | | ‘0101 1010’B |  |  |
| ngKSI | | The same value as the last AUTHENTICATION REQUEST message |  |  |
| Spare half octet | | '0000'B |  |  |
| EAP message | | EAP-Success | See Table 4.7.3.2-03 |  |
| ABBA | | ‘0000 0000 0000 0000’B |  |  |

NOTE: The security protection of this message is the same as the previous AUTHENTICATION REQUEST message.

#### *– Authentication failure*

Table 4.7.1-4: AUTHENTICATION FAILURE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.4 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | 5GMM |  |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Authentication failure message identity | | ‘0101 1001’B |  |  |
| 5GMM cause | | Present but contents not checked |  |  |
| Authentication failure parameter | | If present: contents not checked |  |  |

NOTE: The security protection of this message is the same as the previous AUTHENTICATION REQUEST message.

#### *– Authentication reject*

Table 4.7.1-5: AUTHENTICATION REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | 5GMM |  |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Authentication reject message identity | | ‘0101 1000’B |  |  |
| EAP message | | Not present |  |  |
| EAP message | | EAP-Response/AKA-Authentication-Reject | See Table 4.7.3.2-04 | EAP-AKA |

|  |  |
| --- | --- |
| Condition | Explanation |
| EAP-AKA | EAP based primary authentication and key agreement procedure |

NOTE: This message is sent without integrity protection.

#### *– Registration request*

Table 4.7.1-6: REGISTRATION REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.6 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Registration request message identity | | ‘0100 0001’B |  |  |
| 5GS registration type | |  |  |  |
| 5GS registration type value | | ‘001’B | Initial registration |  |
| ‘010’B |  | MOBILITY |
| ‘011’B |  | PERIODIC |
| ‘100’B |  | EMERGENCY |
| FOR | | Present but contents not checked |  |  |
| FOR | | '1'B | Follow-on request pending | EMERGENCY |
| ngKSI | | Present but contents not checked |  |  |
| 5GS mobile identity | | Present but contents not checked |  |  |
| Non-current native NAS key set identifier | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| 5GMM capability | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| UE security capability | | If present: contents not checked |  |  |
| Requested NSSAI | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Last visited registered TAI | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| S1 UE network capability | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Uplink data status | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| PDU session status | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| MICO indication | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| UE status | | If present: contents not checked |  |  |
| Additional GUTI | | If present: contents not checked |  |  |
| Allowed PDU session status | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| UE's usage setting | | If present: contents not checked |  | NOT pc\_IMS AND NON\_CLEARTEXT\_IE |
| UE's usage setting | | Present but contents not checked |  | NON\_CLEARTEXT\_IE |
| Requested DRX parameters | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| EPS NAS message container | | If present: contents not checked |  |  |
| LADN indication | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Payload container type | | If present:  ‘0101’B | UE policy container | NON\_CLEARTEXT\_IE |
| Payload container | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Network slicing indication | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| 5GS update type | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Mobile station classmark 2 | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Supported codecs | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| NAS message container | | The complete, ciphered, REGISTRATION REQUEST message including all IEs. |  | CIPHERED\_MESSAGE |
| EPS bearer context status | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Requested extended DRX parameters | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| T3324 value | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| UE radio capability ID | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Requested mapped NSSAI | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Additional information requested | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Requested WUS assistance information | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| N5GC indication | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Requested NB-N1 mode DRX parameters | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |

|  |  |
| --- | --- |
| Condition | Explanation |
| INITIAL | Initial registration |
| MOBILITY | Mobility registration updating |
| PERIODIC | Periodic registration updating |
| EMERGENCY | Emergency registration |
| NON\_CLEARTEXT\_IE | An information element that is not allowed to be sent in cleartext and shall only be included in the complete REGISTRATION REQUEST message in the NAS message container IE. |
| CIPHERED\_MESSAGE | If any of the IEs marked with the condition NON\_CLEARTEXT\_IE is present, and the UE has a valid 5G NAS security context, this condition applies. |

NOTE: This message is sent interity protected when a valid security context exists otherwise sent without integrity protection, including only cleartext IEs.

#### *– Registration accept*

Table 4.7.1-7: REGISTRATION ACCEPT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.7 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Registration accept message identity | | ‘0100 0010’B |  |  |
| 5GS registration result | |  |  |  |
| 5GS registration result value | | ‘001’B | 3GPP access |  |
| SMS allowed | | ‘0’B | SMS over NAS not allowed |  |
| 5G-GUTI | | See Table 4.4.2-3 | For 5GC NAS test cases see Table 6.3.2.2-1 |  |
| Equivalent PLMNs | | Not Present |  |  |
| TAI list | |  |  |  |
| Length of tracking area identity list contents | | '0000 0111'B | 7 octets |  |
| Partial tracking area identity list 1 | |  |  |  |
| Number of elements | | '0 0000'B | 1 element |  |
| Type of list | | '00'B | list of TACs belonging to one PLMN, with non-consecutive TAC values |  |
| MCC | | See Table 4.4.2-3 | For 5GC NAS test cases see Table 6.3.2.2-1 |  |
| MNC | | See Table 4.4.2-3 | For 5GC NAS test cases see Table 6.3.2.2-1 |  |
| TAC 1 | | See Table 4.4.2-3 | For 5GC NAS test cases see Table 6.3.2.2-1 |  |
| Allowed NSSAI | |  |  |  |
| Length of NSSAI contents | | 4 entries | Equal to the number of S-NSSAI values included |  |
| S-NSSAI | |  |  |  |
| Length of S-NSSAI contents | | ‘0000 0001’B | SST |  |
| SST | | ‘0000 0001’B | SST value 1 (eMBB) |  |
| S-NSSAI | |  |  |  |
| Length of S-NSSAI contents | | ‘0000 0001’B | SST |  |
| SST | | ‘0000 0010’B | SST value 2 (URLLC) |  |
| S-NSSAI | |  |  |  |
| Length of S-NSSAI contents | | ‘0000 0001’B | SST |  |
| SST | | ‘0000 0011’B | SST value 3 (MIoT) |  |
| S-NSSAI | |  |  |  |
| Length of S-NSSAI contents | | ‘0000 0001’B | SST |  |
| SST | | ‘0000 0100’B | SST value 4 (V2X) |  |
| Rejected NSSAI | | Not Present |  |  |
| Configured NSSAI | | Not Present |  |  |
| 5GS network feature support | | ‘0000 1101 0000 0000 0000 0000’B | IMS voice over PS session supported over 3GPP access, Emergency services supported in NR connected to 5GCN and E-UTRA connected to 5GCN.  All other features set to "not supported" including the 'Interworking without N26 interface not supported'. |  |
| 5GS network feature support | | Not Present |  | SST\_URLLC OR SST\_V2X OR SST\_MIOT |
| PDU session status | | The same value as the PDU session status IEof the most recently received REGISTRATION REQUEST message |  |  |
| PDU session reactivation result | | Not Present |  |  |
| PDU session reactivation result error cause | | Not Present |  |  |
| LADN information | | Not Present |  |  |
| MICO indication | | Not Present |  |  |
| Network slicing indication | | Not Present |  |  |
| Service area list | | Not Present |  |  |
| T3512 value | |  |  | INITIAL |
| Timer value | | '0 0000'B |  |  |
| Unit | | '111'B | value indicates that the timer is deactivated |  |
| T3512 value | | Not Present |  |  |
| Non-3GPP de-registration timer value | | Not Present |  |  |
| T3502 value | | Not Present |  |  |
| Emergency number list | | Not Present |  |  |
| Extended emergency number list | | Not Present |  |  |
| SOR Transparent container | | Not Present |  |  |
| EAP message | | Not Present |  |  |
| NSSAI inclusion mode | | Not Present |  |  |
| Operator-defined access category definitions | | Not Present |  |  |
| Negotiated DRX parameters | | Not Present |  |  |
| Non-3GPP NW policies | | Not Present |  |  |
| EPS bearer context status | | The same value as the EPS bearer context status IE of the most recently received REGISTRATION REQUEST message |  |  |
| Negotiated extended DRX parameters | | Not Present |  |  |
| T3447 value | | Not Present |  |  |
| T3448 value | | Not Present |  |  |
| T3324 value | | Not Present |  |  |
| UE radio capability ID | | Not Present |  |  |
| UE radio capability ID | | The same value as received in UE radio capability ID; if any of the REGISTRATION REQUEST message |  | pc\_5GC\_RACS |
| UE radio capability ID deletion indication | | Not Present |  |  |
| Pending NSSAI | | Not Present |  |  |
| Ciphering key data | | Not Present |  |  |
| CAG information list | | Not Present |  |  |
| Truncated 5G-S-TMSI configuration | | Not Present |  |  |
| Negotiated WUS assistance information | | Not Present |  |  |
| Negotiated NB-N1 mode DRX parameters | | Not Present |  |  |
| Extended rejected NSSAI | | Not Present |  |  |
| Service-level-AA container | | Not Present |  |  |
| Negotiated PEIPS assistance information | | Not Present |  |  |
| 5GS additional request result | | Not Present |  |  |
| NSSRG information | | Not Present |  |  |
| Disaster roaming wait range | | Not Present |  |  |
| Disaster return wait range | | Not Present |  |  |
| List of PLMNs to be used in disaster condition | | Not Present |  |  |
| Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming" | | Not Present |  |  |
| Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service" | | Not Present |  |  |
| Extended CAG information list | | Not Present |  |  |
| NSAG information | | Not Present |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| INITIAL | Initial registration |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– Registration complete*

Table 4.7.1-8: REGISTRATION COMPLETE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.8 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Registration complete message identity | | ‘0100 0011’B |  |  |
| SOR transparent container | | If present: contents not checked |  |  |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– Registration reject*

Table 4.7.1-9: REGISTRATION REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.9 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Registration reject message identity | | ‘0100 0100’B |  |  |
| 5GMM cause | | Set according to specific message content |  |  |
| T3346 value | | Not Present |  |  |
| T3502 value | | Not Present |  |  |
| EAP message | | Not Present |  |  |
| Rejected NSSAI | | Not Present |  |  |
| CAG information list | | Not Present |  |  |
| Extended rejected NSSAI | | Not Present |  |  |
| Disaster return wait range | | Not Present |  |  |
| Extended CAG information list | | Not Present |  |  |
| Lower bound timer value | | Not Present |  |  |
| Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming" | | Not Present |  |  |
| Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service" | | Not Present |  |  |

NOTE: This message is sent without integrity protection before the secure exchange of NAS messages has been established and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after the secure exchange of NAS messages has been established.

#### *– UL NAS transport*

Table 4.7.1-10: UL NAS TRANSPORT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.10 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| UL NAS TRANSPORT message identity | | ‘0110 0111’B |  |  |
| Payload container type | | Set according to specific message content |  |  |
| Payload container type | | ‘0001’B | N1 SM information | INITIAL\_PDU\_REQUEST |
| Spare half octet | | '0000'B |  |  |
| Payload container | | Set according to specific message content |  |  |
| Payload container | | PDU SESSION ESTABLISHMENT REQUEST message |  | INITIAL\_PDU\_REQUEST |
| PDU session ID | | If present: contents not checked |  |  |
| PDU session ID | | Same PDU session ID as defined in the PDU SESSION ESTABLISHMENT REQUEST message in the Payload container |  | INITIAL\_PDU\_REQUEST |
| Old PDU session ID | | If present: contents not checked |  |  |
| Request type | | If present: contents not checked |  |  |
| Request type | | ‘001’B | initial request | INITIAL\_PDU\_REQUEST |
| S-NSSAI | | If present: contents not checked |  |  |
| DNN | | If present: contents not checked | (NOTE 1) |  |
| Additional information | | If present: contents not checked |  |  |
| MA PDU session information | | If present: contents not checked |  |  |
| Release assistance indication | | If present: contents not checked |  |  |
| NOTE 1: Although the contents of the IE is not required to be verified for PASS/FAIL purposes, the provided information shall be taken into account e.g. for the building the content of messages and allowing for specific UE behaviour as specified in Table 4.8.4-1. | | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| INITIAL\_PDU\_REQUEST | The UL NAS TRANSPORT message is used to transport a PDU SESSION ESTABLISHMENT REQUEST message to establish a new PDU session. |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– DL NAS transport*

Table 4.7.1-11: DL NAS TRANSPORT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.11 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| DL NAS TRANSPORT message identity | | ‘0110 1000’B |  |  |
| Payload container type | | Set according to specific message content |  |  |
| Payload container type | | ‘0001’B | N1 SM information | 5GSM\_MESSAGE |
| Spare half octet | | '0000'B |  |  |
| Payload container | | Set according to specific message content |  |  |
| Payload container | | 5GSM message |  | 5GSM\_MESSAGE |
| PDU session ID | | Not Present |  |  |
| PDU session ID | | Set to the same value as the PDU session ID of the 5GSM message in the Payload container. |  | 5GSM\_MESSAGE |
| Additional information | | Not Present |  |  |
| 5GMM cause | | Not Present |  |  |
| Back-off timer value | | Not Present |  |  |
| Lower bound timer value | | Not Present |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| 5GSM\_MESSAGE | The DL NAS TRANSPORT message is used to transport a 5GSM message |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– De-registration request (UE originating de-registration)*

Table 4.7.1-12: DEREGISTRATION REQUEST\_1

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.12 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| De-registration request message identity | | ‘0100 0101’B |  |  |
| De-registration type | |  |  |  |
| Switch off | | ‘0’B |  | NORMAL |
| ‘1’B |  | SWITCH\_OFF |
| Re-registration required | | ‘0’B |  |  |
| Access type | | ‘01’B | 3GPP access |  |
| ngKSI | | Present but contents not checked |  |  |
| 5GS mobile identity | | Present but contents not checked |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| NORMAL | Normal de-registration |
| SWITCH\_OFF | Switch off |

NOTE: If this message is sent as an initial NAS message, it is sent with integrity protection but without ciphering. Otherwise it is sent without integrity protection and ciphering before SS has started the ciphering and integrity and ciphered protected after SS has started the ciphering.

#### *– De-registration accept (UE originating de-registration)*

Table 4.7.1-13: DEREGISTRATION ACCEPT\_1

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.13 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| De-registration accept message identity | | ‘0100 0110’B |  |  |

NOTE: This message is sent using the same security protection as in the previous DETACH REQUEST message received from the UE.

#### *– De-registration request (UE terminated de-registration)*

Table 4.7.1-14: DEREGISTRATION REQUEST\_2

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.14 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| De-registration request message identity | | ‘0100 0111’B |  |  |
| De-registration type | | Set according to specific message content |  |  |
| Spare half octet | | '0000'B |  |  |
| 5GMM cause | | Not Present |  |  |
| T3346 value | | Not Present |  |  |
| Rejected NSSAI | | Not Present |  |  |
| CAG information list | | Not Present |  |  |
| Extended rejected NSSAI | | Not Present |  |  |
| Disaster return wait range | | Not Present |  |  |
| Extended CAG information list | | Not Present |  |  |
| Lower bound timer value | | Not Present |  |  |
| Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming" | | Not Present |  |  |
| Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service" | | Not Present |  |  |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– De-registration accept (UE terminated de-registration)*

Table 4.7.1-15: DEREGISTRATION ACCEPT\_2

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.15 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| De-registration accept message identity | | ‘0100 1000’B |  |  |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– Service request*

Table 4.7.1-16: SERVICE REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.16 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Service request message identity | | ‘0100 1100’B |  |  |
| ngKSI | |  |  |  |
| NAS key set identifier | | The valid NAS key set identifier of the UE |  |  |
| TSC | | '0'B | native security context (for KSIAMF) |  |
| Service type | | ‘0010’B | mobile terminated services |  |
| 5G-S-TMSI | | The valid 5G-S-TMSI of the UE |  |  |
| Uplink data status | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| PDU session status | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Allowed PDU session status | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| NAS message container | | If present, the complete, ciphered, SERVICE REQUEST message including all IEs. |  | CIPHERED\_MESSAGE |
| UE request type | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Paging restriction | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |

|  |  |
| --- | --- |
| Condition | Explanation |
| NON\_CLEARTEXT\_IE | An information element that is not allowed to be sent in cleartext and shall only be included in the complete SERIVICE REQUEST message in the NAS message container IE.  NOTE: This condition is only applicable if the SERVICE REQUEST message is sent as an initial NAS message. |
| CIPHERED\_MESSAGE | If any of the IEs marked with the condition NON\_CLEARTEXT\_IE is present, this condition applies.  NOTE: This condition is only applicable if the SERVICE REQUEST message is sent as an initial NAS message. |

NOTE: This message is sent without integrity protection, including only cleartext IEs, before NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after NAS security mode control procedure has been successfully completed

#### *– Service accept*

Table 4.7.1-17: SERVICE ACCEPT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.17 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Service accept message identity | | ‘0100 1110’B |  |  |
| PDU session status | | Not Present |  |  |
| PDU session reactivation result | | Not Present |  |  |
| PDU session reactivation result error cause | | Not Present |  |  |
| EAP message | | Not Present |  |  |
| T3448 value | | Not Present |  |  |
| 5GS additional request result | | Not Present |  |  |
| Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming" | | Not Present |  |  |
| Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service" | | Not Present |  |  |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– Service reject*

Table 4.7.1-18: SERVICE REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.18 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Service reject message identity | | ’0100 1101’B |  |  |
| 5GMM cause | | The value is set according to specific message content |  |  |
| PDU session status | | Not Present |  |  |
| T3346 value | | Not Present |  |  |
| EAP message | | Not Present |  |  |
| T3448 value | | Not Present |  |  |
| CAG information list | | Not Present |  |  |
| Disaster return wait range | | Not Present |  |  |
| Extended CAG information list | | Not Present |  |  |
| Lower bound timer value | | Not Present |  |  |
| Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming" | | Not Present |  |  |
| Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service" | | Not Present |  |  |

NOTE: This message is sent without integrity protection before NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after NAS security mode control procedure has been successfully completed

#### *– Configuration update command*

Table 4.7.1-19: CONFIGURATION UPDATE COMMAND

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.19 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Configuration update command message identity | | ‘0101 0100’B |  |  |
| Configuration update indication | | Not Present |  |  |
| 5G-GUTI | | Not Present |  |  |
| TAI list | | Not Present |  |  |
| Allowed NSSAI | | Not Present |  |  |
| Service area list | | Not Present |  |  |
| Full name for network | | Not Present |  |  |
| Short name for network | | Not Present |  |  |
| Local time zone | | Not Present |  |  |
| Universal time and local time zone | | Not Present |  |  |
| Network daylight saving time | | Not Present |  |  |
| LADN information | | Not Present |  |  |
| MICO indication | | Not Present |  |  |
| Network slicing indication | | Not Present |  |  |
| Configured NSSAI | | Not Present |  |  |
| Rejected NSSAI | | Not Present |  |  |
| Operator-defined access category definitions | | Not Present |  |  |
| SMS indication | | Not Present |  |  |
| T3447 value | | Not Present |  |  |
| CAG information list | | Not Present |  |  |
| UE radio capability ID | | Not Present |  |  |
| UE radio capability ID deletion indication | | Not Present |  |  |
| 5GS registration result | | Not Present |  |  |
| Truncated 5G-S-TMSI configuration | | Not Present |  |  |
| Additional configuration indication | | Not Present |  |  |
| Extended rejected NSSAI | | Not Present |  |  |
| Service-level-AA container | | Not Present |  |  |
| NSSRG information | | Not Present |  |  |
| Disaster roaming wait range | | Not Present |  |  |
| Disaster return wait range | | Not Present |  |  |
| List of PLMNs to be used in disaster condition | | Not Present |  |  |
| Extended CAG information list | | Not Present |  |  |
| Updated PEIPS assistance information | | Not Present |  |  |
| NSAG information | | Not Present |  |  |
| Priority indicator | | Not Present |  |  |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– Configuration update complete*

Table 4.7.1-20: CONFIGURATION UPDATE COMPLETE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.20 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Configuration update complete message identity | | ‘0101 0101’B |  |  |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– Identity request*

Table 4.7.1-21: IDENTITY REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.21 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Identity request message identity | | ‘0101 1011’B |  |  |
| Identity type | | Set according to specific message contents |  |  |
| Spare half octet | | '0000'B |  |  |

NOTE: This message is sent without integrity protection before 5GS NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed.

#### *– Identity response*

Table 4.7.1-22: IDENTITY RESPONSE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.22 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Identity response message identity | | 0101 1100’B |  |  |
| Mobile identity | | Present but contents not checked |  |  |

NOTE: This message is sent without integrity protection before 5GS NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed.

#### *– Notification*

Table 4.7.1-23: NOTIFICATION

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.23 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Notification message identity | | ‘0110 0101’B |  |  |
| Access type | | ‘01’B | 3GPP access |  |
| Spare half octet | | '0000'B |  |  |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– Notification response*

Table 4.7.1-24: NOTIFICATION RESPONSE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.24 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Notification response message identity | | ‘0110 0110’B |  |  |
| PDU session status | | If present: contents not checked |  |  |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– Security mode command*

Table 4.7.1-25: SECURITY MODE COMMAND

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.25 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Security mode command message identity | | ‘0101 1101’B |  |  |
| Selected NAS security algorithms | |  |  |  |
| Type of ciphering algorithm | | Set according to PIXIT px\_NAS\_5GC\_CipheringAlgorithm for default ciphering algorithm |  |  |
| Type of ciphering algorithm | | ‘0000’B | 5G encryption algorithm 5G EA0 (null ciphering algorithm) | For RF |
| Type of integrity protection algorithm | | Set according to PIXIT px\_NAS\_5GC\_IntegrityProtAlgorithm for default integrity protection algorithm | This value should not be equal to the null integrity algorithm. |  |
| ngKSI | |  |  |  |
| NAS key set identifier | | The valid NAS key set identifier |  |  |
| TSC | | '0'B | native security context (for KSIAMF) |  |
| Spare half octet | | '0000'B |  |  |
| Replayed UE security capabilities | | Set according to the received UE security capabilities |  |  |
| IMEISV request | | Not Present |  |  |
| Selected EPS NAS security algorithms | | Not Present |  |  |
| Selected EPS NAS security algorithms | |  |  | UE\_S1\_SUPPORTED |
| Type of ciphering algorithm | | Set according to PIXIT px\_NAS\_CipheringAlgorithm for default ciphering algorithm | The px\_NAS\_CipheringAlgorithm PIXIT is defined in TS 36.523-3 [x] |  |
| Type of integrity protection algorithm | | Set according to PIXIT px\_NAS\_IntegrityProtAlgorithmfor default integrity protection algorithm | The px\_NAS\_IntegrityProtAlgorithm is defined in TS 36.523-3 [x] |  |
| Additional 5G security information | | Not Present |  |  |
| Additional 5G security information | |  |  | NO\_VALID\_SS\_SECURITY\_CONTEXT |
| RINMR | | ‘1’B | Retransmission of the initial NAS message requested |  |
| HDP | | ‘0’B | KAMF derivation is not required |  |
| EAP message | | Not Present |  |  |
| EAP message | | EAP-Success | See Table 4.7.3.2-03 | EAP-AKA |
| ABBA | | ‘0000 0000 0000 0000’B |  | EAP-AKA |
| Replayed S1 UE security capabilities | | Not Present |  |  |
| Replayed S1 UE security capabilities | | Set according to the received UE security capabilities in the last REGISTRATION REQUEST message |  | UE\_S1\_SUPPORTED |

|  |  |
| --- | --- |
| Condition | Explanation |
| NO\_VALID\_SS\_SECURITY\_CONTEXT | If the SS doesn’t have a valid security context |
| EAP\_AKA | EAP based primary authentication and key agreement procedure |
| For RF | Used for RF/RRM test cases |
| UE\_S1\_SUPPORTED | The UE indicated support of S1 in the last REGISTRATION REQUEST message |

NOTE: This message is always sent integrity protected with new 5GS NAS security context.

#### *– Security mode complete*

Table 4.7.1-26: SECURITY MODE COMPLETE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.26 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Security mode complete message identity | | ‘0101 1110’B |  |  |
| IMEISV | | Not present |  |  |
| NAS message container | | Not present |  |  |
| Complete initial NAS message |  | RINMR\_INDICATED |
| non-IMEISV PEI | | Not present |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| RINMR\_INDICATED | The SS requested retransmission of the initial NAS message in the last SECURITY MODE COMMAND |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message with new 5GS NAS security context.

#### *– Security mode reject*

Table 4.7.1-27: SECURITY MODE REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.27 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Security mode reject message identity | | ‘0101 1111’B |  |  |
| 5GMM cause | | The value is set according to specific message content |  |  |

NOTE: This message is sent without integrity protection before 5GS NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed.

#### *– Security protected 5GS NAS message*

Table 4.7.1-28: SECURITY PROTECTED 5GS NAS MESSAGE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.28 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | 5GMM |  |  |
| Security header type | | '0001'B | Integrity protected | UNCIPHERED |
| '0010'B | Integrity protected and ciphered | CIPHERED |
| '0011'B | Integrity protected with new 5G NAS security context | UNCIPHERED-NEW |
| '0100'B | Integrity protected and ciphered with new 5G NAS security context | CIPHERED-NEW |
| Spare half octet | | '0000'B |  |  |
| Message authentication code | | The calculated value of MAC-I for this message. | The value of MAC-I is calculated by SS using Sequence number sent by UE. | SENT-BY-SS |
| The same value as the XMAC-I value calculated by SS. |  | SENT-BY-UE |
| Sequence number | | The internal counter of the SS |  | SENT-BY-SS |
| Any allowed value |  | SENT-BY-UE |
| Plain 5GS NAS message | | Set according to specific message content |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| UNCIPHERED | This condition applies to unciphered NAS message exchange |
| CIPHERED | This condition applies to ciphered NAS message exchange |
| UNCIPHERED-NEW | This condition applies to unciphered NAS message exchange with new 5G NAS security context |
| CIPHERED-NEW | This condition applies to ciphered NAS message exchange with new 5G NAS security context |
| SENT-BY-SS | Use for the message sent from SS to UE |
| SENT-BY-UE | Use for the message sent from UE to SS |

#### *– 5GMM status*

Table 4.7.1-29: 5GMM STATUS

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.29 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | 5GMM |  |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| 5GMM STATUS message identity | | ‘0110 0100’B |  |  |
| 5GMM cause | | ‘0110 1111’B | Protocol error, unspecified | SENT-BY-SS |
| Present but contents not checked |  | SENT-BY-UE |

|  |  |
| --- | --- |
| Condition | Explanation |
| SENT-BY-SS | Use for the message sent from SS to UE |
| SENT-BY-UE | Use for the message sent from UE to SS |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– Control plane service request*

Table 4.7.1-30: CONTROL PLANE SERVICE REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.30 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Control plane service request message identity | | ‘0100 1111’B |  |  |
| Control plane service type | | ‘001’B | mobile terminated request |  |
| ngKSI | |  |  |  |
| NAS key set identifier | | The valid NAS key set identifier of the UE |  |  |
| TSC | | '0'B | native security context (for KSIAMF) |  |
| CIoT small data container | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Payload container type | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Payload container | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| PDU session ID | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| PDU session status | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Release assistance indication | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Uplink data status | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| NAS message container | | If present: contents not checked |  | CIPHERED\_MESSAGE |
| Additional information | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Allowed PDU session status | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| UE request type | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |
| Paging restriction | | If present: contents not checked |  | NON\_CLEARTEXT\_IE |

|  |  |
| --- | --- |
| Condition | Explanation |
| NON\_CLEARTEXT\_IE | An information element that is not allowed to be sent in cleartext and shall only be included in the complete CONTROL PLANE SERIVICE REQUEST message in the NAS message container IE.  NOTE: This condition is only applicable if the CONTROL PLANE SERVICE REQUEST message is sent as an initial NAS message. |
| CIPHERED\_MESSAGE | If any of the IEs marked with the condition NON\_CLEARTEXT\_IE is present, this condition applies.  NOTE: This condition is only applicable if the CONTROL PLANE SERVICE REQUEST message is sent as an initial NAS message. |

NOTE: This message is sent without integrity protection, including only cleartext IEs, before NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after NAS security mode control procedure has been successfully completed

#### *– Network slice-specific authentication command*

Table 4.7.1-31: NETWORK SLICE-SPECIFIC AUTHENTICATION COMMAND

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.31 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| NETWORK SLICE-SPECIFIC AUTHENTICATION COMMAND message identity | | ‘0101 0000’B |  |  |
| S-NSSAI | | Set according to specific message content |  |  |
| EAP message | | Set according to Table 4.7.3.2-1 | See TS 24.501 [25] subclause 9.11.2.2 |  |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– Network slice-specific authentication complete*

Table 4.7.1-32: NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.32 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE message identity | | ‘0101 0001’B |  |  |
| S-NSSAI | | Set according to specific message content |  |  |
| EAP message | | Set according to Table 4.7.3.2-2 | See TS 24.501 [25] subclause 9.11.2.2 |  |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– Network slice-specific authentication result*

Table 4.7.1-33: NETWORK SLICE-SPECIFIC AUTHENTICATION RESULT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.33 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE message identity | | ‘0101 0010’B |  |  |
| S-NSSAI | | Set according to specific message content |  |  |
| EAP message | | EAP-Success | See Table 4.7.3.2-3 | NSSAA Success |
| EAP-Failure | See Table 4.7.3.2-6 | NSSAA Failure |

|  |  |
| --- | --- |
| Condition | Explanation |
| NSSAA Success | Network slice-specific authentication succeeds |
| NSSAA Failure | Network slice-specific authentication fails |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– Relay key request*

Table 4.7.1-34: RELAY KEY REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.34 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Relay key request message identity | | ‘0110 1001’B |  |  |
| PRTI | | FFS |  |  |
| Relay key request parameters | | FFS |  |  |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– Relay key accept*

Table 4.7.1-35: RELAY KEY ACCEPT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.35 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Relay key accept message identity | | ‘0110 1010’B |  |  |
| PRTI | | FFS |  |  |
| EAP message | | FFS |  |  |
| Relay key response parameters | | FFS |  |  |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– Relay key reject*

Table 4.7.1-36: RELAY KEY REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.36 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Relay key reject message identity | | ‘0110 1011’B |  |  |
| PRTI | | FFS |  |  |
| EAP message | | FFS |  |  |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– Relay authentication request*

Table 4.7.1-37: RELAY AUTHENTICATION REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.37 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Relay authentication request message identity | | ‘0110 1100’B |  |  |
| PRTI | | FFS |  |  |
| EAP message | | FFS |  |  |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

#### *– Relay authentication response*

Table 4.7.1-38: RELAY AUTHENTICATION RESPONSE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.2.37 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0111 1110’B | 5GS mobility management messages |  |
| Security header type | | ’0000’B | Plain 5GS NAS message, not security protected |  |
| Spare half octet | | '0000'B |  |  |
| Relay authentication response message identity | | ‘0110 1101’B |  |  |
| PRTI | | FFS |  |  |
| EAP message | | FFS |  |  |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

### 4.7.2 Contents of 5GSM messages

#### *– PDU session establishment request*

Table 4.7.2-1: PDU SESSION ESTABLISHMENT REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | Any value according to TS 24.501 [25] subclause 9.4 |  |  |
| PTI | | Any value from 1 to 254 |  |  |
| PDU SESSION ESTABLISHMENT REQUEST message identity | | ‘1100 0001’B |  |  |
| Integrity protection maximum data rate | | Present but contents not checked |  |  |
| PDU session type | | Any value between '001'B, '010'B, '011'B and ‘101’B | The allowed values are respectively IPv4, IPv6, IPv4v6 and Ethernet (EtherType as defined in IEEE 802.3) |  |
| SSC mode | | If present: contents not checked |  |  |
| 5GSM capability | | If present: contents not checked |  |  |
| Maximum number of supported packet filters | | If present: contents not checked |  |  |
| Always-on PDU session requested | | If present: contents not checked |  |  |
| Always-on PDU session requested | |  |  | SST\_URLLC |
| APSR | | ‘1’B | Always-on PDU session requested |  |
| SM PDU DN request container | | If present: contents not checked |  |  |
| Extended protocol configuration options | | If present: contents not checked | The SS shall remember if this IE is present and its contents because this affects subsequent SS behaviour, e.g. coding of PDU SESSION ESTABLISHMENT ACCEPT. |  |
| Extended protocol configuration options | | Present including at least the following container |  | DATA\_OFF |
| Container ID n | | ‘0017’H | 3GPP PS data off UE status |  |
| Length of container ID n contents | |  | 1 octet |  |
| Container ID n contents | | ‘01’H | ‘deactivated’ |  |
| IP header compression configuration | | If present: contents not checked |  |  |
| DS-TT Ethernet port MAC address | | If present: contents not checked |  |  |
| UE-DS-TT residence time | | If present: contents not checked |  |  |
| Port management information container | | If present: contents not checked |  |  |
| Ethernet header compression configuration | | If present: contents not checked |  |  |
| Suggested interface identifier | | If present: contents not checked |  |  |
| Service-level-AA container | | If present: contents not checked |  |  |
| Requested MBS container | | If present: contents not checked |  |  |
| PDU session pair ID | | If present: contents not checked |  |  |
| RSN | | If present: contents not checked |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| DATA\_OFF | If the UE supports 3GPP PS data off as specified in TS 38.508-2 [10], Table A.4.3.7-1/xx |

#### *– PDU session establishment accept*

Table 4.7.2-2: PDU SESSION ESTABLISHMENT ACCEPT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.2 | | | | |
| Information Element | Value/remark | Comment | Condition |
| Extended protocol discriminator | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message |  |  |
| PTI | The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message |  |  |
| PDU SESSION ESTABLISHMENT ACCEPT message identity | ‘1100 0010’B |  |  |
| Selected PDU session type | '001'B |  | IPv4 |
| '010'B |  | IPv6 |
| '011'B |  | IPv4v6 |
| '101'B |  | Ethernet |
| Selected SSC mode | ‘001’B | SSC mode 1 |  |
| Authorized QoS rules | 5GC QoS rule of the entry in Table 4.8.4-1 which has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc\_APN\_Default\_Configuration if the DNN IE was not present |  |  |
| Session AMBR |  |  |  |
| Unit for Session-AMBR for downlink | ‘000 00101’ | Value is incremented in multiples of 256 Kbps |  |
| Session-AMBR for downlink | ‘0000 0000 0000 0100’B | 1024 Kbps |  |
| Unit for Session-AMBR for uplink | ‘000 00101’ | Value is incremented in multiples of 256 Kbps |  |
| Session-AMBR for uplink | ‘0000 0000 0000 0100’B | 1024 Kbps |  |
| 5GSM cause | Not Present |  |  |
| PDU address |  |  | IPv4 |
| Length of PDU address contents | 5 octets |  |  |
| PDU type value | ‘001’B | IPv4 |  |
| PDU address information | IPv4 address | The SS provides a valid IPv4 address | NOT IPv4-DHCP |
|  | 0.0.0.0 | DHCPv4 is to be used to allocate the IPv4 address | IPv4-DHCP |
| PDU address |  |  | IPv6 |
| Length of PDU address contents | 9 octets |  |  |
| PDU type value | ‘010’B | IPv6 |  |
| PDU address information | IPv6 interface identifier | The SS provides a valid IPv6 interface identifier |  |
| PDU address |  |  | IPv4v6 |
| Length of PDU address contents | 13 octets |  |  |
| PDU type value | ‘011’B | IPv4v6 |  |
| PDU address information (Octets 4 to 11) | IPv6 interface identifier | The SS provides a valid IPv6 interface identifier |  |
| PDU address information (Octets 12 to 15) | IPv4 address | The SS provides a valid IPv4 address | NOT IPv4-DHCP |
|  | 0.0.0.0 | DHCPv4 is to be used to allocate the IPv4 address | IPv4-DHCP |
| RQ timer value | Not Present |  |  |
| S-NSSAI |  |  |  |
| Length of S-NSSAI contents | ‘0000 0001’B | SST |  |
| SST | ‘0000 0001’B | SST value 1 (eMBB) | SST\_eMBB |
| SST | ‘0000 0010’B | SST value 2 (URLLC) | SST\_URLLC |
| SST | ‘0000 0011’B | SST value 3 (MIoT) | SST\_MIoT |
| SST | ‘0000 0100’B | SST value 4 (V2X) | SST\_V2X |
| Always-on PDU session indication | Not Present |  |  |
| Always-on PDU session indication |  |  |  |
| APSI | ‘0’B | Always-on PDU session not allowed | Always\_On\_Requested |
| APSI | ‘1’B | Always-on PDU session required | Always\_On\_Requested AND SST\_URLLC |
| Mapped EPS bearer contexts | Not Present |  |  |
| Mapped EPS bearer contexts |  |  | Interworking\_with\_EPS |
| Mapped EPS bearer context |  |  |  |
| EPS bearer identity | The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules |  |  |
| Operation code | ‘001’B | Create new EPS bearer |  |
| E bit | '1'B | Parameters list is included |  |
| Number of EPS parameters | ’0001’B | 1 parameter |  |
| Mapped EPS QoS parameters | EPC default bearer context of the entry in Table 4.8.4-1 which has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc\_APN\_Default\_Configuration if the DNN IE was not present |  |  |
| EAP message | Not Present |  |  |
| Authorized QoS flow descriptions | The QoS flow referred to in the relevant Authorized QoS rules IE |  |  |
| Extended protocol configuration options | Not Present |  |  |
| Extended protocol configuration options |  |  | P-CSCF\_IPv6 OR P-CSCF\_IPv4 |
| Container ID 1 | ‘0001’H |  | P-CSCF\_IPv6 |
| Length of container ID 1 contents |  | Length value determined by testimplementation |  |
| Container ID 1 contents | IPv6 address | P-CSCF IPv6 Address |  |
| Container ID 2 | ‘000C’H |  | P-CSCF\_IPv4 |
| Length of container ID 2 contents |  | Length value determined by test implementation |  |
| Container ID 2 contents | IPv4 address | P-CSCF IPv4 Address |  |
| Container ID 3 | ‘0001’H |  | Additional\_P-CSCF\_IPv6 |
| Length of container ID 3 contents |  | Length value determined by testimplementation |  |
| Container ID 3 contents | IPv6 address | Additional P-CSCF IPv6 Address |  |
| Container ID 4 | ‘000C’H |  | Additional\_P-CSCF\_IPv4 |
| Length of container ID 4 contents |  | Length value determined by test implementation |  |
| Container ID 4 contents | IPv4 address | Additional P-CSCF IPv4 Address |  |
| Container ID n | ‘0003’H | n assigned to next available number | DNS IPv6 |
| Length of container ID n contents |  | Length value determined by the TTCN implementation |  |
| Container ID n contents | IPv6 address | DNS IPv6 address |  |
| Container ID n+1 | ‘000D’H | n assigned to next available number | DNS IPv4 |
| Length of container ID n contents |  | Length value determined by the TTCN implementation |  |
| Container ID n contents | IPv4 address | DNS IPv4 address |  |
| DNN | The DNN/APN ID of the entry in Table 4.8.4-1 which has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc\_APN\_Default\_Configuration if the DNN IE was not present |  |  |
| 5GSM network feature support | Not Present |  |  |
| Serving PLMN rate control | Not Present |  |  |
| ATSSS container | Not Present |  |  |
| Control plane only indication | Not Present |  |  |
| IP header compression configuration | Not Present |  |  |
| Ethernet header compression configuration | Not Present |  |  |
| Service-level-AA container | Not Present |  |  |
| Received MBS container | Not Present |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| IPv4 | If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the PDU session type = '001'B |
| IPv6 | If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the PDU session type = '010'B |
| IPv4v6 | If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the PDU session type = '011'B |
| IPv4-DHCP | If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the IE Extended protocol configuration options contains a configuration protocol option = '000BH' ("IPv4 address allocation via DHCPv4", length of contents = 0).  Note: This condition is used in conjunction with IPv4 or IPv4v6 as indicated in the "PDU address information" just above. |
| Ethernet | If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the PDU session type = '101'B. |
| Always\_On\_Requested | If the last PDU SESSION ESTABLISHMENT REQUEST message included the Always-on PDU session requested IE |
| P-CSCF\_IPv6 | If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message the IE Extended protocol configuration options contains a configuration protocol option = '0001H' (“P-CSCF IPv6 Address Request", length of contents = 0) |
| P-CSCF\_IPv4 | If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message the IE Extended protocol configuration options contains a configuration protocol option = '000CH' (“P-CSCF IPv4 Address Request", length of contents = 0) |
| Interworking\_with\_EPS | If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts. |
| Additional\_P-CSCF\_IPv6 | P-CSCF\_IPv6 AND SS requires to be configured with second P-CSCF Ipv6 address |
| Additional \_P-CSCF\_IPv4 | P-CSCF\_IPv6 AND SS requires to be configured with second P-CSCF Ipv4 address |
| DNS IPv6 | If in the last PDU Session Establishment REQUEST the Extended protocol configuration options was included with a “DNS IPv6 Address Request”. |
| DNS IPv4 | If in the last PDU Session Establishment REQUEST the Extended protocol configuration options was included with a “DNS IPv4 Address Request”. |

#### *– PDU session establishment reject*

Table 4.7.2-3: PDU SESSION ESTABLISHMENT REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.3 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message |  |  |
| PTI | | The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message |  |  |
| PDU SESSION ESTABLISHMENT REJECT message identity | | ‘1100 0011’B |  |  |
| 5GSM cause | | The value is set according to specific message content |  |  |
| Back-off timer value | | Not Present |  |  |
| Allowed SSC mode | | Not Present |  |  |
| EAP message | | Not Present |  |  |
| 5GSM congestion re-attempt indicator | | Not Present |  |  |
| Extended protocol configuration options | | Not Present |  |  |
| Re-attempt indicator | | Not Present |  |  |
| Service-level-AA container | | Not Present |  |  |

#### *– PDU session authentication command*

Table 4.7.2-4: PDU SESSION AUTHENTICATION COMMAND

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.4 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | Set according to specific message content |  |  |
| PTI | | '0000 0000'B | No procedure transaction identity assigned |  |
| PDU SESSION AUTHENTICATION COMMAND message identity | | ‘1100 0101’B |  |  |
| EAP message | | Set according to TS 38.508 Table 4.7.3.2-1 | See TS 24.501 [25] subclause 9.11.2.2 |  |
| Extended protocol configuration options | | Not Present |  |  |
| Remote UE handling information list | | Not Present |  |  |

#### *– PDU session authentication complete*

Table 4.7.2-5: PDU SESSION AUTHENTICATION COMPLETE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | The value indicated in PDU SESSION AUTHENTICATION COMMAND message |  |  |
| PTI | | '0000 0000'B | No procedure transaction identity assigned |  |
| PDU SESSION AUTHENTICATION COMPLETE message identity | | ‘1100 0110’B |  |  |
| EAP message | | Set according to TS 38.508 Table 4.7.3.2-2 | See TS 24.501 [25] subclause 9.11.2.2 |  |
| Extended protocol configuration options | | If present: contents not checked |  |  |
| Remote UE handling information list | | If present: contents not checked |  |  |

#### *– PDU session authentication result*

Table 4.7.2-6: PDU SESSION AUTHENTICATION RESULT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.6 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | The value indicated in PDU SESSION AUTHENTICATION COMMAND message |  |  |
| PTI | | '0000 0000'B | No procedure transaction identity assigned |  |
| PDU SESSION AUTHENTICATION RESULT message identity | | ‘1100 0111’B |  |  |
| EAP message | | Set according to specific message content | See TS 24.501 [25] subclause 9.11.2.2 |  |
| Extended protocol configuration options | | Not Present |  |  |

#### *– PDU session modification request*

Table 4.7.2-7: PDU SESSION MODIFICATION REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.7 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | The value indicated in PDU SESSION ESTABLISHMENT REQUEST message |  |  |
| PTI | | Any value from 1 to 254 |  |  |
| PDU SESSION MODIFICATION REQUEST message identity | | ‘1100 1001’B |  |  |
| 5GSM capability | | If present: contents not checked |  |  |
| 5GSM cause | | If present: contents not checked |  |  |
| Maximum number of supported packet filters | | If present: contents not checked |  |  |
| Always-on PDU session requested | | If present: contents not checked |  |  |
| Integrity protection maximum data rate | | If present: contents not checked |  |  |
| Requested QoS rules | | If present: contents not checked |  |  |
| Requested QoS flow descriptions | | If present: contents not checked |  |  |
| Mapped EPS bearer contexts | | If present: contents not checked |  |  |
| Extended protocol configuration options | | If present: contents not checked |  |  |
| Port management information container | | If present: contents not checked |  |  |
| IP header compression configuration | | If present: contents not checked |  |  |
| Ethernet header compression configuration | | If present: contents not checked |  |  |
| Requested MBS container | | If present: contents not checked |  |  |
| Service-level-AA container | | If present: contents not checked |  |  |

#### *– PDU session modification reject*

Table 4.7.2-8: PDU SESSION MODIFICATION REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.8 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | The value indicated in PDU SESSION MODIFICATION REQUEST message. |  |  |
| PTI | | The value indicated in PDU SESSION MODIFICATION REQUEST message. |  |  |
| PDU SESSION MODIFICATION REJECT message identity | | ‘1100 1010’B |  |  |
| 5GSM cause | | Set according to specific message content. |  |  |
| Back-off timer value | | Not Present |  |  |
| 5GSM congestion re-attempt indicator | | Not Present |  |  |
| Extended protocol configuration options | | Not Present |  |  |
| Re-attempt indicator | | Not Present |  |  |

#### *– PDU session modification command*

Table 4.7.2-9: PDU SESSION MODIFICATION COMMAND

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.9 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | Set according to specific message content. |  |  |
| PDU session ID | | The value indicated in PDU SESSION MODIFICATION REQUEST message. |  | UE\_Initiated\_Modification |
| PTI | | '0000 0000'B | No procedure transaction identity assigned |  |
| PTI | | The value indicated in PDU SESSION MODIFICATION REQUEST message. |  | UE\_Initiated\_Modification |
| PDU SESSION MODIFICATION COMMAND message identity | | ‘1100 1011’B |  |  |
| 5GSM cause | | Not Present |  |  |
| Session AMBR | | Not Present |  |  |
| RQ timer value | | Not Present |  |  |
| Always-on PDU session indication | | Not Present |  |  |
| Always-on PDU session indication | |  |  |  |
| APSI | | ‘0’B | Always-on PDU session not allowed | Always\_On\_Requested |
| APSI | | ‘1’B | Always-on PDU session required | Always\_On\_Requested AND SST\_URLLC |
| Authorized QoS rules | | Not Present |  |  |
| Mapped EPS bearer contexts | | Not Present |  |  |
| Authorized QoS flow descriptions | | Not Present |  |  |
| Extended protocol configuration options | | Not Present |  |  |
| ATSSS container | | Not Present |  |  |
| IP header compression configuration | | Not Present |  |  |
| Port management information container | | Not Present |  |  |
| Serving PLMN rate control | | Not Present |  |  |
| Ethernet header compression configuration | | Not Present |  |  |
| Received MBS container | | Not Present |  |  |
| Service-level-AA container | | Not Present |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Always\_On\_Requested | If the last PDU SESSION MODIFICATION REQUEST message included the Always-on PDU session requested IE |
| UE\_Initiated\_Modification | If this message was triggered by a PDU SESSION MODIFICATION REQUEST message sent by the UE |

#### *– PDU session modification complete*

Table 4.7.2-10: PDU SESSION MODIFICATION COMPLETE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.10 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | The value indicated in PDU SESSION MODIFICATION COMMAND message |  |  |
| PTI | | '0000 0000'B | No procedure transaction identity assigned |  |
| PTI | | The value indicated in PDU SESSION MODIFICATION REQUEST message. |  | UE\_Initiated\_Modification |
| PDU SESSION MODIFICATION COMPLETE message identity | | ‘1100 1100’B |  |  |
| Extended protocol configuration options | | If present: contents not checked |  |  |
| Port management information container | | If present: contents not checked |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| UE\_Initiated\_Modification | If this message was triggered by a PDU SESSION MODIFICATION REQUEST message sent by the UE |

#### *– PDU session modification command reject*

Table 4.7.2-11: PDU SESSION MODIFICATION COMMAND REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.11 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | The value indicated in PDU SESSION MODIFICATION COMMAND message |  |  |
| PTI | | '0000 0000'B | No procedure transaction identity assigned |  |
| PDU SESSION MODIFICATION COMMAND REJECT message identity | | ‘1100 1101’B |  |  |
| 5GSM cause | | If present: contents not checked |  |  |
| Extended protocol configuration options | | If present: contents not checked |  |  |

#### *– PDU session release request*

Table 4.7.2-12: PDU SESSION RELEASE REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.12 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | The value indicated in PDU SESSION ESTABLISHMENT REQUEST message |  |  |
| PTI | | Any value from 1 to 254 |  |  |
| PDU SESSION RELEASE REQUEST message identity | | ‘1101 0001’B |  |  |
| 5GSM cause | | If present: contents not checked |  |  |
| Extended protocol configuration options | | If present: contents not checked |  |  |

#### *– PDU session release reject*

Table 4.7.2-13: PDU SESSION RELEASE REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.13 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | The value indicated in PDU SESSION RELEASE REQUEST message. |  |  |
| PTI | | The value indicated in PDU SESSION RELEASE REQUEST message. |  |  |
| PDU SESSION RELEASE REJECT message identity | | ‘1101 0010’B |  |  |
| 5GSM cause | | Set according to specific message content. |  |  |
| Extended protocol configuration options | | Not Present |  |  |

#### *– PDU session release command*

Table 4.7.2-14: PDU SESSION RELEASE COMMAND

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.14 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | Set according to specific message content. |  |  |
| PTI | | '0000 0000'B | No procedure transaction identity assigned |  |
| PDU SESSION RELEASE COMMAND message identity | | ‘1101 0011’B |  |  |
| 5GSM cause | | ‘0001 1010’B | Insufficient resources |  |
| Back-off timer value | | Not Present |  |  |
| EAP message | | Not Present |  |  |
| 5GSM congestion re-attempt indicator | | Not Present |  |  |
| Extended protocol configuration options | | Not Present |  |  |
| Access type | | Not Present |  |  |
| Service-level-AA container | | Not Present |  |  |

#### *– PDU session release complete*

Table 4.7.2-15: PDU SESSION RELEASE COMPLETE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.15 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | The value indicated in PDU SESSION RELEASE COMMAND message. |  |  |
| PTI | | '0000 0000'B | No procedure transaction identity assigned |  |
| PDU SESSION RELEASE COMPLETE message identity | | ‘1101 0100’B |  |  |
| 5GSM cause | | If present: contents not checked |  |  |
| Extended protocol configuration options | | If present: contents not checked |  |  |

#### *– 5GSM status*

Table 4.7.2-16: 5GSM STATUS

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.16 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | Set according to specific message content. |  |  |
| PTI | | Set according to specific message content. |  |  |
| 5GSM STATUS message identity | | ‘1101 0110’B |  |  |
| 5GSM cause | | Set according to specific message content. |  |  |

#### *– Service-level authentication command*

Table 4.7.2-17: SERVICE-LEVEL AUTHENTICATION COMMAND

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.17 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | Set according to specific message content. |  |  |
| PTI | | Set according to specific message content. |  |  |
| SERVICE-LEVEL AUTHENTICATION COMMAND message identity | | ‘1101 1000’B |  |  |
| Service-level-AA container | | FFS |  |  |

#### *– Service-level authentication complete*

Table 4.7.2-18: SERVICE-LEVEL AUTHENTICATION COMPLETE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.18 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | Set according to specific message content. |  |  |
| PTI | | Set according to specific message content. |  |  |
| SERVICE-LEVEL AUTHENTICATION COMPLETE message identity | | ‘1101 1001’B |  |  |
| Service-level-AA container | | FFS |  |  |

#### *– Remote UE report*

Table 4.7.2-19: REMOTE UE REPORT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.19 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | Set according to specific message content. |  |  |
| PTI | | Set according to specific message content. |  |  |
| REMOTE UE REPORT message identity | | ‘1101 1010’B |  |  |
| Remote UE context connected | | FFS |  |  |
| Remote UE context disconnected | | FFS |  |  |

#### *– Remote UE report response*

Table 4.7.2-20: REMOTE UE REPORT RESPONSE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.501 clause 8.3.20 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Extended protocol discriminator | | ‘0010 1110’B | 5GS session management messages |  |
| PDU session ID | | Set according to specific message content. |  |  |
| PTI | | Set according to specific message content. |  |  |
| REMOTE UE REPORT RESPONSE message identity | | ‘1101 1011’B |  |  |
| EAP message | | FFS |  |  |
| Remote UE handling information list | | FFS |  |  |
| Authorized QoS flow descriptions | | FFS |  |  |

### 4.7.3 Contents of EAP-AKA' messages

For all the message definitions below, the acceptable order and syntax of attributes and fields within these attributes must be according to IETF RFCs where those attributes have been defined. Typically the order of attributes is not significant, but there could be well defined exceptions where the order is important.

The contents of the messages described in the present Annex is not complete - only the attributes required to be checked or generated by SS are listed here. The messages sent by the UE may contain additional attributes which are not checked and must thus be ignored by SS.

#### 4.7.3.1 EAP-AKA' message attributes

Table 4.7.3.1-1: AT\_RAND\_Def

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 10.6 | | | |
| Information Element | | Value/remark | Comment | Condition |
| AT\_RAND | | '0000 0001'B | 1 |  |
| Length | | '0000 0101'B | 5 |  |
| Reserved | | '0000 0000 0000 0000'B |  |  |
| RAND | | An arbitrarily selected 128 bits value |  |  |

Table 4.7.3.1-2: AT\_AUTN\_Def

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 10.7 | | | |
| Information Element | | Value/remark | Comment | Condition |
| AT\_AUTN | | '0000 0010'B | 2 |  |
| Length | | '0000 0101'B | 5 |  |
| Reserved | | '0000 0000 0000 0000'B |  |  |
| AUTN | | 128 bits value generated according to TS 24.501 [28] subclause 9.11.3.15 |  |  |

Table 4.7.3.1-3: AT\_KDF\_Def

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 5448 [31] clause 3.3 | | | |
| Information Element | | Value/remark | Comment | Condition |
| AT\_KDF | | '0001 1000'B | 24 |  |
| Length | | '0000 0001'B | 1 |  |
| KDF | | '0000 0000 0000 0001' | 1: EAP\_AKA' |  |

Table 4.7.3.1-4: AT\_KDF\_INPUT\_Def

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 5448 [31] clause 3.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| AT\_KDF\_INPUT | | '0001 0111'B | 23 |  |
| Length | | Set to the Length of attribute AT\_KDF\_INPUT in 4 bytes |  |  |
| Actual Network Name Length | | Set to the actual length of 'Network Name' in bytes excluding any appended all zero bytes at end |  |  |
| Network Name | | Value generated according to TS 24.501 [28] clause 9.12.1 and shall be a multiple of 4 bytes (appended with 1,2 or 3 bytes of all zero bits when necessary) |  |  |

Table 4.7.3.1-5: AT\_MAC\_Def

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 10.15 | | | |
| Information Element | | Value/remark | Comment | Condition |
| AT\_MAC | | '0000 1011'B | 11 |  |
| Length | | '0000 0101'B | 5 |  |
| Reserved | | '0000 0000 0000 0000'B |  |  |
| MAC | | 128 bits value generated according to RFC 4187 [30] subclause 10.15 |  |  |

Table 4.7.3.1-6: AT\_RES\_Def

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 10.08 | | | |
| Information Element | | Value/remark | Comment | Condition |
| AT\_RES | | '0000 0011'B | 3 |  |
| Length | | Set to Length of AT\_RES attribute in 4 bytes. | 1 byte |  |
| RES\_LENGTH | | Set to the actual length of 'RES' in bytes excluding any appended all zero bytes at end |  |  |
| RES | | RES\* value calculated according to TS 24.501 [28] clause 9.11.3.17, possibly appended with 1,2 or 3 bytes of all zero bits to make lenght multiple of 4 bytes. |  |  |

Table 4.7.3.1-7: AT\_AUTS\_Def

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 10.08 | | | |
| Information Element | | Value/remark | Comment | Condition |
| AT\_AUTS | | '0000 0100'B | 4 |  |
| Length | | '0000 0100'B | 4 |  |
| AUTS | | 14 octets RES\* value not checked |  |  |

Table 4.7.3.1-8: AT\_PERMANENT\_ID\_Def

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 10.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| AT\_PERMANENT\_ID\_REQ | | '0000 1010'B | 10 |  |
| Length | | '0000 0001'B | 1 |  |
| Reserved | | '0000 0000 0000 0000'B |  |  |

Table 4.7.3.1-9: AT\_ANY\_ID\_REQ\_Def

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 10.3 | | | |
| Information Element | | Value/remark | Comment | Condition |
| AT\_ANY\_ID\_REQ | | '0000 1101'B | 13 |  |
| Length | | '0000 0001'B | 1 |  |
| Reserved | | '0000 0000 0000 0000'B |  |  |

Table 4.7.3.1-10: AT\_FULLAUTH\_ID\_Def

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 10.4 | | | |
| Information Element | | Value/remark | Comment | Condition |
| AT\_FULLAUTH\_ID\_REQ | | '0001 0001'B | 17 |  |
| Length | | '0000 0001'B | 1 |  |
| Reserved | | '0000 0000 0000 0000'B |  |  |

Table 4.7.3.1-11: AT\_IDENTITY\_Def

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 10.5 | | | |
| Information Element | Value/remark | Comment | Condition | |
| AT\_IDENTITY | '0000 1110'B | 14 |  | |
| Length | Set to the Length of AT\_IDENTITY attribute in 4 bytes |  |  | |
| Actual Identity Length | Set to the actual length of 'identity' in bytes excluding any appended all zero bytes at end |  |  | |
| Identity | Value generated according to TS 24.501 [28] clause 9.11.3.4 and shall be a multiple of 4 bytes (appended with 1,2 or 3 bytes of all zero bits when necessary) |  |  | |

Table 4.7.3.1-12: AT\_NOTIFICATION\_Def

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 10.19 | | | |
| Information Element | Value/remark | Comment | Condition | |
| AT\_NOTIFICATION | '0000 1100'B | 12 |  | |
| Length | '0000 0001'B | 1 |  | |
| Notification Code | 16 bits value generated according to RFC 4187 [30] subclause 10.19. |  |  | |

#### 4.7.3.2 EAP-AKA' messages

Table 4.7.3.2-1: EAP-Request/AKA'-Challenge

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 9.3, RFC 3748 [32] clause 4 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Code | | 1 | Request |  |
| Length | | Set to length of EAP packet |  |  |
| Data | |  |  |  |
| AT\_RAND | | AT\_RAND\_Def |  |  |
| AT\_AUTN | | AT\_AUTN\_Def |  |  |
| AT\_KDF | | AT\_KDF\_Def |  |  |
| AT\_KDF\_INPUT | | AT\_KDF\_INPUT\_Def |  |  |
| AT\_MAC | | AT\_MAC\_Def |  |  |

Table 4.7.3.2-2: EAP-Response/AKA'-Challenge

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 9.4, RFC 3748 [32] clause 4 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Code | | 2 | Response |  |
| Length | | Set to length of EAP packet |  |  |
| Data | |  |  |  |
| AT\_Res | | AT\_Res\_Def |  |  |
| AT\_MAC | | AT\_MAC\_Def |  |  |

Table 4.7.3.2-3: EAP-Succes

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 6.3.4, RFC 3748 [32] clause 4 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Code | | 3 | Success |  |
| Length | | Set to length of EAP packet |  |  |
| Data | | Not present | Specific attributes not present |  |

Table 4.7.3.2-4: EAP-Response/AKA-Authentication-Reject

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 9.5, RFC 3748 [32] clause 4 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Code | | 4 | Failure |  |
| Length | | Set to length of EAP packet |  |  |
| Data | | Not checked |  |  |

Table 4.7.3.2-5: EAP-Response/AKA-Synchronization-Failure

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 9.6, RFC 3748 [32] clause 4 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Code | | 4 | Failure |  |
| Length | | Set to length of EAP packet |  |  |
| Data | |  |  |  |
| AT\_AUTS | | AT\_AUTS\_Def |  |  |

Table 4.7.3.2-6: EAP-Failure

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 6.3.3, RFC 3748 [32] clause 4 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Code | | 4 | Failure |  |
| Length | | Set to length of EAP packet |  |  |
| Data | | Not present | Specific attributes not present |  |

Table 4.7.3.2-7: EAP-Request/AKA-Identity

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 9.1, RFC 3748 [32] clause 4 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Code | | 1 | Request |  |
| Length | | Set to length of EAP packet |  |  |
| Data | |  |  |  |
| AT\_PERMANENT\_ID\_REQ | | AT\_PERMANENT\_ID\_REQ\_Def |  | SS requests that the UE send its permanent identity. |
| AT\_ANY\_ID\_REQ | | AT\_ANY\_ID\_REQ\_Def |  | SS does not specify which kind of an identity the UE should return. |
| AT\_FULLAUTH\_ID\_REQ | | AT\_FULLAUTH\_ID\_REQ\_Def |  | SS requests either the permanent identity or a pseudonym identity. |

Table 4.7.3.2-8: EAP-Response/AKA-Identity

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 9.2, RFC 3748 [32] clause 4 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Code | | 2 | Response |  |
| Length | | Set to length of EAP packet |  |  |
| Data | |  |  |  |
| AT\_IDENTITY | | AT\_IDENTITY\_Def |  |  |

Table 4.7.3.2-9: EAP-Request/AKA-Notification

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 9.10, RFC 3748 [32] clause 4 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Code | | 1 | Request |  |
| Length | | Set to length of EAP packet |  |  |
| Data | |  |  |  |
| AT\_NOTIFICATION | | AT\_NOTIFICATION\_Def |  |  |

Table 4.7.3.2-10: EAP-Response/AKA-Notification

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: IETF RFC 4187 [30] clause 9.11, RFC 3748 [32] clause 4 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Code | | 2 | Response |  |
| Length | | Set to length of EAP packet |  |  |
| Data | | Not present | Specific attributes not present |  |

### 4.7.4 Contents of V2X messages

Table 4.7.4-1 to -6: Void

#### *– DIRECT LINK ESTABLISHMENT REQUEST*

Table 4.7.4-7: DIRECT LINK ESTABLISHMENT REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.1.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK ESTABLISHMENT REQUEST message identity | | '0000 0001'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| V2X service identifiers | |  |  |  |
| Length of V2X service identifier contents | | '04'H |  |  |
| V2X service identifier 1 | | '00 00 00 01'H |  |  |
| Source user info | |  |  |  |
| Length of Application layer ID contents | | '04'H |  |  |
| Application Layer ID 1 | | '00 00 01 00'H | Application Layer ID in initiating UE side |  |
| UE security capabilities | |  |  |  |
| Length of UE security capabilities contents | | '02'H |  |  |
| 5G-EA algorithms | | '1000 0000'B | 5G-EA0 supported |  |
| 5G-IA algorithms | | '1000 0000'B | 5G-IA0 supported |  |
| UE PC5 unicast signalling security policy | | '0000 0000'B | Signalling integrity protection not needed,  Signalling ciphering not needed. |  |
| Key establishment information container | | Not Present |  |  |
| Nonce\_1 | | Not Present |  |  |
| MSBs of KNRP-sess ID | | Not Present |  |  |
| Target user info | | Not Checked |  | Tx |
| Target user info | |  |  | Rx |
| Application layer ID IEI | | '28'H |  |  |
| Length of Application layer ID contents | | '04'H |  |  |
| Application layer ID contents | | '00 00 11 00'H |  |  |
| KNRP ID | | Not Present |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK ESTABLISHMENT ACCEPT*

Table 4.7.4-8: DIRECT LINK ESTABLISHMENT ACCEPT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.1.1.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| DIRECT LINK ESTABLISHMENT ACCEPT message identity | '0000 0010'B |  |  |
| Sequence number | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| Source user info |  |  |  |
| Length of Application layer ID contents | '04'H |  |  |
| Application Layer ID 1 | '00 00 02 00'H | Application Layer ID in target UE side |  |
| QoS flow descriptions |  |  |  |
| Length of PC5 QoS flow descriptions contents | Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes |  |  |
| PC5 QoS flow description 1 |  |  |  |
| PQFI | '00 0001'B |  |  |
| Operation Code | '001'B | Create new PC5 QoS flow description |  |
| Number of parameters | 5 |  |  |
| E | 1 | parameters list is included |  |
| Associated V2X service identifiers |  |  |  |
| Length of V2X service identifier contents | '04'H |  |  |
| V2X service identifier 1 | '00 00 00 01'H |  |  |
| Parameters list |  |  |  |
| Parameter 1 |  |  |  |
| Parameter identifier | '01'H | PQI |  |
| Length of parameter contents | 1 |  |  |
| Parameter contents | 22 | Sensor sharing, See Table 5.4.4-1 in TS 23.287[xx] |  |
| Parameter 2 |  |  |  |
| Parameter identifier | '02'H | GFBR |  |
| Length of parameter contents | 3 |  |  |
| Parameter contents | '0000 0110 0000 0000 0000 1010'B | 10 \* 1Mbps = 10Mbps. |  |
| Parameter 3 |  |  |  |
| Parameter identifier | '03'H | MFBR |  |
| Length of parameter contents | 3 |  |  |
| Parameter contents | '0000 0110 0000 0000 0001 0100'B | 20 \* 1Mbps = 20Mbps. |  |
| Parameter 4 |  |  |  |
| Parameter identifier | '04'H | Averaging window |  |
| Length of parameter contents | 2 |  |  |
| Parameter contents | '0000 0111 1101 0000'B | 2000ms |  |
| Parameter 5 |  |  |  |
| Parameter identifier | '06'H | Default priority level |  |
| Length of parameter contents | 1 |  |  |
| Parameter contents | 4 |  |  |
| Configuration of UE PC5 unicast user plane security protection | '0000 0000'B | User plane integrity protection and ciphering is off |  |
| IP address configuration | Not Checked |  | Tx |
| IP address configuration |  |  | Rx |
| IP address configuration IEI | '57'H |  |  |
| IP address configuration content | '0000 0001'B | IPv6 Router |  |
| Link local IPv6 address | Not Present |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK MODIFICATION REQUEST*

Table 4.7.4-9: DIRECT LINK MODIFICATION REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.4.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK MODIFICATION REQUEST message identity | | '0000 0100'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| Link modification operation code | | '0000 0011'B | Add new PC5 QoS flow(s) to the existing PC5 unicast link |  |
| QoS flow descriptions | |  |  |  |
| Length of PC5 QoS flow descriptions contents | | Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes |  |  |
| PC5 QoS flow description 1 | |  |  |  |
| PQFI | | '00 0010'B |  |  |
| Operation Code | | '001'B | Create new PC5 QoS flow description |  |
| Number of parameters | | 5 |  |  |
| E | | 1 | parameters list is included |  |
| Associated V2X service identifiers | |  |  |  |
| Length of V2X service identifier contents | | '04'H |  |  |
| V2X service identifier 1 | | '00 00 00 02'H |  |  |
| Parameters list | |  |  |  |
| Parameter 1 | |  |  |  |
| Parameter identifier | | '01'H | PQI |  |
| Length of parameter contents | | 1 |  |  |
| Parameter contents | | 23 | Platooning between UEs, See Table 5.4.4-1 in TS 23.287[xx] |  |
| Parameter 2 | |  |  |  |
| Parameter identifier | | '02'H | GFBR |  |
| Length of parameter contents | | 3 |  |  |
| Parameter contents | | '0000 0111 0000 0000 0000 1010'B | 10 \* 4Mbps = 40Mbps. |  |
| Parameter 3 | |  |  |  |
| Parameter identifier | | '03'H | MFBR |  |
| Length of parameter contents | | 3 |  |  |
| Parameter contents | | '0000 0111 0000 0000 0001 0100'B | 20 \* 4Mbps = 80Mbps. |  |
| Parameter 4 | |  |  |  |
| Parameter identifier | | '04'H | Averaging window |  |
| Length of parameter contents | | 2 |  |  |
| Parameter contents | | '0000 0111 1101 0000'B | 2000ms |  |
| Parameter 5 | |  |  |  |
| Parameter identifier | | '06'H | Default priority level |  |
| Length of parameter contents | | 1 |  |  |
| Parameter contents | | 3 |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK MODIFICATION ACCEPT*

Table 4.7.4-10: DIRECT LINK MODIFICATION ACCEPT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.5.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK MODIFICATION ACCEPT message identity | | '0000 0101'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| QoS flow descriptions | |  |  |  |
| PC5 QoS flow descriptions IEI | | '79'H |  |  |
| Length of PC5 QoS flow descriptions contents | | Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes |  |  |
| PC5 QoS flow description 1 | |  |  |  |
| PQFI | | '00 0010'B |  |  |
| Operation Code | | '001'B | Create new PC5 QoS flow description |  |
| Number of parameters | | 5 |  |  |
| E | | 1 | parameters list is included |  |
| Associated V2X service identifiers | |  |  |  |
| Length of V2X service identifier contents | | '04'H |  |  |
| V2X service identifier 1 | | '00 00 00 02'H |  |  |
| Parameters list | |  |  |  |
| Parameter 1 | |  |  |  |
| Parameter identifier | | '01'H | PQI |  |
| Length of parameter contents | | 1 |  |  |
| Parameter contents | | 23 | Platooning between UEs, See Table 5.4.4-1 in TS 23.287[xx] |  |
| Parameter 2 | |  |  |  |
| Parameter identifier | | '02'H | GFBR |  |
| Length of parameter contents | | 3 |  |  |
| Parameter contents | | '0000 0111 0000 0000 0000 1010'B | 10 \* 4Mbps = 40Mbps. |  |
| Parameter 3 | |  |  |  |
| Parameter identifier | | '03'H | MFBR |  |
| Length of parameter contents | | 3 |  |  |
| Parameter contents | | '0000 0111 0000 0000 0001 0100'B | 20 \* 4Mbps = 80Mbps. |  |
| Parameter 4 | |  |  |  |
| Parameter identifier | | '04'H | Averaging window |  |
| Length of parameter contents | | 2 |  |  |
| Parameter contents | | '0000 0111 1101 0000'B | 2000ms |  |
| Parameter 5 | |  |  |  |
| Parameter identifier | | '06'H | Default priority level |  |
| Length of parameter contents | | 1 |  |  |
| Parameter contents | | 3 |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK RELEASE REQUEST*

Table 4.7.4-11: DIRECT LINK RELEASE REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.6.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK RELEASE REQUEST message identity | | '0000 0111'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| PC5 signalling protocol cause | | '0110 1111'B | Protocol error, unspecified | Rx |
| Not Checked |  | Tx |
| MSB of KNRP ID | | Not Checked |  | Tx |
| '00 00'H |  | Rx |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK RELEASE ACCEPT*

Table 4.7.4-12: DIRECT LINK RELEASE ACCEPT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.7.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK RELEASE ACCEPT message identity | | '0000 1000'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| LSB of KNRP ID | | Not Checked |  | Tx |
| '00 00'H |  | Rx |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK KEEPALIVE REQUEST*

Table 4.7.4-13: DIRECT LINK KEEPALIVE REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.8.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK KEEPALIVE REQUEST message identity | | '0000 1001'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| Keep-alive counter | | '00 00 00 00'H | Increase by 1 after each keep-alive procedure. |  |
| Maximum inactivity period | | Not Checked |  | Tx |
| Maximum inactivity period | |  |  | Rx |
| Maximum inactivity period IEI | | '55'H |  |  |
| Maximum inactivity period contents | | '00 00 00 06'H | 6 seconds, higher value than T5003=5s |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK KEEPALIVE RESPONSE*

Table 4.7.4-14: DIRECT LINK KEEPALIVE RESPONSE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.9.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK KEEPALIVE RESPONSE message identity | | '0000 1010'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| Keep-alive counter | | '00 00 00 01'H |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK AUTHENTICATION REQUEST*

Table 4.7.4-15: DIRECT LINK AUTHENTICATION REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.10.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK AUTHENTICATION REQUEST message identity | | '0000 1011'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| Key establishment information container | |  |  |  |
| Length of key establishment information container contents | | Not checked |  | Tx |
|  | | '00'H |  | Rx |
| Key establishment information container contents | | Not checked |  | Tx |
|  | | Not Present |  | Rx |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK AUTHENTICATION RESPONSE*

Table 4.7.4-16: DIRECT LINK AUTHENTICATION RESPONSE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.11.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK AUTHENTICATION RESPONSE message identity | | '0000 1100'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| Key establishment information container | |  |  |  |
| Length of key establishment information container contents | | Not checked |  | Tx |
|  | | '00'H |  | Rx |
| Key establishment information container contents | | Not checked |  | Tx |
|  | | Not Present |  | Rx |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK AUTHENTICATION REJECT*

Table 4.7.4-17: DIRECT LINK AUTHENTICATION REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.12.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK AUTHENTICATION REJECT message identity | | '0000 1101'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| PC5 signalling protocol cause value | | '0110 1111'B | Protocol error, unspecified |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK SECURITY MODE COMMAND*

Table 4.7.4-18: DIRECT LINK SECURITY MODE COMMAND

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.13.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK SECURITY MODE COMMAND message identity | | '0000 1110'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| Selected security algorithms | | '0000 0000'B |  |  |
| UE security capabilities | |  |  |  |
| Length of UE security capabilities contents | | '02'H |  |  |
| 5G-EA algorithms | | '1000 0000'B | 5G-EA0 supported |  |
| 5G-IA algorithms | | '1000 0000'B | 5G-IA0 supported |  |
| UE PC5 unicast signalling security policy | |  |  |  |
| UE PC5 unicast signalling security policy IEI | | '59'H |  |  |
| Signalling integrity protection policy | | '000'B | Signalling integrity protection not needed |  |
| Signalling ciphering policy | | '000'B | Signalling ciphering not needed. |  |
| Nonce\_2 | | Not Checked |  | Tx |
|  | | Not Present |  | Rx |
| LSBs of KNRP-sess ID | | Not Checked |  | Tx |
|  | | Not Present |  | Rx |
| Key establishment information container | | Not Checked |  | Tx |
|  | | Not Present |  | Rx |
| MSBs of KNRP ID | | Not Checked |  | Tx |
|  | | Not Present |  | Rx |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK SECURITY MODE COMPLETE*

Table 4.7.4-19: DIRECT LINK SECURITY MODE COMPLETE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.14.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK SECURITY MODE COMPLETE message identity | | '0000 1111'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
|  | | Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| QoS flow descriptions | |  |  |  |
| Length of PC5 QoS flow descriptions contents | | Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes |  |  |
| PC5 QoS flow description 1 | |  |  |  |
| PQFI | | '00 0001'B |  |  |
| Operation Code | | '001'B | Create new PC5 QoS flow description |  |
| Number of parameters | | 5 |  |  |
| E | | 1 | parameters list is included |  |
| Associated V2X service identifiers | |  |  |  |
| Length of V2X service identifier contents | | '04'H |  |  |
| V2X service identifier 1 | | '00 00 00 01'H |  |  |
| Parameters list | |  |  |  |
| Parameter 1 | |  |  |  |
| Parameter identifier | | '01'H | PQI |  |
| Length of parameter contents | | 1 |  |  |
| Parameter contents | | 22 | Sensor sharing, See Table 5.4.4-1 in TS 23.287[xx] |  |
| Parameter 2 | |  |  |  |
| Parameter identifier | | '02'H | GFBR |  |
| Length of parameter contents | | 3 |  |  |
| Parameter contents | | '0000 0110 0000 0000 0000 1010'B | 10 \* 1Mbps = 10Mbps. |  |
| Parameter 3 | |  |  |  |
| Parameter identifier | | '03'H | MFBR |  |
| Length of parameter contents | | 3 |  |  |
| Parameter contents | | '0000 0110 0000 0000 0001 0100'B | 20 \* 1Mbps = 20Mbps. |  |
| Parameter 4 | |  |  |  |
| Parameter identifier | | '04'H | Averaging window |  |
| Length of parameter contents | | 2 |  |  |
| Parameter contents | | '0000 0111 1101 0000'B | 2000ms |  |
| Parameter 5 | |  |  |  |
| Parameter identifier | | '06'H | Default priority level |  |
| Length of parameter contents | | 1 |  |  |
| Parameter contents | | 4 |  |  |
| UE PC5 unicast user plane security policy | | '0000 0000'B | Signalling integrity protection not needed,  Signalling ciphering not needed. |  |
| IP address configuration | | Not Checked |  | Tx |
| IP address configuration | |  |  | Rx |
| IP address configuration IEI | | '57'H |  |  |
| IP address configuration content | | '0000 0001'B | IPv6 Router |  |
| Link local IPv6 address | | Not Present |  | Rx |
| Not Checked |  | Tx |
| LSBs of KNRP ID | | Not Checked |  | Tx |
|  | | Not present |  | Rx |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK SECURITY MODE REJECT*

Table 4.7.4-20: DIRECT LINK SECURITY MODE REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.15.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK SECURITY MODE REJECT message identity | | '0001 0000'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| PC5 signalling protocol cause | | '0110 1111'B | Protocol error, unspecified |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK REKEYING REQUEST*

Table 4.7.4-21: DIRECT LINK REKEYING REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.16.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK REKEYING REQUEST message identity | | '0001 0001'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| UE security capabilities | |  |  |  |
| Length of UE security capabilities contents | | '02'H |  |  |
| 5G-EA algorithms | | '1000 0000'B | 5G-EA0 supported |  |
| 5G-IA algorithms | | '1000 0000'B | 5G-IA0 supported |  |
| Key establishment information container | | Not Checked |  |  |
| Nonce\_1 | | Not Checked |  |  |
| MSBs of KNRP-sess ID | | Not Checked |  |  |
| Re-authentication indication | |  |  |  |
| Re-authentication indication IEI | | '56'H |  |  |
| Re-authentication indication contents | | '0000 0000'B | KNRP is not requested to be refreshed |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK REKEYING RESPONSE*

Table 4.7.4-22: DIRECT LINK REKEYING RESPONSE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.17.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK REKEYING RESPONSE message identity | | '0001 0010'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK IDENTIFIER UPDATE REQUEST*

Table 4.7.4-23: DIRECT LINK IDENTIFIER UPDATE REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.18.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK IDENTIFIER UPDATE REQUEST message identity | | '0001 0011'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| MSB of KNRP-sess ID | | Not checked |  | Tx |
|  | | '00'H |  | Rx |
| Source layer-2 ID | | '00 00 10'H |  |  |
| Source user info | |  |  |  |
| Application layer ID IEI | | '57'H |  |  |
| Length of Application layer ID contents | | '04'H |  |  |
| Application Layer ID 1 | | '00 00 01 00'H | Application Layer ID in initiating UE side |  |
| Source link local IPv6 address | | Not present |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK IDENTIFIER UPDATE ACCEPT*

Table 4.7.4-24: DIRECT LINK IDENTIFIER UPDATE ACCEPT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.19.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK IDENTIFIER UPDATE ACCEPT message identity | | '0001 0100'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| LSB of KNRP-sess ID | | Not checked |  | Tx |
|  | | '00'H |  | Rx |
| MSB of KNRP-sess ID | | Not checked |  | Tx |
|  | | '00'H |  | Rx |
| Source layer-2 ID | | '00 00 20'H |  |  |
| Target layer-2 ID | | '00 00 10'H |  |  |
| Target user info | |  |  |  |
| Application layer ID IEI | | '28'H |  |  |
| Length of Application layer ID contents | | '04'H |  |  |
| Application Layer ID 1 | | '00 00 01 00'H | Application Layer ID in initiating UE side |  |
| Target link local IPv6 address | | Not Present |  |  |
| Source user info | |  |  |  |
| Application layer ID IEI | | '57'H |  |  |
| Length of Application layer ID contents | | '04'H |  |  |
| Application Layer ID 1 | | '00 00 02 00'H | Application Layer ID in target UE side |  |
| Source link local IPv6 address | | Not Present |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK IDENTIFIER UPDATE ACK*

Table 4.7.4-25: DIRECT LINK IDENTIFIER UPDATE ACK

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.20.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK IDENTIFIER UPDATE ACK message identity | | '0001 0101'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| LSB of KNRP-sess ID | | Not checked |  | Tx |
|  | | '00'H |  | Rx |
| Target layer-2 ID | | '00 00 20'H |  |  |
| Target user info | |  |  |  |
| Application layer ID IEI | | '28'H |  |  |
| Length of Application layer ID contents | | '04'H |  |  |
| Application Layer ID 1 | | '00 00 02 00'H | Application Layer ID in target UE side |  |
| Target link local IPv6 address | | Not Present |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK IDENTIFIER UPDATE REJECT*

Table 4.7.4-26: DIRECT LINK IDENTIFIER UPDATE REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.21.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK IDENTIFIER UPDATE REJECT message identity | | '0001 0110'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| PC5 signalling protocol cause | | '0110 1111'B | Protocol error, unspecified |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK MODIFICATION REJECT*

Table 4.7.4-27: DIRECT LINK MODIFICATION REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.22.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK MODIFICATION REJECT message identity | | '0000 0110'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| PC5 signalling protocol cause | | '0110 1111'B | Protocol error, unspecified |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

#### *– DIRECT LINK ESTABLISHMENT REJECT*

Table 4.7.4-28: DIRECT LINK ESTABLISHMENT REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 [54] Table 7.3.23.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| DIRECT LINK ESTABLISHMENT REJECT message identity | | '0000 0011'B |  |  |
| Sequence number | | Not Checked | 0~255, uniquely identify a PC5 signalling message being sent or received | Tx |
| Incremented by TTCN by 1 for each outgoing new PC5 Signalling message. | 0~255, uniquely identify a PC5 signalling message being sent or received | Rx |
| PC5 signalling protocol cause | | '0110 1111'B | Protocol error, unspecified |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx | UE transmits and NR-SS-UE receives |
| Rx | UE receives and NR-SS-UE transmits |

### 4.7.5 V2X information elements

#### 4.7.5.1 Void

#### 4.7.5.2 Void

#### 4.7.5.3 Void

#### 4.7.5.4 V2X information elements for UE policy part

#### *– UE policy part when UE policy part type = {V2XP}*

Table 4.7.5.4-1: *UE policy part* *when UE policy part type = {V2XP}*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.2.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| UE policy part contents length | | Set to the actual length of 'UE policy part contents' in bytes |  |  |
| UE policy part type | | ‘0001’B | UE policy part type={ V2XP } |  |
| Spare | | ‘0000’B |  |  |
| UE policy part contents={V2XP contents} | | See Table 4.7.5.4-2 |  |  |

#### *– V2XP contents*

Table 4.7.5.4-2: *V2XP contents*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.2.1.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| V2XP info #1 | | See Table 4.7.5.4-3 |  |  |
| V2XP info #2 | | FFS |  |  |

#### *– V2XP info*

Table 4.7.5.4-3: *V2XP info*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| V2XP info type | | ‘0001’B | UE policies for V2X communication over PC5 |  |
| Spare | | ‘0000’B |  |  |
| Length of V2XP info contents | | Set to the actual length of 'V2XP info contents' in bytes |  |  |
| V2XP info contents | | See Table 4.7.5.5-1 |  |  |

#### 4.7.5.5 V2X information elements of UE policies for V2X communication over PC5

#### *– V2XP info = {UE policies for V2X communication over PC5}*

Table 4.7.5.5-1: *V2XP info = {UE policies for V2X communication over PC5}*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| V2XP info type | | ‘0001’B | UE policies for V2X communication over PC5 |  |
| Length of V2XP info contents | | Set to the actual length of 'V2XP info contents' in bytes |  |  |
| Validity timer | | 'FF FF FF FF FF FF FF FF FF FF'H | 5 bytes, Expiration UTC time of validity of the UE policies, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds) |  |
| VSITPMRI | | ‘1’B | ‘V2X service identifier to PC5 RAT and Tx profiles mapping rules’ is present |  |
| Served by E-UTRA or served by NR | | See Table 4.7.5.5-2 |  |  |
| Not served by E-UTRA and not served by NR | | See Table 4.7.5.5-6 |  |  |
| V2X service identifier to PC5 RAT and Tx profiles mapping rules | | See Table 4.7.5.5-12 |  |  |
| Privacy config | | See Table 4.7.5.5-15 |  |  |
| V2X communication over PC5 in E-UTRA-PC5 | | See Table 4.7.5.5-19 |  |  |
| V2X communication over PC5 in NR-PC5 | | See Table 4.7.5.5-31 |  |  |

#### *– Served by E-UTRA or served by NR*

Table 4.7.5.5-2: *Served by E-UTRA or served by NR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of served by E-UTRA or served by NR contents | | Set to the actual length of 'served by E-UTRA or served by NR contents' in bytes |  |  |
| Authorized PLMN and RATs combinations | | See Table 4.7.5.5-3 |  |  |

#### *– Authorized PLMN and RATs combinations*

Table 4.7.5.5-3: *Authorized PLMN and RATs combinations*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.3 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of authorized PLMN and RATs combinations contents | | Set to the actual length of 'authorized PLMN and RATs combinations contents' in bytes |  |  |
| Authorized PLMN and RATs combination 1 | | See Table 4.7.5.5-4 |  |  |
| Authorized PLMN and RATs combination 2 | | FFS |  |  |

#### *– Authorized PLMN and RATs combination*

Table 4.7.5.5-4: *Authorized PLMN and RATs combination*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.4 | | | |
| Information Element | | Value/remark | Comment | Condition |
| PLMN ID | | Set according to parameter given in test case |  |  |
| NPIEN | | '1'B | UE is authorized to use V2X communication over NR-PC5 when served by E-UTRA or served by NR |  |
| EPIEN | | '1'B | UE is authorized to use V2X communication over E-UTRA-PC5 when served by E-UTRA or served by NR |  |

#### *– PLMN ID*

Table 4.7.5.5-5: *PLMN ID*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.5 | | | |
| Information Element | | Value/remark | Comment | Condition |
| MCC digit 1 | | Set according to parameter given in test case |  |  |
| MCC digit 2 | | Set according to parameter given in test case |  |  |
| MCC digit 3 | | Set according to parameter given in test case |  |  |
| MNC digit 3 | | Set according to parameter given in test case |  |  |
| MNC digit 1 | | Set according to parameter given in test case |  |  |
| MNC digit 2 | | Set according to parameter given in test case |  |  |

#### *– Not served by E-UTRA and not served by NR*

Table 4.7.5.5-6: *Not served by E-UTRA and not served by NR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.6 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of not served by E-UTRA and not served by NR contents | | Set to the actual length of 'not served by E-UTRA and not served by NR contents' in bytes |  |  |
| VPNENNI | | '1'B | UE is authorized to use V2X communication over PC5 |  |
| NPINENN | | '1'B | UE is authorized to use V2X communication over NR-PC5 when not served by E-UTRA and not served by NR |  |
| EPINENN | | '1'B | UE is authorized to use V2X communication over E-UTRA-PC5 when not served by E-UTRA and not served by NR |  |
| E-UTRA radio parameters per geographical area list | | See Table 4.7.5.5-7 |  |  |
| NR radio parameters per geographical area list | | See Table 4.7.5.5-7 |  |  |

#### *– Radio parameters per geographical area list*

Table 4.7.5.5-7: *Radio parameters per geographical area list*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.7 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of radio parameters per geographical area list contents | | Set to the actual length of 'radio parameters per geographical area list contents' in bytes |  |  |
| Radio parameters per geographical area info 1 | | See Table 4.7.5.5-8 |  |  |
| Radio parameters per geographical area info 2 | | FFS |  |  |

#### *– Radio parameters per geographical area info*

Table 4.7.5.5-8: *Radio parameters per geographical area info*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation TS 24.588 Figure 5.3.1.8 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of radio parameters per geographical area contents | | Set to the actual length of 'radio parameters per geographical area contents' in bytes |  |  |
| Geographical area | | See Table 4.7.5.5-9 |  |  |
| Radio parameters | | See Table 4.7.5.5-11 |  |  |
| MI | | '1'B | Operator managed |  |

#### *– Geographical area*

Table 4.7.5.5-9: *Geographical area*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.9 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of geographical area contents | | Set to the actual length of 'geographical area contents' in bytes |  |  |
| Coordinate 1 | | See Table 4.7.5.5-10 |  |  |
| Coordinate 2 | | See Table 4.7.5.5-10 |  |  |
| Coordinate 3 | | See Table 4.7.5.5-10 |  |  |

#### *– Coordinate area*

Table 4.7.5.5-10: *Coordinate area*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.10 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Latitude | | 35.753056 |  | Coordinate 1 |
|  | | 35.735278 |  | Coordinate 2 |
|  | | 35.744167 |  | Coordinate 3 |
| Longitude | | 139.689167 |  | Coordinate 1 |
|  | | 139.689167 |  | Coordinate 2 |
|  | | 139.709167 |  | Coordinate 3 |

#### *– Radio parameters*

Table 4.7.5.5-11: *Radio parameters*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.11 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of radio parameters contents | | Set to the actual length of 'radio parameters contents' in bytes |  |  |
| Radio parameters contents | | See Table 4.10.1.1-1: SL-V2X-Preconfiguration in TS 36.508 [2] |  | E-UTRAN V2X |
|  | | See Table 4.10.1-1: SL-PreconfigurationNR |  | NR V2X |

#### *– V2X service identifier to PC5 RAT and Tx profiles mapping rules*

Table 4.7.5.5-12: *V2X service identifier to PC5 RAT and Tx profiles mapping rules*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.12 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to PC5 RAT and Tx profiles mapping rules contents | | Set to the actual length of 'V2X service identifier to PC5 RAT and Tx profiles mapping rules contents' in bytes |  |  |
| V2X service identifier to PC5 RAT and Tx profiles mapping rule 1 | | See Table 4.7.5.5-13 |  |  |
| V2X service identifier to PC5 RAT and Tx profiles mapping rule 2 | | FFS |  |  |

#### *– V2X service identifier to PC5 RAT and Tx profiles mapping rule*

Table 4.7.5.5-13: *V2X service identifier to PC5 RAT and Tx profiles mapping rule*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.13 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to PC5 RAT and Tx profiles mapping rule contents | | Set to the actual length of 'V2X service identifier to PC5 RAT and Tx profiles mapping rule contents' in bytes |  |  |
| V2X service identifiers | | See Table 4.7.5.5-14 |  |  |
| PC5 RAT | | ‘00’B |  | E-UTRA-PC5 |
|  | | ‘01’B |  | NR-PC5 |
| Length of E-UTRA-PC5 Tx profiles | | Set to the actual length of 'E-UTRA-PC5 Tx profiles' in bytes |  | E-UTRA-PC5 |
| E-UTRA-PC5 Tx profiles | | rel14 | UE shall use Release 14 compatible format (i.e. using MCS table in Table 8.6.1-1 with 64 QAM indices overridden by 16QAM in TS 36.213 [23] and not Rel-15 feature) to transmit the corresponding V2X packet, Refer to IE v2x-TxProfileList in TS 36.331 | E-UTRA-PC5 |

#### *– V2X service identifiers*

Table 4.7.5.5-14: *V2X service identifiers*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.14 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifiers contents | | Set to the actual length of 'V2X service identifiers contents' in bytes |  |  |
| V2X service identifier 1 | | '00 00 00 01'H | 4 bytes for each V2X service identifier |  |
| V2X service identifier 2 | | '00 00 00 02'H |  |  |

#### *– Privacy config*

Table 4.7.5.5-15: *Privacy config*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.15 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of privacy config contents | | Set to the actual length of 'privacy config contents' in bytes |  |  |
| V2X services requiring privacy | | See Table 4.7.5.5-16 |  |  |
| Privacy timer | | 'FF FF'H | Expressed in units of seconds, after which the UE shall change the source Layer-2 ID self-assigned by the UE |  |

#### *– V2X services requiring privacy*

Table 4.7.5.5-16: *V2X services requiring privacy*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.16 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X services requiring privacy contents | | Set to the actual length of 'V2X services requiring privacy contents' in bytes |  |  |
| V2X service requiring privacy 1 | | See Table 4.7.5.5-17 |  |  |
| V2X service requiring privacy 2 | | FFS |  |  |

#### *– V2X service requiring privacy*

Table 4.7.5.5-17: *V2X service requiring privacy*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.17 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service requiring privacy contents | | Set to the actual length of 'V2X service requiring privacy contents' in bytes |  |  |
| V2X service identifiers | | See Table 4.7.5.5-14 |  |  |
| Geographical areas | | See Table 4.7.5.5-18 |  |  |

#### *– Geographical areas*

Table 4.7.5.5-18: *Geographical areas*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.18 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of geographical areas contents | | Set to the actual length of 'geographical areas contents' in bytes |  |  |
| Geographical area 1 | | See Table 4.7.5.5-9 |  |  |
| Geographical area 2 | | FFS |  |  |

#### *– V2X communication over PC5 in E-UTRA-PC5*

Table 4.7.5.5-19: *V2X communication over PC5 in E-UTRA-PC5*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.19 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X communication over PC5 in E-UTRA-PC5 contents | | Set to the actual length of 'V2X communication over PC5 in E-UTRA-PC5 contents' in bytes |  |  |
| PPMR | | '1'B | PPPP to PDB mapping rules field is present |  |
| VSAPI | | '1'B | V2X services authorized for PPPR field is present |  |
| VSIEFMRI | | '1'B | V2X service identifier to V2X E-UTRA frequency mapping rules field is present |  |
| DDL2II | | '1'B | Default destination layer-2 ID field is present |  |
| V2X service identifier to destination layer-2 ID mapping rules | | See Table 4.7.5.5-20 |  |  |
| PPPP to PDB mapping rules | | See Table 4.7.5.5-22 |  |  |
| V2X service identifier to V2X E-UTRA frequency mapping rules | | See Table 4.7.5.5-24 |  |  |
| V2X services authorized for PPPR | | See Table 4.7.5.5-29 |  |  |
| Default destination layer-2 ID | | '00 00 40'H | 3 bytes, Random value |  |

#### *– V2X service identifier to destination layer-2 ID mapping rules*

Table 4.7.5.5-20: *V2X service identifier to destination layer-2 ID mapping rules*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.20 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to destination layer-2 ID mapping rules contents | | Set to the actual length of 'V2X service identifier to destination layer-2 ID mapping rules contents' in bytes |  |  |
| V2X service identifier to destination layer-2 ID mapping rule 1 | | See Table 4.7.5.5-21 |  |  |
| V2X service identifier to destination layer-2 ID mapping rule 2 | | FFS |  |  |

#### *– V2X service identifier to destination layer-2 ID mapping rule*

Table 4.7.5.5-21: *V2X service identifier to destination layer-2 ID mapping rule*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.21 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to destination layer-2 ID mapping rule contents | | Set to the actual length of 'V2X service identifier to destination layer-2 ID mapping rule contents' in bytes |  |  |
| V2X service identifiers | | See Table 4.7.5.5-14 |  |  |
| Destination layer-2 ID | | '00 00 41'H |  |  |

#### *– PPPP to PDB mapping rules*

Table 4.7.5.5-22: *PPPP to PDB mapping rules*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.22 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of PPPP to PDB mapping rules contents | | Set to the actual length of 'PPPP to PDB mapping rules contents' in bytes |  |  |
| PPPP to PDB mapping rule 1 | | See Table 4.7.5.5-23 |  |  |
| PPPP to PDB mapping rule 2 | | FFS |  |  |

#### *– PPPP to PDB mapping rule*

Table 4.7.5.5-23: *PPPP to PDB mapping rule*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.23 | | | |
| Information Element | | Value/remark | Comment | Condition |
| PPPP | | '000'B | PPPP value 1 |  |
| PDB | | '00 32'H | 50ms |  |

#### *– V2X service identifier to V2X E-UTRA frequency mapping rules*

Table 4.7.5.5-24: *V2X service identifier to V2X E-UTRA frequency mapping rules*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.24 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to V2X E-UTRA frequency mapping rules contents | | Set to the actual length of 'V2X service identifier to V2X E-UTRA frequency mapping rules contents' in bytes |  |  |
| V2X service identifier to V2X E-UTRA frequency mapping rule 1 | | See Table 4.7.5.5-25 |  |  |
| V2X service identifier to V2X E-UTRA frequency mapping rule 2 | | FFS |  |  |

#### *– V2X service identifier to V2X E-UTRA frequency mapping rule*

Table 4.7.5.5-25: *V2X service identifier to V2X E-UTRA frequency mapping rule*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.25 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to V2X E-UTRA frequency mapping rule contents | | Set to the actual length of 'V2X service identifier to V2X E-UTRA frequency mapping rule contents' in bytes |  |  |
| V2X service identifiers | | See Table 4.7.5.5-14 |  |  |
| V2X E-UTRA frequencies with geographical areas list | | See Table 4.7.5.5-26 |  |  |

#### *– V2X E-UTRA frequencies with geographical areas list*

Table 4.7.5.5-26: *V2X E-UTRA frequencies with geographical areas list*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.26 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X E-UTRA frequencies with geographical areas list contents | | Set to the actual length of 'V2X E-UTRA frequencies with geographical areas list contents' in bytes |  |  |
| V2X E-UTRA frequencies with geographical areas info 1 | | See Table 4.7.5.5-27 |  |  |
| V2X E-UTRA frequencies with geographical areas info 2 | | FFS |  |  |

#### *– V2X E-UTRA frequencies with geographical areas info*

Table 4.7.5.5-27: *V2X E-UTRA frequencies with geographical areas info*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.27 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X E-UTRA frequencies with geographical areas info contents | | Set to the actual length of 'V2X E-UTRA frequencies with geographical areas info contents' in bytes |  |  |
| V2X E-UTRA frequencies | | See Table 4.7.5.5-28 |  |  |
| Geographical areas | | See Table 4.7.5.5-18 |  |  |

#### *– V2X E-UTRA frequencies*

Table 4.7.5.5-28: *V2X E-UTRA frequencies*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.28 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X E-UTRA frequencies contents | | Set to the actual length of 'V2X E-UTRA frequencies contents' in bytes |  |  |
| V2X E-UTRA frequency 1 | | Downlink E-UTRA ARFCN under test.  f5 of Table 6.2.3.5-1 in TS 36.508 [2] |  | SIG |
| Downlink E-UTRA ARFCN under test.  Mid Range EARFCN value of Table 4.3.1.2.15-1 in TS 36.508 [2]. |  |  |
| V2X E-UTRA frequency 2 | | FFS |  |  |

#### *– V2X services authorized for PPPR*

Table 4.7.5.5-29: *V2X services authorized for PPPR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.29 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X services authorized for PPPR contents | | Set to the actual length of 'V2X services authorized for PPPR contents' in bytes |  |  |
| V2X service authorized for PPPR 1 | | See Table 4.7.5.5-30 |  |  |
| V2X service authorized for PPPR 2 | | FFS |  |  |

#### *– V2X service authorized for PPPR*

Table 4.7.5.5-30: *V2X service authorized for PPPR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.30 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service authorized for PPPR contents | | Set to the actual length of 'V2X service authorized for PPPR contents' in bytes |  |  |
| V2X service identifiers | | See Table 4.7.5.5-14 |  |  |
| PPPR | | '000'B | PPPR value 1 |  |

#### *– V2X communication over PC5 in NR-PC5*

Table 4.7.5.5-31: *V2X communication over PC5 in NR-PC5*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.31 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X communication over PC5 in NR-PC5 contents | | Set to the actual length of 'V2X communication over PC5 in NR-PC5 contents' in bytes |  |  |
| VSINFMRI | | '1'B | V2X service identifier to V2X NR frequency mapping rules field is present |  |
| DDL2IBI | | '1'B | Default destination layer-2 ID for broadcast field is present |  |
| V2X service identifier to V2X NR frequency mapping rules | | See Table 4.7.5.5-32 |  |  |
| V2X service identifier to destination layer-2 ID for broadcast mapping rules | | See Table 4.7.5.5-37 |  |  |
| V2X service identifier to destination layer-2 ID for groupcast mapping rules | | See Table 4.7.5.5-39 |  |  |
| V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules | | See Table 4.7.5.5-41 |  |  |
| V2X service identifier to PC5 QoS parameters mapping rules | | See Table 4.7.5.5-43 |  |  |
| AS configuration | | See Table 4.7.5.5-45 |  |  |
| Default destination layer-2 ID for broadcast | | '00 00 50'H |  |  |
| NR-PC5 unicast security policies | | See Table 4.7.5.5-49 |  |  |
| V2X service identifier to default mode of communication mapping rules | | See Table 4.7.5.5-52 |  |  |

#### *– V2X service identifier to V2X NR frequency mapping rules*

Table 4.7.5.5-32: *V2X service identifier to V2X NR frequency mapping rules*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.32 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to V2X NR frequency mapping rules contents | | Set to the actual length of 'V2X service identifier to V2X NR frequency mapping rules contents' in bytes |  |  |
| V2X service identifier to V2X NR frequency mapping rule 1 | | See Table 4.7.5.5-33 |  |  |
| V2X service identifier to V2X NR frequency mapping rule 2 | | FFS |  |  |

#### *– V2X service identifier to V2X NR frequency mapping rule*

Table 4.7.5.5-33: *V2X service identifier to V2X NR frequency mapping rule*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.33 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to V2X NR frequency mapping rule contents | | Set to the actual length of 'V2X service identifier to V2X NR frequency mapping rule contents' in bytes |  |  |
| V2X service identifiers | | See Table 4.7.5.5-14 |  |  |
| V2X NR frequencies with geographical areas list | | See Table 4.7.5.5-34 |  |  |

#### *– V2X NR frequencies with geographical areas list*

Table 4.7.5.5-34: *V2X NR frequencies with geographical areas list*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.34 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X NR frequencies with geographical areas list contents | | Set to the actual length of 'V2X NR frequencies with geographical areas list contents' in bytes |  |  |
| V2X NR frequencies with geographical areas info 1 | | See Table 4.7.5.5-35 |  |  |
| V2X NR frequencies with geographical areas info 2 | | FFS |  |  |

#### *– V2X NR frequencies with geographical areas info*

Table 4.7.5.5-35: *V2X NR frequencies with geographical areas info*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.35 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X NR frequencies with geographical areas info contents | | Set to the actual length of 'V2X NR frequencies with geographical areas info contents' in bytes |  |  |
| V2X NR frequencies | | See Table 4.7.5.5-36 |  |  |
| Geographical areas | | See Table 4.7.5.5-18 |  |  |

#### *– V2X NR frequencies*

Table 4.7.5.5-36: *V2X NR frequencies*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.36 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X NR frequencies contents | | Set to the actual length of 'V2X NR frequencies contents' in bytes |  |  |
| V2X NR frequency 1 | | ARFCN-ValueNR with condition SL\_SSB in Table 4.6.3-5 |  |  |
| V2X NR frequency 2 | | FFS |  |  |

#### *– V2X service identifier to destination layer-2 ID for broadcast mapping rules*

Table 4.7.5.5-37: *V2X service identifier to destination layer-2 ID for broadcast mapping rules*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.37 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to destination layer-2 ID for broadcast mapping rules contents | | Set to the actual length of 'V2X service identifier to destination layer-2 ID for broadcast mapping rules contents' in bytes |  |  |
| V2X service identifier to destination layer-2 ID for broadcast mapping rule 1 | | See Table 4.7.5.5-38 |  |  |
| V2X service identifier to destination layer-2 ID for broadcast mapping rule 2 | | FFS |  |  |

#### *– V2X service identifier to destination layer-2 ID for broadcast mapping rule*

Table 4.7.5.5-38: *V2X service identifier to destination layer-2 ID for broadcast mapping rule*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.38 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to destination layer-2 ID for broadcast mapping rule contents | | Set to the actual length of 'V2X service identifier to destination layer-2 ID for broadcast mapping rule contents' in bytes |  |  |
| V2X service identifiers | | See Table 4.7.5.5-14 |  |  |
| Destination layer-2 ID for broadcast | | '00 00 51'H |  |  |

#### *– V2X service identifier to destination layer-2 ID for groupcast mapping rules*

Table 4.7.5.5-39: *V2X service identifier to destination layer-2 ID for groupcast mapping rules*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.39 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to destination layer-2 ID for groupcast mapping rules contents | | Set to the actual length of 'V2X service identifier to destination layer-2 ID for groupcast mapping rules contents' in bytes |  |  |
| V2X service identifier to destination layer-2 ID for groupcast mapping rule 1 | | See Table 4.7.5.5-40 |  |  |
| V2X service identifier to destination layer-2 ID for groupcast mapping rule 2 | | FFS |  |  |

#### *– V2X service identifier to destination layer-2 ID for groupcast mapping rule*

Table 4.7.5.5-40: *V2X service identifier to destination layer-2 ID for groupcast mapping rule*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.40 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to destination layer-2 ID for groupcast mapping rule contents | | Set to the actual length of 'V2X service identifier to destination layer-2 ID for groupcast mapping rule contents' in bytes |  |  |
| V2X service identifiers | | See Table 4.7.5.5-14 |  |  |
| Destination layer-2 ID for groupcast | | '00 00 52'H |  |  |

#### *– V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules*

Table 4.7.5.5-41: *V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.41 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules contents | | Set to the actual length of 'V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules contents' in bytes |  |  |
| V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule 1 | | See Table 4.7.5.5-42 |  |  |
| V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule 2 | | FFS |  |  |

#### *– V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule*

Table 4.7.5.5-42: *V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.42 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule contents | | Set to the actual length of 'V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule contents' in bytes |  |  |
| V2X service identifiers | | See Table 4.7.5.5-14 |  |  |
| Destination layer-2 ID for unicast initial signalling | | '00 00 53'H |  |  |

#### *– V2X service identifier to PC5 QoS parameters mapping rules*

Table 4.7.5.5-43: *V2X service identifier to PC5 QoS parameters mapping rules*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.43 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to PC5 QoS parameters mapping rules contents | | Set to the actual length of 'V2X service identifier to PC5 QoS parameters mapping rules contents' in bytes |  |  |
| V2X service identifier to PC5 QoS parameters mapping rule 1 | | See Table 4.7.5.5-44 |  |  |
| V2X service identifier to PC5 QoS parameters mapping rule 2 | | FFS |  |  |

#### *– V2X service identifier to PC5 QoS parameters mapping rule*

Table 4.7.5.5-44: *V2X service identifier to PC5 QoS parameters mapping rule*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.46 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to PC5 QoS parameters mapping rule contents | | Set to the actual length of 'V2X service identifier to PC5 QoS parameters mapping rule contents' in bytes |  |  |
| V2X service identifiers | | See Table 4.7.5.5-14 |  |  |
| RI | | '1'B | Range field is present |  |
| PLAMBRI | | '1'B | Per-link aggregate maximum bit rate field is present |  |
| MFBRI | | '1'B | Maximum flow bit rate field is present |  |
| GFBRI | | '1'B | Guaranteed flow bit rate field is present |  |
| PQI | | 22 | See Table 5.4.4-1 in TS 23.287 [xx] |  |
| Guaranteed flow bit rate | | '0000 0110 0000 0000 0000 1010'B | 10 \* 1Mbps = 10Mbps. |  |
| Maximum flow bit rate | | '0000 0110 0000 0000 0001 0100'B | 20 \* 1Mbps = 20Mbps. |  |
| Per-link aggregate maximum bit rate | | '0000 0110 0000 0000 0000 0010'B | 2 \* 1Mbps = 2Mbps. |  |
| Range | | '0000 0001 1111 0100'B | 500 meters |  |

#### *– AS configuration*

Table 4.7.5.5-45: *AS configuration*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.46a | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of AS configuration contents | | Set to the actual length of 'AS configuration contents' in bytes |  |  |
| SLRB mapping rules | | See Table 4.7.5.5-46 |  |  |

#### *– SLRB mapping rules*

Table 4.7.5.5-46: *SLRB mapping rules*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.47 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of SLRB mapping rules contents | | Set to the actual length of 'SLRB mapping rules contents' in bytes |  |  |
| SLRB mapping rule 1 | | See Table 4.7.5.5-47 |  |  |
| SLRB mapping rule 2 | | FFS |  |  |

#### *– SLRB mapping rule*

Table 4.7.5.5-47: *SLRB mapping rule*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.48 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of SLRB mapping rule contents | | Set to the actual length of 'SLRB mapping rule contents' in bytes |  |  |
| PC5 QoS profile | | See Table 4.7.5.5-48 |  |  |
| Length of SLRB | | Set to the actual length of 'SLRB' in bytes |  |  |
| SLRB | | See Table 4.10.1-1 |  |  |

#### *– PC5 QoS profile*

Table 4.7.5.5-48: *PC5 QoS profile*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.49 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of PC5 QoS profile contents | | Set to the actual length of 'PC5 QoS profile contents' in bytes |  |  |
| MDBVI | | '0'B | Maximum data burst volume field is absent |  |
| AWI | | '1'B | Averaging window field is present |  |
| PLOI | | '1'B | The octet of the priority level is present |  |
| RI | | '1'B | Range field is present |  |
| PLAMBRI | | '1'B | Per-link aggregate maximum bit rate field is present |  |
| MFBRI | | '1'B | Maximum flow bit rate field is present |  |
| GFBRI | | '1'B | Guaranteed flow bit rate field is present |  |
| PQI | | 22 | See Table 5.4.4-1 in TS 23.287[xx] |  |
| Guaranteed flow bit rate | | '0000 0110 0000 0000 0000 1010'B | 10 \* 1Mbps = 10Mbps. |  |
| Maximum flow bit rate | | '0000 0110 0000 0000 0001 0100'B | 20 \* 1Mbps = 20Mbps. |  |
| Per-link aggregate maximum bit rate | | '0000 0110 0000 0000 0000 0010'B | 2 \* 1Mbps = 2Mbps. |  |
| Range | | '0000 0001 1111 0100'B | 500 meters |  |
| Priority level | | 4 |  |  |
| Averaging window | | '0000 0111 1101 0000'B | 2000ms |  |
| Maximum data burst volume | | Not Present |  |  |

#### *– NR-PC5 unicast security policies*

Table 4.7.5.5-49: *NR-PC5 unicast security policies*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.50 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of NR-PC5 unicast security policies contents | | Set to the actual length of 'NR-PC5 unicast security policies contents' in bytes |  |  |
| NR-PC5 unicast security policy 1 | | See Table 4.7.5.5-50 |  |  |
| NR-PC5 unicast security policy 2 | | FFS |  |  |

#### *– NR-PC5 unicast security policy*

Table 4.7.5.5-50: *NR-PC5 unicast security policy*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.51 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of NR-PC5 unicast security policy contents | | Set to the actual length of 'NR-PC5 unicast security policy contents' in bytes |  |  |
| V2X service identifiers | | See Table 4.7.5.5-14 |  |  |
| Security policy | | See Table 4.7.5.5-51 |  |  |
| Geographical areas | | See Table 4.7.5.5-18 |  |  |

#### *– Security policy*

Table 4.7.5.5-51: *Security policy*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.52 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Signalling integrity protection policy | | '000'B | Signalling integrity protection not needed |  |
| Spare | | ‘0’B |  |  |
| Signalling ciphering policy | | '000'B | Signalling ciphering not needed |  |
| Spare | | ‘0’B |  |  |
| User plane integrity protection policy | | '000'B | User plane integrity protection not needed |  |
| Spare | | ‘0’B |  |  |
| User plane ciphering policy | | '000'B | User plane ciphering not needed |  |
| Spare | | ‘0’B |  |  |

#### *– V2X service identifier to default mode of communication mapping rules*

Table 4.7.5.5-52: *V2X service identifier to default mode of communication mapping rules*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.53 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to default mode of communication mapping rules contents | | ‘Set to the actual length of 'V2X service identifier to default mode of communication mapping rules contents' in bytes |  |  |
| V2X service identifier to default mode of communication mapping rule 1 | | See Table 4.7.5.5-53 |  |  |
| V2X service identifier to default mode of communication mapping rule 2 | | FFS |  |  |

#### *– V2X service identifier to default mode of communication mapping rule*

Table 4.7.5.5-53: *V2X service identifier to default mode of communication mapping rule*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.588 Figure 5.3.1.54 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Length of V2X service identifier to default mode of communication mapping rule contents | | ‘Set to the actual length of 'V2X service identifier to default mode of communication mapping rule contents' in bytes |  |  |
| V2X service identifiers | | See Table 4.7.5.5-14 |  |  |
| DMC | | '00'B | Default mode of communication is set to unicast |  |
| Spare | | ‘0000 00’B |  |  |

### 4.7.6 Contents of UE Policy Delivery messages

#### *– MANAGE UE POLICY COMMAND*

Table 4.7.6-1: MANAGE UE POLICY COMMAND

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501 Table D.5.1.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| PTI | | Any value from 1 to 254 |  |  |
| MANAGE UE POLICY COMMAND message identity | | ’0000 0001’B | MANAGE UE POLICY COMMAND message |  |
| UE policy section management list | |  |  |  |
| Length of UE policy section management list contents | | Set to the actual length of 'UE policy section management list contents' in bytes |  |  |
| UE policy section management list contents | | 1 entry |  |  |
| UE policy section management sublist (PLMN-1) | |  |  |  |
| Length of UE policy section management sublist | | Set to the actual length of 'UE policy section management sublist' in bytes |  |  |
| PLMN ID | | Set to the PLMN value used in the test case |  |  |
| UE policy section management sublist contents | |  |  |  |
| Instruction 1 | |  |  |  |
| Instruction contents length | | Set to the actual length of 'Instruction contents' in bytes |  |  |
| UPSC | | '00 01'H | 2 bytes, value set by PCF |  |
| UE policy section contents | |  |  |  |
| UE policy part 1 | |  |  |  |
| UE policy part contents length | | Set to the actual length of 'UE policy part contents' in bytes |  |  |
| Spare | | ‘0000’B |  |  |
| UE policy part type | | ‘0001’B |  | URSP |
|  | | ‘0010’B |  | ANDSP |
|  | | ‘0011’B |  | V2XP |
| UE policy part contents | | See Table 4.8.5.1-1 |  | URSP |
|  | | FFS |  | ANDSP |
|  | | See Table 4.7.5.4-1 |  | V2XP |

|  |  |
| --- | --- |
| Condition | Explanation |
| URSP | UE Route Selection Policy (URSP) |
| ANDSP | UE Access Network Discovery and Selection Policy (ANDSP) |
| V2XP | UE policies for V2X (V2XP) |

#### *– MANAGE UE POLICY COMPLETE*

Table 4.7.6-2: MANAGE UE POLICY COMPLETE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501 Table D.5.2.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| PTI | | The same value as the value set in MANAGE UE POLICY COMMAND message. |  |  |
| MANAGE UE POLICY COMPLETE message identity | | ’0000 0010’B | MANAGE UE POLICY COMPLETE message |  |

#### *– MANAGE UE POLICY COMMAND REJECT*

Table 4.7.6-3: MANAGE UE POLICY COMMAND REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501 Table D.5.3.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| PTI | | The same value as the value set in MANAGE UE POLICY COMMAND message. |  |  |
| MANAGE UE POLICY COMMAND REJECT message identity | | ’0000 0011’B | MANAGE UE POLICY COMMAND REJECT message |  |
| UE policy section management result | |  |  |  |
| Length of UE policy section management result contents | | Set to the actual length of 'UE policy section management result contents' in bytes |  |  |
| UE policy section management list contents | | 1 entry |  |  |
| UE policy section management subresult (PLMN 1) | |  |  |  |
| Number of results | | 1 |  |  |
| PLMN ID | | Set to the PLMN value used in the test case |  |  |
| UE policy section management subresult contents | | 1 entry |  |  |
| Result 1 | |  |  |  |
| UPSC | | '00 01'H |  |  |
| Failed instruction order | | Set according to specific message content. |  |  |
| Cause | | Set according to specific message content. |  |  |

#### *– UE STATE INDICATION*

Table 4.7.6-4: UE STATE INDICATION

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501 Table D.5.4.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| PTI | | Any value from 1 to 254 |  |  |
| UE STATE INDICATION message identity | | ’0000 0100’B |  |  |
| UPSI list | | 1 entry |  |  |
| Length of UPSI list contents | | Set to the actual length of 'UPSI list contents' in bytes |  |  |
| UPSI sublist (PLMN 1) | | 1 entry |  |  |
| Length of UPSI sublist | | Set to the actual length of 'UPSI sublist' in bytes |  |  |
| PLMN ID | | Set to the PLMN value used in the test case |  |  |
| UPSC 1 | | Set according to specific message content. |  |  |
| UE policy classmark | | Not checked |  |  |
| Length of Policy information contents | | Set to the actual length of 'Policy information contents' in bytes |  |  |
| Spare | | ‘0000 000’B |  |  |
| SupportANDSP | | ‘1’B |  | ANDSP |
|  | | Not checked |  |  |
| UE OS Id | |  |  |  |
| Length of OS Id information contents | | Set to the actual length of 'OS Id information contents' in bytes |  |  |
| OS Id\_1 | | Set according to parameter given in test case |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| ANDSP | UE Access Network Discovery and Selection Policy (ANDSP) |

#### *– UE POLICY PROVISIONING REQUEST*

Table 4.7.6-5: UE POLICY PROVISIONING REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 Table 7.2.1.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| PTI | | Any value from 1 to 254 |  |  |
| UE POLICY PROVISIONING REQUEST message identity | | ’0000 0101’B |  |  |
| Requested UE policies | |  |  |  |
| Length of Requested UE policies contents | | 2 |  |  |
| Requested UE policies contents | | '0000 0001 0000 0000'B | UE policies for V2X communication over PC5 requested |  |

#### *– UE POLICY PROVISIONING REJECT*

Table 4.7.6-6: UE POLICY PROVISIONING REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.587 Table 7.2.2.1.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| PTI | | The same value as the value set in UE POLICY PROVISIONING REQUEST message. |  |  |
| UE POLICY PROVISIONING REJECT message identity | | ’0000 0110’B |  |  |
| UPDS cause | | '0001 1111'B | Request rejected, unspecified |  |

## 4.7A Default TC message and information element contents

This clause contains the default values of common TC (Test Control, see [11]) messages and information elements, which apply to all test cases unless otherwise specified. All the messages and information elements are listed in alphabetical order.

### 4.7A.1 Test mode messages

*- ACTIVATE TEST MODE* with the following exception:

- The supported test modes for 5GS are limited to those specified in subclause 38.509 [11] 5.3.4.

Same as TS 36.508 [2], Table 4.7A-1.

#### *- ACTIVATE TEST MODE COMPLETE*

Same as TS 36.508 [2], Table 4.7A-2.

#### *- DEACTIVATE TEST MODE*

Same as TS 36.508 [2], Table 4.7A-5.

#### *- DEACTIVATE TEST MODE COMPLETE*

Same as TS 36.508 [2], Table 4.7A-6.

### 4.7A.2 Test loop messages

#### *- CLOSE UE TEST LOOP*

Same as TS 36.508 [2], Table 4.7A-3 with the following exception:

- The supported test modes for 5GS are limited to those specified in subclause 38.509 [11] 5.3.4.

#### *- CLOSE UE TEST LOOP COMPLETE*

Same as TS 36.508 [2], Table 4.7A-4.

#### *- OPEN UE TEST LOOP*

Same as TS 36.508 [2], Table 4.7A-7.

#### *- OPEN UE TEST LOOP COMPLETE*

Same as TS 36.508 [2], Table 4.7A-8.

### 4.7A.3 Beamlock messages

#### *- ACTIVATE BEAMLOCK*

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

Table 4.7A.3-1: ACTIVATE BEAMLOCK

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.4.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Protocol discriminator | 1 1 1 1 |  |  |
| Skip indicator | 0 0 0 0 |  |  |
| Message type | 1 0 1 0 0 0 0 0 |  |  |
| UE Beamlock test Function | 0 0 0 0 0 0 0 1 |  | Tx Only |
| UE Beamlock test Function | 0 0 0 0 0 0 1 0 |  | Rx Only |
| UE Beamlock test Function | 0 0 0 0 0 0 1 1 |  | Tx and Rx |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx Only | Activation UE beamlock function for Tx only |
| Rx Only | Activation UE beamlock function for Rx only |
| Tx and Rx | Activation UE beamlock function for both Tx and Rx |

#### *- ACTIVATE BEAMLOCK COMPLETE*

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

Table 4.7A.3-2: ACTIVATE BEAMLOCK COMPLETE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.4.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| Protocol discriminator | 1 1 1 1 |  |  |
| Skip indicator | 0 0 0 0 |  |  |
| Message type | 1 0 1 0 0 0 0 1 |  |  |

#### *- DEACTIVATE BEAMLOCK*

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

Table 4.7A.3-3: DEACTIVATE BEAMLOCK

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.4.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| Protocol discriminator | 1 1 1 1 |  |  |
| Skip indicator | 0 0 0 0 |  |  |
| Message type | 1 0 1 0 0 0 1 0 |  |  |

#### *- DEACTIVATE BEAMLOCK COMPLETE*

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

Table 4.7A.3-4: DEACTIVATE BEAMLOCK COMPLETE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.4.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| Protocol discriminator | 1 1 1 1 |  |  |
| Skip indicator | 0 0 0 0 |  |  |
| Message type | 1 0 1 0 0 0 1 1 |  |  |

### 4.7A.4 UE SS-RSRP per receiver branch reporting messages

#### *- SS-RSRPB REPORT REQUEST*

FFS

#### *- SS-RSRPB REPORT RESPONSE*

FFS

### 4.7A.5 UE Positioning messages

#### *- RESET UE POSITIONING STORED INFORMATION*

FFS

#### *- UPDATE UE LOCATION INFORMATION*

FFS

### 4.7A.6 NSSAI delete messages

#### *- NSSAI DELETE REQUEST*

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

Table 4.7A.6-1: NSSAI DELETE REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.7.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Protocol discriminator | 1 1 1 1 |  |  |
| Skip indicator | 0 0 0 0 |  |  |
| Message type | 1 0 0 0 0 1 1 0 |  |  |
| Delete NSSAI type | Set according to specific message contents |  |  |
| Configured NSSAI | Set according to specific message contents |  |  |
| Allowed NSSAI | Set according to specific message contents |  |  |

#### *- NSSAI DELETE RESPONSE*

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

Table 4.7A.6-2: NSSAI DELETE RESPONSE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.7.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| Protocol discriminator | 1 1 1 1 |  |  |
| Skip indicator | 0 0 0 0 |  |  |
| Message type | 1 0 1 0 0 1 1 1 |  |  |

### 4.7A.7 UE Power Limit Messages

#### *- ACTIVATE POWER LIMIT REQUEST*

This Message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

Table 4.7A.7-1: ACTIVATE POWER LIMIT REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.11.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Protocol discriminator | 1 1 1 1 |  |  |
| Skip indicator | 0 0 0 0 |  |  |
| Message type | 1 0 1 0 1 1 1 0 |  |  |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 0 0 1 0 |  | TOT NR AGG BW 100 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 0 0 1 1 |  | TOT NR AGG BW 150 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 0 1 0 0 |  | TOT NR AGG BW 200 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 0 1 0 1 |  | TOT NR AGG BW 250 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 0 1 1 0 |  | TOT NR AGG BW 300 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 0 1 1 1 |  | TOT NR AGG BW 350 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 1 0 0 0 |  | TOT NR AGG BW 400 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 1 0 0 1 |  | TOT NR AGG BW 450 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 1 0 1 0 |  | TOT NR AGG BW 500 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 1 0 1 1 |  | TOT NR AGG BW 550 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 1 1 0 0 |  | TOT NR AGG BW 600 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 1 1 0 1 |  | TOT NR AGG BW 650 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 1 1 1 0 |  | TOT NR AGG BW 700 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 1 1 1 1 |  | TOT NR AGG BW 750 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 0 0 0 0 |  | TOT NR AGG BW 800 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 0 0 0 1 |  | TOT NR AGG BW 850 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 0 0 1 0 |  | TOT NR AGG BW 900 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 0 0 1 1 |  | TOT NR AGG BW 950 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 0 1 0 0 |  | TOT NR AGG BW 1000 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 0 1 0 1 |  | TOT NR AGG BW 1050 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 0 1 1 0 |  | TOT NR AGG BW 1100 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 0 1 1 1 |  | TOT NR AGG BW 1150 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 1 0 0 0 |  | TOT NR AGG BW 1200 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 1 0 0 1 |  | TOT NR AGG BW 1250 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 1 0 1 0 |  | TOT NR AGG BW 1300 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 1 0 1 1 |  | TOT NR AGG BW 1350 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 1 1 0 0 |  | TOT NR AGG BW 1400 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 1 1 0 1 |  | TOT NR AGG BW 1450 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 1 1 1 0 |  | TOT NR AGG BW 1500 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 1 1 1 1 |  | TOT NR AGG BW 1550 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 1 0 0 0 0 0 |  | TOT NR AGG BW 1600 |
| PCELL NR BANDWIDTH | 0 0 0 0 0 0 0 1 |  | PCELL NR BW 50 |
| PCELL NR BANDWIDTH | 0 0 0 0 0 0 1 0 |  | PCELL NR BW 100 |
| PCELL NR BANDWIDTH | 0 0 0 0 0 1 0 0 |  | PCELL NR BW 200 |
| PCELL NR BANDWIDTH | 0 0 0 0 1 0 0 0 |  | PCELL NR BW 400 |

|  |  |
| --- | --- |
| Condition | Explanation |
| TOT NR AGG BW 100 | Total NR aggregated Bandwidth equal to 100 MHz |
| TOT NR AGG BW 150 | Total NR aggregated Bandwidth equal to 150 MHz |
| TOT NR AGG BW 200 | Total NR aggregated Bandwidth equal to 200 MHz |
| TOT NR AGG BW 250 | Total NR aggregated Bandwidth equal to 250 MHz |
| TOT NR AGG BW 300 | Total NR aggregated Bandwidth equal to 300 MHz |
| TOT NR AGG BW 350 | Total NR aggregated Bandwidth equal to 350 MHz |
| TOT NR AGG BW 400 | Total NR aggregated Bandwidth equal to 400 MHz |
| TOT NR AGG BW 450 | Total NR aggregated Bandwidth equal to 450 MHz |
| TOT NR AGG BW 500 | Total NR aggregated Bandwidth equal to 500 MHz |
| TOT NR AGG BW 550 | Total NR aggregated Bandwidth equal to 550 MHz |
| TOT NR AGG BW 600 | Total NR aggregated Bandwidth equal to 600 MHz |
| TOT NR AGG BW 650 | Total NR aggregated Bandwidth equal to 650 MHz |
| TOT NR AGG BW 700 | Total NR aggregated Bandwidth equal to 700 MHz |
| TOT NR AGG BW 750 | Total NR aggregated Bandwidth equal to 750 MHz |
| TOT NR AGG BW 800 | Total NR aggregated Bandwidth equal to 800 MHz |
| TOT NR AGG BW 850 | Total NR aggregated Bandwidth equal to 850 MHz |
| TOT NR AGG BW 900 | Total NR aggregated Bandwidth equal to 900 MHz |
| TOT NR AGG BW 950 | Total NR aggregated Bandwidth equal to 950 MHz |
| TOT NR AGG BW 1000 | Total NR aggregated Bandwidth equal to 1000 MHz |
| TOT NR AGG BW 1050 | Total NR aggregated Bandwidth equal to 1050 MHz |
| TOT NR AGG BW 1100 | Total NR aggregated Bandwidth equal to 1100 MHz |
| TOT NR AGG BW 1150 | Total NR aggregated Bandwidth equal to 1150 MHz |
| TOT NR AGG BW 1200 | Total NR aggregated Bandwidth equal to 1200 MHz |
| TOT NR AGG BW 1250 | Total NR aggregated Bandwidth equal to 1250 MHz |
| TOT NR AGG BW 1300 | Total NR aggregated Bandwidth equal to 1300 MHz |
| TOT NR AGG BW 1350 | Total NR aggregated Bandwidth equal to 1350 MHz |
| TOT NR AGG BW 1400 | Total NR aggregated Bandwidth equal to 1400 MHz |
| TOT NR AGG BW 1450 | Total NR aggregated Bandwidth equal to 1450 MHz |
| TOT NR AGG BW 1500 | Total NR aggregated Bandwidth equal to 1500 MHz |
| TOT NR AGG BW 1550 | Total NR aggregated Bandwidth equal to 1550 MHz |
| TOT NR AGG BW 1600 | Total NR aggregated Bandwidth equal to 1600 MHz |
| PCELL NR BW 50 | PCC NR Bandwidth equal to 50 MHz |
| PCELL NR BW 100 | PCC NR Bandwidth equal to 100 MHz |
| PCELL NR BW 200 | PCC NR Bandwidth equal to 200 MHz |
| PCELL NR BW 400 | PCC NR Bandwidth equal to 400 MHz |

#### - ACTIVATE POWER LIMIT RESPONSE

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

Table 4.7A.7-2: ACTIVATE POWER LIMIT RESPONSE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.11.2 | | | |
| Information Element | Value/remark | Comment | Condition |
| Protocol discriminator | 1 1 1 1 |  |  |
| Skip indicator | 0 0 0 0 |  |  |
| Message type | 1 0 1 0 1 1 1 1 |  |  |

#### - DEACTIVATE POWER LIMIT REQUEST

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

Table 4.7A.7-3: DEACTIVATE POWER LIMIT REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.11.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| Protocol discriminator | 1 1 1 1 |  |  |
| Skip indicator | 0 0 0 0 |  |  |
| Message type | 1 0 1 1 0 0 0 0 |  |  |

#### - DEACTIVATE POWER LIMIT RESPONSE

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

* Table 4.7A.7-3: DEACTIVATE POWER LIMIT RESPONSE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.11.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| Protocol discriminator | 1 1 1 1 |  |  |
| Skip indicator | 0 0 0 0 |  |  |
| Message type | 1 0 1 1 0 0 0 1 |  |  |

## 4.7B Default AT Command message and information element

#### *- AT Command +CATM*

Same as TS 36.508 [2], Table 4.7I-1.

#### *- AT Command +CCUTLE*

This AT Command is sent by the SS to the UE.

Table 4.7B-1: +CCUTLE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 27.007 clause 15.3 | | | |
| Field | | Value/remark | Comment | Condition |
| + CCUTLE = | |  |  |  |
| <status> | | 1 |  | Open |
| <status> | | 0 |  | Close |
| <direction> | | 1 |  | Transmit |
| <sl\_mimo> | | 0 |  | Transmit |
|  | | 1 |  | Transmit AND SL\_MIMO |
| <direction> | | 0 |  | Receive |
| <format> | | 1 |  | Receive |
| <length> | | 1 |  | Receive |
| <monitor\_list> | | HEX ‘0000AA’ |  | Receive |

|  |  |
| --- | --- |
| Condition | Explanation |
| Open | Open UE test loop back mode E. |
| Close | Close UE test loop back mode E |
| Transmit | UE is configured to transmit V2X communication packets |
| Receive | UE is configured to receive V2X communication packets |
| SL\_MIMO | UE is configured to transmit PSSCH with 2 spatial layers, i.e. SL MIMO |

#### *- AT Command +CUTCR*

Same as TS 36.508 [2], Table 4.7I-3.

#### *- AT Command +CUSPCREQ*

Same as TS 36.508 [2], Table 4.7I-4.

## 4.8 Reference configurations

### 4.8.1 Radio configurations

– *RRCReconfiguration-DRB(n, m)*

Table 4.8.1-1: RRCReconfiguration-DRB (n, m)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-13 with condition NR. | | | |
| Information Element | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { |  |  |  |
| criticalExtensions CHOICE { |  |  |  |
| c1 CHOICE { |  |  |  |
| rrcReconfiguration SEQUENCE { |  |  |  |
| radioBearerConfig | RadioBearerConfig-DRB-NR(n,m) |  |  |
| } |  |  |  |
| nonCriticalExtension SEQUENCE { |  |  |  |
| masterCellGroup | CellGroupConfig-DRB(n, m) | OCTET STRING (CONTAINING CellGroupConfig) |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

– *RRCReconfiguration-HO*

Table 4.8.1-1A: RRCReconfiguration-HO

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-13. | | | |
| Information Element | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { |  |  |  |
| criticalExtensions CHOICE { |  |  |  |
| rrcReconfiguration SEQUENCE { |  |  |  |
| radioBearerConfig | RadioBearerConfig with conditions SRB\_NR\_PDCP and DRBn and Re-establish\_PDCP |  | RBConfig\_KeyChange |
|  | RadioBearerConfig with conditions DRBn and Recover\_PDCP |  | RBConfig\_NoKeyChange |
| secondaryCellGroup | Not present |  |  |
| nonCriticalExtension SEQUENCE { |  |  |  |
| masterCellGroup | CellGroupConfig with conditions PCell\_change | OCTET STRING (CONTAINING CellGroupConfig) |  |
| masterKeyUpdate | Not present |  |  |
| masterKeyUpdate SEQUENCE { |  |  | RBConfig\_KeyChange |
| keySetChangeIndicator | false | Horizontal key derivation |  |
| nextHopChainingCount | NextHopChainingCount |  |  |
| nas-Container | Not present |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| RBConfig\_KeyChange | RadioBearerConfig to perform Intra-NR handover with security key change |
| RBConfig\_NoKeyChange | RadioBearerConfig to perform Intra-NR handover without security key change |

– *RRCReconfiguration-SRB2-DRB(n, m)*

Table 4.8.1-1B: RRCReconfiguration-SRB2-DRB(n, m)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-13 with condition NR. | | | |
| Information Element | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { |  |  |  |
| criticalExtensions CHOICE { |  |  |  |
| c1 CHOICE { |  |  |  |
| rrcReconfiguration SEQUENCE { |  |  |  |
| radioBearerConfig | RadioBearerConfig-SRB2-DRB(n,m) |  |  |
| } |  |  |  |
| nonCriticalExtension SEQUENCE { |  |  |  |
| masterCellGroup | CellGroupConfig-SRB2-DRB(n, m) | OCTET STRING (CONTAINING CellGroupConfig) |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

– *RRCReconfiguration-NR-DC-DRB*

Table 4.8.1-1CA: RRCReconfiguration-NR-DC-DRB

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-13 with condition NR-DC. | | | |
| Information Element | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { |  |  |  |
| criticalExtensions CHOICE { |  |  |  |
| c1 CHOICE { |  |  |  |
| rrcReconfiguration SEQUENCE { |  |  |  |
| radioBearerConfig | Not present |  |  |
| } |  |  |  |
| nonCriticalExtension SEQUENCE { |  |  |  |
| masterCellGroup | Not present |  | MCG(s) and SCG |
| CellGroupConfig with condition DRB(n+m+1) | OCTET STRING (CONTAINING CellGroupConfig) | MCG(s) and split |
| nonCriticalExtension SEQUENCE { |  |  |  |
| nonCriticalExtension SEQUENCE { |  |  |  |
| radioBearerConfig2 | RadioBearerConfig with conditions DRB(n+m+1) and SCG\_DRB and SecondaryKeys | OCTET STRING (CONTAINING RadioBearerConfig)  DRB(n,m) already configured on MCG | MCG(s) and SCG |
|  | RadioBearerConfig with conditions DRB(n+m+1) and SCG\_DRB and Split and SecondaryKeys | OCTET STRING (CONTAINING RadioBearerConfig)  DRB(n,m) already configured on MCG | MCG(s) and split |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

– *RRCReconfiguration-NE-DC-DRB*

Table 4.8.1-1CB: RRCReconfiguration-NE-DC-DRB

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-13 with condition NE-DC. | | | |
| Information Element | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { |  |  |  |
| criticalExtensions CHOICE { |  |  |  |
| c1 CHOICE { |  |  |  |
| rrcReconfiguration SEQUENCE { |  |  |  |
| radioBearerConfig | Not present |  |  |
| } |  |  |  |
| nonCriticalExtension SEQUENCE { |  |  |  |
| masterCellGroup | Not present |  | MCG(s) and SCG |
| CellGroupConfig with condition DRB(n+m+1) | OCTET STRING (CONTAINING CellGroupConfig) | MCG(s) and split |
| nonCriticalExtension SEQUENCE { |  |  |  |
| nonCriticalExtension SEQUENCE { |  |  |  |
| radioBearerConfig2 | RadioBearerConfig with conditions DRB(n+m+1) and SCG\_DRB and SecondaryKeys | OCTET STRING (CONTAINING RadioBearerConfig)  DRB(n,m) already configured on MCG | MCG(s) and SCG |
|  | RadioBearerConfig with conditions DRB(n+m+1) and SCG\_DRB and Split and SecondaryKeys | OCTET STRING (CONTAINING RadioBearerConfig)  DRB(n,m) already configured on MCG | MCG(s) and split |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

– *RRCReconfiguration-Speech*

Table 4.8.1-1C: RRCReconfiguration-Speech

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-13 with condition NR. | | | |
| Information Element | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { |  |  |  |
| criticalExtensions CHOICE { |  |  |  |
| c1 CHOICE { |  |  |  |
| rrcReconfiguration SEQUENCE { |  |  |  |
| radioBearerConfig | RadioBearerConfig-Speech |  |  |
| } |  |  |  |
| nonCriticalExtension SEQUENCE { |  |  |  |
| masterCellGroup | CellGroupConfig-DRB(0.1) | OCTET STRING (CONTAINING CellGroupConfig) |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

– *RRCReconfiguration-Video*

Table 4.8.1-1D: RRCReconfiguration-Video

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-13 with condition NR. | | | |
| Information Element | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { |  |  |  |
| criticalExtensions CHOICE { |  |  |  |
| c1 CHOICE { |  |  |  |
| rrcReconfiguration SEQUENCE { |  |  |  |
| radioBearerConfig | RadioBearerConfig-Video |  |  |
| } |  |  |  |
| nonCriticalExtension SEQUENCE { |  |  |  |
| masterCellGroup | CellGroupConfig-DRB(0,2) | OCTET STRING (CONTAINING CellGroupConfig) |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

– *CellGroupConfig-DRB(n, m)*

Table 4.8.1-2: CellGroupConfig-DRB(n, m)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.3-19: CellGroupConfig (the same conditions are applicable as for table 4.6.3-19). | | | |
| Information Element | Value/remark | Comment | Condition |
| CellGroupConfig ::= SEQUENCE { |  |  |  |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | n+m entries | BID is the total number of established DRBs in the UE, before applying the contents of this IE |  |
| RLC-BearerConfig[k, k=1..n] | RLC-BearerConfig with conditions AM and DRBj (with j=BID+k) | entry (1..n+1) | n>0 |
| RLC-BearerConfig[k, k=n+1..n+m] | RLC-BearerConfig with conditions UM and DRBj (with j=BID+k) | entry (n+1..n+m) | m>0 |
| } |  |  |  |
| } |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| n>0 | n is greater than zero |
| m>0 | m is greater than zero |

– *CellGroupConfig-SRB3*

Table 4.8.1-2A: CellGroupConfig-SRB3

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.3-19: CellGroupConfig with condition EN-DC. | | | |
| Information Element | Value/remark | Comment | Condition |
| CellGroupConfig ::= SEQUENCE { |  |  |  |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 2 entries |  |  |
| RLC-BearerConfig[1] | RLC-BearerConfig with conditions AM and DRB2 | entry 1 |  |
| RLC-BearerConfig[2] | RLC-BearerConfig with condition SRB3 | entry 2 |  |
| } |  |  |  |
| } |  |  |  |

– *CellGroupConfig-SRB2-DRB(n, m)*

Table 4.8.1-2B: CellGroupConfig-SRB2-DRB(n, m)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.3-19: CellGroupConfig | | | |
| Information Element | Value/remark | Comment | Condition |
| CellGroupConfig ::= SEQUENCE { |  |  |  |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 1+n+m entries |  |  |
| RLC-BearerConfig[1] | RLC-BearerConfig with condition SRB2 | entry 1 |  |
| RLC-BearerConfig[k, k=2..n+1] | RLC-BearerConfig with conditions AM and DRBj | entry (2..n+1)  j is allocated according to internal TTCN mapping | n>0 |
| ... |  | ... |  |
| RLC-BearerConfig[k, k=n+2..n+m+1] | RLC-BearerConfig with conditions UM and DRBj | entry (n+2..n+m+1)  j is allocated according to internal TTCN mapping | m>0 |
| } |  |  |  |
| mac-CellGroupConfig | Not present |  |  |
| physicalCellGroupConfig | Not present |  |  |
| spCellConfig | Not present |  |  |
| } |  |  |  |

– *RadioBearerConfig-DRB (n, m)*

Table 4.8.1-3: RadioBearerConfig-DRB (n, m)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.3-132 and condition EN-DC. | | | |
| Information Element | Value/remark | Comment | Condition |
| RadioBearerConfig ::= SEQUENCE { |  |  |  |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod { | n+m entries | BID is the total number of established DRBs in the UE, before applying the contents of this IE |  |
| DRB-ToAddMod[k=1..n+m] SEQUENCE { |  | entry (1..n+m) |  |
| cnAssociation CHOICE { |  |  |  |
| eps-BearerIdentity | l, l=BID+5..BID+4+n+m |  |  |
| } |  |  |  |
| drb-Identity | l, l=BID+1..BID+n+m |  |  |
| reestablishPDCP | Not present |  |  |
| recoverPDCP | Not present |  |  |
| pdcp-Config | PDCP-Config |  | k <= n |
| PDCP-Config with condition UM |  | k > n |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

- *RadioBearerConfig-DRB-NR(n, m)*

Table 4.8.1-3A: RadioBearerConfig-DRB-NR(n, m)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.3-132. | | | |
| Information Element | Value/remark | Comment | Condition |
| RadioBearerConfig ::= SEQUENCE { |  |  |  |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod { | n+m entries | BID is the total number of established DRBs in the UE, before applying the contents of this IE |  |
| DRB-ToAddMod[k=1..n+m] SEQUENCE { |  | entry (1..n+m) |  |
| cnAssociation CHOICE { |  |  |  |
| sdap-Config | SDAP-Config |  |  |
| } |  |  |  |
| drb-Identity | BID+k | k=1..n+m |  |
| reestablishPDCP | Not present |  |  |
| recoverPDCP | Not present |  |  |
| pdcp-Config | PDCP-Config |  | k <= n |
| PDCP-Config with condition UM |  | k > n |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

– *RadioBearerConfig-SRB2-DRB (n, m)*

Table 4.8.1-4: RadioBearerConfig-SRB2-DRB (n, m)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.3-132 and condition SRB2. | | | |
| Information Element | Value/remark | Comment | Condition |
| RadioBearerConfig ::= SEQUENCE { |  |  |  |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod { | n+m entries |  |  |
| DRB-ToAddMod[k=1..n+m] := SEQUENCE { |  | entry (1..n+m) |  |
| cnAssociation CHOICE { |  |  |  |
| sdap-Config | SDAP-Config | SDAP-Config is configured according to internal TTCN mapping |  |
| } |  |  |  |
| drb-Identity | j | j is allocated according to internal TTCN mapping |  |
| reestablishPDCP | Not present |  |  |
| recoverPDCP | Not present |  |  |
| pdcp-Config | PDCP-Config |  | (1<k <= n) OR (k=1 AND NOT NR\_split) |
| PDCP-Config with condition UM |  | k > n |
| PDCP-Config with condition NR\_split |  | k=1 AND NR\_split |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

– *RadioBearerConfig-Speech*

Table 4.8.1-5: RadioBearerConfig-Speech

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.3-132 and condition SRB2. | | | |
| Information Element | Value/remark | Comment | Condition |
| RadioBearerConfig ::= SEQUENCE { |  |  |  |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod { | 1 entry |  |  |
| DRB-ToAddMod[1] SEQUENCE { |  |  |  |
| cnAssociation CHOICE { |  |  |  |
| sdap-Config SEQUENCE { | SDAP-Config |  |  |
| defaultDRB | false |  |  |
| } |  |  |  |
| } |  |  |  |
| drb-Identity | j | j is allocated according to internal TTCN mapping |  |
| reestablishPDCP | Not present |  |  |
| recoverPDCP | Not present |  |  |
| pdcp-Config | PDCP-Config with condition UM |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

– *RadioBearerConfig-Video*

Table 4.8.1-6: RadioBearerConfig-Video

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.3-132 and condition SRB2. | | | |
| Information Element | Value/remark | Comment | Condition |
| RadioBearerConfig ::= SEQUENCE { |  |  |  |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod { | 2 entries |  |  |
| DRB-ToAddMod [1] SEQUENCE { |  | entry 1 |  |
| cnAssociation CHOICE { |  |  |  |
| sdap-Config SEQUENCE { | SDAP-Config |  |  |
| defaultDRB | false |  |  |
| } |  |  |  |
| } |  |  |  |
| drb-Identity | j | j is allocated according to internal TTCN mapping |  |
| reestablishPDCP | Not present |  |  |
| recoverPDCP | Not present |  |  |
| pdcp-Config | PDCP-Config with condition UM |  |  |
| } |  |  |  |
| DRB-ToAddMod [2] SEQUENCE { |  | entry 2 |  |
| cnAssociation CHOICE { |  |  |  |
| sdap-Config SEQUENCE { | SDAP-Config |  |  |
| defaultDRB | false |  |  |
| } |  |  |  |
| } |  |  |  |
| drb-Identity | k | k is allocated according to internal TTCN mapping |  |
| reestablishPDCP | Not present |  |  |
| recoverPDCP | Not present |  |  |
| pdcp-Config | PDCP-Config with condition UM |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

### 4.8.2 5GC configurations

#### 4.8.2.1 Reference QoS rules

Table 4.8.2.1-1: Reference QoS rule #1

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS rules |  |  |  |
| QoS rule |  |  |  |
| QoS rule identifier | ‘0000 0001’B | 1 (unique per PDU session) |  |
| Rule operation code | ‘001’B | Create new QoS rule |  |
| DQR bit | ‘1’B | The QoS rule is the default QoS rule. |  |
| Number of packet filters | ‘0001’B | 1 packet filters |  |
| Packet filter list | See table 4.8.2.2-1 | Packet filter list #1 |  |
| QoS rule precedence | ‘1111 1111’B | 255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.) |  |
| Spare bit | ‘0’B |  |  |
| Segregation | ‘0’B | Spare |  |
| QoS flow identifier (QFI) | ’00 0001’B | QFI 1 (Table 4.8.2.3-1) |  |

Table 4.8.2.1-2: Reference QoS rule #2

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS rules |  |  |  |
| QoS rule |  |  |  |
| QoS rule identifier | ‘0000 0010’B | 2 (unique per PDU session) |  |
| Rule operation code | ‘001’B | Create new QoS rule |  |
| DQR bit | ‘1’B | The QoS rule is the default QoS rule. |  |
| Number of packet filters | ‘0001’B | 1 packet filter |  |
| Packet filter list | See table 4.8.2.2-1 | Packet filter list #1 |  |
| QoS rule precedence | ‘1111 1111’B | 255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.) |  |
| Spare bit | ‘0’B |  |  |
| Segregation | ‘0’B | Spare |  |
| QoS flow identifier (QFI) | ’00 0010’B | QFI 2 (Table 4.8.2.3-2) |  |

Table 4.8.2.1-3: Reference QoS rule #3

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS rules |  |  |  |
| QoS rule |  |  |  |
| QoS rule identifier | ‘0000 0011’B | 3 (unique per PDU session) |  |
| Rule operation code | ‘001’B | Create new QoS rule |  |
| DQR bit | ‘0’B | The QoS rule is the non-default QoS rule. |  |
| Number of packet filters | ‘0001’B | 1 packet filter |  |
| Packet filter list | See table 4.8.2.2-2 | Packet filter list #2 |  |
| QoS rule precedence | ‘0000 0011’B | 3 (unique per PDU session) |  |
| Spare bit | ‘0’B |  |  |
| Segregation | ‘0’B | Spare |  |
| QoS flow identifier (QFI) | ’00 0001’B | QFI 1 (Table 4.8.2.3-1) |  |

Table 4.8.2.1-4: Reference QoS rule #4

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS rules |  |  |  |
| QoS rule |  |  |  |
| QoS rule identifier | ‘0000 0100’B | 4 (unique per PDU session) |  |
| Rule operation code | ‘001’B | Create new QoS rule |  |
| DQR bit | ‘1’B | The QoS rule is the default QoS rule. |  |
| Number of packet filters | ‘0001’B | 1 packet filter |  |
| Packet filter list | See table 4.8.2.2-3 | Packet filter list #3 |  |
| QoS rule precedence | ‘0000 00100’B | 4 (unique per PDU session) |  |
| Spare bit | ‘0’B |  |  |
| Segregation | ‘0’B | Spare |  |
| QoS flow identifier (QFI) | ’00 0010’B | QFI 2 (Table 4.8.2.3-2) |  |

Table 4.8.2.1-4a: Reference QoS rule #4a

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS rules |  |  |  |
| QoS rule |  |  |  |
| QoS rule identifier | ‘0000 1111’B | 15 (unique per PDU session) |  |
| Rule operation code | ‘001’B | Create new QoS rule |  |
| DQR bit | ‘0’B | The QoS rule is the non-default QoS rule. |  |
| Number of packet filters | ‘0001’B | 1 packet filter |  |
| Packet filter list | See table 4.8.2.2-3a | Packet filter list #3a |  |
| QoS rule precedence | ‘0000 1111’B | 15 (unique per PDU session) |  |
| Spare bit | ‘0’B |  |  |
| Segregation | ‘0’B | Spare |  |
| QoS flow identifier (QFI) | ’00 0100’B | QFI 4 (Table 4.8.2.3-2a) |  |

Table 4.8.2.1-5: Reference QoS rule #5

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS rules |  |  |  |
| QoS rule |  |  |  |
| QoS rule identifier | ‘0000 0101’B | 5 (unique per PDU session) |  |
| Rule operation code | ‘001’B | Create new QoS rule |  |
| DQR bit | ‘0’B | The QoS rule is the non-default QoS rule. |  |
| Number of packet filters | ‘0001’B | 1 packet filter |  |
| Packet filter list | See table 4.8.2.2-4 | Packet filter list #4 |  |
| QoS rule precedence | ‘0000 0101’B | 5 (unique per PDU session) |  |
| Spare bit | ‘0’B |  |  |
| Segregation | ‘0’B | Spare |  |
| QoS flow identifier (QFI) | ’00 0101’B | QFI 5 (Table 4.8.2.3-3) |  |

Table 4.8.2.1-6: Reference QoS rule #6

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS rules |  |  |  |
| QoS rule |  |  |  |
| QoS rule identifier | ‘0000 0110’B | 6 (unique per PDU session) |  |
| Rule operation code | ‘001’B | Create new QoS rule |  |
| DQR bit | ‘0’B | The QoS rule is the non-default QoS rule. |  |
| Number of packet filters | ‘0001’B | 1 packet filter |  |
| Packet filter list | See table 4.8.2.2-5 | Packet filter list #5 |  |
| QoS rule precedence | ‘0000 0110’B | 6 (unique per PDU session) |  |
| Spare bit | ‘0’B |  |  |
| Segregation | ‘0’B | Spare |  |
| QoS flow identifier (QFI) | ’00 0110’B | QFI 6 (Table 4.8.2.3-4) |  |

Table 4.8.2.1-7: Reference QoS rule #7

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS rules |  |  |  |
| QoS rule |  |  | IMS\_VOICE |
| QoS rule identifier | ‘0000 0011’B | 3 (unique per PDU session) |  |
| Rule operation code | ‘001’B | Create new QoS rule |  |
| DQR bit | ‘0’B | The QoS rule a non-default QoS rule. |  |
| Number of packet filters | ‘0001’B | 1 packet filter |  |
| Packet filter list | See table 4.8.2.2-6 | Packet filter list #6 |  |
| QoS rule precedence | ‘0000 0001’B | 1 (unique per PDU session) |  |
| Spare bit | ‘0’B |  |  |
| Segregation | ‘0’B | Spare |  |
| QoS flow identifier (QFI) | ’00 0111’B | QFI 7 (Table 4.8.2.3-5) |  |
| QoS rule |  |  | IMS\_VIDEO |
| QoS rule identifier | ‘0000 0100’B | 4 (unique per PDU session) |  |
| Rule operation code | ‘001’B | Create new QoS rule |  |
| DQR bit | ‘0’B | The QoS rule a non-default QoS rule. |  |
| Number of packet filters | ‘0001’B | 1 packet filter |  |
| Packet filter list | See table 4.8.2.2-7 | Packet filter list #7 |  |
| QoS rule precedence | ‘0000 0010’B | 2 (unique per PDU session) |  |
| Spare bit | ‘0’B |  |  |
| Segregation | ‘0’B | Spare |  |
| QoS flow identifier (QFI) | ’00 1000’B | QFI 8 (Table 4.8.2.3-6) |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| IMS\_VOICE | If this QoS rule is used to setup an IMS voice session |
| IMS\_VIDEO | If this QoS rule is used to setup an IMS video session |

Table 4.8.2.1-8: Reference QoS rule #8

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS rules |  |  |  |
| QoS rule |  |  |  |
| QoS rule identifier | ‘0000 0111’B | 7 (unique per PDU session) |  |
| Rule operation code | ‘001’B | Create new QoS rule |  |
| DQR bit | ‘1’B | The QoS rule is the default QoS rule. |  |
| Number of packet filters | ‘0001’B | 1 packet filter |  |
| Packet filter list | See table 4.8.2.2-1 | Packet filter list #1 |  |
| QoS rule precedence | ‘1111 1111’B | 255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.) |  |
| Spare bit | ‘0’B |  |  |
| Segregation | ‘0’B | Spare |  |
| QoS flow identifier (QFI) | ’00 1001’B | QFI 9 (Table 4.8.2.3-7) |  |

#### 4.8.2.2 Reference packet filters

Table 4.8.2.2-1: Packet filter list #1

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| Information Element | Value/remark | Comment | Condition |
| Packet filter list |  |  |  |
| Packet filter direction | ‘11’B | bidirectional |  |
| Packet filter identifier | ‘0001’B | Id 1 |  |
| Component type 1 ID | ‘0000 0001’B | Match-all type |  |

Table 4.8.2.2-2: Packet filter list #2

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| **Information Element** | **Value/remark** | **Comment** | **Condition** |
| Packet filter list |  |  |  |
| Packet filter direction | ‘11’B | bidirectional |  |
| Packet filter identifier | ‘0010’B | Id 2 |  |
| Component type 1 ID | 0 0 0 1 0 0 0 0 | IPv4 remote address type | remoteIPv4 |
| 0 0 1 0 0 0 0 1 | IPv6 remote address type/prefix lenght type | remoteIPv6 |
| Component type 1 Value | 10.10.10.2  255.255.255.255 | See Note 1 | remoteIPv4 |
| C0C0:C0C0:C0C0:C002  C0C0:C0C0:C0C0:C0C0/  64 | See Note 1 | remoteIPv6 |
| Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remoteIPv4 applies if the UE has acquired an IPv4 address only, remoteIPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address. | | | |

Table 4.8.2.2-3: Packet filter list #3

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| Information Element | Value/remark | Comment | Condition |
| Packet filter list |  |  |  |
| Packet filter direction | ‘11’B | bidirectional |  |
| Packet filter identifier | ‘0011’B | Id 3 |  |
| Component type 1 ID | 0 0 0 1 0 0 0 0 | IPv4 remote address type | remoteIPv4 |
| 0 0 1 0 0 0 0 1 | IPv6 remote address type/prefix lenght type | remoteIPv6 |
| Component type 1 Value | 10.10.10.3  255.255.255.255 | See Note 1 | remoteIPv4 |
| C0C0:C0C0:C0C0:C003  C0C0:C0C0:C0C0:C0C0/  64 | See Note 1 | remoteIPv6 |
| Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remoteIPv4 applies if the UE has acquired an IPv4 address only, remoteIPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address. | | | |

Table 4.8.2.2-3a: Packet filter list #3a

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| **Information Element** | **Value/remark** | **Comment** | **Condition** |
| Packet filter list |  |  |  |
| Packet filter direction | ‘11’B | bidirectional |  |
| Packet filter identifier | ‘1111’B | Id 15 |  |
| Component type 1 ID | 0 0 0 1 0 0 0 0 | IPv4 remote address type | remoteIPv4 |
| 0 0 1 0 0 0 0 1 | IPv6 remote address type/prefix lenght type | remoteIPv6 |
| Component type 1 Value | 10.10.10.30  255.255.255.255 | See Note 1 | remoteIPv4 |
| C0C0:C0C0:C0C0:C030  C0C0:C0C0:C0C0:C0C0/  64 | See Note 1 | remoteIPv6 |
| Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remoteIPv4 applies if the UE has acquired an IPv4 address only, remoteIPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address. | | | |

Table 4.8.2.2-4: Packet filter list #4

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| Information Element | Value/remark | Comment | Condition |
| Packet filter list |  |  |  |
| Packet filter direction | ‘11’B | bidirectional |  |
| Packet filter identifier | ‘0100’B | Id 4 |  |
| Component type 1 ID | 0 0 0 1 0 0 0 0 | IPv4 remote address type | remoteIPv4 |
| 0 0 1 0 0 0 0 1 | IPv6 remote address type/prefix lenght type | remoteIPv6 |
| Component type 1 Value | 10.10.10.4  255.255.255.255 | See Note 1 | remoteIPv4 |
| C0C0:C0C0:C0C0:C004  C0C0:C0C0:C0C0:C0C0/  64 | See Note 1 | remoteIPv6 |
| Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remoteIPv4 applies if the UE has acquired an IPv4 address only, remoteIPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address. | | | |

Table 4.8.2.2-5: Packet filter list #5

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| Information Element | Value/remark | Comment | Condition |
| Packet filter list |  |  |  |
| Packet filter direction | ‘11’B | bidirectional |  |
| Packet filter identifier | ‘0101’B | Id 5 |  |
| Component type 1 ID | 0 0 0 1 0 0 0 0 | IPv4 remote address type | remoteIPv4 |
| 0 0 1 0 0 0 0 1 | IPv6 remote address type/prefix lenght type | remoteIPv6 |
| Component type 1 Value | 10.10.10.5  255.255.255.255 | See Note 1 | remoteIPv4 |
| C0C0:C0C0:C0C0:C005  C0C0:C0C0:C0C0:C0C0/  64 | See Note 1 | remoteIPv6 |
| Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remoteIPv4 applies if the UE has acquired an IPv4 address only, remoteIPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address. | | | |

Table 4.8.2.2-6: Packet filter list #6

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| Information Element | Value/remark | Comment | Condition |
| Packet filter list |  |  |  |
| Packet filter direction | ‘11’B | bidirectional |  |
| Packet filter identifier | 0110’B | Id 6 |  |
| Component type 1 ID | 0 1 0 1 0 0 0 1 | Remote port range type |  |
| Component type 1 Value | media port | SS speech media port as used in the SDP negotiation (RTP remote port); see Note 1 |  |
| media port + 1 | RTCP remote port; see Note 1 |  |
| Component type 2 ID | 0 0 1 1 0 0 0 0 | Protocol identifier/Next header type |  |
| Component type 2 Value | 17 | UDP |  |
| Note 1: According to to TS 26.114 [45] and RFC 4566 [46] a "media port" can be understood as the transport port to which a media stream is sent. | | | |

Table 4.8.2.2-7: Packet filter list #7

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.13 | | | |
| Information Element | Value/remark | Comment | Condition |
| Packet filter list |  |  |  |
| Packet filter direction | ‘11’B | bidirectional |  |
| Packet filter identifier | 0111’B | Id 7 |  |
| Component type 1 ID | 0 1 0 1 0 0 0 1 | Remote port range type |  |
| Component type 1 Value | media port | SS video media port as used in the SDP negotiation (RTP remote port); see Note 1 |  |
| media port + 1 | RTCP remote port; see Note 1 |  |
| Component type 2 ID | 0 0 1 1 0 0 0 0 | Protocol identifier/Next header type |  |
| Component type 2 Value | 17 | UDP |  |
| Note 1: According to to TS 26.114 [45] and RFC 4566 [46] a "media port" can be understood as the transport port to which a media stream is sent. | | | |

#### 4.8.2.3 Reference QoS flow descriptions

Table 4.8.2.3-1: Reference QoS flow #1

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.12 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS flow descriptions |  |  |  |
| QoS flow description |  |  |  |
| QFI | ‘00 0001’B | QFI 1 |  |
| Operation code | ‘001’B | Create new QoS flow description |  |
| E bit | ‘1’B | Parameters list is included |  |
| Number of parameters | ’00 0001’B | 1 parameter |  |
| Number of parameters | ’00 0010’B | 2 parameters | Interworking\_with\_EPS |
| 5QI | ‘0000 1001’B | 5QI 9 |  |
| EPS bearer identity | Any not yet assigned value different to '5' |  | Interworking\_with\_EPS |

|  |  |
| --- | --- |
| Condition | Explanation |
| Interworking\_with\_EPS | If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE. |

Table 4.8.2.3-2: Reference QoS flow #2

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.12 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS flow descriptions |  |  |  |
| QoS flow description |  |  |  |
| QFI | ‘00 0010’B | QFI 2 |  |
| Operation code | ‘001’B | Create new QoS flow description |  |
| E bit | ‘1’B | Parameters list is included |  |
| Number of parameters | ’00 0001’B | 1 parameter |  |
| Number of parameters | ’00 0010’B | 2 parameters | Interworking\_with\_EPS |
| 5QI | ‘0000 0101’B | 5QI 5 |  |
| EPS bearer identity | ‘0101 0000’B | EBI 5 | Interworking\_with\_EPS |
| EPS bearer identity | Any not yet assigned value different from ‘5’ |  | EmergencySession AND Interworking\_with\_EPS |

|  |  |
| --- | --- |
| Condition | Explanation |
| Interworking\_with\_EPS | If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE. |
| EmergencySession | If this flow is used in the Authorized QoS flow descriptions IE of a PDU Session Establishment Accept message for an emergency PDU session |

Table 4.8.2.3-2a: Reference QoS flow #2a

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.12 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS flow descriptions |  |  |  |
| QoS flow description |  |  |  |
| QFI | ‘00 0100’B | QFI 4 |  |
| Operation code | ‘001’B | Create new QoS flow description |  |
| E bit | ‘1’B | Parameters list is included |  |
| Number of parameters | ’00 0001’B | 1 parameter |  |
| 5QI | ‘0000 0101’B | 5QI 5 |  |

Table 4.8.2.3-3: Reference QoS flow #3

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.12 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS flow descriptions |  |  |  |
| QoS flow description |  |  |  |
| QFI | ‘00 0101’B | QFI 5 |  |
| Operation code | ‘001’B | Create new QoS flow description |  |
| E bit | ‘1’B | Parameters list is included |  |
| Number of parameters | ’00 0001’B | 1 parameter |  |
| 5QI | ‘0000 0101’B | 5QI 5 |  |

Table 4.8.2.3-4: Reference QoS flow #4

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.12 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS flow descriptions |  |  |  |
| QoS flow description |  |  |  |
| QFI | ‘00 0110’B | QFI 6 |  |
| Operation code | ‘001’B | Create new QoS flow description |  |
| E bit | ‘1’B | Parameters list is included |  |
| Number of parameters | ’00 0001’B | 1 parameter |  |
| 5QI | ‘0000 0101’B | 5QI 5 |  |

Table 4.8.2.3-5: Reference QoS flow #5

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.12 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS flow descriptions |  |  |  |
| QoS flow description |  |  |  |
| QFI | ‘00 0111’B | QFI 7 |  |
| Operation code | ‘001’B | Create new QoS flow description |  |
| E bit | ‘1’B | Parameters list is included |  |
| Number of parameters | ’00 0101’B | 5 parameter |  |
| Number of parameters | ’00 0110’B | 6 parameters | Interworking\_with\_EPS |
| 5QI | ‘0000 0001’B | 5QI 1 |  |
| GFBR uplink | ‘040002’H | 128 Kbps |  |
| GFBR downlink | ‘040002’H | 128 Kbps |  |
| MFBR uplink | ‘040005’H | 320 Kbps |  |
| MFBR downlink | ‘040005’H | 320 Kbps |  |
| EPS bearer identity | Any not yet assigned value different to '5' | EBI 6 | Interworking\_with\_EPS |

|  |  |
| --- | --- |
| Condition | Explanation |
| Interworking\_with\_EPS | If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE. |

Table 4.8.2.3-6: Reference QoS flow #6

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.12 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS flow descriptions |  |  |  |
| QoS flow description |  |  |  |
| QFI | ‘00 1000’B | QFI 8 |  |
| Operation code | ‘001’B | Create new QoS flow description |  |
| E bit | ‘1’B | Parameters list is included |  |
| Number of parameters | ’00 0101’B | 5 parameter |  |
| Number of parameters | ’00 0110’B | 6 parameters | Interworking\_with\_EPS |
| 5QI | ‘0000 0010’B | 5QI 2 |  |
| GFBR uplink | ‘020012’H | 72 Kbps |  |
| GFBR downlink | ‘020012’H | 72 Kbps |  |
| MFBR uplink | ‘030033’H | 816 Kbps |  |
| MFBR downlink | ‘030033’H | 816 Kbps |  |
| EPS bearer identity | Any not yet assigned value different to '5' | EBI 7 | Interworking\_with\_EPS |

|  |  |
| --- | --- |
| Condition | Explanation |
| Interworking\_with\_EPS | If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE. |

Table 4.8.2.3-7: Reference QoS flow #7

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.501, table 9.11.4.12 | | | |
| Information Element | Value/remark | Comment | Condition |
| QoS flow descriptions |  |  |  |
| QoS flow description |  |  |  |
| QFI | ‘00 1001’B | QFI 9 |  |
| Operation code | ‘001’B | Create new QoS flow description |  |
| E bit | ‘1’B | Parameters list is included |  |
| Number of parameters | ’00 0001’B | 1 parameter |  |
| 5QI | ‘0101 0010’B | 5QI 82 |  |

### 4.8.3 Common test UICC and USIM parameters

This clause defines default parameters for programming the elementary files of the test UICC when running conformance test cases defined in 3GPP TS 38.523-1[12].

#### 4.8.3.1 General

See clause 4.9.1 in 3GPP TS 36.508 [2] for the definition of test algorithm for

- authentication via EPC;

- authentication via 5GC using 5G AKA based primary authentication and key agreement procedure.

- authentication via 5GC using EAP-AKA' based primary authentication and key agreement procedure, further the Derivation of MSK, EMSK and other keys shaall be as derived as clause 3.3 of IETF RFC 5448 [31], using Key derivation function HMAC-SHA-256 algorithm.

#### 4.8.3.2 Default parameters for the test USIM and ISIM

Same as clause 4.9.2 in 3GPP TS 36.508 [2] for

- authentication via EPC;

- authentication via 5GC using 5G AKA based primary authentication and key agreement procedure.

- authentication via 5GC using EAP-AKA' based primary authentication and key agreement procedure.

#### 4.8.3.3 Default settings for the Elementary Files (EFs)

Same as clause 4.9.3 in 3GPP TS 36.508 [2] for

- authentication via EPC;

- authentication via 5GC using 5G AKA based primary authentication and key agreement procedure

- authentication via 5GC using EAP-AKA' based primary authentication and key agreement procedure.

##### 4.8.3.3.1 Modified contents of the USIM Elementary Files

Table 4.8.3.3.1-1: EFUST (USIM Service Table)

| Services |  | Activated | Version | Condition |
| --- | --- | --- | --- | --- |
| Service n°122 | 5GS Mobility Management Information | Optional |  | 5GC |
| Service n°123 | 5GS Security Parameters | Optional |  | 5GC |
| Service n°124 | Subscription identifier privacy support | Optional |  | 5GC |
| Service n°125 | SUCI calculation by the USIM | Optional |  | 5GC |
| Service n°126 | UAC Access Identities Configuration | Optional |  | 5GC |
| Service n°127 | Control plane-based steering of UE in VPLMN | Optional |  | 5GC |
| Service n°128 | Call control on PDU Session by USIM | Optional |  |  |
| Service n°129 | 5GS Operator PLMN List | Optional |  |  |
| Note: Only 5GS related services indicated | | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| 5GC | Authentication via 5GC |

##### 4.8.3.3.2 Contents of Elementary Files at the DF5GS level

This clause defines the default contents of Elementary Files (EF) that are specific for 5GS and which are grouped in Data File (DF) structure 5GS.

EF5GS3GPPLOCI (5GS 3GPP location information)

File size: 20 Bytes

Default values: Bytes 1 to 13 (HEX): FF FF FF FF FF FF FF FF FF FF FF FF FF (5G-GUTI)

Bytes 14 to 19 (HEX): 42 F6 18 FF FF FE (Last visited registered TAI in 5GS for 3GPP access)

Byte 20 (BIN): 00000001 (5GS update status for 3GPP access = "5U2 not updated")

Bytes 14 to 19: TAI-MCC = 246 (bytes 14 to 15) and TAI-MNC = 81 (byte 16) are frequently used. The TAC (bytes 17 to 19) is set to "FF FF FE" since this, in conjunction with byte 20 setting of "01", is used to ensure that the UE performs registration at the beginning of a test.

Bytes in this file (e.g. GUTI in bytes 1 to 13) may be updated as a result of a registration attempt by the UE.

EF5GSN3GPPLOCI (5GS non-3GPP location information)

File size: 20 Bytes

Default values: Bytes 1 to 13 (HEX): FF FF FF FF FF FF FF FF FF FF FF FF FF (5G-GUTI)

Bytes 14 to 19 (HEX): 42 F6 18 FF FF FE (Last visited registered TAI in 5GS for non-3GPP access)

Byte 20 (BIN): 00000001 (5GS update status for non-3GPP access = "5U2 not updated")

Bytes 14 to 19: TAI-MCC = 246 (bytes 14 to 15) and TAI-MNC = 81 (byte 16) are frequently used. The TAC (bytes 17 to 19) is set to "FF FF FE" since this, in conjunction with byte 20 setting of "01", is used to ensure that the UE performs registration at the beginning of a test.

Bytes in this file (e.g. GUTI in bytes 1 to 13) may be updated as a result of a registration attempt by the UE.

EF5GS3GPPNSC (5GS 3GPP Access NAS Security Context)

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

EF5GSN3GPPNSC (5GS non-3GPP Access NAS Security Context)

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

EF5GAUTHKEYS (5G authentication keys)

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

EFUAC\_AIC (UAC Access Identities Configuration)

The programming of this EF is a test house option.

EFSUCI\_Calc\_Info (Subscription Concealed Identifier Calculation Information EF)

The programming of this EF is a test house option.

EFOPL5G (5GS Operator PLMN List)

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

##### 4.8.3.3.3 Default settings of UICC and USIM for V2X

EFUST (USIM Service Table):

Same as clause 4.9.3.4 of TS 36.508 [2].

EFVST (V2X Service Table)

If service n°119 is "available" in the USIM Service Table, this file shall be present. This EF indicates the coding of the V2X management objects and which V2X services are available.

File size: 2 Bytes

Default values: Bytes 1 to 2 (HEX): 01 02

Coding of the V2X management objects is according to 3GPP TS 24.588 [113].

Service n°2 V2X policy configuration data over PC5 is supported.

NOTE: The default value for NR support of V2X services is different from that for LTE V2X in clause 4.9.3.4 of TS 36.508 [2].

EFV2XP\_PC5 (V2X data policy over PC5)

If service n°2 is "available" in EFVST, this file shall be present. This EF contains V2X in 5GS UE policies over PC5. The format of the V2X in 5GS UE policies over PC5 are specified in 3GPP TS 24.588 [113].

The V2X in 5GS UE policies over PC5 contents:

Table 4.8.3.3.3-1: V2X data policy over PC5

|  |  |  |  |
| --- | --- | --- | --- |
| Description | Value | M/O | Length (bytes) |
| V2X data policy over PC5 Tag | 'A0' | M | 1 |
| Length | Note 1 | M | Note 2 |
| Validity timer | 'FF FF FF FF FF FF FF FF FF FF'H | M | X1 |
| Indicator bits | '1000 0000'B | M | 1 |
| Served by E-UTRA or served by NR Tag | '80' | M | 1 |
| Length | X2 | M | Note 2 |
| Served by E-UTRA or served by NR information | See Table 4.7.5.5-2 | M | X2 |
| Not served by E-UTRA and not served by NR Tag | '81' | O | 1 |
| Length | X3 | O | Note 2 |
| Not served by E-UTRA and not served by NR information | See Table 4.7.5.5-6 | O | X3 |
| V2X service identifier to Tx profiles mapping rules Tag | '82' | O | 1 |
| Length | X4 | O | Note 2 |
| V2X service identifier to Tx profiles mapping rules information | See Table 4.7.5.5-12 |  | X4 |
| Privacy config Tag | '83' | O | 1 |
| Length | X5 | O | Note 2 |
| Privacy config information | See Table 4.7.5.5-15 |  | X5 |
| V2X communication over PC5 in E-UTRA Tag | '84' | O | 1 |
| Length | X6 | O | Note 2 |
| V2X communication over PC5 in E-UTRA information | See Table 4.7.5.5-19 | O | X6 |
| V2X communication over PC5 in NR Tag | '85 | O | 1 |
| Length | X7 | O | Note 2 |
| V2X communication over PC5 in NR Information | See Table 4.7.5.5-31 | O | X7 |
| Note 1: This is the total size of the constructed TLV object.  Note 2: The length is coded according to ISO/IEC 8825-1 [35]. | | | |

### 4.8.4 DNN/APN configurations

The present subclause provides DNN/APN configurations required for flexible PDU/PDN handling. Table 4.8.4-1 provides configurations for the types on DNN/APN handled in the present version of the test specification. If in the future new PDU types need to be handled, then new DNN/APN configuration(s) may be added.

Table 4.8.4-1: DNN/APN configurations, first set

|  |  |  |  |
| --- | --- | --- | --- |
| Configurations | Config #1 | Config #2 | Config #3 |
| DNN/APN type | internet | ims | urllc |
| DNN/APN ID | pc\_APN\_ID\_Internet | pc\_APN\_ID\_IMS | pc\_APN\_ID\_URLLC |
| 5GC QoS rule | Reference QoS rule #1 as specified in subclause 4.8.2.1. | Reference QoS rule #2 as specified in subclause 4.8.2.1. | Reference QoS rule #8 as specified in subclause 4.8.2.1. |
| EPC default bearer context | Reference default EPS bearer context #1 as specified in TS 36.508 [10], Table 6.6.1-1. | Reference default EPS bearer context #2 as specified in TS 36.508 [10], Table 6.6.1-1. | N/A |
| EPC dedicated bearer context | Reference dedicated EPS bearer context #1 as specified in TS 36.508 [10], Table 6.6.2-1. | Reference dedicated EPS bearer context #4 as specified in TS 36.508 [10], Table 6.6.2-1. | N/A |
| IP address allocation | Yes | Yes | Yes |
| IMS registration | No | Yes  NOTE 1 | No |
| SST condition (NOTE 2) | SST\_eMBB | SST\_eMBB | SST\_URLLC |
| NOTE 1: For PDN establishment the Procedure for IMS signalling according to TS 36.508 [2], subclause 4.5A.3 applies; for PDU establishment the Procedure for IMS signalling according to TS 34.229-5 [47], Annex A.2 applies.  NOTE 2: The possible values of the SST condition are defined in Table 4.6.0.1-5. | | | |

Table 4.8.4-2: DNN/APN configurations, second set

|  |  |  |
| --- | --- | --- |
| Configurations | Config #4 | Config #5 |
| DNN/APN type | miot | v2x |
| DNN/APN ID | pc\_APN\_ID\_MIoT | pc\_APN\_ID\_V2X |
| 5GC QoS rule | FFS | FFS |
| EPC default bearer context | N/A | N/A |
| EPC dedicated bearer context | N/A | N/A |
| IP address allocation | Yes | Yes |
| IMS registration | No | No |
| SST condition (NOTE 1) | SST\_MIoT | SST\_V2X |
| NOTE 1: The possible values of the SST condition are defined in Table 4.6.0.1-5. | | |

### 4.8.5 URSP configurations

#### 4.8.5.1 General

FFS

#### 4.8.5.2 UE Route Selection Policy Rules

Table 4.8.5.2-1: UE Route Selection Policy Rule #1

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.526, Figure 5.2.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| URSP rules | 1 entry |  |  |
| URSP rule |  |  |  |
| Rule Precedence | 1 |  |  |
| Traffic descriptor |  |  |  |
| Traffic descriptor component type identifier | ‘1000 1000’B | DNN type |  |
| Traffic descriptor component |  |  |  |
| Application descriptors | Not present |  |  |
| IP descriptors | Not present |  |  |
| Domain descriptors | Not present |  |  |
| Non-IP descriptors | Not present |  |  |
| DNN | FFS |  |  |
| Connection Capabilities | Not present |  |  |
| List of Route Selection Descriptors | Route Selection Descriptor #1 | Table 4.8.5.3-1 |  |

#### 4.8.5.3 Route Selection Descriptors

Table 4.8.5.3-1: Route Selection Descriptor #1

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.526, Figure 5.2.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| Route Selection Descriptor Precedence | 1 |  |  |
| Route selection descriptor contents |  |  |  |
| Route selection descriptor component type identifier | ‘0000 0010’B |  | S-NSSAI type |
| ‘0000 0100’B |  | DNN type |
| Route selection descriptor component |  |  |  |
| SSC Mode Selection | Not present |  |  |
| Network Slice Selection | FFS |  | S-NSSAI type |
| DNN Selection | FFS |  | DNN type |
| PDU Session Type Selection | Not present |  |  |
| Non-Seamless Offload indication | Not present |  |  |
| Access Type preference | Not present |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| S-NSSAI type | The Route selection descriptor component type is S-NSSAI |
| DNN type | The Route selection descriptor component type is DNN |

## 4.9 Test procedures

### 4.9.1 Test procedure to check user plane connectivity on DRB#n

This procedure aims at checking whether the UE User Plane Access Stratum is capable of exchanging data on DRB#n (#n is the DRB Id specified in the test case when the present procedure is called). In case the UE supports IP, it is also checked that the UE IP stack is connected to the UE User Plane Access Stratum.

Table 4.9.1-1: Test procedure sequence

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| - | EXCEPTION: Steps 1a1 to 1c2 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place depending on the UE implementation. | - | - | - | - |
| 1a1 | IF (pc\_IP\_Ping = TRUE AND pc\_IPv4 = TRUE) THEN, the SS sends an ICMP Echo request to the IPv4 address assigned to the UE on DRB#n. | <-- | *ICMP ECHO REQUEST (NOTE 3)* | - | - |
| 1a2 | Check: Does the UE send an ICMP Echo reply on DRB#n? | --> | *ICMP ECHO REPLY* | - | P |
| 1b1 | ELSE IF (pc\_IP\_Ping = TRUE AND (pc\_IPv4 = FALSE AND pc\_IPv6 = TRUE)) THEN, the SS sends an ICMPv6 Echo request to the IPv6 address assigned to the UE on DRB#n. | <-- | *ICMPv6 ECHO REQUEST (NOTE 3)* | - | - |
| 1b2 | Check: Does the UE send an ICMPv6 Echo reply on DRB#n? | --> | *ICMPv6 ECHO REPLY* | - | P |
| 1c1 | ELSE, the SS transmits one IP Packet to verify data path on DRB#n.  See NOTE 1, 2. | - | - | - | - |
| 1c2 | Check: Does UE send the IP Packet on DRB#n in the uplink? | - | - | - | P |
| NOTE 1: A Test Loop is assumed to already have been closed.  NOTE 2: When DRB#n is a dedicated bearer, the IP Packet shall match the packet filters as configured for DRB#n. When DRB#n is a default bearer, the IP Packet shall match none of the dedicated bearers associated to DRB#n (if any). (NOTE 4)  NOTE 3: When DRB#n is a dedicated bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be the same as the remote address of the DL/UL packet filters. When DRB#n is a default bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be different than the remote address of the DL/UL packet filters for an associated dedicated bearer (if any). (NOTE 4)  NOTE 4: For 5GC QoS rules and the associated packet filters are specified in clause 4.8.2.  For EPC the TFTs and associated packet filters are specified in clause 6.6.2 of TS 36.508 [2] and the IP packet shall be as according to clause 7.14.2 of TS 36.523-3 [41]. | | | | | |

Table 4.9.1-1A: Test procedure sequence for Data path check for CA tests

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| - | EXCEPTION: Step 1 is only performed if SCell is not yet activated. | - | - | - | - |
| 1 | The SS transmits an Activation MAC control element to activate Scell. | <-- | MAC PDU (Activation (C1=1)) |  |  |
| - | EXCEPTION: Steps 2a1 to 2c2 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place depending on the UE implementation. | - | - | - | - |
| 2a1 | IF (pc\_IP\_Ping = TRUE AND pc\_IPv4 = TRUE) THEN, the SS sends an ICMP Echo request to the IPv4 address assigned to the UE on DRB#n on the SCell. | <-- | *ICMP ECHO REQUEST (NOTE 3)* | - | - |
| 2a2 | Check: Does the UE send an ICMP Echo reply on DRB#n on the SpCell? | --> | *ICMP ECHO REPLY* | - | P |
| 2b1 | ELSE IF (pc\_IP\_Ping = TRUE AND (pc\_IPv4 = FALSE AND pc\_IPv6 = TRUE)) THEN, the SS sends an ICMPv6 Echo request to the IPv6 address assigned to the UE on DRB#n on the SCell. | <-- | *ICMPv6 ECHO REQUEST (NOTE 3)* | - | - |
| 2b2 | Check: Does the UE send an ICMPv6 Echo reply on DRB#n on the SpCell? | --> | *ICMPv6 ECHO REPLY* | - | P |
| 2c1 | ELSE, the SS transmits one IP Packet to verify data path on DRB#n on the SCell.  See NOTE 1, 2. | - | - | - | - |
| 2c2 | Check: Does UE send the IP Packet on DRB#n in the uplink on the SpCell? | - | - | - | P |
| NOTE 1: A Test Loop is assumed to already have been closed.  NOTE 2: When DRB#n is a dedicated bearer, the IP Packet shall match the packet filters as configured for DRB#n. When DRB#n is a default bearer, the IP Packet shall match none of the dedicated bearers associated to DRB#n (if any). (NOTE 4)  NOTE 3: When DRB#n is a dedicated bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be the same as the remote address of the DL/UL packet filters. When DRB#n is a default bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be different than the remote address of the DL/UL packet filters for an associated dedicated bearer (if any). (NOTE 4)  NOTE 4: For 5GC QoS rules and the associated packet filters are specified in clause 4.8.2. For EPC the TFTs and associated packet filters are specified in clause 6.6.2 of TS 36.508 [2] and the IP packet shall be as according to clause 7.14.2 of TS 36.523-3 [41]. | | | | | |

### 4.9.2 Test procedure to activate UE Beamlock Test Function (UBF)

4.9.2.1 Initiation

UE is operating in FR2 in RRC\_CONNECTED state.

4.9.2.2 Procedure

Table 4.9.2.2-1: Test procedure Sequence

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| 1 | SS request UE to activate UE beamlock function. | <-- | *ACTIVATE BEAMLOCK* | - | - |
| 2 | UE confirms that UE beamlock function is activated | --> | *ACTIVATE BEAMLOCK COMPLETE* | - | - |

4.9.2.3 Specific Message contents

Table 4.9.2.3-1: ACTIVATE BEAMLOCK

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.4.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Protocol discriminator | | 1 1 1 1 |  |  |
| Skip indicator | | 0 0 0 0 |  |  |
| Message type | | 1 0 1 0 0 0 0 0 |  |  |
| UE Beamlock test Function | | 0 0 0 0 0 0 0 1 |  | Tx Only |
| UE Beamlock test Function | | 0 0 0 0 0 0 1 0 |  | Rx Only |
| UE Beamlock test Function | | 0 0 0 0 0 0 1 1 |  | Tx and Rx |

|  |  |
| --- | --- |
| Condition | Explanation |
| Tx Only | Activation UE beamlock function for Tx only |
| Rx Only | Activation UE beamlock function for Rx only |
| Tx and Rx | Activation UE beamlock function for both Tx and Rx |

Table 4.9.2.3-2: ACTIVATE BEAMLOCK COMPLETE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.4.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Protocol discriminator | | 1 1 1 1 |  |  |
| Skip indicator | | 0 0 0 0 |  |  |
| Message type | | 1 0 1 0 0 0 0 1 |  |  |

### 4.9.3 Test procedure to deactivate UE Beamlock Test Function (UBF)

4.9.3.1 Initiation

UE is operating in FR2 in RRC\_CONNECTED state with UE beamlock test function activated.

4.9.3.2 Procedure

Table 4.9.3.2-1: Test procedure Sequence

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| 1 | SS request UE to deactivate UE beamlock function. | <-- | *DEACTIVATE BEAMLOCK* | - | - |
| 2 | UE confirms that UE beamlock function is activated | --> | *DEACTIVATE BEAMLOCK COMPLETE* | - | - |

4.9.3.3 Specific Message contents

Table 4.9.3.3-1: DEACTIVATE BEAMLOCK

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.4.3 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Protocol discriminator | | 1 1 1 1 |  |  |
| Skip indicator | | 0 0 0 0 |  |  |
| Message type | | 1 0 1 0 0 0 1 0 |  |  |

Table 4.9.3.3-2: DEACTIVATE BEAMLOCK COMPLETE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.4.4 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Protocol discriminator | | 1 1 1 1 |  |  |
| Skip indicator | | 0 0 0 0 |  |  |
| Message type | | 1 0 1 0 0 0 1 1 |  |  |

### 4.9.4 Test procedure to check that UE is in state 5GC RRC\_IDLE on a certain NR/NGC cell

4.9.4.1 Scope

This procedure aims at checking whether the UE is in state 5GC RRC\_IDLE on a certain cell (as specified in the test case).

4.9.4.2 Procedure description

4.9.4.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.4.2.2 Procedure

Table 4.9.4.2.2-1: Test procedure sequence

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| 1 | Step 1 of Generic procedure for bringing the UE in RRC\_CONNECTED state with connectivity *NR* as specified in Table 4.5.4.2-3 is performed. | - | - | - | - |
| 2 | Check: Does the UE transmit an *RRCSetupRequest* message on the cell specified in the test case? | --> | NR RRC: *RRCSetupRequest* | - | P |
| 3-8 | Steps 3-8 of Generic procedure for bringing the UE in RRC\_CONNECTED state with connectivity *NR* as specified in Table 4.5.4.2-3 are performed. | - | - | - | - |
| - | EXCEPTION: Step 9a1 describes a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value | - | - | - | - |
| 9a1 | IF '*connected without release*' is not present THEN the SS transmits an *RRCRelease* message to release RRC connection and move the UE to RRC\_IDLE. | <-- | NR RRC: *RRCRelease* | - | - |

4.9.4.2.3 Specific Message content

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

### 4.9.5 Test procedure to check that UE is camped on a new NR/NGC cell belonging to a new TA

4.9.5.1 Scope

This procedure aims at checking whether the UE performs a mobility registration updating (Tracking Area (TA) update) procedure when it camps on a new cell (as specified in the test case) belonging to a new TA.

4.9.5.2 Procedure description

4.9.5.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.5.2.2 Procedure sequence

Table 4.9.5.2.2-1: Test procedure sequence mobility registration updating (TA update)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| - | EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case. | - | - | - | - |
| 1 | The UE transmits an *RRCSetupRequest* message. | --> | NR RRC: *RRCSetupRequest* | - | - |
| 2 | SS transmit an *RRCSetup* message. | <-- | NR RRC: *RRCSetup* | - | - |
| 3 | The UE transmits an *RRCSetupComplete* message to confirm the successful completion of the connection establishment and a REGISTRATION REQUEST message indicating "mobility registration updating" is sent to update the registration of the actual tracking area. | --> | NR RRC: *RRCSetupComplete*  5GMM: REGISTRATION REQUEST | - | - |
| 4 | SS sends a REGISTRATION ACCEPTmessage containing a 5G-GUTI.  (NOTE 1, NOTE 2) | <-- | NR RRC: *DLInformationTransfer*  5GMM: REGISTRATION ACCEPT | - | - |
| 5 | Check: Does the UE send a REGISTRATION COMPLETE? | --> | NR RRC: *ULInformationTransfer*  5GMM: REGISTRATION COMPLETE | - | P |
| - | EXCEPTION: Step 6a1 describes a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value | - | - | - | - |
| 6a1 | IF '*connected without release*' is not present THEN the SS transmits an *RRCRelease* message to release RRC connection and move the UE to RRC\_IDLE. | <-- | NR RRC: *RRCRelease* | - | - |
| NOTE 1: If a PDU session status IE was included in the REGISTRATION REQUEST message then the SS includes a PDU session status IE in the REGISTRATION ACCEPT message indicating that all the PDU sessions are active.  NOTE 2: If the UE has indicated S1 mode supported then the SS shall indicate in the 5GS network feature support IE in the REGISTRATION ACCEPT message the IWK N26 bit set to "interworking without N26 not supported". The setting of the "interworking without N26 not supported" has been chosen to ensure that the UE is operating in the single-registration mode allowing for a clearly pre-determined UE behaviour. | | | | | |

4.9.5.2.3 Specific Message content

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

### 4.9.6 Test procedures for Switch off / Power off UE

#### 4.9.6.1 Switch off / Power off procedure in RRC\_IDLE

Table 4.9.6.1-1: Switch off procedure in RRC\_IDLE

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Step | | Procedure | | Message Sequence | | | | |
| U - S | | Message | |
| - | | EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [36] pc\_SwitchOnOff or [37] pc\_USIM\_Removal is supported | | - | | - | | |
| 1a1 | | IF pc\_SwitchOnOff THEN switch off UE, IF pc\_USIM\_Removal THEN remove the USIM (Note 1) | | - | | - | | |
| 1a2 | | UE transmits an *RRCSetupRequest* message. | | --> | | RRC: *RRCSetupRequest* | | |
| 1a3 | | SS transmit an *RRCSetup* message. | | <-- | | RRC: *RRCSetup* | | |
| - | | EXCEPTION: Steps 1a4Aa1 to 1a4Aa5b1 specify optional behaviour if the UE has previously performed IMS registration | | - | | - | | |
| 1a4Aa1 | | The UE transmits an *RRCSetupComplete* message to confirm the successful completion of the connection establishment and to initiate the IMS signalling procedure by including the SERVICE REQUEST message. | | --> | | RRC: *RRCSetupComplete*  5GMM: SERVICE REQUEST | | |
| 1a4Aa2 | | The SS transmits a *SecurityModeCommand* message to activate AS security. | | <-- | | RRC: *SecurityModeCommand* | | |
| 1a4Aa3 | | The UE transmits a *SecurityModeComplete* message and establishes the initial security configuration. | | --> | | RRC: *SecurityModeComplete* | | |
| 1a4Aa4 | | The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB. | | <-- | | RRC: *RRCReconfiguration*  5GMM: SERVICE ACCEPT | | |
| - | | EXCEPTION: In parallel to the event described in step 1a4Aa5 below, the generic test procedure in TS 34.229-5 [47] Annex A.11 may be performed. | | - | | - | | |
| 1a4Aa5 | | The UE transmits an *RRCReconfigurationComplete* message. | | --> | | RRC: *RRCReconfigurationComplete* | | |
| - | | EXCEPTION: Steps 1a4Aa5a1 - 1a4Aa5b1 may be performed depending on UE implementation | | - | | - | | |
| 1a4Aa5a1 | | The UE transmits a PDU SESSION RELEASE REQUEST message. | | --> | | PDU SESSION RELEASE REQUEST | | |
| 1a4Aa5a2 | | PDU session release procedure defined in clause 4.9.21 of TS 38.508-1 [4] is performed | | - | | - | | |
| 1a4Aa5a3 | | The UE transmits a DEREGISTRATION REQUEST message. | | --> | | 5GMM: DEREGISTRATION REQUEST | | |
| 1a4Aa5b1 | | The UE transmits a DEREGISTRATION REQUEST message | | - | | 5GMM: DEREGISTRATION REQUEST | | |
| - | | EXCEPTION: Step 1a4Ab1 below specifies the behaviour if the UE has not previously performed IMS registration | | - | | - | | |
| 1a4Ab1 | | The UE transmits an *RRCSetupComplete* message including the DEREGISTRATION REQUEST message. | | --> | | RRC: *RRCSetupComplete*  5GMM: DEREGISTRATION REQUEST | | |
| 1a4 | | Void | | - | | - | | |
| 1a5 | | The SS transmits an *RRCRelease* message | | <-- | | RRC: *RRCRelease* | | |
| 1b1 | | ELSE power off UE (Note 2) | | - | | - | | |
| Note 1: USIM removal is a feasible alternative to switch off UE.  Note 2: Power off is used when UE don’t support switch off or USIM removal, in which case no UE originated deregistration procedure is expected. | | | | | | | | |

#### 4.9.6.2 Switch off / Power off procedure in RRC\_INACTIVE

4.9.6.2.1 Procedure

Table 4.9.6.2.1-1: Switch off procedure in RRC\_INACTIVE

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Step | | Procedure | | Message Sequence | | | | |
| U - S | | Message | |
| - | | EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [36] pc\_SwitchOnOff or [37] pc\_USIM\_Removal is supported | | - | | - | | |
| 1a1 | | IF pc\_SwitchOnOff THEN switch off UE, IF pc\_USIM\_Removal THEN remove the USIM (Note 1) | | - | | - | | |
| 1a2 | | UE transmits an *RRCResumeRequest* message. | | --> | | NR RRC: *RRCResumeRequest* | | |
| 1a3 | | SS transmit an *RRCResume* message. | | <-- | | NR RRC: *RRCResume* | | |
| - | | EXCEPTION: Steps 1a4Aa1 to 1a4Aa5b1 specify optional behaviour if the UE has previously performed IMS registration | | - | | - | | |
| 1a4Aa1 | | The UE transmits an *RRCResumeComplete* message to confirm the successful completion of the connection establishment and to initiate the IMS signalling procedure by including the SERVICE REQUEST message. | | --> | | RRC: *RRCResumeComplete*  5GMM: SERVICE REQUEST | | |
| 1a4Aa2 | | The SS transmits a *SecurityModeCommand* message to activate AS security. | | <-- | | RRC: *SecurityModeCommand* | | |
| 1a4Aa3 | | The UE transmits a *SecurityModeComplete* message and establishes the initial security configuration. | | --> | | RRC: *SecurityModeComplete* | | |
| 1a4Aa4 | | The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB. | | <-- | | RRC: *RRCReconfiguration*  5GMM: SERVICE ACCEPT | | |
| - | | EXCEPTION: In parallel to the event described in step 1a4Aa5 below, the generic test procedure in TS 34.229-5 [47] Annex A.11 may be performed. | | - | | - | | |
| 1a4Aa5 | | The UE transmits an *RRCReconfigurationComplete* message. | | --> | | RRC: *RRCReconfigurationComplete* | | |
| - | | EXCEPTION: Steps 1a4Aa5a1 - 1a4Aa5b1 may be performed depending on UE implementation | | - | | - | | |
| 1a4Aa5a1 | | The UE transmits a PDU SESSION RELEASE REQUEST message. | | --> | | PDU SESSION RELEASE REQUEST | | |
| 1a4Aa5a2 | | PDU session release procedure defined in clause 4.9.21 of TS 38.508-1 [4] is performed | | - | | - | | |
| 1a4Aa5a3 | | The UE transmits a DEREGISTRATION REQUEST message. | | --> | | 5GMM: DEREGISTRATION REQUEST | | |
| 1a4Aa5b1 | | The UE transmits a DEREGISTRATION REQUEST message | | - | | 5GMM: DEREGISTRATION REQUEST | | |
| - | | EXCEPTION: Step 1a4Ab1 below specifies the behaviour if the UE has not previously performed IMS registration | | - | | - | | |
| 1a4 | | Void | | - | | - | | |
| 1a5 | | The SS transmits an *RRCRelease* message | | <-- | | NR RRC: *RRCRelease* | | |
| 1b1 | | ELSE power off UE (Note 2) | | - | | - | | |
| Note 1: USIM removal is a feasible alternative to switch off UE.  Note 2: Power off is used when UE don’t support switch off or USIM removal, in which case no UE originated deregistration procedure is expected. | | | | | | | | |

4.9.6.2.2 Specific Message contents

Table 4.9.6.2.2-1: RRCResumeRequest

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.2.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCResumeRequest ::= SEQUENCE { | |  |  |  |
| rrcResumeRequest SEQUENCE { | |  |  |  |
| resumeIdentity | | Not checked |  |  |
| resumeMAC-I | | Not checked |  |  |
| resumeCause | | Not checked |  |  |
| spare | | Not checked |  |  |
| } | |  |  |  |
| } | |  |  |  |

#### 4.9.6.3 Switch off / Power off procedure in RRC\_CONNECTED

Table 4.9.6.3-1: Switch off procedure in RRC\_CONNECTED

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Step | | Procedure | | Message Sequence | | | | |
| U - S | | Message | |
| 1a1-1a3 | | Void | | - | | - | | |
| 2-4 | | Void | | - | | - | | |
| - | | EXCEPTION: Steps 5a1 to 5b1 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if a particular implementation is under test. | | - | | - | | |
| 5a1 | | IF pc\_SwitchOnOff THEN switch off UE, IF pc\_USIM\_Removal THEN remove the USIM (Note 1) | |  | |  | | |
| - | | EXCEPTION : Step 5a1Aa1 to 5a2Ab1 below specifies optional behaviour if the UE has previously performed IMS registration | | - | | - | | |
| 5a1Aa1 | | The UE may perform the generic test procedure described in TS 34.229-5 [47] Annex A.11 | | - | | - | | |
| - | | EXCEPTION: Steps 5a2Aa1a1 – 5a2Ab1 may be performed depending on UE implementation | | - | | - | | |
| 5a2Aa1a1 | | The UE transmits a PDU SESSION RELEASE REQUEST message. | | --> | | PDU SESSION RELEASE REQUEST | | |
| 5a2Aa1a2 | | PDU session release procedure defined in clause 4.9.21 of TS 38.508-1 [4] is performed | | - | | - | | |
| 5a2Aa1a3 | | The UE transmits a DEREGISTRATION REQUEST message. | | --> | | 5GMM: DEREGISTRATION REQUEST | | |
| 5a2Ab1 | | The UE transmits a DEREGISTRATION REQUEST message. | | --> | | 5GMM: DEREGISTRATION REQUEST | | |
| 5a3 | | The SS transmits an RRCRelease message. | | <-- | | NR RRC: *RRCRelease* | | |
| 5b1 | | ELSE power off UE (Note 2) | | - | | - | | |
| Note 1: USIM removal is a feasible alternative to switch off UE.  Note 2: Power off is used when UE don’t support switch off or USIM removal, in which case no UE originated deregistration procedure is expected. | | | | | | | | |

#### 4.9.6.3A Switch off / Power off procedure in RRC\_CONNECTED with T3540 started

Table 4.9.6.3A-1: Switch off procedure in RRC\_CONNECTED with T3540 started

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Procedure | Message Sequence | |
| U - S | Message | |
| 1 | SS starts timer1 = T3540 (10 sec). | - | - |
| 2 | The SS locally releases the RRC connection. | - | - |
| 3 | SS waits for Timer1 expires.  NOTE: On expiry of T3540 UE shall locally release the established N1 NAS signalling connection | - | - |
| 4 | The test procedure as described in Table 4.9.6.1-1: Switch off procedure in RRC\_IDLE take place. | - | - |

#### 4.9.6.4 Switch off / Power off procedure in State DEREGISTERED

Table 4.9.6.4-1: Switch off procedure in State DEREGISTERED

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Procedure | Message Sequence | |
| U - S | Message | |
| - | EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [36] pc\_SwitchOnOff or [37] pc\_USIM\_Removal is supported | - | - |
| 1a1 | IF pc\_SwitchOnOff THEN switch off UE (Note 1) | - | - |
| 1b1 | ELSE power off UE (Note 2) | - | - |
| Note 1: USIM removal is a feasible alternative to switch off UE.  Note 2: Power off is used when UE don’t support switch off or USIM removal. | | | |

#### 4.9.6.5 Switch off / Power off procedure in WLAN Ipsec\_SA\_Established

Table 4.9.6.5-1: Switch off procedure in Ipsec\_SA\_Established

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Procedure | Message Sequence | |
| U - S | Message | |
| - | EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [30] pc\_SwitchOnOff or [31] pc\_USIM\_Removal is supported | - | - |
| 1a1 | IF pc\_SwitchOnOff THEN switch off UE (Note 1) | - | - |
| 1a2 | The UE transmits a DEREGISTRATION REQUEST message. | --> | 5GMM: DEREGISTRATION REQUEST |
| 1a3 | The generic procedure for SS-requested IPsec Secure tunnel disconnection, specified in subclause 4.5A.5, takes place performing disconnection of security association | - | - |
| 1b1 | ELSE power off UE (Note 2) | - | - |
| Note 1: USIM removal is a feasible alternative to switch off UE.  Note 2: Power off is used when UE don’t support switch off or USIM removal, in which case no UE originated deregistration procedure is expected. | | | |

### 4.9.7 Test procedure for UE for Tracking area updating / Inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode

4.9.7.1 Scope

This procedure aims at verifying that the UE performs a Tracking Area Update (TAU) procedure when it performs inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE.

The procedure provides different security context handling options based on the condition parameters defined in Table 4.9.7.1-1.

Table 4.9.7.1-1: Condition parameters

|  |  |
| --- | --- |
| Condition | Explanation |
| new security context | When this parameter is present the SS will establish and take into account a new security context. |
| existing EPS security context | When this parameter is present the SS will take into account an existing EPS security context. A prerequisite for using this condition is the existence of an EPS security context |
| NOTE 1: If none of the defined condition parameters is present when the procedure is referred to then the SS will apply mapped 5G security context. A prerequisite for using this condition is the existence of 5G security context. | |

4.9.7.2 Procedure description

4.9.7.2.1 Initial conditions

System Simulator:

- 1 E-UTRA cell connected to EPC, default parameters, system information combination 31 as defined in TS 36.508 [2], subclause 4.4.3.1.1.

NOTE: Details about the NGC cell from which the UE will move to the E-UTRA cell are to be specified in the test.

User Equipment:

- The Test UICC shall be inserted. It shall provide relevant details on the EPC and 5GC.

All details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.7.2.2 Procedure sequence

Table 4.9.7.2.2-1: Test procedure sequence UE Tracking area updating / inter-system change from N1 mode to S1 mode in EMM-IDLE mode

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| - | EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case. | - | - | - | - |
| 1 | The UE transmits an *RRCConnectionRequest* message on the cell specified in the test case. | --> | RRC: *RRCConnectionRequest* | - | - |
| 2 | SS transmits an *RRCConnectionSetup* message. | <-- | RRC: *RRCConnectionSetup* | - | - |
| 3 | The UE transmits an *RRCConnectionSetupComplete* message to confirm the successful completion of the connection establishment and a TRACKING AREA UPDATE REQUEST message is sent to update the registration of the actual tracking area.  For some consequences related to the content of the TRACKING AREA UPDATE REQUEST message see the Notes in Table 4.9.7.2.3-1. | --> | RRC: *RRCConnectionSetupComplete* NAS: TRACKING AREA UPDATE REQUEST | - | - |
| - | EXCEPTION: Steps 4a1-4b2 describe a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value | - | - | - | - |
| 4a1 | IF *'new security context*' THEN the SS transmits an AUTHENTICATION REQUEST message to initiate the EPS authentication and AKA procedure. | <-- | RRC: *DLInformationTransfer*  NAS: AUTHENTICATION REQUEST | - | - |
| 4a2 | The UE transmits an AUTHENTICATION RESPONSE message and establishes mutual authentication. | --> | RRC: *ULInformationTransfer*  NAS: AUTHENTICATION RESPONSE | - | - |
| 4a3 | The SS transmits a NAS SECURITY MODE COMMAND message to activate NAS security. | <-- | RRC: *DLInformationTransfer*  NAS: SECURITY MODE COMMAND | - | - |
| 4a4 | The UE transmits a NAS SECURITY MODE COMPLETE message and establishes the initial security configuration. | --> | RRC: *ULInformationTransfer*  NAS: SECURITY MODE COMPLETE | - | - |
| 4b1 | IF *'existing EPS security context*' THEN the SS transmits a NAS SECURITY MODE COMMAND message to activate NAS security. | <-- | RRC: *DLInformationTransfer*  NAS: SECURITY MODE COMMAND | - | - |
| 4b2 | The UE transmits a NAS SECURITY MODE COMPLETE message and establishes the initial security configuration. | --> | RRC: *ULInformationTransfer*  NAS: SECURITY MODE COMPLETE | - | - |
| - | EXCEPTION: If none of the branches 4a or 4b takes place then the SS shall apply mapped 5G security context, otherwise the SS shall apply the security context depending on the branch. | - | - | - | - |
| 5 | SS responds with TRACKING AREA UPDATE ACCEPTmessage. | <-- | RRC: *DLInformationTransfer*  NAS: TRACKING AREA UPDATE ACCEPT | - | - |
| 6 | Check: Does the UE transmit TRACKING AREA UPDATE COMPLETE? | --> | RRC: *ULInformationTransfer*  NAS: TRACKING AREA UPDATE COMPLETE | - | P |
| 7a1 | Void | - | - | - | - |
| - | EXCEPTION: Steps 8a1 to 8b2a8 describe a step sequence depending on test case scenario; the left-most "lower case letter" identifies a step sequence that take place if the test procedure is called in a particular scenario.  (NOTE 1) | - | - | - | - |
| 8a1 | IF *Interworking without N26 interface supported* THEN  The generic procedure for UE-requested PDN connection establishment, specified in subclause 4.5A.2B, takes place performing establishment of UE-requested PDN connection(s) with ExpectedNumberOfNewPDNConnections = pc\_noOf\_PDNsSameConnection. | - | - | - | - |
| - | EXCEPTION: Steps 8a2a1 to 8a2b1 describe a step sequence depending on test case scenario; the right-most "lower case letter" identifies a step sequence that take place if the UE performs a specific action. | - | - | - | - |
| 8a2a1 | IF pc\_noOf\_PDNsNewConnection>0 THEN the SS transmits an *RRCConnectionRelease* message to release RRC connection and moves the UE to RRC\_IDLE. | <-- | RRC: *RRCConnectionRelease* | - | - |
| 8a2a2 | The procedure E-UTRA RRC\_IDLE Unrestricted nr PDN Extension as specified in Table 4.5.2.2-6 takes place. | - | - | - | - |
| 8a2b1 | ELSE IF *connected without release* is not present THEN, the SS transmits an *RRCConnectionRelease* message to release RRC connection and move to E-UTRA RRC\_IDLE (State 2). | <-- | RRC: *RRCConnectionRelease* | - | - |
| 8b1 | ELSE (i.e. 'Interworking without N26 interface not supported')  The generic procedure for UE-requested PDN connection establishment, specified in subclause 4.5A.2B, takes place performing establishment of UE-requested PDN connection(s) with ExpectedNumberOfNewPDNConnections = pc\_noOf\_PDNsSameConnection with the exception that IF step 2b1, Table 4.5A.2B.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional connection establishment to take place (NOTE 2). | - | - | - | - |
| - | EXCEPTION: Steps 8b2a1 to 8b2b1 describe a step sequence depending on test case scenario; the right-most "lower case letter" identifies a step sequence that take place if the UE performs a specific action. | - | - | - | - |
| 8b2a1 | IF pc\_noOf\_PDNsNewConnection>0 THEN the SS transmits an *RRCConnectionRelease* message to release RRC connection and moves the UE to RRC\_IDLE. | <-- | RRC: *RRCConnectionRelease* | - | - |
| 8b2a2 | The procedure E-UTRA RRC\_IDLE Unrestricted nr PDN Extension as specified in table 4.5.2.2-6 takes place.  For the referred in step 7, Table 4.5.2.2-6, generic procedure for UE-requested PDN connection establishment, specified in subclause 4.5A.2B, IF step 2b1, Table 4.5A.2B.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional connection establishment to take place (NOTE 2). | - | - | - | - |
| 8b2b1 | ELSE IF *connected without release* is not present THEN, the SS transmits an *RRCConnectionRelease* message to release RRC connection and move to E-UTRA RRC\_IDLE (State 2). | <-- | RRC: *RRCConnectionRelease* | - | - |
| NOTE 1: The NWK will indicated whether Interworking without N26 interface is supported in the REGISTRATION ACCEPT message, IE '5GS network feature support', IWK N26 bit. Consequently which branch would the procedure sequence go through will depend on the content of the REGISTRATION ACCEPT message applicable to e.g. the test case which calls the present test procedure.  NOTE 2: Depending on UE implementation and/or NWK behaviour, the UE may transfer some PDU sessions into PDN connections without re-establishing those utilising the relevant mapped QoS provided in the PDU SESSION ESTABLISHMENT ACCEPT message when the UE was on the NR cell. This will result in the number of established PDNs, if any, being lower than the pc\_noOf\_PDNsSameConnection or the pc\_noOf\_PDNsNewConnection which the UE will establish upon initial attach to the EPS. | | | | | |

4.9.7.2.3 Specific Message content

Default message contents as specified in TS 36.508 [2] with the following exceptions.

Table 4.9.7.2.3-1: TRACKING AREA UPDATE REQUEST (Step 3, Table 4.9.7.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 36.508 [2], Table 4.7.2-27, condition NR. | | | |
| Information Element | Value/remark | Comment | Condition |
| EPS update type |  |  |  |
| EPS update type Value | '000'B or '001'B or '010'B | ‘TA updating’ or ‘combined TA/LA updating’ or ‘combined TA/LA updating with IMSI attach’ |  |
| "Active" flag | Any value |  |  |
| NAS key set identifier | the eKSI indicating the 5G NAS security context value assigned at the initial registration when the UE entered N1 |  |  |
| Old GUTI | GUTI, mapped from the 5G-GUTI assigned at the initial registration when the UE entered N1 |  |  |
| Additional GUTI | Not present or any allowed value |  |  |
| Last visited registered TAI | The TAI the last visited E-UTRA Cell belonged to, if any. Not included if the UE does not have last stored EPC TAI. |  |  |
| UE radio capability information update needed | '1'B | UE radio capability information update needed | First-N1-to-S1 |
| EPS bearer context status | Present, Content not checked | EBI corresponding to active PDN connections (transferred PDU Sessions) need to be set to 1  (NOTE 2) |  |
| Old GUTI type | "Native GUTI" |  |  |
| UE status | "UE is in 5GMM-REGISTERED state" |  |  |
| NOTE 1: The message shall be integrity protected using the 5GS security context available in the UE.  NOTE 2: There will be no PDN connection establishment nor explicit bearer configuration for the transferred PDU sessions. This means that the UE has created locally the default bearer context and the dedicated bearer context(s) based on the parameters of the mapped bearer contexts or the associations between QoS flow and mapped bearer in the PDU session. Although the contents of the IE is not required to be verified for PASS/FAIL purposes, the provided information shall be taken into account for building any subsequent RRC Reconfiguration message, and can be used e.g. for SS configuration purposes as well. | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| First-N1-to-S1 | First N1 to S1 transition following UE registration in N1 mode |

Table 4.9.7.2.3-2: AUTHENTICATION REQUEST (Step 4a1, Table 4.9.7.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 36.508 [2], Table 4.7.2-7. | | | |
| Information Element | Value/remark | Comment | Condition |
| NAS key set identifierASME |  |  |  |
| NAS key set identifier | An arbitrarily selected value between '000'B and '110'B, different from the valid NAS key set identifier of the UE if such a value exists. | Value shall be different to the 5G NAS security context value if there is one assigned |  |

Table 4.9.7.2.3-3: SECURITY MODE COMMAND (Step 4a3, Table 4.9.7.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 36.508 [2], Table 4.7.2-19. | | | |
| Information Element | Value/remark | Comment | Condition |
| NAS key set identifierASME |  |  |  |
| NAS key set identifier | The 4G NAS key set identifier assigned in step 4a1. |  |  |

Table 4.9.7.2.3-4: SECURITY MODE COMMAND (Step 4b1, Table 4.9.7.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 36.508 [2], Table 4.7.2-19. | | | |
| Information Element | Value/remark | Comment | Condition |
| NAS key set identifierASME |  |  |  |
| NAS key set identifier | The 4G NAS key set identifier assigned in the latest Authentication procedure. |  |  |

Table 4.9.7.2.3-5: TRACKING AREA UPDATE ACCEPT (Step 5, Table 4.9.7.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 36.508 [2], Table 4.7.2-24, condition NR. | | | |
| Information Element | Value/remark | Comment | Condition |
| EPS network feature support | The IWK N26 (octet 4, bit 7) set to '1' |  | *Interworking without N26 interface supported* |

### 4.9.8 Test procedure for Registration Reject

4.9.8.1 Scope

The purpose of this procedure is to reject the registration request, with a specific cause value, which may allow fields to be cleared in the USIM.

4.9.8.2 Procedure description

4.9.8.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.8.2.2 Procedure sequence

Table 4.9.8.2.2-1: Procedure for Registration Reject

|  |  |  |  |
| --- | --- | --- | --- |
| St | Procedure | Message Sequence | |
|  |  | U – S | Message |
| 1 | The UE transmits an *RRCSetupRequest* message. | --> | NR RRC: *RRCSetupRequest* |
| 2 | The SS transmits an *RRCSetup* message. | <-- | NR RRC: *RRCSetup* |
| 3 | The UE transmits an *RRCSetupComplete* message and a REGISTRATION REQUEST message. | --> | NR RRC: *RRCSetupComplete*  5GMM: REGISTRATION REQUEST |
| 4 | The SS transmits an AUTHENTICATION REQUEST message including EAP-Request/AKA'-Challenge or 5G AKA Challenge. | <-- | 5GMM: AUTHENTICATION REQUEST |
| 5 | The UE transmits an AUTHENTICATION RESPONSE message including EAP-Response/AKA'-Challenge or 5G AKA Response. | --> | 5GMM: AUTHENTICATION RESPONSE |
| 6 | The SS transmits a SECURITY MODE COMMAND message including EAP-Success if EAP-AKA' used. | <-- | 5GMM: SECURITY MODE COMMAND |
| 7 | The UE transmits a SECURITY MODE COMPLETE message. | --> | 5GMM: SECURITY MODE COMPLETE |
| 8 | The SS transmits a REGISTRATION REJECT message with the cause value set to *Reject Cause*. | <-- | 5GMM: REGISTRATION REJECT |
| 9 | The SS transmits an *RRCRelease* message | <-- | RRC: *RRCRelease* |
| 10 | Test procedure for Switch off / Power off in State DEREGISTERED as specified in subclause 4.9.6.4 |  |  |

4.9.8.2.3 Specific message contents

Table 4.9.8.2.3-1: REGISTRATION REJECT

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: table 4.7.1-9 | | | |
| Information Element | | Value/remark | Comment | Condition |
| 5GMM cause | | Set according to *Reject Cause* | *Reject Cause* set to #6 Illegal ME as default |  |

### 4.9.9 Test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode

4.9.9.1 Scope

This procedure aims at verifying that the UE performs a Mobility and periodic registration update procedure when it performs inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE.

4.9.9.2 Procedure description

4.9.9.2.1 Initial conditions

System Simulator:

- 1 NGC Cell connected to 5GC, default parameters, system information combination NR-6 as defined in subclause 4.4.3.1.2.

NOTE: Details about the E-UTRA cell from which the UE will move to the NGC cell are to be specified in the test.

User Equipment:

- The Test UICC shall be inserted. It shall provide relevant details on the EPC and 5GC.

All details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.9.2.2 Procedure sequence

Table 4.9.9.2.2-1: Test procedure sequence UE Tracking area updating / inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| - | EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case. | - | - | - | - |
| 1-3 | Steps 1-3 from the mobility and periodic registration update procedure as described in Table 4.9.5.2.2-1 are performed.  For some consequences related to the content of the REGISTRATION REQUEST message sent in step 1 see the Notes in Table 4.9.9.2.3-1. | - | - | - | - |
| 4 | The SS transmits a DLInformationTransfer message and an AUTHENTICATION REQUEST message. | <-- | NR RRC: DLInformationTransfer  5GMM: AUTHENTICATION REQUEST | - | - |
| 5 | The UE transmits an ULInformationTransfer message and an AUTHENTICATION RESPONSE message. | --> | NR RRC: ULInformationTransfer  5GMM: AUTHENTICATION RESPONSE | - | - |
| 6 | The SS transmits a DLInformationTransfer message and a SECURITY MODE COMMAND message. | <-- | NR RRC: DLInformationTransfer  5GMM: SECURITY MODE COMMAND | - | - |
| 7 | The UE transmits an ULInformationTransfer message and a SECURITY MODE COMPLETE message. | --> | NR RRC: ULInformationTransfer  5GMM: SECURITY MODE COMPLETE | - | - |
| 8 | The SS transmits a SecurityModeCommand message. | <-- | NR RRC: SecurityModeCommand | - | - |
| 9 | The UE transmits a SecurityModeComplete message. | --> | NR RRC: SecurityModeComplete | - | - |
| 10-11 | Steps 4-5 of Table 4.9.5.2.2-1 of the test procedure are performed. | - | - | - | - |
| 12a1-13a1 | Void | - | - | - | - |
| - | EXCEPTION: Steps 14a1 to 14b2b1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the test procedure is called in a particular scenario.  (NOTE 1) | - | - | - | - |
| 14a1 | IF *Interworking without N26 interface supported* THEN  The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with ExpectedNumberOfNewPDUSessions = pc\_noOf\_PDUsSameConnection.  The UE may attempt to transfer some of the existing in S1 PDN connection(s) in which case in the PDU SESSION ESTABLISHMENT REQUEST message the request type shall be set to "existing PDU session" (NOTE 3). | - | - | - | - |
| - | EXCEPTION: Steps 14a2a1 to 14a2b1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. | - | - | - | - |
| 14a2a1 | IF pc\_noOf\_PDUsNewConnection > 0 THEN the SS transmits an *RRCRelease* message to release RRC connection and moves the UE to RRC\_IDLE. | <-- | NR RRC: *RRCRelease* | - | - |
| 14a2a2 | The procedure NR RRC\_IDLE Extension as specified in table 4.5.2.2-4 takes place. | - | - | - | - |
| 14a2b1 | ELSE IF *connected without release* is not present THEN, the SS transmits an *RRCConnectionRelease* message to release RRC connection and move the UE to RRC\_IDLE. | <-- | NR RRC: *RRCRelease* | - | - |
| - | EXCEPTION: In parallel to the events described in step 14b1 below, the steps specified in Table 4.9.9.2.2-2 may take place. | - | - | - | - |
| 14b1 | ELSE (i.e. 'Interworking without N26 interface not supported')  The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with ExpectedNumberOfNewPDUSessions = pc\_noOf\_PDUsSameConnection with the exception that IF step 2b1, Table 4.5A.2.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional session establishment to take place (NOTE 2). | - | - | - | - |
| - | EXCEPTION: Steps 14b2a1 to 14b2b1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. | - | - | - | - |
| 14b2a1 | IF pc\_noOf\_PDUsNewConnection> 0 THEN the SS transmits an *RRCRelease* message to release RRC connection and move the UE to RRC\_IDLE. | <-- | NR RRC: *RRCRelease* | - | - |
| 14b2a2 | The procedure NR RRC\_IDLE Extension as specified in Table 4.5.2.2-4 takes place.  For the referred in step 8, Table 4.5.2.2-4, generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, IF step 2b1, Table 4.5A.2.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional session establishment to take place (NOTE 2). | - | - | - | - |
| 14b2b1 | ELSE IF *connected without release* is not present THEN, the SS transmits an *RRCRelease* message to release RRC connection and move the UE to RRC\_IDLE. | <-- | NR RRC: *RRCRelease* | - | - |
| NOTE 1: The NWK will indicated whether Interworking without N26 interface is supported in the REGISTRATION ACCEPT message, IE '5GS network feature support', IWK N26 bit. Consequently which branch would the procedure sequence go through will depend on the content of the REGISTRATION ACCEPT message applicable to e.g. the test case which calls the present test procedure.  NOTE 2: Depending on UE implementation and/or NWK behaviour, the UE may transfer some PDN connections into PDU sessions without re-establishing them with the relevant mapping provided in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message. This will result in the number of connection modifications, if any, being lower than the pc\_noOf\_PDUsSameConnection or the pc\_noOf\_PDUsNewConnection which the UE will establish upon initial attach to the 5GS.  NOTE 3: Since the MME does not provide the UE with the mapped PDU session for a PDN connection, the UE does not know whether interworking to 5GS is supported for a PDN connection for which the UE assigned a PDU Session identity before attempting to transfer the PDN connection from S1 mode to N1 mode. It is up to UE implementation to decide which PDN connection(s) to be attempted to transfer from S1 mode to N1 mode, e.g. based on UE policy or UE local configuration. (see TS 24.501 [22], subclause 6.1.4.2) | | | | | |

Table 4.9.9.2.2-2: Parallel behaviour

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| - | EXCEPTION: Step 1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.  NOTE 2, NOTE 3 | - | - | - | - |
| 1 | IF this is the first time in a test case that the UE moves from S1 to N1 THEN  the generic procedure for Procedure for UE-requested PDU session modification after the first S1 to N1 mode change / Single-registration mode with N26, specified in subclause 4.5A.2C, takes place with ExpectedNumberOfPDUSessionModifications=(pc\_noOf\_PDUsSameConnection+pc\_noOf\_PDUsNewConnection), with the exception that IF step 2b1, Table 4.5A.2C.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional session modifications to take place (NOTE 1). |  |  |  |  |
| NOTE 1: Depending on UE implementation and/or NWK behaviour, the UE may transfer with modification some PDN connections into PDU sessions without re-establishing them with the relevant mapping provided in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message. This will result in the number of session modifications, if any, being lower than the pc\_noOf\_PDUsSameConnection+pc\_noOf\_PDUsNewConnection.  NOTE 2: Whether this is the first time in a test case that the UE moves from S1 to N1 depends on the test scenario (including what happens in the preamble of the test).  NOTE 3: It is assumed that the PDU session modification for all transferred PDUs will happen on the same connection with the mobility and periodic registration update procedure.  NOTE 4: For PDN connections which will be transferred, tests calling the present procedure shall ensure that: - For each PDN connection established during the UE registration to the EPS, the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message which corresponds to the default EPS bearer of the PDN connectivity being activated, contains the Protocol configuration options IE or the Extended protocol configuration options IE with mapped 5GS PDU a session-AMBR and QoS rule(s). | | | | | |

4.9.9.2.3 Specific Message content

Table 4.9.9.2.3-1: REGISTRATION REQUEST (step 1, Table 4.9.9.2.2-1; step 3, Table 4.9.5.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.1-6. | | | |
| Information Element | Value/remark | Comment | Condition |
| 5GS registration type | '00xxx010' | mobility registration updating  x - not checked |  |
| ngKSI |  |  |  |
| NAS key set identifier | KSIAMF that was created when the UE last registered to 5GCN |  | Registered\_Previously\_on\_5GCN |
|  | ‘111’B | No key | Not\_Registered\_Previously\_on\_5GCN |
| TSC | '0'B | native security context (for KSIAMF) | Registered\_Previously\_on\_5GCN |
|  | Not applicable | TSC does not apply for NAS key set identifier value "111" | Not\_Registered\_Previously\_on\_5GCN |
| 5GS mobile identity | 5G-GUTI mapped from the 4G-GUTI assigned when the UE last registered to EPC E-UTRA |  |  |
| Non-current native NAS key set identifier | Not present |  |  |
| 5GMM capability | '1' | S1 mode supported |  |
| Last visited registered TAI | The TAI the last visited NGC Cell belonged to, if any. Not included if the UE does not have last stored 5GC TAI. |  |  |
| S1 UE network capability |  |  |  |
| All octets with the exception of octet 8, bit 8 and octet 9, bit 6 | Not checked |  |  |
| Extended protocol configuration options (ePCO) (octet 8, bit 8) | '1' | Extended protocol configuration options IE supported |  |
| N1 mode supported (N1mode) (octet 9, bit 6) | '1' | N1 mode supported |  |
| PDU session status | Any allowed value | (NOTE 1) |  |
| UE status | "UE is in EMM-REGISTERED state" |  |  |
| Additional GUTI | 5G-GUTI assigned when the UE last registered to 5GC N |  | Registered\_Previously\_on\_5GCN |
|  | Not present |  | Not\_Registered\_Previously\_on\_5GCN |
| EPS NAS message container | TRACKING AREA UPDATE REQUEST message | See Table 4.9.9.2.3-2 |  |
| EPS bearer context status | Not present | (NOTE 2) |  |
| NOTE 1: The UE includes the PDU session status IE indicating the status of the PDU session(s) mapped during the inter-system change from S1 mode to N1 mode from the PDN connection(s) for which the EPS indicated that interworking to 5GS is supported, if any. This means that the UE has created locally the default bearer context and the dedicated bearer context(s) based on the parameters of the mapped bearer contexts or the associations between QoS flow and mapped bearer in the PDN connection. Although the contents of the IE is not required to be verified for PASS/FAIL purposes, the provided information shall be taken into account for building any subsequent RRC Reconfiguration message, and can be used e.g. for SS configuration purposes as well.  NOTE 2: The UE is assumed NOT to have locally deactivated EPS bearer context(s) for which interworking to 5GS is supported while the UE was in S1 mode without notifying the network. | | | |

|  |  |
| --- | --- |
| **Condition** | **Explanation** |
| Not\_Registered\_Previously\_on\_5GCN | UE has not\_registered\_previously\_on\_5GCN. UE does not have valid 5G NAS security context and 5G-GUTI. |
| Registered\_Previously\_on\_5GCN | UE has registered\_previously\_on\_5GCN. UE have valid 5G NAS security context and 5G-GUTI |

Table 4.9.9.2.3-2: TRACKING AREA UPDATE REQUEST (Table 4.9.9.2.3-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 36.508 [2], Table 4.7.2-27. | | | |
| Information Element | Value/remark | Comment | Condition |
| EPS update type |  |  |  |
| EPS update type Value | '000'B | TA updating |  |
| "Active" flag | '0'B | No Bearer Establishment requested |  |
| NAS key set identifier | the eKSI for the current EPS security context |  |  |
| TSC | '0'B |  |  |
|  | '1'B |  | Mapped EPS security context |
| Old GUTI | 4G-GUTI assigned when the UE last registered to EPC E-UTRA |  |  |
| UE network capability | Not present |  |  |
| Last visited registered TAI | Not present |  |  |
| DRX parameter | Not present |  |  |
| UE radio capability information update needed | Not present |  |  |
| EPS bearer context status | Not present |  |  |
| MS network capability | Not present |  |  |
| Old location area identification | Not present |  |  |
| TMSI status | Not present |  |  |
| Mobile station classmark 2 | Not present |  |  |
| Mobile station classmark 3 | Not present |  |  |
| Supported Codecs | Not present |  |  |
| Additional update type | Not present |  |  |
| Voice domain preference and UE's usage setting | Not present |  |  |
| Old GUTI type | Not present |  |  |
| Device properties | Not present |  |  |
| MS network feature support | Not present |  |  |
| TMSI based NRI container | Not present |  |  |
| T3324 value | Not present |  |  |
| T3412 extended value | Not present |  |  |
| Extended DRX parameters | Not present |  |  |
| UE additional security capability | Not present |  |  |
| UE status | Not present |  |  |
| Additional information requested | Not present |  |  |
| NOTE: The message shall be integrity protected using the current EPS security context. | | | |

|  |  |
| --- | --- |
| **Condition** | **Explanation** |
| Mapped EPS security context | When explicitly specified by the test case in which the message is used. |

Table 4.9.9.2.3-3: REGISTRATION ACCEPT (step 10, Table 4.9.9.2.2-1; step 4, Table 4.9.5.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.1-7. | | | |
| Information Element | Value/remark | Comment | Condition |
| 5GS network feature support | The IWK N26 (octet 4, bit 7) set to '1' |  | *Interworking without N26 interface supported* |

### 4.9.10 Test procedure to check that the UE is in RRC\_CONNECTED state

4.9.10.1 Scope

This procedure aims at checking whether the UE is in the RRC\_CONNECTED state.

4.9.10.2 Procedure description

4.9.10.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.10.2.2 Procedure

Table 4.9.10.2.2-1: Test procedure sequence

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| 1 | The SS sends *UECapabilityEnquiry* message to the UE. | <-- | NR RRC: *UECapabilityEnquiry* | - | - |
| 2 | Check: Does the UE send a *UECapabilityInformation* message? | --> | NR RRC: *UECapabilityInformation* |  | P |

4.9.10.2.3 Specific Message content

None.

### 4.9.11 Test procedure for IMS Emergency call or eCall over IMS establishment in 5GC with IMS emergency registration

4.9.11.1 Scope

This procedure aims at verifying the UE establishment of IMS Emergency call or an eCall in 5GC when the UE is in 5GMM-IDLE and when IMS emergency registration is required e.g. under Normal Service conditions.

The procedure provides different emergency or eCall establishment options based on the condition parameters defined in Table 4.9.11.1-1.

Table 4.9.11.1-1: Condition parameters

|  |  |
| --- | --- |
| Condition | Explanation |
| emergency call | When this parameter is present the TC has triggered the UE to initiate an emergency call. (NOTE) |
| eCall | When this parameter is present the TC has triggered the UE to initiate an eCall. |
| NOTE: If this generic procedure is referred in test case without any condition, emergency call shall be used as default. | |

The trigger to initiate MO call will be part of test case from where the generic procedure is called.

4.9.11.2 Procedure description

4.9.11.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The procedure assumes that the UE is in test state 1N-A, subclause 4.4A.2 on the NR Cell. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.11.2.2 Procedure sequence

Table 4.9.11.2.2-1: Test procedure sequence UE IMS Emergency call or eCall over IMS establishment in 5GC with IMS emergency registration

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| - | EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case. | - | - | - | - |
| 1 | The UE transmits an *RRCSetupRequest* message with 'establishmentCause' set to 'emergency'. | --> | NR RRC: *RRCSetupRequest* | - | P |
| 2 | The SS transmits an *RRCSetup* message. | <-- | NR RRC: *RRCSetup* | - | - |
| 3 | The UE transmits an *RRCSetupComplete* message and a SERVICE REQUEST message with 'Service type' set to 'emergency services'. | --> | NR RRC: *RRCSetupComplete*  5GMM: SERVICE REQUEST | - | P |
| 4 | The SS transmits a *SecurityModeCommand* message. | <-- | NR RRC: *SecurityModeCommand* | - | - |
| 5 | The UE transmits a *SecurityModeComplete* message. | --> | NR RRC: *SecurityModeComplete* | - | - |
| 6 | The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB. | <-- | NR RRC: *RRCReconfiguration*  5GMM: SERVICE ACCEPT | - | - |
| - | EXCEPTION: Depending upon UE implementation, steps 7 and 8 can occur in any order. | - | - | - | - |
| 7 | The UE transmits an *RRCReconfigurationComplete* message. | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| 8 | The UE transmits an UL NAS TRANSPORT message with 'Request type' set to 'initial emergency request', and, a PDU SESSION ESTABLISHMENT REQUEST. | --> | NR RRC: *ULInformationTransfer*  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION ESTABLISHMENT REQUEST | - | P |
| - | EXCEPTION: In parallel to the events described in steps 9-10 below the events specified in steps 1a1 to 2 of Table 4.9.11.2.2-2 take place. | - | - | - | - |
| 9 | The SS transmits an *RRCReconfiguration* message and an PDU SESSION ESTABLISHMENT ACCEPT. | <-- | NR RRC: *RRCReconfiguration*  5GMM: DL NAS TRANSPORT  5GSM: PDU SESSION ESTABLISHMENT ACCEPT | - | - |
| 10 | The UE transmits an *RRCReconfigurationComplete* message. | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| - | EXCEPTION: In parallel to the events described in steps 11-13 below the events specified in steps 3 of Table 4.9.11.2.2-2 take place. | - | - | - | - |
| 11 | The SS transmits an RRCReconfiguration message and an PDU SESSION MODIFICATION COMMAND. | <-- | NR RRC: RRCReconfiguration  5GMM: DL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMMAND | - | - |
| - | EXCEPTION: Depending upon UE implementation, steps 12 and 13 can occur in any order. | - | - | - | - |
| 12 | The UE transmits an RRCReconfigurationComplete message. | --> | NR RRC: RRCReconfigurationComplete | - | - |
| 13 | The UE transmits an ULInformationTransfer message and an PDU SESSION MODIFICATION COMPLETE message. | --> | NR RRC: ULInformationTransfer  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMPLETE | - | P |

Table 4.9.11.2.2-2: IMS signalling and Emergency call establishment

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| - | EXCEPTION: Step 1a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. | - | - | - | - |
| 1a1 | The generic procedure for IP address allocation in the user plane specified in subclause 4.5A.3 takes place. | - | - | - | - |
| 2 | Generic Test Procedure for IMS Emergency registration / 5GS as defined in TS 34.229-5 [47], annex A.3 is performed. | - | - | - | - |
| - | EXCEPTION: Steps 3a1-3b1 describe a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value. | - | - | - | - |
| 3a1 | IF ‘*emergency call*’ THEN Generic test procedure for setting up IMS Emergency Voice Call / 5G as defined in TS 34.229-5 [47], annex A.6 is performed. | - | - | - | - |
| 3b1 | IF ‘*eCall*’ THEN Generic test procedure for NR eCall Setup and MSD Update, steps 1-3, as defined in Annex A.23 of TS 34.229-5 [47] is performed. | - | - | - | - |

4.9.11.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

Table 4.9.11.2.3-1: *SIB1* (at any time prior and during the procedure, Table 4.9.11.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-28. | | | |
| Information Element | | Value/remark | Comment | Condition |
| SIB1 ::= SEQUENCE { | |  |  |  |
| ims-EmergencySupport | | Present | true |  |
| } | |  |  |  |

Table 4.9.11.2.3-2: *RRCSetupRequest* (step 1, Table 4.9.11.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-23. | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCSetupRequest ::= SEQUENCE { | |  |  |  |
| rrcSetupRequest SEQUENCE { | |  |  |  |
| establishmentCause | | emergency |  |  |
| } | |  |  |  |
| } | |  |  |  |

Table 4.9.11.2.3-3:SERVICE REQUEST (step 3, Table 4.9.11.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.1-16. | | | |
| Information Element | | Value/remark | Comment | Condition |
| Service type | | ‘0011’B | emergency services |  |

Table 4.9.11.2.3-4:UL NAS TRANSPORT (step 8, Table 4.9.11.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.1-10, condition INITIAL\_PDU\_REQUEST. | | | |
| Information Element | | Value/remark | Comment | Condition |
| Request type | | ‘011’B | initial emergency request |  |
| S-NSSAI | | Not Present |  |  |
| DNN | | Not Present |  |  |

Table 4.9.11.2.3-5:PDU SESSION ESTABLISHMENT REQUEST (step 8, Table 4.9.11.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-1. | | | |
| Information Element | | Value/remark | Comment | Condition |
| PDU session ID | | A value that is not currently being used by another PDU session |  |  |
| PTI | | A value currently not used |  |  |
| SSC mode | | ‘001’B | SSC mode 1 |  |

Table 4.9.11.2.3-6:DL NAS TRANSPORT (step 9, Table 4.9.11.2.2-1)

|  |
| --- |
| Derivation Path: Table 4.7.1-11, condition 5GSM\_MESSAGE. |

Table 4.9.11.2.3-7:PDU SESSION ESTABLISHMENT ACCEPT (step 9, Table 4.9.11.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-2. | | | |
| Information Element | | Value/remark | Comment | Condition |
| Selected SSC mode | | ‘001’B | SSC mode 1 |  |
| Authorized QoS rules | | Reference QoS rule #2 as defined in Table 4.8.2.1-2. |  |  |
| Authorized QoS flow descriptions | | Reference QoS flow #2 as defined in Table 4.8.2.3-2. |  |  |
| DNN | | Not Present |  |  |

Table 4.9.11.2.3-8: *RRCReconfiguration* (step 9, Table 4.9.11.2.2-1)

|  |
| --- |
| Derivation Path: Table 4.8.1-1: RRCReconfiguration-DRB (1, 0) |

Table 4.9.11.2.3-9:PDU SESSION MODIFICATION COMMAND (step 11, Table 4.9.11.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-2. | | | |
| Information Element | | Value/remark | Comment | Condition |
| PDU session ID | | Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message. |  |  |
| Authorized QoS rules | | Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS\_VOICE. |  |  |
| Authorized QoS flow descriptions | | Reference QoS flow #5 as defined in Table 4.8.2.3-5. |  |  |

Table 4.9.11.2.3-10: *RRCReconfiguration* (step 11, Table 4.9.11.2.2-1)

|  |
| --- |
| Derivation Path: 4.8.1-1C RRCReconfiguration-Speech |

Table 4.9.11.2.3-11:INVITE (step 3a1, Table 4.9.11.2.2-2)

|  |
| --- |
| Derivation Path: TS 34.229-5 [47], Annex A.6, Step 1 with conditions A7 and A28 |

### 4.9.12 Test procedure for IMS Emergency call establishment in 5GC without IMS emergency registration

4.9.12.1 Scope

This procedure aims at verifying the UE establishment of IMS Emergency call in 5GC without the need for IMS emergency registration to take place beforehand e.g. under Limited Service or SIM/USIM not available, the SIM/USIM is considered invalid by the UE conditions.

4.9.12.2 Procedure description

4.9.12.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters unless specified otherwise. PLMN/TAI which the cell belongs to, shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it

User Equipment:

- Whether the Test UICC shall be inserted or not, and, its settings e.g. in regard to the provision of Emergency Numbers, shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.12.2.2 Procedure sequence

Table 4.9.12.2.2-1: Test procedure sequence UE IMS Emergency call establishment in 5GC without IMS emergency registration

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| - | EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case. | - | - | - | - |
| 1 | Check: Does the UE transmits an *RRCSetupRequest* message with 'establishmentCause' set to 'emergency'? | --> | NR RRC: *RRCSetupRequest* | - | P |
| 2 | The SS transmits an *RRCSetup* message. | <-- | NR RRC: *RRCSetup* | - | - |
| 3 | Check: Does the UE transmits an *RRCSetupComplete* message and a REGISTRATION REQUEST message with 'Service type' set to 'emergency services'? | --> | NR RRC: *RRCSetupComplete*  5GMM: REGISTRATION REQUEST | - | P |
| 4 | The SS transmits a *DLInformationTransfer* message and a SECURITY MODE COMMAND message with 'Selected NAS security algorithms' set to "null integrity protection algorithm" (5G-IA0), "null ciphering algorithm" (5G-EA0). | <-- | NR RRC: *DLInformationTransfer*  5GMM: SECURITY MODE COMMAND | - | - |
| 5 | The UE transmits an *ULInformationTransfer* message and a SECURITY MODE COMPLETE message. | --> | NR RRC: *ULInformationTransfer*  5GMM: SECURITY MODE COMPLETE | - | P |
| 6 | The SS transmits a *SecurityModeCommand* message with cipheringAlgorithm set to '*NULL*' ciphering algorithm (nea0) and integrityProtAlgorithm set to '*NULL*' integrity protection algorithm (nia0). | <-- | NR RRC: *SecurityModeCommand* | - | - |
| 7 | The UE transmits a *SecurityModeComplete* message. | --> | NR RRC: *SecurityModeComplete* | - | P |
| 8 | The SS transmits a *UECapabilityEnquiry* message. | <-- | NR RRC: *UECapabilityEnquiry* | - | - |
| 9 | The UE transmits a *UECapabilityInformation* message. | --> | NR RRC: *UECapabilityInformation* | - | - |
| 10 | The SS transmits a *DLInformationTransfer* message and a REGISTRATION ACCEPT message. | <-- | NR RRC: *DLInformationTransfer*  5GMM: REGISTRATION ACCEPT | - | - |
| 11 | The UE transmits an *ULInformationTransfer* message and a REGISTRATION COMPLETE message. | --> | NR RRC: *ULInformationTransfer*  5GMM: REGISTRATION COMPLETE | - | - |
| 12 | Void | - | - | - | - |
| 13 | Check: Does the UE transmits an UL NAS TRANSPORT message with 'Request type' set to 'initial emergency request', and, a PDU SESSION ESTABLISHMENT REQUEST? | --> | NR RRC: *ULInformationTransfer*  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION ESTABLISHMENT REQUEST | - | P |
| - | EXCEPTION: In parallel to the events described in steps 14-15 below the events specified in steps 1a1 of Table 4.9.12.2.2-2 take place. | - | - | - | - |
| 14 | The SS transmits an *RRCReconfiguration* message and an PDU SESSION ESTABLISHMENT ACCEPT to establish SRB2 and DRB. | <-- | NR RRC: *RRCReconfiguration*  5GMM: DL NAS TRANSPORT  5GSM: PDU SESSION ESTABLISHMENT ACCEPT | - | - |
| 15 | The UE transmits an *RRCReconfigurationComplete* message. | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| - | EXCEPTION: In parallel to the events described in steps 16-18 below the events specified in steps 2 of Table 4.9.12.2.2-2 take place. | - | - | - | - |
| 16 | The SS transmits an RRCReconfiguration message and an PDU SESSION MODIFICATION COMMAND. | <-- | NR RRC: RRCReconfiguration  5GMM: DL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMMAND | - | - |
| - | EXCEPTION: Depending upon UE implementation, steps 17 and 18 can occur in any order. | - | - | - | - |
| 17 | The UE transmits an RRCReconfigurationComplete message. | --> | NR RRC: RRCReconfigurationComplete | - | - |
| 18 | Check: Does the UE transmits an ULInformationTransfer message and an PDU SESSION MODIFICATION COMPLETE message? | --> | NR RRC: ULInformationTransfer  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMPLETE | - | P |

Table 4.9.12.2.2-2: IMS signalling and Emergency call establishment

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| - | EXCEPTION: Step 1a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. | - | - | - | - |
| 1a1 | The generic procedure for IP address allocation in the user plane specified in subclause 4.5A.3 takes place. | - | - | - | - |
| 2 | Generic test procedure for setting up IMS Emergency Voice Call as defined in TS 34.229-5 [47] annex A.6 is performed. | - | - | - | - |

4.9.12.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

NOTE: Some of the specific message contents provided below assume that the UE is in the state 5GMM-DEREGISTERED.LIMITED-SERVICE or 5GMM-REGISTERED.LIMITED-SERVICE (e.g. the selected cell over 3GPP access is in a forbidden PLMN or is in a forbidden tracking area respectively), or, in 5GMM-DEREGISTERED.NO-SUPI as defined in TS 24.501 [28], subclauses 5.1.3.2.1.3.3 and 5.1.3.2.1.3.6 respectively. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

Table 4.9.12.2.3-1: *SIB1* (at any time prior and during the procedure, Table 4.9.12.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-28. | | | |
| Information Element | | Value/remark | Comment | Condition |
| SIB1 ::= SEQUENCE { | |  |  |  |
| ims-EmergencySupport | | Present | true |  |
| } | |  |  |  |

Table 4.9.12.2.3-2: *RRCSetupRequest* (step 1, Table 4.9.12.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-23. | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCSetupRequest ::= SEQUENCE { | |  |  |  |
| rrcSetupRequest SEQUENCE { | |  |  |  |
| establishmentCause | | emergency |  |  |
| } | |  |  |  |
| } | |  |  |  |

Table 4.9.12.2.3-3:REGISTRATION REQUEST (step 3, Table 4.9.12.2.2-1)

|  |
| --- |
| Derivation Path: Table 4.7.1-6, condition EMERGENCY. |

Table 4.9.12.2.3-4:SECURITY MODE COMMAND (step 4, Table 4.9.12.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.1-25. | | | |
| Information Element | | Value/remark | Comment | Condition |
| Selected NAS security algorithms | |  |  |  |
| Type of ciphering algorithm | | 5G-EA0 | null ciphering algorithm |  |
| Type of integrity protection algorithm | | 5G-IA0 | null integrity protection algorithm |  |
| ngKSI | |  |  |  |
| NAS key set identifier | | '000'B |  |  |

Table 4.9.12.2.3-5: *SecurityModeCommand* (step 6, Table 4.9.12.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-25. | | | |
| Information Element | | Value/remark | Comment | Condition |
| SecurityModeCommand ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| securityModeCommand SEQUENCE { | |  |  |  |
| securityConfigSMC SEQUENCE { | |  |  |  |
| securityAlgorithmConfig SEQUENCE { | |  |  |  |
| cipheringAlgorithm | | nea0 | '*NULL*' ciphering algorithm |  |
| integrityProtAlgorithm | | nia0 | '*NULL*' integrity protection algorithm |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

Table 4.9.12.2.3-6:REGISTRATION ACCEPT (step 10, Table 4.9.12.2.2-1)

|  |
| --- |
| Derivation Path: Table 4.7.1-7, condition EMERGENCY. |

Table 4.9.12.2.3-7:UL NAS TRANSPORT (step 13, Table 4.9.12.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.1-10, condition INITIAL\_PDU\_REQUEST. | | | |
| Information Element | | Value/remark | Comment | Condition |
| Request type | | ‘011’B | initial emergency request |  |
| S-NSSAI | | Not Present |  |  |
| DNN | | Not Present |  |  |

Table 4.9.12.2.3-8:PDU SESSION ESTABLISHMENT REQUEST (step 13, Table 4.9.12.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-1. | | | |
| Information Element | | Value/remark | Comment | Condition |
| PDU session ID | | A value that is not currently being used by another PDU session |  |  |
| PTI | | A value currently not used |  |  |
| SSC mode | | ‘001’B | SSC mode 1 |  |

Table 4.9.12.2.3-9:DL NAS TRANSPORT (step 14, Table 4.9.12.2.2-1)

|  |
| --- |
| Derivation Path: Table 4.7.1-11, condition 5GSM\_MESSAGE. |

Table 4.9.12.2.3-10:PDU SESSION ESTABLISHMENT ACCEPT (step 14, Table 4.9.12.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-2. | | | |
| Information Element | | Value/remark | Comment | Condition |
| Selected SSC mode | | ‘001’B | SSC mode 1 |  |
| Authorized QoS rules | | Reference QoS rule #2 as defined in Table 4.8.2.1-2. |  |  |
| Authorized QoS flow descriptions | | Reference QoS flow #2 as defined in Table 4.8.2.3-2. |  |  |

Table 4.9.12.2.3-11: *RRCReconfiguration* (step 14, Table 4.9.12.2.2-1)

|  |
| --- |
| Derivation Path: Table 4.8.1-1: RRCReconfiguration-SRB2-DRB (1, 0) |

Table 4.9.12.2.3-12:PDU SESSION MODIFICATION COMMAND (step 16, Table 4.9.12.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-2. | | | |
| Information Element | | Value/remark | Comment | Condition |
| PDU session ID | | Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message. |  |  |
| Authorized QoS rules | | Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS\_VOICE. |  |  |
| Authorized QoS flow descriptions | | Reference QoS flow #5 as defined in Table 4.8.2.3-5. |  |  |

Table 4.9.12.2.3-13: *RRCReconfiguration* (step 16, Table 4.9.12.2.2-1)

|  |
| --- |
| Derivation Path: 4.8.1-1C RRCReconfiguration-Speech |

Table 4.9.12.2.3-14:INVITE (step 2, Table 4.9.12.2.2-2)

|  |
| --- |
| Derivation Path: TS 34.229-5 [47], Annex A.6, Step 1 with conditions A6 and A28 |

### 4.9.12A Test procedure for IMS MO Emergency call release

4.9.12A.1 Scope

This procedure aims at verifying the UE initiated release of an ongoing IMS Emergency call in 5GC

The procedure provides different handling options of the emergency PDU session based on the condition parameter defined in Table 4.9.12A.1-1.

Table 4.9.12A.1-1: Condition parameters

|  |  |
| --- | --- |
| Condition | Explanation |
| release emergency PDU session | When this parameter is present the SS will release the emergency PDU session even if not requested by the UE after the release of the emergency call |
| keep emergency PDU session | When this parameter is present the SS will only release the emergency PDU session if requested by the UE, if not it will release the voice QoS after the release of the emergency call |
| NOTE 1: If the defined condition parameter is not present when the procedure is referred to then the default value ‘*release emergency PDU session’* will apply | |

4.9.12A.2 Procedure description

4.9.12A.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The procedure assumes that the UE is in test state 3N-A, subclause 4.4A.2 on the NR Cell with an active IMS emergency call. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.12A.2.2 Procedure sequence

Table 4.9.12A.2.2-1: Test procedure sequence IMS MO Emergency call release

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| 1 | Generic test procedure for MO Release of Voice Call / 5GS, as defined in Annex A.7 of TS 34.229-5 [47], is performed. | - | - | - | - |
| 2-3 | Void | - | - | - | - |
| 3A1 | SS starts timer T1 = 5 seconds. | - | - | - | - |
| - | EXCEPTION: Steps 3Ba1 to 3Bb2b3 describe a transaction that depends on the UE behaviour; the "lower case letter" identifies a step sequence that takes place if a specific behaviour happens. | - | - | - | - |
| 3Ba1 | The UE transmits a PDU SESSION RELEASE REQUEST message. | --> | NR RRC: *ULInformationTransfer*  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION RELEASE REQUEST | - | - |
| 3Ba2 | Stop timer T1 |  |  |  |  |
| 3Ba3 | Test procedure for PDU Session Release specified in subclause 4.9.21 takes place | - | - | - | - |
| 3Bb1 | Timer T1 expires. | - | - | - | - |
| - | EXCEPTION: Steps 3Bb2a1 – 3Bb2b3 describe a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value | - | - | - | - |
| 3Bb2a1 | IF ‘*release emergency PDU session’* THEN test procedure for PDU Session Release specified in subclause 4.9.21 takes place. | - | - | - | - |
| 3Bb2b1 | ELSE (i.e. ‘Keep emergency PDU session’) THEN the SS transmits a RRCReconfiguration message and a PDU SESSION MODIFICATION COMMAND message. | <-- | NR RRC: *RRCReconfiguration*  5GMM: DL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMMAND | - | - |
| - | EXCEPTION: Steps 3Bb2b2 and 3Bb2b3 can occur in any order. | - | - | - | - |
| 3Bb2b2 | The UE transmits a RRCReconfigurationComplete | - | NR RRC: *RRCReconfigurationComplete* | - | - |
| 3Bb2b3 | Check: Does the UE transmit a PDU SESSION MODIFICATION COMPLETE message? | --> | NR RRC: *ULInformationTransfer*  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMPLETE | - | P |
| 4-5 | Void | - | - | - | - |

4.9.12A.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

Table 4.9.12A.2.3-1: *RRCReconfiguration* (step 3Ba2, step 3Bb2a1, Table 4.9.12A.2.2-1; step 1 Table 4.9.21.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-13. | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReconfiguration SEQUENCE { | |  |  |  |
| radioBearerConfig SEQUENCE { | |  |  |  |
| drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity { | | 2 entries |  |  |
| DRB-Identity[1] | | DRB-Identity linked to the IMS emergency signalling bearer | entry 1 |  |
| DRB-Identity[2] | | DRB-Identity linked to the IMS emergency speech bearer | entry 2 |  |
| } | |  |  |  |
| } | |  |  |  |
| nonCriticalExtension SEQUENCE { | |  |  |  |
| masterCellGroup SEQUENCE { | |  |  |  |
| rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity { | | 2 entries |  |  |
| logicalChannelIdentity[1] | | Same value as drb-Identity[1] above | entry 1 |  |
| logicalChannelIdentity[2] | | Same value as drb-Identity[2] above | entry 2 |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

Table 4.9.12A.2.3-2:PDU SESSION RELEASE COMMAND (step 3Ba2, step 3Bb2a1, Table 4.9.12A.2.2-1; step 1 Table 4.9.21.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.1-14. | | | |
| Information Element | | Value/remark | Comment | Condition |
| PDU session ID | | Set according to the Emergency session ID. |  |  |
| 5GSM cause | | ‘0010 0100’B | Regular deactivation |  |

Table 4.9.12A.2.3-3:PDU SESSION RELEASE REQUEST (step 3Ba1, Table 4.9.12A.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.1-14. | | | |
| Information Element | | Value/remark | Comment | Condition |
| PDU session ID | | Set according to the Emergency session ID. |  |  |
| PTI | | Any value from 1 to 254 |  |  |

Table 4.9.12A.2.3-4: *RRCReconfiguration* (step 3Bb2b1, Table 4.9.12A.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-13. | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReconfiguration SEQUENCE { | |  |  |  |
| radioBearerConfig SEQUENCE { | |  |  |  |
| drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity { | | 1 entry |  |  |
| DRB-Identity | | DRB-Identity linked to the IMS speech bearer |  |  |
| } | |  |  |  |
| } | |  |  |  |
| nonCriticalExtension SEQUENCE { | |  |  |  |
| masterCellGroup SEQUENCE { | |  |  |  |
| rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity { | | 1 entry |  |  |
| LogicalChannelIdentity | | Same value as drb-Identity above |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

Table 4.9.12A.2.3-5:PDU SESSION MODIFICATION COMMAND (step 3Bb2b1, Table 4.9.12A.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-9. | | | |
| Information Element | | Value/remark | Comment | Condition |
| PDU session ID | | Set according to the Emergency session ID |  |  |
| Authorized QoS rules | |  |  |  |
| QoS rule | |  |  |  |
| QoS rule identifier | | ‘00000011’B | QoS rule 3 |  |
| Rule operation code | | ‘010’B | Delete existing QoS rule |  |
| Authorized QoS flow descriptions | |  |  |  |
| QoS flow descriptions | |  |  |  |
| QFI | | ‘00000111’B | QFI 7 |  |
| Operation code | | ‘010’B | Delete existing QoS flow |  |

### 4.9.12B Test procedure for IMS MT Emergency call release

4.9.12B.1 Scope

This procedure aims at verifying the network initiated release of an ongoing IMS Emergency call in 5GC

The procedure provides different handling options of the emergency PDU session based on the condition parameter defined in Table 4.9.12B.1-1.

Table 4.9.12B.1-1: Condition parameters

|  |  |
| --- | --- |
| Condition | Explanation |
| release emergency PDU session | When this parameter is present the SS will release the emergency PDU session after the release of the emergency call |
| keep emergency PDU session | When this parameter is present the SS will release the voice QoS, but not release the emergency PDU session after the release of the emergency call |
| NOTE 1: If the defined condition parameter is not present when the procedure is referred to then the default value ‘*release emergency PDU session’* will apply | |

4.9.12B.2 Procedure description

4.9.12B.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The procedure assumes that the UE is in test state 3N-A, subclause 4.4A.2 on the NR Cell with an active IMS emergency call. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.12B.2.2 Procedure sequence

Table 4.9.12B.2.2-1: Test procedure sequence IMS MT Emergency call release

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| 1-2 | Generic test procedure for MT release of speech call, steps 1-2, as defined in Annex A.8 of TS 34.229-5 [47] is performed. | - | - | - | - |
| - | EXCEPTION: Steps 3a1 – 3b3 describe a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value | - | - | - | - |
| 3a1 | IF ‘release emergency PDU session’ THEN test procedure for PDU Session Release specified in subclause 4.9.21 takes place. |  |  | - | - |
| 3b1 | ELSE (i.e. ‘Keep emergency PDU session’) THEN the SS transmits a RRCReconfiguration message and a PDU SESSION MODIFICATION COMMAND message. | <-- | NR RRC: RRCReconfiguration  5GMM: DL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMMAND | - | - |
| - | EXCEPTION: Steps 3b2 and 3b3 can occur in any order. | - | - | - | - |
| 3b2 | The UE transmits a RRCReconfigurationComplete | - | NR RRC: RRCReconfigurationComplete | - | - |
| 3b3 | Check: Does the UE transmit a PDU SESSION MODIFICATION COMPLETE message? | --> | NR RRC: ULInformationTransfer  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMPLETE | - | P |
| 4 | Void |  |  |  |  |

4.9.12B.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

Table 4.9.12B.2.3-1: *RRCReconfiguration* (step 3a1, Table 4.9.12B.2.2-1; step 1 Table 4.9.21.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-13. | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReconfiguration SEQUENCE { | |  |  |  |
| radioBearerConfig SEQUENCE { | |  |  |  |
| drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity { | | 2 entries |  |  |
| DRB-Identity[1] | | DRB-Identity linked to the IMS emergency signalling bearer | entry 1 |  |
| DRB-Identity[2] | | DRB-Identity linked to the IMS emergency speech bearer | entry 2 |  |
| } | |  |  |  |
| } | |  |  |  |
| nonCriticalExtension SEQUENCE { | |  |  |  |
| masterCellGroup SEQUENCE { | |  |  |  |
| rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity { | | 2 entries |  |  |
| LogicalChannelIdentity[1] | | Same value as drb-Identity[1] above | entry 1 |  |
| LogicalChannelIdentity[2] | | Same value as drb-Identity[2] above | entry 2 |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

Table 4.9.12B.2.3-2:PDU SESSION RELEASE COMMAND (step 3a1, Table 4.9.12B.2.2-1; step 1 Table 4.9.21.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.1-14. | | | |
| Information Element | | Value/remark | Comment | Condition |
| PDU session ID | | Set according to the Emergency session ID. |  |  |
| 5GSM cause | | ‘0010 0100’B | Regular deactivation |  |

Table 4.9.12B.2.3-3: *RRCReconfiguration* (step 3b1, Table 4.9.12B.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-13. | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReconfiguration SEQUENCE { | |  |  |  |
| radioBearerConfig SEQUENCE { | |  |  |  |
| drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity { | | 1 entry |  |  |
| DRB-Identity | | DRB-Identity linked to the IMS speech bearer |  |  |
| } | |  |  |  |
| } | |  |  |  |
| nonCriticalExtension SEQUENCE { | |  |  |  |
| masterCellGroup SEQUENCE { | |  |  |  |
| rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity { | | 1 entry |  |  |
| LogicalChannelIdentity | | Same value as drb-Identity above |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

Table 4.9.12B.2.3-4:PDU SESSION MODIFICATION COMMAND (step 3b1, Table 4.9.12B.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-9. | | | |
| Information Element | | Value/remark | Comment | Condition |
| PDU session ID | | Set according to the Emergency session ID |  |  |
| Authorized QoS rules | |  |  |  |
| QoS rule | |  |  |  |
| QoS rule identifier | | ‘00000011’B | QoS rule 3 |  |
| Rule operation code | | ‘010’B | Delete existing QoS rule |  |
| Authorized QoS flow descriptions | |  |  |  |
| QoS flow descriptions | |  |  |  |
| QFI | | ‘00000111’B | QFI 7 |  |
| Operation code | | ‘010’B | Delete existing QoS flow |  |

### 4.9.13 Test procedure for no response to paging

4.9.13.1 Scope

This procedure aims at checking that the UE ignores paging messages with a specified identity.

4.9.13.2 Procedure description

4.9.13.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.13.2.2 Procedure sequence

Table 4.9.13.2.2-1: Test procedure sequence

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| 1 | The SS transmits a paging message using the NG-5G-S-TMSI which is specified in the referring test step, and on the cell which is specified in the referring test step. | <-- | *Paging* | - | - |
| 2 | Check: Does the UE send an *RRCSetupRequest* message on the cell where the paging was transmitted within the next 3s? | --> | *RRCSetupRequest* | - | F |

4.9.13.3 Specific Message content

None.

### 4.9.14 Void

### 4.9.15 Test procedure for IMS MO speech call establishment in 5GC

4.9.15.1 Scope

The purpose of this procedure is to establish an IMS MO speech call.

4.9.15.2 Procedure description

4.9.15.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.15.2.2 Procedure sequence

Table 4.9.15.2.2-1: IMS MO speech call establishment in 5GC

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U – S | Message |  |  |
| 1 | Make the UE attempt an IMS speech call. | - | - | - | - |
| 2 | Check: Does the UE transmit an *RRCSetupRequest* message with 'establishmentCause' set to 'mo-VoiceCall'? | --> | NR RRC: *RRCSetupRequest* | - | P |
| 3 | SS transmit an *RRCSetup* message. | <-- | NR RRC: *RRCSetup* | - | - |
| 4 | Check: Does the UE transmit an *RRCSetupComplete* message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message? | --> | NR RRC: *RRCSetupComplete* 5GMM: SERVICE REQUEST | - | P |
| 5 | The SS transmits a *SecurityModeCommand* message to activate AS security. | <-- | NR RRC: *SecurityModeCommand* | - | - |
| 6 | Check: Does the UE transmit a *SecurityModeComplete* message and establish the initial security configuration? | --> | NR RRC: *SecurityModeComplete* | - | P |
| 7 | The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB(s). | <-- | NR RRC: *RRCReconfiguration* 5GMM: SERVICE ACCEPT | - | - |
| - | EXCEPTION: In parallel to step 8 below, the steps specified in Table 4.9.15.2.2-2 take place. | - | - | - | - |
| 8 | The UE transmits an *RRCReconfigurationComplete* message. | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| - | EXCEPTION: Steps 9a1 to 9b4 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted. | - | - | - | - |
| 9a1-9a4 | IF the UE is configured to use preconditions THEN steps 2-5 of Annex A.4.1 of TS 34.229-5 [47] take place. | - | - | - | - |
| 9b1-9b4 | ELSE steps 2-5 of Annex A.4.2 of TS 34.229-5 [47] take place. | - | - | - | - |
| 10 | The SS transmits an *RRCReconfiguration* message and a PDU SESSION MODIFICATION COMMAND message. | <-- | NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND | - | - |
| - | EXCEPTION: In parallel to steps 11 and 12 below, step 13a1 or 13b1 occur. | - | - | - | - |
| 11 | The UE transmits an *RRCReconfigurationComplete* message. | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| 12 | Check: Does the UE transmit an *ULInformationTransfer* message, an UL NAS TRANSPORT message and a PDU SESSION MODIFICATION COMPLETE message? | --> | NR RRC: *ULInformationTransfer*  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMPLETE | - | P |
| - | EXCEPTION: Steps 13a1 to 13b3 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted. | - | - | - | - |
| 13a1-13a7 | IF the UE is configured to use preconditions THEN steps 6-12 of Annex A.4.1 of TS 34.229-5 [47] take place. | - | - | - | - |
| 13b1-13b3 | ELSE steps 6-8 of Annex A.4.2 of TS 34.229-5 [47] take place. | - | - | - | - |

Table 4.9.15.2.2-2: Parallel Behaviour

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| - | EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted. | - | - | - | - |
| 1a1 | IF the UE is configured to use preconditions THEN step 1 of Annex A.4.1 of TS 34.229-5 [47] takes place. | - | - | - | - |
| 1b1 | ELSE step 1 of Annex A.4.2 of TS 34.229-5 [47] takes place. | - | - | - | - |

4.9.15.3 Specific message contents

Table 4.9.15.3-1: *RRCSetupRequest* (step 2, Table 4.9.15.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-23 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCSetupRequest ::= SEQUENCE { | |  |  |  |
| rrcSetupRequest SEQUENCE { | |  |  |  |
| establishmentCause | | mo-VoiceCall |  |  |
| } | |  |  |  |
| } | |  |  |  |

Table 4.9.15.3-2: SERVICE REQUEST (step 4, Table 4.9.15.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.1-16 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Service type | |  |  |  |
| Service type value | | ‘0001’B | data |  |

Table 4.9.15.3-3:PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.15.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-9 | | | |
| Information Element | | Value/remark | Comment | Condition |
| PDU session ID | | Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message. |  |  |
| Authorized QoS rules | | Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS\_VOICE. |  |  |
| Authorized QoS flow descriptions | | Reference QoS flow #5 as defined in Table 4.8.2.3-5. |  |  |

Table 4.9.15.3-4: *RRCReconfiguration* (step 10, Table 4.9.15.2.2-1)

|  |
| --- |
| Derivation Path: Table 4.8.1-1C |

### 4.9.16 Test procedure for IMS MT speech call establishment in 5GC

4.9.16.1 Scope

The purpose of this procedure is to establish an IMS MT speech call.

4.9.16.2 Procedure description

4.9.16.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.16.2.2 Procedure sequence

Table 4.9.16.2.2-1: IMS MT speech call establishment in 5GC

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U – S | Message |  |  |
| 1 | The SS transmits a *Paging* message. | <-- | NR RRC: *Paging* | - | - |
| 2 | Check: Does the UE transmit an *RRCSetupRequest* message with 'establishmentCause' set to 'mt-Access'? | --> | NR RRC: *RRCSetupRequest* | - | P |
| 3 | The SS transmits an *RRCSetup* message. | <-- | NR RRC: *RRCSetup* | - | - |
| 4 | Check: Does the UE transmit an *RRCSetupComplete* message and a SERVICE REQUEST message? | --> | NR RRC: *RRCSetupComplete*  5GMM: SERVICE REQUEST | - | P |
| 5 | The SS transmits a *SecurityModeCommand* message. | <-- | NR RRC: *SecurityModeCommand* | - | - |
| 6 | The UE transmits a *SecurityModeComplete* message. | --> | NR RRC: *SecurityModeComplete* | - | - |
| 7 | The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).  The RRCReconfiguration message is configured using RRCReconfiguration-SRB2-DRB(n, m) where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively. | <-- | NR RRC: *RRCReconfiguration*  5GMM: SERVICE ACCEPT | - | - |
| 8 | Check: Does the UE transmit an *RRCReconfigurationComplete* message? | --> | NR RRC: *RRCReconfigurationComplete* | - | P |
| - | EXCEPTION: Steps 9a1 to 9b5 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted. | - | - | - | - |
| 9a1-9a5 | IF the UE is configured to use preconditions THEN steps 1-5 of Annex A.5.1 of TS 34.229-5 [47] take place. | - | - | - | - |
| 9b1-9b5 | ELSE steps 1-5 of Annex A.5.2 of TS 34.229-5 [47] take place. | - | - | - | - |
| 10 | The SS transmits an *RRCReconfiguration* message and a PDU SESSION MODIFICATION COMMAND message. | <-- | NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND | - | - |
| - | EXCEPTION: Depending upon UE implementation, steps 11 and 12 can occur in any order | - | - | - | - |
| 11 | The UE transmits an *RRCReconfigurationComplete* message | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| 12 | Check: Does the UE transmit a *ULInformationTransfer* message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message? | --> | NR RRC: *ULInformationTransfer*  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMPLETE | - | P |
| - | EXCEPTION: Steps 13a1 to 13b7 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted. | - | - | - | - |
| 13a1-13a7 | IF the UE is configured to use preconditions THEN steps 6-12 of Annex A.5.1 of TS 34.229-5 [47] take place. | - | - | - | - |
| 13b1-13b5 | ELSE steps 6-10 of Annex A.5.2 of TS 34.229-5 [47] take place. | - | - | - | - |

4.9.16.3 Specific message contents

Table 4.9.16.3-1: *RRCSetupRequest* (step 2, Table 4.9.16.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-23 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCSetupRequest ::= SEQUENCE { | |  |  |  |
| rrcSetupRequest SEQUENCE { | |  |  |  |
| establishmentCause | | mt-Access |  |  |
| } | |  |  |  |
| } | |  |  |  |

Table 4.9.16.3-2: SERVICE REQUEST (step 4, Table 4.9.16.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.1-16 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Service type | |  |  |  |
| Service type value | | ’0010’B | Mobile Terminated Services |  |

Table 4.9.16.3-3:PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.16.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| PDU session ID | | Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message. |  |  |
| Authorized QoS rules | | Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS\_VOICE. |  |  |
| Authorized QoS flow descriptions | | Reference QoS flow #5 as defined in Table 4.8.2.3-5. |  |  |

Table 4.9.16.3-4: *RRCReconfiguration* (step 10, Table 4.9.16.2.2-1)

|  |
| --- |
| Derivation Path: Table 4.8.1-1C |

### 4.9.17 Test procedure for IMS MO call release in 5GC

4.9.17.1 Scope

The purpose of this procedure is to make a UE initiated release of an ongoing IMS call.

4.9.17.2 Procedure description

4.9.17.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A on the NR Cell with an active IMS call.

4.9.17.2.2 Procedure sequence

Table 4.9.17.2.2-1: IMS MO call release in 5GC

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U – S | Message |  |  |
| 1-2 | Generic test procedure for MO release of speech call, steps 1-2, as defined in annex A.7 of TS 34.229-5 [47] are performed. | - | - | - | - |
| 3 | The SS transmits an *RRCReconfiguration* message and an PDU SESSION MODIFICATION COMMAND | <-- | NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND | - | - |
| - | EXCEPTION: Steps 4 and 5 can occur in any order. | - | - | - | - |
| 4 | The UE transmits an *RRCReconfigurationComplete* message | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| 5 | Check: Does the UE transmit a *ULInformationTransfer* message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message? | --> | NR RRC: *ULInformationTransfer*  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMPLETE | - | P |

4.9.17.2.3 Specific message contents

Table 4.9.17.2.3-1: *RRCReconfiguration* (step 3, Table 4.9.17.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-13. | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReconfiguration SEQUENCE { | |  |  |  |
| radioBearerConfig SEQUENCE { | |  |  |  |
| drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity { | | 1 entry |  | IMS\_VOICE |
| DRB-Identity[1] | | DRB-Identity linked to the IMS speech bearer | entry 1 |  |
| } | |  |  |  |
| drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity { | | 2 entries |  | IMS\_VIDEO |
| DRB-Identity[1] | | DRB-Identity linked to the IMS video bearer | entry 1 |  |
| DRB-Identity[2] | | DRB-Identity linked to the IMS video bearer | entry 2 |  |
| } | |  |  |  |
| } | |  |  |  |
| nonCriticalExtension SEQUENCE { | |  |  |  |
| masterCellGroup SEQUENCE { | |  |  |  |
| rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity { | | 1 entry |  | IMS\_VOICE |
| LogicalChannelIdentity[1] | | Same value as drb-Identity[1] above | entry 1 |  |
| } | |  |  |  |
| rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity { | | 2 entries |  | IMS\_VIDEO |
| LogicalChannelIdentity[1] | | Same value as drb-Identity[1] above | entry 1 |  |
| LogicalChannelIdentity[2] | | Same value as drb-Identity[2] above | entry 2 |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| IMS\_VOICE | If this QoS rule is used to setup an IMS voice session |
| IMS\_VIDEO | If this QoS rule is used to setup an IMS video session |

Table 4.9.17.2.3-2:PDU SESSION MODIFICATION COMMAND (step 3, Table 4.9.17.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-9. | | | |
| Information Element | | Value/remark | Comment | Condition |
| PDU session ID | | Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message. |  |  |
| Authorized QoS rules | |  |  |  |
| QoS rule[1] | |  |  | IMS\_VOICE, IMS\_VIDEO |
| QoS rule identifier | | ‘00000011’B | QoS rule 3 |  |
| Rule operation code | | ‘010’B | Delete existing QoS rule |  |
| QoS rule[2] | |  |  | IMS\_VIDEO |
| QoS rule identifier | | ‘00000100’B | QoS rule 4 |  |
| Rule operation code | | ‘010’B | Delete existing QoS rule |  |
| Authorized QoS flow descriptions | |  |  |  |
| QoS flow descriptions[1] | |  |  | IMS\_VOICE, IMS\_VIDEO |
| QFI | | ‘00000111’B | QFI 7 |  |
| Operation code | | ‘010’B | Delete existing QoS flow |  |
| QoS flow descriptions[2] | |  |  | IMS\_VIDEO |
| QFI | | ’00001000’B | QFI 8 |  |
| Operation code | | ‘010’B | Delete existing QoS flow |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| IMS\_VOICE | If this QoS rule is used to setup an IMS voice session |
| IMS\_VIDEO | If this QoS rule is used to setup an IMS video session |

### 4.9.18 Test procedure for IMS MT call release in 5GC

4.9.18.1 Scope

The purpose of this procedure is to make the network release an ongoing IMS call.

4.9.18.2 Procedure description

4.9.18.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A on the NR Cell with an active IMS call.

4.9.18.2.2 Procedure sequence

Table 4.9.18.2.2-1: IMS MT call release in 5GC

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U – S | Message |  |  |
| 1-2 | Generic test procedure for MT release of speech call, steps 1-2, as defined in annex A.8 of TS 34.229-5 [47] are performed. | - | - | - | - |
| 3 | The SS transmits an *RRCReconfiguration* message and an PDU SESSION MODIFICATION COMMAND | <-- | NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND | - | - |
| - | EXCEPTION: Steps 4 and 5 can occur in any order. | - | - | - | - |
| 4 | The UE transmits an *RRCReconfigurationComplete* message | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| 5 | Check: Does the UE transmit a *ULInformationTransfer* message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message? | --> | NR RRC: *ULInformationTransfer*  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMPLETE | - | P |

4.9.18.2.3 Specific message contents

Table 4.9.18.2.3-1: *RRCReconfiguration* (step 3, Table 4.9.18.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-13. | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReconfiguration SEQUENCE { | |  |  |  |
| radioBearerConfig SEQUENCE { | |  |  |  |
| drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity { | | 1 entry |  | IMS\_VOICE |
| DRB-Identity[1] | | DRB-Identity linked to the IMS speech bearer | entry 1 |  |
| } | |  |  |  |
| drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity { | | 2 entries |  | IMS\_VIDEO |
| DRB-Identity[1] | | DRB-Identity linked to the IMS video bearer | entry 1 |  |
| DRB-Identity[2] | | DRB-Identity linked to the IMS video bearer | entry 2 |  |
| } | |  |  |  |
| } | |  |  |  |
| nonCriticalExtension SEQUENCE { | |  |  |  |
| masterCellGroup SEQUENCE { | |  |  |  |
| rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity { | | 1 entry | entry 1 | IMS\_VOICE |
| LogicalChannelIdentity[1] | | Same value as drb-Identity[1] above |  |  |
| } | |  |  |  |
| rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity { | | 2 entries |  | IMS\_VIDEO |
| LogicalChannelIdentity[1] | | Same value as drb-Identity[1] above | entry 1 |  |
| LogicalChannelIdentity[2] | | Same value as drb-Identity[2] above | entry 2 |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| IMS\_VOICE | If this QoS rule is used to setup an IMS voice session |
| IMS\_VIDEO | If this QoS rule is used to setup an IMS video session |

Table 4.9.18.2.3-2:PDU SESSION MODIFICATION COMMAND (step 3, Table 4.9.18.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-9 | | | |
| Information Element | | Value/remark | Comment | Condition |
| PDU session ID | | Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message. |  |  |
| Authorized QoS rules | |  |  |  |
| QoS rule | |  |  |  |
| QoS rule identifier | | ‘00000011’B | QoS rule 3 | IMS\_VOICE, IMS\_VIDEO |
| Rule operation code | | ‘010’B | Delete existing QoS rule |  |
| QoS rule[2] | |  |  | IMS\_VIDEO |
| QoS rule identifier | | ‘00000100’B | QoS rule 4 |  |
| Rule operation code | | ‘010’B | Delete existing QoS rule |  |
| Authorized QoS flow descriptions | |  |  |  |
| QoS flow descriptions | |  |  |  |
| QFI | | ‘00000111’B | QFI 7 | IMS\_VOICE, IMS\_VIDEO |
| Operation code | | ‘010’B | Delete existing QoS flow |  |
| QoS flow descriptions[2] | |  |  | IMS\_VIDEO |
| QFI | | ’00001000’B | QFI 8 |  |
| Operation code | | ‘010’B | Delete existing QoS flow |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| IMS\_VOICE | If this QoS rule is used to setup an IMS voice session |
| IMS\_VIDEO | If this QoS rule is used to setup an IMS video session |

### 4.9.19 Test procedure for IMS MO SMS in 5GC

4.9.19.1 Scope

The purpose of this procedure is to transmit an IMS MO SMS.

4.9.19.2 Procedure description

4.9.19.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.19.2.2 Procedure sequence

Table 4.9.19.2.2-1: IMS MO SMS in 5GS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U – S | Message |  |  |
| 1 | Make the UE attempt an IMS MO SMS | - | - | - | - |
| 2 | The UE transmits an *RRCSetupRequest* message with 'establishmentCause' set to 'mo-SMS'. | --> | NR RRC: *RRCSetupRequest* | - | P |
| 3 | The SS transmits an *RRCSetup* message. | <-- | NR RRC: *RRCSetup* | - | - |
| 4 | The UE transmits an *RRCSetupComplete* message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message. | --> | NR RRC: *RRCSetupComplete* 5GMM: SERVICE REQUEST | - | P |
| 5 | The SS transmits a *SecurityModeCommand* message to activate AS security. | <-- | NR RRC: *SecurityModeCommand* | - | - |
| 6 | The UE transmits a *SecurityModeComplete* message and establish the initial security configuration. | --> | NR RRC: *SecurityModeComplete* | - | P |
| 7 | The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB(s). | <-- | NR RRC: *RRCReconfiguration* 5GMM: SERVICE ACCEPT | - | - |
| 8 | The UE transmits an *RRCReconfigurationComplete* message. | --> | NR RRC: *RRCReconfigurationComplete* | - | P |
| 9-16 | The steps 1-8 from the expected sequence defined in Annex A.13 of TS 34.229-5 [47] of IMS MO SMS / 5GS take place. | - | - | - | - |

4.9.19.3 Specific message contents

Table 4.9.19.3-1: *RRCSetupRequest* (step 2, Table 4.9.19.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.508-1 [4], Table 4.6.1-23 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCSetupRequest ::= SEQUENCE { | |  |  |  |
| rrcSetupRequest SEQUENCE { | |  |  |  |
| establishmentCause | | mo-SMS |  |  |
| } | |  |  |  |
| } | |  |  |  |

Table 4.9.19.3-2: SERVICE REQUEST (step 4, Table 4.9.19.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.508-1 [4], Table 4.7.1-16 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Service type | |  |  |  |
| Service type value | | ‘0001’B | data |  |

### 4.9.20 Test procedure for IMS MT SMS in 5GC

4.9.20.1 Scope

The purpose of this procedure is to receive an IMS MT SMS.

4.9.20.2 Procedure description

4.9.20.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.20.2.2 Procedure sequence

Table 4.9.20.2.2-1: IMS MT SMS in 5GS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U – S | Message |  |  |
| 1 | The SS transmits a *Paging* message. | <-- | NR RRC: *Paging* | - | - |
| 2 | The UE transmits an *RRCSetupRequest* message with 'establishmentCause' set to 'mt-Access'. | --> | NR RRC: *RRCSetupRequest* | - | P |
| 3 | The SS transmits an *RRCSetup* message. | <-- | NR RRC: *RRCSetup* | - | - |
| 4 | The UE transmits an *RRCSetupComplete* message and a SERVICE REQUEST message. | --> | NR RRC: *RRCSetupComplete*  5GMM: SERVICE REQUEST | - | P |
| 5 | The SS transmits a *SecurityModeCommand* message. | <-- | NR RRC: *SecurityModeCommand* | - | - |
| 6 | The UE transmits a *SecurityModeComplete* message. | --> | NR RRC: *SecurityModeComplete* | - | - |
| 7 | The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).  The RRCReconfiguration message is configured using RRCReconfiguration-SRB2-DRB(n, m) where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively. | <-- | NR RRC: *RRCReconfiguration*  5GMM: SERVICE ACCEPT | - | - |
| 8 | The UE transmits an *RRCReconfigurationComplete* message. | --> | NR RRC: *RRCReconfigurationComplete* | - | P |
| 9-12 | The steps 1-4 from the expected sequence defined in Annex A.14 of TS 34.229-5 [47] IMS MT SMS / 5GS take place. | - | - | - | - |

4.9.20.3 Specific message contents

Table 4.9.20.3-1: *RRCSetupRequest* (step 2, Table 4.9.20.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.508-1 [4], Table 4.6.1-23 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCSetupRequest ::= SEQUENCE { | |  |  |  |
| rrcSetupRequest SEQUENCE { | |  |  |  |
| establishmentCause | | mt-Access |  |  |
| } | |  |  |  |
| } | |  |  |  |

Table 4.9.20.3-2: SERVICE REQUEST (step 4, Table 4.9.20.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.508-1 [4], Table 4.7.1-16 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Service type | |  |  |  |
| Service type value | | ‘0010’B | Mobile Terminated Services |  |

### 4.9.21 Test procedure for PDU Session Release

4.9.21.1 Scope

The purpose of this procedure is to release both the PDU session and the user plane resources.

4.9.21.2 Procedure description

4.9.21.2.1 Initial conditions

The UE is in state 3N-A with PDU SESSION ACTIVE as per Table 4.4A.2-3. If this is a UE triggered PDU Session Release, this will be specified in the test case together with the sending of a PDU SESSION RELEASE REQUEST by the UE.

4.9.21.2.2 Procedure sequence

Table 4.9.21.2.2-1: Procedure for PDU Session Release

|  |  |  |  |
| --- | --- | --- | --- |
| St | Procedure | Message Sequence | |
|  |  | U – S | Message |
| 1 | The SS transmits an *RRCReconfiguration* message and a PDU SESSION RELEASE COMMAND | <-- | NR RRC: *RRCReconfiguration*  5GMM: DL NAS TRANSPORT  5GSM: PDU SESSION RELEASE COMMAND |
| - | EXCEPTION: Depending upon UE implementation, step 1A and 2 can occur in any order | - | - |
| 1A | The UE transmits a *RRCReconfigurationComplete* | - | NR RRC: *RRCReconfigurationComplete* |
| 2 | The UE transmits a PDU SESSION RELEASE COMPLETE message | --> | NR RRC: *ULInformationTransfer*  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION RELEASE COMPLETE |

4.9.21.3 Specific message contents

The NAS message contents will be as specified in the test case.

Table 4.9.21.3-1: *RRCReconfiguration* (step 1, Table 4.9.21.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-13. | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReconfiguration SEQUENCE { | |  |  |  |
| radioBearerConfig SEQUENCE { | |  |  |  |
| drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity { | | 1 entry |  |  |
| DRB-Identity[1] | | DRB-Identity linked to the PDU Session to be released |  |  |
| } | |  |  |  |
| } | |  |  |  |
| nonCriticalExtension SEQUENCE { | |  |  |  |
| masterCellGroup SEQUENCE { | |  |  |  |
| rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity { | | 1 entry |  |  |
| logicalChannelIdentity[1] | | Same value as drb-Identity[1] above |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

### 4.9.22 Test procedure for establishing unicast mode NR sidelink communication / Initiating UE side

4.9.22.1 Scope

The purpose of this procedure is to establish unicast mode sidelink communication.

4.9.22.2 Procedure description

4.9.22.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A.

4.9.22.2.2 Procedure sequence

Table 4.9.22.2.2-1: Procedure for establishing unicast mode sidelink communication (Initiating UE side)

|  |  |  |  |
| --- | --- | --- | --- |
| St | Procedure | Message Sequence | |
|  |  | U – S | Message |
| 1 | Void | - | - |
| - | EXCEPTION: Steps 1a1 to 1b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value. | - | - |
| 1a1 | IF the UE is in state 1N-B or 4-A, the UE is configured by upper layer to establish unicast mode link.  NOTE: This can be done by sending AT COMMAND +CCUTLE to close test loop function. | - | - |
| 1b1 | ELSE IF the UE is in state 3N-B, the SS transmits a CLOSE UE TEST LOOP message. | <-- | TC: CLOSE UE TEST LOOP |
| 1b2 | The UE transmits a CLOSE UE TEST LOOP COMPLETE message. | --> | TC: CLOSE UE TEST LOOP COMPLETE |
| 2 | The UE sends a DIRECT LINK ESTABLISHMENT REQUEST message. | --> | PC5-S: DIRECT LINK ESTABLISHMENT REQUEST |
| 3 | The NR-SS-UE sends a DIRECT LINK SECURITY MODE COMMAND message. | <-- | PC5-S: DIRECT LINK SECURITY MODE COMMAND |
| 4 | The UE sends a DIRECT LINK SECURITY MODE COMPLETE message. | --> | PC5-S: DIRECT LINK SECURITY MODE COMPLETE |
| 5 | The NR-SS-UE sends a DIRECT LINK ESTABLISHMENT ACCEPT message. | <-- | PC5-S: DIRECT LINK ESTABLISHMENT ACCEPT |
| 6 | The UE sends an RRCReconfigurationSidelink message to establish a unicast mode SL-DRB.  NOTE: Unless specifically specified in the test case prose, the UE shall select the DRB parameters as specified in the pre-configured parameters. | --> | PC5-RRC: RRCReconfigurationSidelink |
| 7 | The NR-SS-UE sends an RRCReconfigurationCompleteSidelink message. | <-- | PC5-RRC: RRCReconfigurationCompleteSidelink |
| 8 | Void | - | - |
| - | EXCEPTION: Steps 8a1 to 8b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value. | - | - |
| 8a1 | IF the UE is in state 1N-B or 4-A, the SS sends AT COMMAND +CCUTLE to open test loop function | - | - |
| 8b1 | ELSE IF the UE is in state 3N-B, the SS transmits an OPEN UE TEST LOOP message. | <-- | TC: OPEN UE TEST LOOP |
| 8b2 | The UE transmits an OPEN UE TEST LOOP COMPLETE message. | --> | TC: OPEN UE TEST LOOP COMPLETE |

4.9.22.3 Specific message contents

All specific message contents shall be according subclause 4.6 and 4.7B with the exceptions below.

Table 4.9.22.3-1: +CCUTLE (Table 4.9.22.2.2-1, Step 1)

|  |
| --- |
| Derivation Path: Table 4.7B-1 with condition Close and Transmit |

Table 4.9.22.3-2: CLOSE UE TEST LOOP (Table 4.9.22.2.2-1, Step 1b1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 36.508 [2] Table 4.7A-3 with condition UE TEST LOOP MODE E(V2X Transmission) | | | |
| Information Element | | Value/remark | Comment | Condition |
| UE test loop mode E LB setup | |  |  |  |
| Communication Transmit or Receive | | 0 0 0 0 0 0 0 1 | ‘01’ indicates V2X UE triggered to transmit NR sidelink communication with single spatial layer. |  |

Table 4.9.22.3-3: DIRECT LINK ESTABLISHMENT REQUEST (Table 4.9.22.2.2-1, Step 2)

|  |
| --- |
| Derivation Path: Table 4.7.4-7 with condition Tx |

Table 4.9.22.3-4: DIRECT LINK SECURITY MODE COMMAND (Table 4.9.22.2.2-1, Step 3)

|  |
| --- |
| Derivation Path: Table 4.7.4-18 with condition Rx |

Table 4.9.22.3-5: DIRECT LINK SECURITY MODE COMPLETE (Table 4.9.22.2.2-1, Step 4)

|  |
| --- |
| Derivation Path: Table 4.7.4-19 with condition Tx |

Table 4.9.22.3-6: DIRECT LINK ESTABLISHMENT ACCEPT (Table 4.9.22.2.2-1, Step 5)

|  |
| --- |
| Derivation Path: Table 4.7.4-8 with condition Rx |

Table 4.9.22.3-7: RRCReconfigurationSidelink (Table 4.9.22.2.2-1, Step 6)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1A-3 with condition TX and SL\_DRB | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReconfigurationSidelink ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReconfigurationSidelink-r16 SEQUENCE { | |  |  |  |
| slrb-ConfigToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SLRB-Config-r16 { | | 1 entry |  |  |
| SLRB-Config-r16[1] SEQUENCE { | |  | entry 1 |  |
| sl-SDAP-ConfigPC5-r16 SEQUENCE { | |  |  |  |
| sl-MappedQoS-FlowsToAddList-r16 SEQUENCE (SIZE (1.. maxNrofSL-QFIsPerDest-r16)) OF SL-PQFI-r16 { | | 1 entry |  |  |
| SL-PQFI-r16[1] | | (1..63) | entry 1 |  |
| } | |  |  |  |
| sl-MappedQoS-FlowsToReleaseList-r16 | | Not present |  |  |
| sl-SDAP-Header-r16 | | present |  |  |
| } | |  |  |  |
| sl-PDCP-ConfigPC5-r16 SEQUENCE { | |  |  |  |
| sl-PDCP-SN-Size-r16 | | len12bits |  |  |
| sl-OutOfOrderDelivery-r16 | | Not present |  |  |
| } | |  |  |  |
| sl-RLC-ConfigPC5-r16 CHOICE { | |  |  |  |
| sl-AM-RLC-r16 SEQUENCE { | |  |  |  |
| sl-SN-FieldLengthAM-r16 | | size12 |  |  |
| } | |  |  |  |
| } | |  |  |  |
| sl-MAC-LogicalChannelConfigPC5-r16 SEQUENCE { | |  |  |  |
| sl-LogicalChannelIdentity-r16 | | (4..32) |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

Table 4.9.22.3-8: RRCReconfigurationCompleteSidelink (Table 4.9.22.2.2-1, Step 7)

|  |
| --- |
| Derivation Path: Table 4.6.1A-4 with condition RX |

Table 4.9.22.3-9: +CCUTLE (Table 4.9.22.2.2-1, Step 8a1)

|  |
| --- |
| Derivation Path: Table 4.7B-1 with condition Open |

### 4.9.23 Test procedure for establishing unicast mode NR sidelink communication / Peer UE side

4.9.23.1 Scope

The purpose of this procedure is to establish unicast mode sidelink communication.

4.9.23.2 Procedure description

4.9.23.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A.

4.9.23.2.2 Procedure sequence

Table 4.9.23.2.2-1: Procedure for establishing unicast mode sidelink communication (Peer UE side)

|  |  |  |  |
| --- | --- | --- | --- |
| St | Procedure | Message Sequence | |
|  |  | U – S | Message |
| 1 | The NR-SS-UE sends a DIRECT LINK ESTABLISHMENT REQUEST message. | <-- | PC5-S: DIRECT LINK ESTABLISHMENT REQUEST |
| 2 | The UE sends a DIRECT LINK SECURITY MODE COMMAND message. | --> | PC5-S: DIRECT LINK SECURITY MODE COMMAND |
| 3 | The NR-SS-UE sends a DIRECT LINK SECURITY MODE COMPLETE message. | <-- | PC5-S: DIRECT LINK SECURITY MODE COMPLETE |
| 4 | The UE sends a DIRECT LINK ESTABLISHMENT ACCEPT message. | --> | PC5-S: DIRECT LINK ESTABLISHMENT ACCEPT |
| 5 | The NR-SS-UE sends an RRCReconfigurationSidelink message to establish a unicast mode SL-DRB. | <-- | PC5-RRC: RRCReconfigurationSidelink |
| 6 | The UE sends an RRCReconfigurationCompleteSidelink message. | --> | PC5-RRC: RRCReconfigurationCompleteSidelink |

4.9.23.3 Specific message contents

All specific message contents shall be according subclause 4.6 and 4.7B.

Table 4.9.23.3-1: DIRECT LINK ESTABLISHMENT REQUEST (Table 4.9.23.2.2-1, Step 1)

|  |
| --- |
| Derivation Path: Table 4.7.4-7 with condition Rx |

Table 4.9.23.3-2: DIRECT LINK SECURITY MODE COMMAND (Table 4.9.23.2.2-1, Step 2)

|  |
| --- |
| Derivation Path: Table 4.7.4-18 with condition Tx |

Table 4.9.23.3-3: DIRECT LINK SECURITY MODE COMPLETE (Table 4.9.23.2.2-1, Step 3)

|  |
| --- |
| Derivation Path: Table 4.7.4-19 with condition Rx |

Table 4.9.23.3-4: DIRECT LINK ESTABLISHMENT ACCEPT (Table 4.9.23.2.2-1, Step 4)

|  |
| --- |
| Derivation Path: Table 4.7.4-8 with condition Tx |

Table 4.9.23.3-5: RRCReconfigurationSidelink (Table 4.9.23.2.2-1, Step 5)

|  |
| --- |
| Derivation Path: Table 4.6.1A-3 with condition RX and SL\_DRB |

Table 4.9.23.3-5: RRCReconfigurationCompleteSidelink (Table 4.9.23.2.2-1, Step 6)

|  |
| --- |
| Derivation Path: Table 4.6.1A-4 with condition TX |

### 4.9.24 Test procedure for IMS MO Video call establishment in 5GC

4.9.24.1 Scope

The purpose of this procedure is to establish an IMS MO Video call.

4.9.24.2 Procedure description

4.9.24.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.24.2.2 Procedure sequence

Table 4.9.24.2.2-1: IMS MO video call establishment in 5GC

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U – S | Message |  |  |
| 1 | Make the UE attempt an IMS Video call | - | - | - | - |
| 2 | Check: Does the UE transmit an *RRCSetupRequest* message with 'establishmentCause' set to 'mo-VideoCall'? | --> | NR RRC: *RRCSetupRequest* | - | P |
| 3 | SS transmit an *RRCSetup* message. | <-- | NR RRC: *RRCSetup* | - | - |
| 4 | Check: Does the UE transmit an *RRCSetupComplete* message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message? | --> | NR RRC: *RRCSetupComplete* 5GMM: SERVICE REQUEST | - | P |
| 5 | The SS transmits a *SecurityModeCommand* message to activate AS security. | <-- | NR RRC: *SecurityModeCommand* | - | - |
| 6 | Check: Does the UE transmit a *SecurityModeComplete* message and establish the initial security configuration? | --> | NR RRC: *SecurityModeComplete* | - | P |
| 7 | The SS transmits a *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB(s). | <-- | NR RRC: *RRCReconfiguration* 5GMM: SERVICE ACCEPT | - | - |
| - | EXCEPTION: In parallel to step 8 below, the steps specified in Table 4.9.24.2.2-2 take place. | - | - | - | - |
| 8 | The UE transmits an *RRCReconfigurationComplete* message. | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| - | EXCEPTION: Steps 9a1 to 9b4 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted. | - | - | - | - |
| 9a1-9a4 | IF the UE is configured to use preconditions, THEN steps 2-5 of Annex A.15.1 of TS 34.229-5 [47] take place. | - | - | - | - |
| 9b1-9b4 | ELSE steps 2-5 of Annex A.15.2 of TS 34.229-5 [47] take place. | - | - | - | - |
| 10 | The SS transmits a *RRCReconfiguration* message and a PDU SESSION MODIFICATION COMMAND. | <-- | NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND | - | - |
| - | EXCEPTION: Depending upon UE implementation, steps 11 and 12 can occur in any order | - | - | - | - |
| 11 | The UE transmits an *RRCReconfigurationComplete* message | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| 12 | Check: Does the UE transmit a *ULInformationTransfer* message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message? | --> | NR RRC: *ULInformationTransfer*  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMPLETE | - | P |
| - | EXCEPTION: Steps 13a1 to 13b8 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted. | - | - | - | - |
| 13a1-13a7 | IF the UE is configured to use preconditions, THEN steps 6-12 of Annex A.15.1 of TS 34.229-5 [47] take place. | - | - | - | - |
| 13b1-13b3 | ELSE steps 6-10 of Annex A.15.2 of TS 34.229-5 [47] take place. | - | - | - | - |

Table 4.9.24.2.2-2: Parallel Behaviour

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| - | EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted. | - | - | - | - |
| 1a1 | IF the UE is configured to use preconditions, THEN step 1 of Annex A.15.1 of TS 34.229-5 [47] takes place. | - | - | - | - |
| 1b1 | ELSE step 1 of Annex A.15.2 of TS 34.229-5 [47] takes place | - | - | - | - |

4.9.24.3 Specific message contents

Table 4.9.24.3-1: *RRCSetupRequest* (step 2, Table 4.9.24.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.508-1 [21], Table 4.6.1-23. | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCSetupRequest ::= SEQUENCE { | |  |  |  |
| rrcSetupRequest SEQUENCE { | |  |  |  |
| establishmentCause | | mo-VideoCall |  |  |
| } | |  |  |  |
| } | |  |  |  |

Table 4.9.24.3-2: SERVICE REQUEST (step 4, Table 4.9.24.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.508-1 [21], Table 4.7.1-16 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Service type | |  |  |  |
| Service type value | | ‘0001’B | data |  |

Table 4.9.24.3-3:PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.24.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.508-1 [21], Table 4.7.2-9. | | | |
| Information Element | | Value/remark | Comment | Condition |
| PDU session ID | | Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message. |  |  |
| Authorized QoS rules | | Reference QoS rule #7 as defined in TS 38.508-1, Table 4.8.2.1-7 using conditions IMS\_VOICE and IMS\_VIDEO. |  |  |
| Authorized QoS flow descriptions | | Reference QoS flow #5 and QoS flow #6 as defined in TS 38.508-1, Table 4.8.2.3-5 & Table 4.8.2.3-6 respectively. |  |  |
| Mapped EPS bearer contexts | | Not Present |  |  |
| Mapped EPS bearer contexts | |  |  | Interworking\_with\_EPS |
| Mapped EPS bearer context | |  |  |  |
| EPS bearer identity | | The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules |  |  |
| Operation code | | ‘001’B | Create new EPS bearer |  |
| E bit | | '1'B | Parameters list is included |  |
| Number of EPS parameters | | ’0010’B | 2 parameters |  |
| Mapped EPS QoS parameters | | See reference dedicated EPS bearer context #3 and #4 in TS 36.508 table 6.6.2-1 |  |  |
| Traffic Flow Template | | See reference dedicated EPS bearer context #3 and #4 in TS 36.508 table 6.6.2-1 |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Interworking\_with\_EPS | If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts. |

Table 4.9.24.3-4: *RRCReconfiguration* (step 10, Table 4.9.24.2.2-1)

|  |
| --- |
| Derivation Path: TS 38.508-1 [21], Table 4.8.1-1D |

### 4.9.25 Test procedure for UE Configuration Update for transparent UE Policy delivery

4.9.25.1 Scope

The purpose of this procedure is to transfer UE policy data to the UE.

4.9.25.2 Procedure description

4.9.25.2.1 Initial conditions

N/A

4.9.25.2.2 Procedure sequence

Table 4.9.25.2.2-1: Test procedure for UE Configuration Update for transparent UE Policy delivery

|  |  |  |  |
| --- | --- | --- | --- |
| St | Procedure | Message Sequence | |
|  |  | U – S | Message |
| 1 | The SS transmits a DL NAS TRANSPORT message. | <-- | 5GMM: DL NAS TRANSPORT |
| 2 | The UE transmits a UL NAS TRANSPORT message. | --> | 5GMM: UL NAS TRANSPORT |

4.9.25.3 Specific message contents

Table 4.9.25.3-1: DL NAS TRANSPORT (step 1, Table 4.9.25.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.508-1 [4], Table 4.7.1-11 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Payload container type | | ‘0101’B | UE policy container |  |
| Payload container | | Set according toTable 4.7.6-1 using condition URSP |  |  |

Table 4.9.25.3-2: UL NAS TRANSPORT (step 2, Table 4.9.25.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.508-1 [4], Table 4.7.1-12 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Payload container type | | ‘0101’B | UE policy container |  |
| Payload container | | Set according toTable 4.7.6-2 |  |  |

### 4.9.26 Test procedure for IMS MT video call establishment in 5GC

4.9.26.1 Scope

The purpose of this procedure is to establish an IMS MT video call.

4.9.26.2 Procedure description

4.9.26.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.26.2.2 Procedure sequence

Table 4.9.26.2.2-1: IMS MT video call establishment in 5GC

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U – S | Message |  |  |
| 1 | The SS transmits a *Paging* message. | <-- | NR RRC: *Paging* | - | - |
| 2 | Check: Does the UE transmit an *RRCSetupRequest* message with 'establishmentCause' set to 'mt-Access'? | --> | NR RRC: *RRCSetupRequest* | - | P |
| 3 | The SS transmits an *RRCSetup* message. | <-- | NR RRC: *RRCSetup* | - | - |
| 4 | Check: Does the UE transmit an *RRCSetupComplete* message and a SERVICE REQUEST message? | --> | NR RRC: *RRCSetupComplete*  5GMM: SERVICE REQUEST | - | P |
| 5 | The SS transmits a *SecurityModeCommand* message. | <-- | NR RRC: *SecurityModeCommand* | - | - |
| 6 | The UE transmits a *SecurityModeComplete* message. | --> | NR RRC: *SecurityModeComplete* | - | - |
| 7 | The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).  The RRCReconfiguration message is configured using RRCReconfiguration-SRB2-DRB(n, m) where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively. | <-- | NR RRC: *RRCReconfiguration*  5GMM: SERVICE ACCEPT | - | - |
| 8 | Check: Does the UE transmit an *RRCReconfigurationComplete* message? | --> | NR RRC: *RRCReconfigurationComplete* | - | P |
| - | EXCEPTION: Steps 9a1 to 9b5 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted. | - | - | - | - |
| 9a1-9a5 | IF the UE is configured to use preconditions THEN steps 1-5 of Annex A.16.1 of TS 34.229-5 [47] take place. | - | - | - | - |
| 9b1-9b5 | ELSE steps 1-5 of Annex A.16.2 of TS 34.229-5 [47] take place. | - | - | - | - |
| 10 | The SS transmits an *RRCReconfiguration* message and a PDU SESSION MODIFICATION COMMAND message. | <-- | NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND | - | - |
| - | EXCEPTION: Depending upon UE implementation, steps 11 and 12 can occur in any order | - | - | - | - |
| 11 | The UE transmits an *RRCReconfigurationComplete* message | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| 12 | Check: Does the UE transmit a *ULInformationTransfer* message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message? | --> | NR RRC: *ULInformationTransfer*  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMPLETE | - | P |
| - | EXCEPTION: Steps 13a1 to 13b7 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted. | - | - | - | - |
| 13a1-13a7 | IF the UE is configured to use preconditions THEN steps 6-12 of Annex A.16.1 of TS 34.229-5 [47] take place. | - | - | - | - |
| 13b1-13b5 | ELSE steps 6-10 of Annex A.16.2 of TS 34.229-5 [47] take place. | - | - | - | - |

4.9.26.3 Specific message contents

Table 4.9.26.3-1: *RRCSetupRequest* (step 2, Table 4.9.26.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-23 | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCSetupRequest ::= SEQUENCE { | |  |  |  |
| rrcSetupRequest SEQUENCE { | |  |  |  |
| establishmentCause | | mt-Access |  |  |
| } | |  |  |  |
| } | |  |  |  |

Table 4.9.26.3-2: SERVICE REQUEST (step 4, Table 4.9.26.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.1-26 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Service type | |  |  |  |
| Service type value | | ’0010’B | Mobile Terminated Services |  |

Table 4.9.26.3-3:PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.26.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.508-1 [21], Table 4.7.2-9. | | | |
| Information Element | | Value/remark | Comment | Condition |
| PDU session ID | | Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message. |  |  |
| Authorized QoS rules | | Reference QoS rule #7 as defined in TS 38.508-1, Table 4.8.2.1-7 using conditions IMS\_VOICE and IMS\_VIDEO. |  |  |
| Authorized QoS flow descriptions | | Reference QoS flow #5 and QoS flow #6 as defined in TS 38.508-1, Table 4.8.2.3-5 & Table 4.8.2.3-6 respectively. |  |  |
| Mapped EPS bearer contexts | | Not Present |  |  |
| Mapped EPS bearer contexts | |  |  | Interworking\_with\_EPS |
| Mapped EPS bearer context | |  |  |  |
| EPS bearer identity | | The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules |  |  |
| Operation code | | ‘001’B | Create new EPS bearer |  |
| E bit | | '1'B | Parameters list is included |  |
| Number of EPS parameters | | ’0001’B | 1 parameter |  |
| Mapped EPS QoS parameters | | See reference dedicated EPS bearer context #3 and EPS bearer context #4 in TS 36.508 table 6.6.2-1 |  |  |
| Traffic flow Template | | See reference dedicated EPS bearer context #3 and EPS bearer context #4 in TS 36.508 table 6.6.2-1 |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Interworking\_with\_EPS | If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts. |

Table 4.9.26.3-4: *RRCReconfiguration* (step 10, Table 4.9.26.2.2-1)

|  |
| --- |
| Derivation Path: TS 38.508-1 [21], Table 4.8.1-1D |

### 4.9.27 Test procedure for adding video to a speech call in 5GC

4.9.27.1 Scope

The purpose of this procedure is to add video to an established speech call.

4.9.27.2 Procedure description

4.9.27.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A and registered to the IMS.

4.9.27.2.2 Procedure sequence

Table 4.9.27.2.2-1: IMS video call addition in 5GC

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U – S | Message |  |  |
| 1 | The SS transmits an *RRCReconfiguration* message and a PDU SESSION MODIFICATION COMMAND message. | <-- | NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND | - | - |
| - | EXCEPTION: Steps 2 and 3 can occur in any order. | - | - | - | - |
| 2 | The UE transmits an *RRCReconfigurationComplete* message | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| 3 | Check: Does the UE transmit a *ULInformationTransfer* message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message? | --> | NR RRC: *ULInformationTransfer*  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMPLETE | - | - |

4.9.27.3 Specific message contents

Table 4.9.27.3-1:PDU SESSION MODIFICATION COMMAND (step 1, Table 4.9.27.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.508-1 [21], Table 4.7.2-9. | | | |
| Information Element | | Value/remark | Comment | Condition |
| PDU session ID | | Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message. |  |  |
| Authorized QoS rules | | Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS\_VIDEO and Rule operation code 011. |  |  |
| Authorized QoS flow descriptions | | Reference QoS flow #6 as defined in Table 4.8.2.3-6 respectively. |  |  |
| Mapped EPS bearer contexts | | Not Present |  |  |
| Mapped EPS bearer contexts | |  |  | Interworking\_with\_EPS |
| Mapped EPS bearer context | |  |  |  |
| EPS bearer identity | | The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules |  |  |
| Operation code | | ‘001’B | Create new EPS bearer |  |
| E bit | | '1'B | Parameters list is included |  |
| Number of EPS parameters | | ’0001’B | 1 parameter |  |
| Mapped EPS QoS parameters | | See reference dedicated EPS bearer context #3 in TS 36.508 table 6.6.2-1 |  |  |
| Traffic flow Template | | See reference dedicated EPS bearer context#3 in TS 36.508 table 6.6.2-1 |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| Interworking\_with\_EPS | If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts. |

Table 4.9.27.3-2: *RRCReconfiguration* (step 1, Table 4.9.27.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-13 with condition NR. | | | |
| Information Element | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { |  |  |  |
| criticalExtensions CHOICE { |  |  |  |
| c1 CHOICE { |  |  |  |
| rrcReconfiguration SEQUENCE { |  |  |  |
| radioBearerConfig | RadioBearerConfig-AddVideo |  |  |
| } |  |  |  |
| nonCriticalExtension SEQUENCE { |  |  |  |
| masterCellGroup | CellGroupConfig-DRB(0,1) | OCTET STRING (CONTAINING CellGroupConfig) |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |

Table 4.9.27.3-3 : RadioBearerConfig-AddVideo (Table 4.9.27.3-2)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.3-132 and condition SRB2. | | | |
| Information Element | Value/remark | Comment | Condition |
| RadioBearerConfig ::= SEQUENCE { |  |  |  |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod { | 1 entry |  |  |
| DRB-ToAddMod [1] SEQUENCE { |  | entry 1 |  |
| cnAssociation CHOICE { |  |  |  |
| sdap-Config SEQUENCE { | SDAP-Config |  |  |
| defaultDRB | false |  |  |
| } |  |  |  |
| } |  |  |  |
| drb-Identity | j | j is allocated according to internal TTCN mapping |  |
| reestablishPDCP | Not present |  |  |
| recoverPDCP | Not present |  |  |
| pdcp-Config | PDCP-Config with condition UM |  |  |
| } |  |  |  |

### 4.9.28 Test procedure for removing video from an ongoing call in 5GC

4.9.28.1 Scope

The purpose of this procedure is to remove video from an established speech call.

4.9.28.2 Procedure description

4.9.28.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A and registered to the IMS.

4.9.28.2.2 Procedure sequence

Table 4.9.28.2.2-1: IMS video removal from established call in 5GC

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U – S | Message |  |  |
| 1 | The SS transmits an *RRCReconfiguration* message and a PDU SESSION MODIFICATION COMMAND message. | <-- | NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND | - | - |
| - | EXCEPTION: Steps 2 and 3 can occur in any order. | - | - | - | - |
| 2 | The UE transmits an *RRCReconfigurationComplete* message | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| 3 | Check: Does the UE transmit a *ULInformationTransfer* message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message? | --> | NR RRC: *ULInformationTransfer*  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMPLETE | - | - |

4.9.28.3 Specific message contents

Table 4.9.28.2.3-1: *RRCReconfiguration* (step 1, Table 4.9.28.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-13. | | | |
| Information Element | | Value/remark | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { | |  |  |  |
| criticalExtensions CHOICE { | |  |  |  |
| rrcReconfiguration SEQUENCE { | |  |  |  |
| radioBearerConfig SEQUENCE { | |  |  |  |
| drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity { | | 1 entry |  |  |
| DRB-Identity[1] | | DRB-Identity linked to the IMS video bearer | entry 1 |  |
| } | |  |  |  |
| } | |  |  |  |
| nonCriticalExtension SEQUENCE { | |  |  |  |
| masterCellGroup SEQUENCE { | |  |  |  |
| rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity { | | 1 entry |  |  |
| LogicalChannelIdentity[1] | | Same value as drb-Identity[1] above | entry 1 |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |
| } | |  |  |  |

Table 4.9.28.2.3-2:PDU SESSION MODIFICATION COMMAND (step 1, Table 4.9.28.2.2-1)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-9. | | | | | | | |
| Information Element | | | Value/remark | | Comment | | Condition | |
| PDU session ID | | | Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message. | |  | |  | |
| Authorized QoS rules | | |  | |  | |  | |
| QoS rule[1] | | |  | |  | |  | |
| QoS rule identifier | | | ‘00000100’B | | QoS rule 7 | |  | |
| Rule operation code | | | ‘010’B | | Delete existing QoS rule | |  | |
| Authorized QoS flow descriptions | | |  | |  | |  | |
| QoS flow descriptions[1] | | |  | |  | |  | |
| QFI | | | ’00001000’B | | QFI 8 | |  | |
| Operation code | | | ‘010’B | | Delete existing QoS flow | |  | |

### 4.9.29 Test Procedure for eCall over IMS establishment in 5GS: eCall Only Support

4.9.29.1 Scope

The purpose of this test procedure is to allow successful completion of eCall over IMS in 5GS when UE is in 5GMM-DEREGISTERED.eCALL-INACTIVE.

The test procedure is applicable for UEs with eCall over IMS support.

Note: The trigger to initiate MO call will be part of test case from where the generic procedure is called.

4.9.29.2 Procedure description

4.9.29.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The test procedure assumes that the UE is in test state 0-A, subclause 4.4A.2 on the NR Cell. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.29.2.2 Procedure sequence

The establishment of eCall over IMS in 5GS is assumed to always be mobile originated.

Table 4.9.29.2.2-1: Test procedure sequence for eCall over IMS Emergency establishment in 5GS (eCall Only Support)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| - | EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case. | - | - | - | - |
| 1 | The UE is switched on and SS waits 15 sec to allow the UE to camp on the serving cell and enter and remain in substate 5GMM-DEREGISTERED.eCALL-INACTIVE | - | - | - | - |
| 2 | Make the UE attempt an eCall (Note) | - | - | - | - |
| 3-20 | Steps 2 to 19 of generic procedure 4.5.2.2-2 takes place. | - | - | - | - |
| 21-26 | Steps 8 to 13 of test procedure 4.9.11 takes place with condition ‘*eCall*’. | - | - | - | - |
| Note: The request to originate a manual or Automatic eCall may be performed by MMI or AT command | | | | | |

4.9.29.2.3 Specific Message content

All specific message contents shall be according to subclause 4.6 and 4.7 with the exceptions below.

Table 4.9.29.2.3-1: *SIB1* (at any time prior and during the procedure, Table 4.9.29.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.6.1-28. | | | |
| Information Element | | Value/remark | Comment | Condition |
| SIB1 ::= SEQUENCE { | |  |  |  |
| ims-EmergencySupport | | Present | true |  |
| } | |  |  |  |

### 4.9.30 Test procedure for releasing unicast mode NR sidelink communication

4.9.30.1 Scope

The purpose of this procedure is to release unicast mode sidelink communication.

4.9.30.2 Procedure description

4.9.30.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A with a PC5 unicast mode sidelink communication established.

4.9.30.2.2 Procedure sequence

Table 4.9.30.2.2-1: Procedure for releasing unicast mode NR sidelink communication

|  |  |  |  |
| --- | --- | --- | --- |
| St | Procedure | Message Sequence | |
|  |  | U – S | Message |
| 1 | The NR-SS-UE sends a DIRECT LINK RELEASE REQUEST message. | <-- | PC5-S: DIRECT LINK RELEASE REQUEST |
| 2 | The UE sends a DIRECT LINK RELEASE ACCEPT message. | --> | PC5-S: DIRECT LINK RELEASE ACCEPT |

4.9.30.3 Specific message contents

Table 4.9.30.3-1: DIRECT LINK RELEASE REQUEST (Step 1, Table 4.9.30.2.2-1)

|  |
| --- |
| Derivation Path: Table 4.7.4-11 with condition Rx |

Table 4.9.30.3-2: DIRECT LINK RELEASE ACCEPT (Step 2, Table 4.9.30.2.2-1)

|  |
| --- |
| Derivation Path: Table 4.7.4-12 with condition Tx |

### 4.9.31 Test procedure to check user plane connectivity on PC5 unicast link

4.9.31.1 Scope

The purpose of this procedure is to check user plane connectivity on established PC5 unicast link.

4.9.31.2 Procedure description

4.9.31.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A. The PC5 unicast link between the UE and the NR-SS-UE and corresponding AS layer connection (PC5-RRC, sidelink DRB) have been established.

4.9.31.2.2 Procedure sequence

Table 4.9.31.2.2-1: Procedure to check user plane connectivity on PC5 unicast link

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U – S | Message |  |  |
| 1 | Void | - | - | - | - |
| - | EXCEPTION: Steps 1a1 to 1b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value. | - | - | - | - |
| 1a1 | IF the UE is in state 1N-B or 4-A, the SS triggers UE to close UE test loop mode E (Receive Mode).  NOTE: Closing of UE test loop mode E may be performed by MMI or AT command (+CCUTLE). | - | - | - | - |
| 1b1 | ELSE IF the UE is in state 3N-B, the SS transmits a CLOSE UE TEST LOOP message to close UE test loop mode E (Receive Mode). | <-- | TC: CLOSE UE TEST LOOP |  |  |
| 1b2 | The UE transmits a CLOSE UE TEST LOOP COMPLETE message. | --> | TC: CLOSE UE TEST LOOP COMPLETE |  |  |
| 2 | The NR-SS-UE transmits one SDAP SDU on SL DRB#n  NOTE: SL DRB#n is the SL DRB associated with the PC5 unicast link to be verified. | - | - | - | - |
| 3 | Void |  |  |  |  |
| - | EXCEPTION: Steps 3a1 to 3b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value. | - | - | - | - |
| 3a1 | IF the UE is in state 1N-B or 4-A, the SS requests the UE to report the counter of successful reception of SDAP SDU packets.  NOTE: Requesting the UE to report the counter of successful reception of SDAP packets may be performed by MMI or AT command (+CUSPCREQ). | - | - | - | - |
| 3a2 | Check: Does the reported counters of successful reception of SDAP SDU/PSSCH/PSCCH packets satisfiy following conditions?  - Counter of SDAP SDU packets equals to 1;  - Counter of PSSCH packets is greater than 0;  - Counter of PSCCH packets is grater than 0;  NOTE: The UE reporting the counter of successful reception of SDAP SDU/PSSCH/PSCCH packets may be performed by MMI or AT command (+CUSPCREQ). | - | - | - | P |
| 3b1 | ELSE IF the UE is in state 3N-B, the SS transmits a UE TEST LOOP NR SIDELINK COUNTER REQUEST message to request the UE to report the counter of successful reception of SDAP SDU packets. | <-- | TC: UE TEST LOOP NR SIDELINK COUNTER REQUEST | - | - |
| 3b2 | Check: Does the reported counters of successful reception of SDAP SDU/PSSCH/PSCCH packets in UE TEST LOOP NR SIDELINK COUNTER RESPONSE message transmitted by the UE satisfiy following conditions?  - Counter of SDAP SDU packets equals to 1;  - Counter of PSSCH packets is greater than 0;  - Counter of PSCCH packets is grater than 0;. | --> | TC: UE TEST LOOP NR SIDELINK COUNTER RESPONSE | - | P |
| 4-5 | Void | - | - | - | - |
| - | EXCEPTION: Steps 5a1 to 5b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value. | - | - | - | - |
| 5a1 | IF the UE is in state 1N-B or 4-A, the SS triggers UE to open UE test loop mode E.  NOTE: Opening of UE test loop mode E may be performed by MMI or AT command (+CCUTLE). | - | - | - | - |
| 5b1 | ELSE IF the UE is in state 3N-B, the SS transmits an OPEN UE TEST LOOP message to open UE test loop mode E. | <-- | TC: OPEN UE TEST LOOP |  |  |
| 5b2 | The UE transmits an OPEN UE TEST LOOP COMPLETE message. | --> | TC: OPEN UE TEST LOOP COMPLETE |  |  |
| 6 | Void | - | - | - | - |
| - | EXCEPTION: Steps 6a1 to 6b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value. | - | - | - | - |
| 6a1 | IF the UE is in state 1N-B or 4-A, the SS triggers UE to close UE test loop mode E (Transmit Mode).  NOTE: Closing of UE test loop mode E may be performed by MMI or AT command (+CCUTLE). | - | - | - | - |
| 6b1 | ELSE IF the UE is in state 3N-B, the SS transmits a CLOSE UE TEST LOOP message to close UE test loop mode E (Transmit Mode). | <-- | TC: CLOSE UE TEST LOOP |  |  |
| 6b2 | The UE transmits a CLOSE UE TEST LOOP COMPLETE message. | --> | TC: CLOSE UE TEST LOOP COMPLETE |  |  |
| 7 | Check: Does UE continuously send SDAP SDUs on SL DRB#n in the next 5 seconds?  NOTE: The UE sends multiple packets. The reception of one of them is sufficient for achieving the Pass verdict. | - | - | - | P |
| 8 | Void | - | - | - | - |
| - | EXCEPTION: Steps 8a1 to 8b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value. | - | - | - | - |
| 8a1 | The SS triggers UE to open UE test loop mode E.  NOTE: Opening of UE test loop mode E may be performed by MMI or AT command (+CCUTLE). | - | - | - | - |
| 8b1 | ELSE IF the UE is in state 3N-B, the SS transmits an OPEN UE TEST LOOP message to open UE test loop mode E. | <-- | TC: OPEN UE TEST LOOP |  |  |
| 8b2 | The UE transmits an OPEN UE TEST LOOP COMPLETE message. | --> | TC: OPEN UE TEST LOOP COMPLETE |  |  |

4.9.31.3 Specific message contents

All specific message contents shall be according subclause 4.6 and 4.7B with the exceptions below.

Table 4.9.31.3-1: +CCUTLE (Table 4.9.31.2.2-1, Step 1a1)

|  |
| --- |
| Derivation Path: Table 4.7B-1 with condition Close and Receive |

Table 4.9.31.3-2: CLOSE UE TEST LOOP (Table 4.9.31.2.2-1, Step 1b1)

|  |
| --- |
| Derivation Path: 36.508 [2] Table 4.7A-3 with condition UE TEST LOOP MODE E (V2X Reception) |

Table 4.9.31.3-3: +CUSPCREQ (Table 4.9.31.2.2-1, Step 3a2)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 36.508[2] Table 4.7I-4 | | | |
| Field | | Value/remark | Comment | Condition |
| +CUSPCREQ = | |  |  |  |
| < type1> | | 2 | NR PSCCH transport blocks |  |
| < format > | | 1 |  |  |
| <length1> | | Not Checked |  |  |
| <counter1> | | Checked | Any value greater than 0 |  |
| < type2> | | 2 | NR STCH SDAP SDU packets |  |
| < format > | | 1 |  |  |
| <length2> | | Not Checked |  |  |
| <counter2> | | 1 |  |  |
| < type3> | | 2 | NR PSSCH transport blocks |  |
| < format > | | 1 |  |  |
| <length3> | | Not Checked |  |  |
| <counter3> | | Checked | Any value greater than 0 |  |

Table 4.9.31.3-4: UE TEST LOOP NR SIDELINK PACKET COUNTER REQUEST (Table 4.9.31.2.2-1, Step 3b1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.9.1 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Protocol discriminator | | ‘1111’B |  |  |
| Skip indicator | | ‘0000’B |  |  |
| Message type | | ‘10101010’B |  |  |

Table 4.9.31.3-5: UE TEST LOOP NR SIDELINK PACKET COUNTER RESPONSE (Table 4.9.31.2.2-1, Step 3b2)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.9.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Protocol discriminator | | ‘1111’B |  |  |
| Skip indicator | | ‘0000’B |  |  |
| Message type | | ‘10101011’B |  |  |
| NR Sidelink PSCCH Packet Counter(s) Value | |  |  |  |
| NR Sidelink PSCCH Packet Counter(s) Value type | | ‘00000001’B |  |  |
| Length of NR Sidelink PSCCH Packet Counter(s) Value contents in bytes | | ‘00000100’B | 4 bytes |  |
| NR Sidelink PSCCH Packet Counter IE #0 | | Checked | Any value greater than 0 |  |
| NR Sidelink STCH Packet Counter(s) Value | |  |  |  |
| NR Sidelink STCH Packet Counter(s) Value type | | ‘00000010’B |  |  |
| Length of NR Sidelink STCH Packet Counter(s) Value in bytes | | ‘00000100’B | 4 bytes |  |
| NR Sidelink STCH Packet Counter IE #0 | | ‘00000000  00000000  00000000  00000001’B |  |  |
| NR Sidelink PSSCH Packet Counter(s) Value | |  |  |  |
| NR Sidelink PSSCH Packet Counter(s) Value type | | ‘00000011’B |  |  |
| Length of NR Sidelink PSSCH Packet Counter(s) Value contents in bytes | | ‘00000100’B | 4 bytes |  |
| NR Sidelink PSSCH Packet Counter IE #0 | | Checked | Any value greater than 0 |  |

Table 4.9.31.3-6: +CCUTLE (Table 4.9.31.2.2-1, Step 5a1 and 8a1)

|  |
| --- |
| Derivation Path: Table 4.7B-1 with condition Open |

Table 4.9.31.3-7: +CCUTLE (Table 4.9.31.2.2-1, Step 6a1)

|  |
| --- |
| Derivation Path: Table 4.7B-1 with condition Close and Transmit |

Table 4.9.31.3-8: CLOSE UE TEST LOOP (Table 4.9.31.2.2-1, Step 6b1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 36.508 [2] Table 4.7A-3 with condition UE TEST LOOP MODE E(V2X Transmission) | | | |
| Information Element | | Value/remark | Comment | Condition |
| UE test loop mode E LB setup | |  |  |  |
| Communication Transmit or Receive | | 0 0 0 0 0 0 0 1 | ‘01’ indicates V2X UE triggered to transmit NR sidelink communication with single spatial layer. |  |

### 4.9.32 Test procedure to activate UE Power Limit Function (UPLF)

4.9.32.1 Initiation

UE is operating in FR2 in RRC\_CONNECTED state with UE power limit test function activated.

4.9.32.2 Procedure

Table 4.9.32.2-1: Test procedure Sequence

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| 1 | SS request UE to activate UE Power Limit Function | <-- | *ACTIVATE POWER LIMIT REQUEST* | - | - |
| 2 | UE confirms that UE Power Limit Function is activated | --> | *ACTIVATE POWER LIMIT RESPONSE* | - | - |

4.9.32.3 Specific Message contents

Table 4.9.32.3-1: ACTIVATE POWER LIMIT REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.11.1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Protocol discriminator | 1 1 1 1 |  |  |
| Skip indicator | 0 0 0 0 |  |  |
| Message type | 1 0 1 0 1 1 1 0 |  |  |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 0 0 1 0 |  | TOT NR AGG BW 100 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 0 1 1 |  | TOT NR AGG BW 150 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 0 1 0 0 |  | TOT NR AGG BW 200 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 0 1 0 1 |  | TOT NR AGG BW 250 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 0 1 1 0 |  | TOT NR AGG BW 300 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 0 1 1 1 |  | TOT NR AGG BW 350 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 1 0 0 0 |  | TOT NR AGG BW 400 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 1 0 0 1 |  | TOT NR AGG BW 450 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 1 0 1 0 |  | TOT NR AGG BW 500 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 1 0 1 1 |  | TOT NR AGG BW 550 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 1 1 0 0 |  | TOT NR AGG BW 600 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 1 1 0 1 |  | TOT NR AGG BW 650 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 1 1 1 0 |  | TOT NR AGG BW 700 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 0 1 1 1 1 |  | TOT NR AGG BW 750 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 0 0 0 0 |  | TOT NR AGG BW 800 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 0 0 0 1 |  | TOT NR AGG BW 850 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 0 0 1 0 |  | TOT NR AGG BW 900 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 0 0 1 1 |  | TOT NR AGG BW 950 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 0 1 0 0 |  | TOT NR AGG BW 1000 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 0 1 0 1 |  | TOT NR AGG BW 1050 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 0 1 1 0 |  | TOT NR AGG BW 1100 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 0 1 1 1 |  | TOT NR AGG BW 1150 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 1 0 0 0 |  | TOT NR AGG BW 1200 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 1 0 0 1 |  | TOT NR AGG BW 1250 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 1 0 1 0 |  | TOT NR AGG BW 1300 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 1 0 1 1 |  | TOT NR AGG BW 1350 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 1 1 0 0 |  | TOT NR AGG BW 1400 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 1 1 0 1 |  | TOT NR AGG BW 1450 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 1 1 1 0 |  | TOT NR AGG BW 1500 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 0 1 1 1 1 1 |  | TOT NR AGG BW 1550 |
| TOTAL NR AGGREGATED BANDWIDTH | 0 0 1 0 0 0 0 0 |  | TOT NR AGG BW 1600 |
| PCELL NR BANDWIDTH | 0 0 0 0 0 0 0 1 |  | PCELL NR BW 50 |
| PCELL NR BANDWIDTH | 0 0 0 0 0 0 1 0 |  | PCELL NR BW 100 |
| PCELL NR BANDWIDTH | 0 0 0 0 0 1 0 0 |  | PCELL NR BW 200 |
| PCELL NR BANDWIDTH | 0 0 0 0 1 0 0 0 |  | PCELL NR BW 400 |

|  |  |
| --- | --- |
| Condition | Explanation |
| TOT NR AGG BW 100 | Total NR aggregated Bandwidth equal to 100 MHz |
| TOT NR AGG BW 150 | Total NR aggregated Bandwidth equal to 150 MHz |
| TOT NR AGG BW 200 | Total NR aggregated Bandwidth equal to 200 MHz |
| TOT NR AGG BW 250 | Total NR aggregated Bandwidth equal to 250 MHz |
| TOT NR AGG BW 300 | Total NR aggregated Bandwidth equal to 300 MHz |
| TOT NR AGG BW 350 | Total NR aggregated Bandwidth equal to 350 MHz |
| TOT NR AGG BW 400 | Total NR aggregated Bandwidth equal to 400 MHz |
| TOT NR AGG BW 450 | Total NR aggregated Bandwidth equal to 450 MHz |
| TOT NR AGG BW 500 | Total NR aggregated Bandwidth equal to 500 MHz |
| TOT NR AGG BW 550 | Total NR aggregated Bandwidth equal to 550 MHz |
| TOT NR AGG BW 600 | Total NR aggregated Bandwidth equal to 600 MHz |
| TOT NR AGG BW 650 | Total NR aggregated Bandwidth equal to 650 MHz |
| TOT NR AGG BW 700 | Total NR aggregated Bandwidth equal to 700 MHz |
| TOT NR AGG BW 750 | Total NR aggregated Bandwidth equal to 750 MHz |
| TOT NR AGG BW 800 | Total NR aggregated Bandwidth equal to 800 MHz |
| TOT NR AGG BW 850 | Total NR aggregated Bandwidth equal to 850 MHz |
| TOT NR AGG BW 900 | Total NR aggregated Bandwidth equal to 900 MHz |
| TOT NR AGG BW 950 | Total NR aggregated Bandwidth equal to 950 MHz |
| TOT NR AGG BW 1000 | Total NR aggregated Bandwidth equal to 1000 MHz |
| TOT NR AGG BW 1050 | Total NR aggregated Bandwidth equal to 1050 MHz |
| TOT NR AGG BW 1100 | Total NR aggregated Bandwidth equal to 1100 MHz |
| TOT NR AGG BW 1150 | Total NR aggregated Bandwidth equal to 1150 MHz |
| TOT NR AGG BW 1200 | Total NR aggregated Bandwidth equal to 1200 MHz |
| TOT NR AGG BW 1250 | Total NR aggregated Bandwidth equal to 1250 MHz |
| TOT NR AGG BW 1300 | Total NR aggregated Bandwidth equal to 1300 MHz |
| TOT NR AGG BW 1350 | Total NR aggregated Bandwidth equal to 1350 MHz |
| TOT NR AGG BW 1400 | Total NR aggregated Bandwidth equal to 1400 MHz |
| TOT NR AGG BW 1450 | Total NR aggregated Bandwidth equal to 1450 MHz |
| TOT NR AGG BW 1500 | Total NR aggregated Bandwidth equal to 1500 MHz |
| TOT NR AGG BW 1550 | Total NR aggregated Bandwidth equal to 1550 MHz |
| TOT NR AGG BW 1600 | Total NR aggregated Bandwidth equal to 1600 MHz |
| PCELL NR BW 50 | PCC NR Bandwidth equal to 50 MHz |
| PCELL NR BW 100 | PCC NR Bandwidth equal to 100 MHz |
| PCELL NR BW 200 | PCC NR Bandwidth equal to 200 MHz |
| PCELL NR BW 400 | PCC NR Bandwidth equal to 400 MHz |

Table 4.9.32.3-2: ACTIVATE POWER LIMIT RESPONSE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.11.2 | | | |
| Information Element | | Value/remark | Comment | Condition |
| Protocol discriminator | | 1 1 1 1 |  |  |
| Skip indicator | | 0 0 0 0 |  |  |
| Message type | | 1 0 1 0 1 1 1 1 |  |  |

### 4.9.33 Test procedure to deactivate UE Power Limit Function (UPLF)

Editor’s note: The power limit request message values set by the UPLF test mode is currently applicable to equal PSD (equal channel bandwidths on all component carriers) only. Message values are pending for unequal channel bandwidths

4.9.33.1 Initiation

UE is operating in FR2 in RRC\_CONNECTED state.

4.9.33.2 Procedure

Table 4.9.33.2-1: Test procedure Sequence

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| 1 | SS request UE to deactivate UE Power Limit Function | <-- | *DEACTIVATE POWER LIMIT REQUEST* | - | - |
| 2 | UE confirms that UE Power Limit Function is deactivated | --> | *DEACTIVATE POWER LIMIT RESPONSE* | - | - |

4.9.33.3 Specific Message contents

Table 4.9.33.3-1: DEACTIVATE POWER LIMIT REQUEST

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.11.3 | | | |
| Information Element | Value/remark | Comment | Condition |
| Protocol discriminator | 1 1 1 1 |  |  |
| Skip indicator | 0 0 0 0 |  |  |
| Message type | 1 0 1 0 1 1 1 0 |  |  |

Table 4.9.33.3-2: DEACTIVATE POWER LIMIT RESPONSE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 38.509 clause 6.11.4 | | | |
| Information Element | Value/remark | Comment | Condition |
| Protocol discriminator | 1 1 1 1 |  |  |
| Skip indicator | 0 0 0 0 |  |  |
| Message type | 1 0 1 0 1 1 1 1 |  |  |

### 4.9.34 Test procedure for MBS Multicast session join and session establishment

4.9.34.1 Scope

The purpose of this procedure is to establish a multicast MBS session.

4.9.34.2 Procedure description

4.9.34.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A.

4.9.34.2.2 Procedure sequence

Table 4.9.34.2.2-1: Procedure for MBS Multicast session join and session establishment

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message/PDU/SDU |  |  |
| - | EXCEPTION: Step 1a1 to 1b12a1 describe behaviour that depends on the UE capability the “lower case letter” identifies a step sequence that take place. | - | - | - | - |
| 1a1 | IF pc\_Join\_MBS\_by\_PDU\_Modification THEN cause the UE to request establishment of associated PDU Session to the MBS DNN.(Note 1) | - | - | - | - |
| 1a2-1a7 | Steps 2-7 of expected sequence from Table 4.5.4.2-3 are performed. | - | - | - | - |
| - | EXCEPTION: Depending upon UE implementation, steps 1a8 and 1a9 can occur in any order | - | - | - | - |
| 1a8 | The UE transmits an *RRCReconfigurationComplete* message. | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| 1a9 | The UE transmits an UL NAS TRANSPORT message and a PDU SESSION ESTABLISHMENT REQUEST without MBS session ID and join request. | --> | NR RRC: *ULInformationTransfer*  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION ESTABLISHMENT REQUEST | - | P |
| 1a10 | The SS transmits an *RRCReconfiguration* message and an PDU SESSION ESTABLISHMENT ACCEPT | <-- | NR RRC: *RRCReconfiguration*  5GMM: DL NAS TRANSPORT  5GSM: PDU SESSION ESTABLISHMENT ACCEPT | - | - |
| 1a11 | The UE transmits an *RRCReconfigurationComplete* message. | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| - | EXCEPTION: Step 1a12a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. | - | - | - |  |
| 1a12a1 | IF the 'IP address allocation' for the DNN for which the PDU session is established is set to "Yes" in Table 4.8.4-1 THEN, the generic procedure for IP address allocation in the user plane, specified in subclause 4.5A.3, takes place performing IP address allocation in the user plane. | - | - | - | - |
| 1a13 | Trigger UE to join MBS Multicast session. | - | - | - | - |
| 1a14 | The UE transmits an ULInformationTransfer message and a PDU SESSION MODIFICATION REQUEST message including MBS session ID and join request. | --> | NR RRC: ULInformationTransfer  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION REQUEST | - | P |
| 1a15 | The SS transmits an RRCReconfiguration message and a PDU SESSION MODIFICATION COMMAND. | <-- | NR RRC: RRCReconfiguration  5GMM: DL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMMAND | - | - |
| - | EXCEPTION: Depending upon UE implementation, steps 1a16 and 1a17can occur in any order. | - | - | - | - |
| 1a16 | The UE transmits an RRCReconfigurationComplete message. | --> | NR RRC: RRCReconfigurationComplete | - | - |
| 1a17 | The UE transmits an ULInformationTransfer message and a PDU SESSION MODIFICATION COMPLETE message. | --> | NR RRC: ULInformationTransfer  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION MODIFICATION COMPLETE | - | P |
| 1b1 | ELSE trigger UE to join MBS Multicast session. | - | - | - | - |
| 1b2-1b7 | Steps 2-7 of expected sequence from Table 4.5.4.2-3 are performed. | - | - | - | - |
| - | EXCEPTION: Depending upon UE implementation, steps 1b8 and 1b9 can occur in any order | - | - | - | - |
| 1b8 | The UE transmits an *RRCReconfigurationComplete* message. | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| 1b9 | The UE transmits an UL NAS TRANSPORT message and a PDU SESSION ESTABLISHMENT REQUEST including MBS session ID and join request. | --> | NR RRC: *ULInformationTransfer*  5GMM: UL NAS TRANSPORT  5GSM: PDU SESSION ESTABLISHMENT REQUEST | - | P |
| 1b10 | The SS transmits an *RRCReconfiguration* message and a PDU SESSION ESTABLISHMENT ACCEPT | <-- | NR RRC: *RRCReconfiguration*  5GMM: DL NAS TRANSPORT  5GSM: PDU SESSION ESTABLISHMENT ACCEPT | - | - |
| 1b11 | The UE transmits an *RRCReconfigurationComplete* message. | --> | NR RRC: *RRCReconfigurationComplete* | - | - |
| - | EXCEPTION: Step 1b12a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. | - | - | - | - |
| 1b12a1 | IF the 'IP address allocation' for the DNN for which the PDU session is established is set to "Yes" in Table 4.8.4-1 THEN, the generic procedure for IP address allocation in the user plane, specified in subclause 4.5A.3, takes place performing IP address allocation in the user plane. | - | - | - | - |
| Note 1: This could be done by e.g. MMI or AT command. | | | | | |

4.9.34.3 Specific message contents

Table 4.9.34.3-1:PDU SESSION ESTABLISHMENT REQUEST (step 1a9, Table 4.9.34.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-1. | | | |
| Information Element | | Value/remark | Comment | Condition |
| Requested MBS container | | Not present |  |  |

Table 4.9.34.3-2:PDU SESSION MODIFICATION REQUEST (step 1a14, Table 4.9.34.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-7. | | | |
| Information Element | | Value/remark | Comment | Condition |
| Requested MBS container | |  |  |  |
| MBS session information | |  |  |  |
| MBS operation | | ‘01’B | Join MBS session |  |
| Type of MBS session ID | | Not checked |  |  |
| MBS session ID | | Present but value not checked, the value is set according to the parameter given in the test case |  |  |

Table 4.9.34.3-3:PDU SESSION MODIFICATION COMMAND (step 1a15, Table 4.9.34.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-9. | | | |
| Information Element | | Value/remark | Comment | Condition |
| Received MBS container | |  |  |  |
| Received MBS information | |  |  |  |
| Rejection cause | | ‘000’B | No additional information provided |  |
| MSAI | | ‘00’B | MBS service area not included |  |
| MD | | ‘010’B | MBS join is accepted |  |
| MSCI | | ‘0’B | MBS security container not included |  |
| MTI | | ‘00’B | No MBS timers included |  |
| IPAE | | ‘0’B | Source and destination IP address information not included |  |
| TMGI | |  |  |  |
| MBMS Service ID | | ‘000001’B |  |  |
| MCC | | See table 4.4.2-3 |  |  |
| MNC | | See table 4.4.2-3 |  |  |
| Source IP address information | | Not present |  |  |
| Destination IP address information | | Not present |  |  |
| MBS service area | | Not present |  |  |
| MBS timers | | Not present |  |  |
| MBS security container | | Not present |  |  |

Table 4.9.34.3-4:PDU SESSION ESTABLISHMENT REQUEST (step 1b9, Table 4.9.34.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-1. | | | |
| Information Element | | Value/remark | Comment | Condition |
| Requested MBS container | |  |  |  |
| MBS session information | |  |  |  |
| MBS operation | | ‘01’B | Join MBS session |  |
| Type of MBS session ID | | Not checked |  |  |
| MBS session ID | | Present but value not checked, the value is set according to the parameter given in the test case. |  |  |

Table 4.9.34.3-5:PDU SESSION ESTABLISHMENT ACCEPT (step 1b10, Table 4.9.34.2.2-1)

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: Table 4.7.2-2. | | | |
| Information Element | | Value/remark | Comment | Condition |
| Received MBS container | |  |  |  |
| Received MBS information | |  |  |  |
| Rejection cause | | ‘000’B | No additional information provided |  |
| MSAI | | ‘00’B | MBS service area not included |  |
| MD | | ‘010’B | MBS join is accepted |  |
| MSCI | | ‘0’B | MBS security container not included |  |
| MTI | | ‘00’B | No MBS timers included |  |
| IPAE | | ‘0’B | Source and destination IP address information not included |  |
| TMGI | |  |  |  |
| MBMS Service ID | | ‘000001’B |  |  |
| MCC | | See table 4.4.2-3 |  |  |
| MNC | | See table 4.4.2-3 |  |  |
| Source IP address information | | Not present |  |  |
| Destination IP address information | | Not present |  |  |
| MBS service area | | Not present |  |  |
| MBS timers | | Not present |  |  |
| MBS security container | | Not present |  |  |

## 4.10 Reference configuration for V2X

### 4.10.1 Pre-configuration for V2X

– SL-PreconfigurationNR

Table 4.10.1-1: *SL-PreconfigurationNR*

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 9.3 | | | |
| Information Element | | Value/remark | Comment | Condition |
| SL-PreconfigurationNR-r16 ::= SEQUENCE { | |  |  |  |
| sidelinkPreconfigNR-r16 SEQUENCE { | |  |  |  |
| sl-PreconfigFreqInfoList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfigCommon-r16 { | | 1 entry |  |  |
| SL-FreqConfigCommon-r16[1] | | SL-FreqConfigCommon | entry 1 |  |
| } | |  |  |  |
| sl-PreconfigNR-AnchorCarrierFreqList-r16 | | Not present |  |  |
| sl-PreconfigEUTRA-AnchorCarrierFreqList-r16 | | Not present |  |  |
| sl-RadioBearerPreConfigList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SL-RadioBearerConfig-r16 { | | 1 entry |  |  |
| SL-RadioBearerConfig-r16[1] | | SL-RadioBearerConfig | entry 1 |  |
| } | |  |  |  |
| sl-RLC-BearerPreConfigList-r16 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF SL-RLC-BearerConfig-r16 { | | 1 entry |  |  |
| SL-RLC-BearerConfig-r16[1] | | SL-RLC-BearerConfig | entry 1 |  |
| } | |  |  |  |
| sl-MeasPreConfig-r16 | | Not present |  |  |
| sl-OffsetDFN-r16 | | Not present |  |  |
| t400-r16 | | ms1000 |  |  |
| sl-MaxNumConsecutiveDTX-r16 | | n32 |  |  |
| sl-SSB-PriorityNR-r16 | | 1 |  |  |
| sl-PreconfigGeneral-r16 SEQUENCE { | |  |  |  |
| sl-TDD-Configuration-r16 | | Not present |  |  |
| reservedBits-r16 | | 00 |  |  |
| } | |  |  |  |
| sl-UE-SelectedPreConfig-r16 SEQUENCE { | |  |  |  |
| sl-PSSCH-TxConfigList-r16 | | SL-PSSCH-TxConfigList for Preconfiguration |  |  |
| sl-ProbResourceKeep-r16 | | v0 |  |  |
| sl-ReselectAfter-r16 | | n9 |  |  |
| sl-CBR-CommonTxConfigList-r16 | | Not present |  |  |
| ul-PrioritizationThres-r16 | | Not present |  |  |
| sl-PrioritizationThres-r16 | | Not present |  |  |
| } | |  |  |  |
| sl-CSI-Acquisition-r16 | | Not present |  |  |
| sl-RoHC-Profiles-r16 | | Not present |  |  |
| sl-MaxCID-r16 | | Not present | default value 15 is used |  |
| } | |  |  |  |
| } | |  |  |  |

Table 4.10.1-2: S*L-PSSCH-TxConfigList* for Preconfiguration (Table 4.10.1-1)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 38.331 [6], clause 6.3.5 | | | | |
| Information Element | | Value/remark | Comment | | Condition |
| SL-PSSCH-TxConfigList-r16 ::= SEQUENCE (SIZE (1..maxPSSCH-TxConfig-r16)) OF SL-PSSCH-TxConfig-r16 { | | 1 entry |  | |  |
| sl-TypeTxSync-r16 | | | Not present | Applicable for all synchronization reference types |  | |
| sl-ThresUE-Speed-r16 | | | kmph60 |  |  | |
| sl-ParametersAboveThres-r16 SEQUENCE { | | |  |  |  | |
| sl-MinMCS-PSSCH-r16 | | | 0 |  |  | |
| sl-MaxMCS-PSSCH-r16 | | | 26 |  |  | |
| sl-MinSubChannelNumPSSCH-r16 | | | 1 |  |  | |
| sl-MaxSubchannelNumPSSCH-r16 | | | 27 |  |  | |
| sl-MaxTxTransNumPSSCH-r16 | | | 4 |  |  | |
| sl-MaxTxPower-r16 | | | Not present |  |  | |
| } | | |  |  |  | |
| sl-ParametersBelowThres-r16 SEQUENCE { | | |  |  |  | |
| sl-MinMCS-PSSCH-r16 | | | 0 |  |  | |
| sl-MaxMCS-PSSCH-r16 | | | 26 |  |  | |
| sl-MinSubChannelNumPSSCH-r16 | | | 1 |  |  | |
| sl-MaxSubchannelNumPSSCH-r16 | | | 27 |  |  | |
| sl-MaxTxTransNumPSSCH-r16 | | | 4 |  |  | |
| sl-MaxTxPower-r16 | | | Not present |  |  | |
| } | | |  |  |  | |
| } | |  |  | |  |

## 4.11 GNSS Requirements for NR sidelink

### 4.11.1 General

This clause defines the GNSS scenarios and requirements which apply for all NR sidelink test cases that require simulated GNSS signals, unless otherwise specified.

The term SV ID used in this clause is defined as the satellite PRN for GPS and Modernized GPS, as Code Number for Galileo, as the satellite Slot Number for GLONASS and as the Ranging Code Number for BDS.

### 4.11.2 GNSS Scenarios

The following GNSS scenarios shall be used.

- Rinex navigation data: the required navigation data file(s) available in the GNSS orbital data sig zip file specified in TS 37.571-5 [49] Annex B are given in Table 4.11.2-1.

Table 4.11.2-1: Rinex navigation data files for NR sidelink testing

|  |  |
| --- | --- |
| GNSS supported by UE | Rinex navigation file(s) (1) |
| GPS | Sig GNSS GPS 2020\_9\_17 Rinex.txt |
| GLONASS | Sig GNSS GLONASS 2020\_9\_17 Rinex.txt |
| Galileo | Sig GNSS Galileo 2020\_9\_17 Rinex.txt |
| BDS | Sig GNSS BDS 2020\_9\_17 Rinex.txt |
| Note 1: Where the UE supports more than one GNSS then all the relevant Rinex navigation data files are used | |

- UE location(s) and motion:

Latitude: the simulated latitude(s) are given in Table 4.11.2-3

Longitude: the simulated longitude(s) are given in Table 4.11.2-3

Height: the simulated height is 30m

Motion: the simulated motion(s) are given in Table 4.11.2-2

Table 4.11.2-2: UE location(s) and motion(s) for NR sidelink testing

|  |  |  |  |
| --- | --- | --- | --- |
| Scenario number and description | Step # | Action (Location details given in Table 4.11.2-3) | Notes |
| Scenario #1: static in Geographical area #1 Note 1 | 1 | Static at location #1 |  |
| Scenario #2: move from inside Geographical area #1 to outside Geographical area #1 Note 1 | 1 | Static at location #1 |  |
| 2 | Trigger from test case to move in a straight line at 15m/s from current location to next location | Simulation leaves Geographical area #1 after 905 m, 60s after the trigger. An additional 1s is added to allow for UE position accuracy of +/- 15m. An additional 10s is added to allow for UE position update. Total time 71s |
| 3 | Static at location #2 |  |
| Note 1: Geographical area #1 is defined in clause 4.7.5.5-9 and is defined by three points with the following coordinates:  Point 1: latitude: 35.753056, longitude: 139.689167  Point 2: latitude: 35.735278, longitude: 139.689167  Point 3: latitude: 35.744167, longitude: 139.709167 | | | |

Table 4.11.2-3: Location descriptions for NR sidelink testing

|  |  |  |  |
| --- | --- | --- | --- |
| Location number | Description for information only | Latitude (degrees) | Longitude (degrees) |
| #1 | Approximate centre of Geographical area #1 | 35.74428 | 139.69916 |
| #2 | Approximately 1720m due west of location #1, outside Geographical area #1 | 35.74428 | 139.68017 |

Table 4.11.2-4: Zone id calculations for NR sidelink testing

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Description | Latitude (degrees) | Longitude (degrees) | Long distance from 0,0 in m (x) Note 1 | Lat distance from 0,0 in m (y) Note 1 | Values for zone\_id calculation (Note 2, Note 3) |
| Centre of zone | 35.74478 | 139.70333 | 11061850 | 3957225 | Zone\_id = 2613  x1= 53, y1= 40 |
| Note 1: all distances are +/- 1m  Note 2: *sl-ZoneLength* is set to 50m in accordance with Table 4.6.6-36, this allows for the accuracy with which a UE can define its position which is assumed to be +/- 15m.  Note 3: zone id is calculated according to TS 38.331 [6] clause 5.8.11. | | | | | |

- Nominal start time:  
17th September 2020 23:40:00 (GPS time) (UTC time: 17th September 2020 23:39:42).

- Visible satellites to be simulated are given in Table 4.11.2-5 and are above 15 degrees elevation with respect to the UE. These satellites have been selected to give a reasonable HDOP for the duration of the test.

Table 4.11.2-5: Satellites to be simulated for NR sidelink testing

|  |  |
| --- | --- |
| GNSS supported by UE | SV IDs of Satellites to be simulated (1) |
| GPS | 3, 4, 6, 17, 19, 28 |
| GLONASS | 3, 4, 5, 10, 18, 19 |
| Galileo | 3, 5, 13, 15, 21, 27 |
| BDS | 38, 40, 42, 43, 59, 60 (2) |
| Note 1: Where the UE supports more than one GNSS then all the relevant satellites are simulated.  Note 2: For BDS, the satellite types are as follows: GEO: 59, 60, IGSO: 38, 40, MEO: 42, 43. | |

- The levels of the simulated satellites are given in Table 4.11.2-6 and shall be generated with an accuracy of +/- 3dB. These conditions are defined for when there is no GNSS assistance data available at the UE and are specified in TS 38.133 [13] clause B.4.

Table 4.11.2-6: GNSS Reference Signal Power Requirements

| System | Parameters | Unit | Value |
| --- | --- | --- | --- |
|  | Number of generated satellites per system | - | 6 |
| GPS(1) | Reference signal power level for all satellites | dBm | -128.5 |
| Galileo | Reference signal power level for all satellites | dBm | -127 |
| GLONASS | Reference signal power level for all satellites | dBm | -131 |
| BDS | Reference signal power level for all satellites | dBm | -133 |
| NOTE 1: "GPS" here means GPS L1 C/A, Modernized GPS, or both, dependent on UE capabilities.  NOTE 2: The DUT UE does not need to support all systems. The DUT UE shall support at least one system and will be tested for the supported system(s). | | | |

- Ionospheric model: simulated values are given in Tables 4.11.2-7 and 4.11.2-8.

Table 4.11.2-7: Klobuchar ionospheric model for GPS or GLONASS or BDS if supported by the UE

|  |  |  |
| --- | --- | --- |
| **Model element** | **Units** | **Value/remark** |
| alfa0 | seconds | 4.6566129 10E-9 |
| alfa1 | sec/semi-circle | 1.4901161 10E-8 |
| alfa2 | sec/(semi-circle)2 | -5.96046 10E-8 |
| alfa3 | sec/(semi-circle)3 | -5.96046 10E-8 |
| beta0 | seconds | 79872 |
| beta1 | sec/semi-circle | 65536 |
| beta2 | sec/(semi-circle)2 | -65536 |
| beta3 | sec/(semi-circle)3 | -393216 |

Table 4.11.2-8: neQuick ionospheric model for Galileo if supported by the UE

|  |  |  |
| --- | --- | --- |
| **Model Element** | **Units** | **Value/remark** |
| ai0 | solar flux unit | 64.4 |
| ai1 | solar flux unit/degree | 0 |
| ai2 | solar flux unit/degree2 | 0 |

- Tropospheric model: STANAG with SRI equal to 324.8, as defined in STANAG 4294 [50].