**3GPP TSG-RAN WG3 Meeting #110-e *R3-20xxxx***

**Online, 02 - 12 November 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **38.455** | **CR** | **0015** | **rev** | **1** | **Current version:** | **16.1.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network | **X** |

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|  |
| ***Title:***  | Corrections to tabular and asn.1 for NR positioning (NRPPa) |
|  |  |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell |
| ***Source to TSG:*** | R3 |
|  |  |
| ***Work item code:*** | NR\_pos-Core |  | ***Date:*** | 2020-10-22 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-16 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)Rel-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
|  |  |
| ***Reason for change:*** | Correction of errors in the tabular and ASN.1 that were introduced by CR0008r19 (RP-201849). |
|  |  |
| ***Summary of change:*** | ASN.1 backwards compatible changes:* Alignment of tabular with ASN.1
* General cleanup, including:
	+ *Measurement Result* IE renamed to *TRP Measurement Result* IE, to distinguish from other measurement results (e.g. E-CID, Other-RAT, WLAN) and align with ASN.1.
* ASN.1 backwards compatible changes to align with tabular (highlighted):
	+ Presence of *TRP-MeasurementResponseList* IE in *MeasurementResponse* message changed to optional
	+ Presence of *TRPList* IE in *TRPInformationRequest* message changed to optional and criticality changed to ignore.
	+ *ActivationTime* replaced with *SFNInitialisationTime*
* Factorization of several IEs in the ASN.1, e.g. *PRS-Resource-ID*, *PRS-Resource-Set-ID*, and *SSB-Index*.

ASN.1 non-backwards compatible changes (highlighted):1. 9.1.4.x & ASN.1: In all messages related to Measurement Information Transfer, *LMF Measurement ID* and *RAN Measurement ID* IEs are made extensible (futureproof and alignment with F1AP)
2. 9.2.5 & ASN.1: In *E-CID Measurement Result* IE, *NG-RAN CGI* IE is changed to *NR CGI* IE (NOTE: An IE definition for NR CGI was created in section 9.2.9 and used for E-CID, and should therefore also be used in other places that are NR-specific)
3. 9.2.25 & ASN.1: In *TRP Information* IE, *NG-RAN CGI* IE is changed to *NR CGI* IE for same reason as #2 above.
4. 9.2.28 & ASN.1: In *Carrier Bandwidth* IE, min value of INTEGER changed from 0 to 1.
5. 9.2.29 & ASN.1: In *SRS Resource* IE, *Slot Offset* IE is deleted (redundant with *Offset* IE).
6. 9.2.30 & ASN.1: In *Positioning SRS Resource* IE, align with RRC:
	* “*slot20480*” value deleted from *Periodicity* IE (in alignment with *SRS-PeriodicityAndOffset-r16* in RRC).
	* In Spatial Relation using SSB, presence of *NR PCI* IE changed to M, and *SSB Index* IE changed to O (in alignment with *SSB-InfoNcell-r16* in RRC), as a consequence removal of *SSBPos* from ASN.1 due to duplication with *SSB*.
	* In Spatial Relation using DL-PRS, presence of *PRS ID* IE changed to M, and *PRS Resource* ID changed to O (in alignment with *DL-PRS-Info-r16* in RRC).
7. 9.2.31 & ASN.1: In *Slot Offset* IE, min value of INTEGER changed from 1 to 0 and semantics description added for value ‘0’.
8. 9.2.37 & ASN.1: max value of UL SRS RSRP should be 126 (see Table 13.3.1-1 of TS 38.133)
9. 9.2.38 & ASN.1: If Local Coordinate System (LCS) is used for UL Angle of Arrival, there does not seem to be any way to provide the LMF with the LCS to GCS translation so this is added to the encoding.
10. 9.2.41 & ASN.1: Relative Path Delay should not be extensible (see e.g. Table 10.1.23.3.3-1 of TS 38.133)
11. 9.2.44 & ASN.1: In *PRS Configuration* IE, align with TS 37.355:
	* *Sequence ID*, *Resource Slot Offset*, and *Resource Symbol Offset* should not be extensible.
	* RE Offset needs to be extensible (see *dl-PRS-CombSizeN-AndReOffset-r16* in TS 37.355)
	* QCL Info should be CHOICE type rather than SEQUENCE type (see *DL-PRS-QCL-Info-r16* in TS 37.355) and NR PCI added to SSB information
12. 9.2.58 & ASN.1: The LCS to GCS Translation should be optional, since it is not needed if the azimuth and elevation are provided in GCS.
13. Other ASN.1 changes (e.g. alignment with tabular and/or RRC, fix errors, etc.)
* *AperiodicSRSResourceTrigger* IE encoding corrected
* In LCS-to-GCS-TranslationItem, alpha, beta, and gamma are made mandatory in alignment with tabular.
* *NZP-CSI-RS-ResourceID* made non-extensible
* In *SRSCarrier-List-Item*, *pointA* made non-extensible.
* *SRSPosResourceID* made non-extensible.
* *SRSResourceID* made non-extensible.
* Missing ProtocolExtensionContainer added to IEs of SEQUENCE type: *UL-RTOAMeasurement*, *LCG-to-GCS-TranslationItem*, *NR-PRS-Beam-InformationItem*, *PRSAngleItem*, *SRSResourceSet-Item*, *TrpMeasurementTimingQuality*, *TrpMeasurementAngleQuality*, *TRPItem*
* Missing ProtocolIE-Single-Container added to IEs of CHOICE type: *BandwidthSRS*, *RelativePathDelay*, *SSBBurstPosition*, *ULRTOAMeas*

Rev1:1. ASN.1: In *TRPInformationList* (renamed *TRPInformationListTRPResp*), *TRP-ID* is moved inside *TRPInformation* in alignment with tabular and F1AP.
2. ASN.1: In *TRPInformationTypeList* (renamed *TRPInformationTypeListTRPReq*), the list is made extensible in alignment with tabular and F1AP.
3. ASN.1: In *MeasurementRequest*, the *SRSConfiguration* is moved below *SFNInitialisationTime* in alignment with the tabular and F1AP.
4. ASN.1: In *SSBInfoItem*, *pci-NR* is moved below *sSB-Configuration* in alignment with tabular and F1AP.
5. ASN.1: Removal of *pRSresourceAngleID*.

Impact analysis:Impact assessment towards the previous version of the specification (same release): This CR has an impact under protocol point of view. The impact can be considered isolated because the change affects one system function, namely NR positioning.This CR includes non-backwards compatible changes. |
|  |  |
| ***Consequences if not approved:*** | Errors would remain in the specification, resulting in e.g. some functionality not operating as intended. |
|  |  |
| ***Clauses affected:*** | 9.1.1.14, 9.1.1.15, 9.1.1.17, 9.1.1.18, 9.1.1.19, 9.1.1.20, 9.1.4.1, 9.1.4.2, 9.1.4.3, 9.1.4.4, 9.1.4.5, 9.1.4.6, 9.1.4.7, 9.2.5, 9.2.12, 9.2.13, 9.2.25, 9.2.27, 9.2.28, 9.2.29, 9.2.30, 9.2.31, 9.2.33, 9.2.34, 9.2.37, 9.2.38, 9.2.41, 9.2.44, 9.2.53, 9.2.54, 9.2.58, 9.3.4, 9.3.5, 9.3.7 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **x** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **x** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

*Beginning of Text Proposal for TS 38.455*

#### 9.1.1.14 TRP INFORMATION REQUEST

This message is sent by an LMF to request information for TRPs hosted by an NG-RAN node.

Direction: LMF → NG-RAN node.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.3 |  | YES | reject |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| **TRP List** |  | *0 ..1* |  |  | YES | ignore |
| **>TRP Item** |  | *1 .. <maxnoTRPs>* |  |  | EACH | ignore |
| >>TRP ID | M |  | 9.2.24 |  | - |  |
| **TRP Information Type List** |  | *1* |  |  |  |  |
| **>TRP Information Type Item** |  | *1 .. <maxnoTRPInfoTypes>* |  |  | EACH | reject |
| >>TRP Information Type Item | M |  | ENUMERATED (nr pci, ng-ran cgi, nr arfcn, prs config, ssb config, sfn init time, spatial direction info, geo-coordinates, …)  |  |  |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoTRPs | Maximum no. of TRPs in a NG-RAN node. Value is 65535 |
| maxnoTRPInfoTypes | Maximum no of TRP information types that can be requested and reported with one message. Value is 64. |

#### 9.1.1.15 TRP INFORMATION RESPONSE

This message is sent by an NG-RAN node to convey TRP information to an LMF.

Direction: NG-RAN node → LMF.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.3 |  | YES | reject |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| **TRP Information List** |  | *1* |  |  | YES | ignore |
| **>TRP Information Item** | M | *1 .. <maxnoTRPs>* |  |  | EACH | ignore |
| >>TRP Information | M |  | 9.2.25 |  | - |  |
| Criticality Diagnostics | O |  | 9.2.2 |  | YES | ignore |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoTRPs | Maximum no. of TRPs in a NG-RAN node. Value is 65535. |

*Next Change*

#### 9.1.1.17 POSITIONING ACTIVATION REQUEST

This message is sent by the LMF to cause the NG RAN node to activate/trigger UL SRS transmission by the UE.

Direction: LMF → NG-RAN node.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.3 |  | YES | reject |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| CHOICE *SRS type* | M |  |  |  | YES | reject |
| >*Semi-persistent* |  |  |  |  |  |  |
| >>SRS Resource Set ID | M  |  | 9.2.33 |  | - | - |
| >>SRS Spatial Relation | O |  | Spatial Relation Information9.2.34 |  | YES | ignore |
| >*Aperiodic* |  |  |  |  |  |  |
| >>Aperiodic | M |  | ENUMERATED(true,…) |  | - | - |
| >>SRS Resource Trigger | O |  | 9.2.35 |  | - | - |
| Activation Time | O |  | SFN Initialisation Time9.2.36 | indicates the start time when the SRS activation is requested | YES | ignore |

#### 9.1.1.18 POSITIONING ACTIVATION RESPONSE

This message is sent by NG-RAN node to confirm successful UL SRS activation in the UE.

Direction: NG-RAN node → LMF.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.3 |  | YES | reject |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| Criticality Diagnostics | O |  | 9.2.2 |  | YES | ignore |
| System Frame Number | O |  | INTEGER(0..1023) |  | YES | ignore |
| Slot Number | O |  | INTEGER(0..79) |  | YES | ignore |

#### 9.1.1.19 POSITIONING ACTIVATION FAILURE

This message is sent by NG-RAN node to indicate that activation of UL SRS transmission in the UE was unsuccessful.

Direction: NG-RAN node → LMF.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.3 |  | YES | reject |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| Cause | M |  | 9.2.1 |  | YES | ignore |
| Criticality Diagnostics | O |  | 9.2.2 |  | YES | ignore |

#### 9.1.1.20 POSITIONING DEACTIVATION

This message is sent by the LMF to cause the NG RAN node to deactivate UL SRS transmission or release all the transmission by the UE.

Direction: LMF → NG-RAN node.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.3 |  | YES | ignore |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| CHOICE *Abort Transmission* | M |  |  |  | YES | Ignore |
| >*Deactivate SRS Resource Set* |  |  |  |  |  |  |
| >>SRS Resource Set ID | M |  | 9.2.33 |  | - |  |
| >*Release ALL* |  |  | NULL | the NG-RAN node configures UE to stop transmitting SRS for the positioning purpose |  |  |

*Next Change*

#### 9.1.4.1 MEASUREMENT REQUEST

This message is sent by the LMF to request the NG-RAN node to configure a positioning measurement.

Direction: LMF → NG-RAN node.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.3 |  | YES | reject |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| LMF Measurement ID | M |  | INTEGER (1..65536, …)  |  | YES | reject |
| **TRP Measurement Request List** |  | *1* |  |  | YES | reject |
| **>TRP Measurement Request Item**  |  | *1..<maxnoofMeasTRPs>* |  |  | EACH | reject |
| >>TRP ID | M |  | 9.2.24 |  | - |  |
| >>Search Window Information | O |  | 9.2.26 |  | - |  |
|  |  |  |  |  |  |  |
| Report Characteristics | M |  | ENUMERATED (OnDemand, Periodic, ...) |  | YES | reject |
| Measurement Periodicity | C-ifReportCharacteristicsPeriodic |  | ENUMERATED (120ms, 240ms, 480ms, 640ms, 1024ms, 2048ms, 5120ms, 10240ms, 1min, 6min, 12min, 30min, 60min,…)  |  | YES | reject |
| **TRP Measurement Quantities** |  | *1* |  |  | YES | reject |
| **>TRP Measurement Quantities Item** |  | *1 .. <maxnoPosMeas>* |  |  | EACH | reject |
| >TRP Measurement Type | M |  | ENUMERATED (gNB-RxTxTimeDiff, UL-SRS-RSRP, UL-AoA, UL-RTOA,…) |  | - |  |
| >Timing Reporting Granularity Factor | O |  | INTEGER (0..5) | TS 38.133 [16] | - |  |
| SFN initialisation Time | O |  | 9.2.36 | If this IE is not present, the TRP may assume that the value is same as its own SFN initialisation time. | YES | ignore |
| SRS Configuration | O |  | 9.2.28 |  | YES | ignore |
| Measurement Beam Information Request | O |  | ENUMERATED (true,...) |  | YES | ignore |
| System Frame Number | O  |  | INTEGER(0..1023) |  | YES | ignore |
| Slot Number | O |  | INTEGER(0..79) |  | YES | ignore |

|  |  |
| --- | --- |
| Condition | Explanation |
| ifReportCharacteristicsPeriodic | This IE shall be present if the *Report Characteristics* IE is set to the value "Periodic". |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoPosMeas | Maximum no. of measured quantities that can be configured and reported with one positioning measurement message. Value is 16384. |
| maxnoofMeasTRPs | Maxmum no. of TRPs that can be included within one message. Value is 64.  |

#### 9.1.4.2 MEASUREMENT RESPONSE

This message is sent by the NG-RAN node to report positioning measurements for the target UE.

Direction: NG-RAN node → LMF.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.3 |  | YES | reject |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| LMF Measurement ID | M |  | INTEGER (1..65536, …)  |  | YES | reject |
| RAN Measurement ID | M |  | INTEGER (1..65536, …)  |  | YES | reject |
| **TRP Measurement Response List** |  | *0..1* |  |  | YES | reject |
| **>TRP Measurement Response Item**  |  | *1..<maxnoofMeasTRPs>* |  |  | EACH | reject |
| >>TRP ID | M |  | 9.2.24 |  | - |  |
| >>TRP Measurement Result | M |  | 9.2.37 |  | - |  |
| Criticality Diagnostics | O |  | 9.2.11 |  | YES | ignore |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofMeasTRPs | Maxmum no. of TRPs that can be included within one message. Value is 64.  |

#### 9.1.4.3 MEASUREMENT FAILURE

This message is sent by the NG-RAN node to report measurement failure.

Direction: NG-RAN node → LMF.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.3 |  | YES | reject |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| LMF Measurement ID | M |  | INTEGER (1..65536, …)  |  | YES | reject |
| Cause | M |  | 9.2.1 |  | YES | ignore |
| Criticality Diagnostics | O |  | 9.2.11 |  | YES | ignore |

#### 9.1.4.4 MEASUREMENT REPORT

This message is sent by the NG-RAN node to report positioning measurements for the target UE.

Direction: NG-RAN node → LMF.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.3 |  | YES | reject |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| LMF Measurement ID | M |  | INTEGER (1..65536, …)  |  | YES | reject |
| RAN Measurement ID | M |  | INTEGER (1..65536, …)  |  | YES | reject |
| **TRP Measurement Response List** |  | *1* |  |  | YES | reject |
| **>TRP Measurement Response Item** |  | *1..<maxnoofMeasTRPs>* |  |  | EACH | reject |
| >>TRP ID | M |  | 9.2.24 |  | - |  |
| >>TRP Measurement Result | M |  | 9.2.37 |  | - |  |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofMeasTRPs | Maxmum no. of TRPs that can be included within one message. Value is 64.  |

#### 9.1.4.5 MEASUREMENT UPDATE

This message is sent by the LMF to update a previously configured measurement.

Direction: LMF → NG-RAN node.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.3 |  | YES | ignore |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| LMF Measurement ID | M |  | INTEGER (1..65536, …)  |  | YES | reject |
| RAN Measurement ID | M |  | INTEGER (1..65536, …)  |  | YES | reject |
| SRS Configuration | O |  | 9.2.28 |  | YES | ignore |

#### 9.1.4.6 MEASUREMENT ABORT

This message is sent by the LMF to request the NG-RAN node to abort a measurement.

Direction: LMF → NG-RAN node.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.3 |  | YES | reject |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| LMF Measurement ID | M |  | INTEGER (1..65536, …)  |  | YES | reject |
| RAN Measurement ID | M |  | INTEGER (1..65536, …)  |  | YES | reject |

#### 9.1.4.7 MEASUREMENT FAILURE INDICATION

This message is sent by the NG-RAN node to indicate that the previously requested measurements can no longer be reported.

Direction: NG-RAN node → LMF.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.3 |  | YES | reject |
| NRPPa Transaction ID | M |  | 9.2.4 |  | - |  |
| LMF Measurement ID | M |  | INTEGER (1..65536, …)  |  | YES | reject |
| RAN Measurement ID | M |  | INTEGER (1..65536, …)  |  | YES | reject |
| Cause | M |  | 9.2.1 |  | YES | ignore |

*Next Change*

### 9.2.5 E-CID Measurement Result

The purpose of the E-CID Measurement Result information element is to provide the E-CID measurement result.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description | Criticality | Assigned Criticality |
| Serving Cell ID | M |  | NG-RAN CGI9.2.6 | NG-RAN Cell Identifier of the serving cell | - |  |
| Serving Cell TAC | M |  | TAC9.2.11 | Tracking Area Code of the serving cell | - |  |
| NG-RAN Access Point Position | O |  | 9.2.10 | The configured estimated geographical position of the antenna of the cell.If the *Geographical Coordinates* IE is used, the *NG-RAN Access Point Position* IE shall be ignored. | - |  |
| **Measured Results** |  | *0 .. <maxnoMeas>* |  |  | - |  |
| >CHOICE *Measured Results Value* | M |  |  |  | - |  |
| >>Value Angle of Arrival EUTRA | M |  | INTEGER (0..719) | According to mapping in TS 36.133 [9] | - |  |
| >>Value Timing Advance Type 1 EUTRA | M |  | INTEGER (0..7690) | According to mapping in TS 36. 214 [17] | - |  |
| >>Value Timing Advance Type 2 EUTRA | M |  | INTEGER (0..7690) | According to mapping in TS 36. 214 [17] | - |  |
| >>**Result RSRP EUTRA** |  | *1 .. <maxCellReport>* |  |  | - |  |
| >>> PCI EUTRA | M |  | INTEGER (0..503) | Physical Cell Identifier of the reported E-UTRA cell | - |  |
| >>>EARFCN | M |  | INTEGER (0.. 262143, …) | Corresponds to NDL for FDD and NDL/UL for TDD in ref. TS 36.104 [7] | - |  |
| >>> CGI EUTRA | O |  | 9.2.7 | Cell Global Identifier of the reported E-UTRA cell | - |  |
| >>>Value RSRP EUTRA | M |  | INTEGER (0..97, …) |  | - |  |
| >>**Result RSRQ EUTRA** |  | *1 . <maxCellReport>* |  |  | - |  |
| >>> PCI EUTRA | M |  | INTEGER (0..503) | Physical Cell Identifier of the reported E-UTRA cell | - |  |
| >>>EARFCN | M |  | INTEGER (0..262143, …) | Corresponds to NDL for FDD and NDL/UL for TDD in ref. TS 36.104 [7] | - |  |
| >>> CGI EUTRA | O |  | 9.2.7 | Cell Global Identifier of the reported E-UTRA cell | - |  |
| >>>Value RSRQ EUTRA | M |  | INTEGER (0..34, …) |  | - |  |
| **>>Result SS-RSRP** |  | *1 .. <maxCellReportNR>* |  |  | YES | ignore |
| >>>NR PCI | M |  | INTEGER (0..1007) |  | - |  |
| >>>NR ARFCN | M |  | INTEGER (0..3279165) |  | - |  |
| >>>NR CGI | O |  | 9.2.9 |  | - |  |
| >>>Value SS-RSRP Cell | O |  | INTEGER (0..127) | SS-RSRP measurement aggregated at cell level | - |  |
| **>>>SS-RSRP per SSB Resource** |  | *0 .. <maxIndexesReport>* |  |  | - |  |
| >>>>SSB Index | M |  | INTEGER (0..63) |  | - |  |
| >>>>Value SS-RSRP | M |  | INTEGER (0..127) | SS-RSRP measurement per SSB resource | - |  |
| **>>Result SS-RSRQ** |  | *1 .. <maxCellReportNR>* |  |  | YES | ignore |
| >>>NR PCI | M |  | INTEGER (0..1007) |  | - |  |
| >>>NR ARFCN | M |  | INTEGER (0..3279165) |  | - |  |
| >>>NR CGI | O |  | 9.2.9 |  | - |  |
| >>>Value SS-RSRQ Cell | O |  | INTEGER (0..127) | SS-RSRQ measurement aggregated at cell level | - |  |
| **>>>SS-RSRQ per SSB Resource** |  | *0 .. <maxIndexesReport>* |  |  | - |  |
| >>>>SSB Index | M |  | INTEGER (0..63) |  | - |  |
| >>>>Value SS-RSRQ | M |  | INTEGER (0..127) | SS-RSRQ measurement per SSB resource | - |  |
| **>>Result CSI-RSRP** |  | *1 .. <maxCellReportNR>* |  |  | YES | ignore |
| >>>NR PCI | M |  | INTEGER (0..1007) |  | - |  |
| >>>NR ARFCN | M |  | INTEGER (0..3279165) |  | - |  |
| >>>NR CGI | O |  | 9.2.9 |  | - |  |
| >>>Value CSI-RSRP Cell | O |  | INTEGER (0..127) | CSI-RSRP measurement aggregated at cell level | - |  |
| **>>>CSI-RSRP per CSI-RS Resource** |  | *0 .. <maxIndexesReport>* |  |  | - |  |
| >>>>CSI-RS Index | M |  | INTEGER (0..95) |  | - |  |
| >>>>Value CSI-RSRP | M |  | INTEGER (0..127) | CSI-RSRP measurement per CSI-RS resource | - |  |
| **>>Result CSI-RSRQ** |  | *1 .. <maxCellReportNR>* |  |  | YES | ignore |
| >>>NR PCI | M |  | INTEGER (0..1007) |  | - |  |
| >>>NR ARFCN | M |  | INTEGER (0..3279165) |  | - |  |
| >>>NR CGI | O |  | 9.2.9 |  | - |  |
| >>>Value CSI-RSRQ Cell | O |  | INTEGER (0..127) | CSI-RSRQ measurement aggregated at cell level | - |  |
| **>>>CSI-RSRQ per CSI-RS Resource** |  | *0 .. <maxIndexesReport>* |  |  | - |  |
| >>>>CSI-RS Index | M |  | INTEGER (0..95) |  | - |  |
| >>>>Value CSI-RSRQ | M |  | INTEGER (0..127) | CSI-RSRQ measurement per CSI-RS resource | - |  |
| >>Angle of Arrival NR | M |  | UL Angle of Arrival9.2.38 |  | YES | ignore |
| Geographical Coordinates | O |  | 9.2.46 |  | YES | ignore |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoMeas | Maximum no. of measured quantities that can be configured and reported with one message. Value is 64. |
| maxCellReport | Maximum no. of cells that can be reported with one message. Value is 9. |
| maxCellReportNR | Maximum no. of NR cells that can be reported with one message. Value is 9. |
| maxIndexesReport | Maximum no. of beam level measurement results that can be reported with one message. Value is 64. |

*Next Change*

### 9.2.12 Cell Portion ID

This parameter gives the current Cell Portion associated with the target UE. The Cell Portion ID is the unique identifier for a cell portion within a cell.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| Cell Portion ID | M |  | INTEGER (0..4095,…) |  |

### 9.2.13 Other-RAT Measurement Result

The purpose of the Other-RAT Measurement Result information element is to provide the measurement results of RATs other than the serving RAT.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description | Criticality | Assigned Criticality |
| **Other-RAT Measured Results** |  | *1.. <maxnoMeas>* |  |  |  |  |
| >CHOICE *Other-RAT Measured Results Value* | M |  |  |  |  |  |
| >>**Result GERAN** | M | *1..<maxGERANMeas>* |  |  |  |  |
| >>>ARFCN of BCCH | M |  | INTEGER (0..1023, ...) |  |  |  |
| >>>Physical CellId GERAN | M |  | INTEGER (0..63, ...) |  |  |  |
| >>>RSSI | M |  | INTEGER (0..63, ...) |  |  |  |
| >>**Result UTRAN** |  | *1..<maxUTRANMeas>* |  |  |  |  |
| >>>UARFCN | M |  | INTEGER (0..16383, ...) |  |  |  |
| >>>CHOICE Physical CellId UTRA | M |  |  |  |  |  |
| >>>>Physical CellId UTRA FDD | M |  | INTEGER (0..511, ...) |  |  |  |
| >>>>Physical CellId UTRA TDD | M |  | INTEGER (0..127, ...) |  |  |  |
| >>>UTRA RSCP | O |  | INTEGER (-5..91, ...) |  |  |  |
| >>>UTRA EcNo | O |  | INTEGER (0..49, ...) | This IE applies to FDD only. |  |  |
| **>>Result NR** |  | *1..<maxNRMeas>* |  |  | YES | ignore |
| >>>NR PCI | M |  | INTEGER (0..1007) |  | - |  |
| >>>NR ARFCN | M |  | INTEGER (0.. 3279165) |  | - |  |
| >>>SS-RSRP Cell | O |  | INTEGER (0..127) | SS-RSRP measurement aggregated at cell level | - |  |
| >>>SS-RSRQ Cell | O |  | INTEGER (0..127) | SS-RSRQ measurement aggregated at cell level | - |  |
| >>>**SS-RSRP per SSB Resource**  |  | *0 .. <maxnoIndexesToReport>* |  |  | - |  |
| >>>>SSB Index | M |  | INTEGER (0..63) |  | - |  |
| >>>>Value SS-RSRP | M |  | INTEGER (0..127) | SS-RSRP measurement per SSB resource | - |  |
| >>>**SS-RSRQ per SSB Resource**  |  | *0 .. <maxnoIndexesToReport>* |  |  | - |  |
| >>>>SSB Index | M |  | INTEGER (0..63) |  | - |  |
| >>>>Value SS-RSRQ | M |  | INTEGER (0..127) | SS-RSRQ measurement per SSB resource | - |  |
| >>>CGI NR  | O |  | 9.2.9 | Cell Global Identifier of the reported NR cell | - |  |
| **>>Result EUTRA** |  | *1..<maxEUTRAMeas>* |  |  | YES | ignore |
| >>>PCI EUTRA | M |  | INTEGER (0..503) |  | - |  |
| >>>EARFCN | M |  | INTEGER (0..262143) |  | - |  |
| >>>RSRP EUTRA | O |  | INTEGER (0..97) |  | - |  |
| >>>RSRQ EUTRA | O |  | INTEGER (0..34) |  | - |  |
| >>>CGI EUTRA | O |  | 9.2.7 | Cell Global Identifier of the reported E-UTRA cell | - |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoMeas | Maximum no. of measured quantities that can be configured and reported with one message. Value is 64. |
| maxGERANMeas | Maximum no. of GERAN cells that can be reported with one message. Value is 8. |
| maxUTRANMeas | Maximum no. of UTRAN cells that can be reported with one message. Value is 8. |
| maxNRMeas | Maximum no. of NR cells that can be reported with one message. Value is 8. |
| maxEUTRAMeas | Maximum no. of EUTRA cells that can be reported with one message. Value is 8. |
| maxIndexesReport | Maximum no. of beam level measurement results that can be reported with one message. Value is 64. |

*Next Change*

### 9.2.25 TRP Information

The *TRP Information* IE contains information for one TRP within an NG-RAN node.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| TRP ID | M |  | 9.2.24 |  |
| **TRP Information Type** |  | *1 .. <maxnoTRPInfoTypes>* |  |  |
| >CHOICE *TRP Information Item* | M |  |  |  |
| >>NR PCI | M |  | INTEGER (0..1007) | NR Physical Cell ID |
| >>NR CGI | M |  | 9.2.9 |  |
| >>NR ARFCN | M |  | INTEGER (0..3279165) |  |
| >>PRS Configuration | M |  | 9.2.44 |  |
| >>SSB Information | M |  | 9.2.54 |  |
| >>SFN Initialisation Time | M |  | 9.2.36 |  |
| >>Spatial Direction Information | M |  | 9.2.45 |  |
| >>Geographical Coordinates | M |  | 9.2.46 |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoTRPInfoTypes | Maximum no of TRP information types that can be requested and reported with one message. Value is 64. |

*Next Change*

### 9.2.27 Requested SRS Transmission Characteristics

This IE contains the requested SRS configuration for the UE.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| Number Of Periodic Transmissions | C-ifResourceTypePeriodic |  | INTEGER (0..500,…) | The number of periodic SRS transmissions requested. The value of ‘0’ represents an infinite number of periodic SRS transmissions. |
| Resource Type | M |  | ENUMERATED (periodic, semi-persistent, aperiodic, …) |  |
| CHOICE *Bandwidth* | M |  |  |  |
| >FR1 |  |  | ENUMERATED (5mHz, 10mHz, 20mHz, 40mHz, 50mHz, 80mHz, 100mHz, ...) |  |
| >FR2 |  |  | ENUMERATED (50mHz, 100mHz, 200mHz, 400mHz,…) |  |
| **SRS Resource Set List** |  | *0.. 1* |  |  |
| **>SRS Resource Set Item** |  | *1..<* *maxnoSRS-ResourceSets>* |  |  |
| >>Number of SRS Resources Per Set | O |  | INTEGER (1..16,...) | The number of SRS Resources per resource set for SRS transmission.  |
| **>>Periodicity List** |  | *0.. 1* |  |  |
| **>>>Periodicity List Item** |  | *1..<maxnoSRS-ResourcePerSet>* |  |  |
| >>>>PeriodicitySRS | M |  | ENUMERATED (0.125, 0.25, 0.5, 0.625, 1, 1.25, 2, 2.5, 4, 5, 8, 10, 16, 20, 32, 40, 64, 80, 160, 320, 640, 1280, 2560, 5120, 10240, …) | Milli-seconds |
| >>Spatial Relation Information | O |  | 9.2.34 |  |
| >>Pathloss Reference Information | O |  | 9.2.53 |  |
| SSB Information | O |  | 9.2.54 |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| ifResourceTypePeriodic | This IE shall be present if the *Resource Type* IE is set to the value "Periodic". |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoSRS-ResourceSets | Maximum no of requested SRS Resource Sets for SRS transmission. Value is 16. |
| maxnoSRS-ResourcePerSet  | Maximum no of SRS Resources per set. Value is 16. |

### 9.2.28 SRS Configuration

This information element contains the SRS configuration configured by the NG-RAN node for the UE.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| **SRS Carrier List** |  | *1..<maxnoSRS-Carriers>* |  |  |
| >Point A | M |  | INTEGER (0..3279165) | NR ARFCN |
| **>Uplink Channel BW-PerSCS-List** |  | *1..<maxnoSCSs>* |  | SCS-SpecificCarrier TS 38.331 [13] |
| >>Offset To Carrier | M |  | INTEGER(0..2199,…) | First usable RB to Point A in the number of PRBs |
| >>Subcarrier Spacing | M |  | ENUMERATED(kHz15, kHz30, kHz60, kHz120,…) |  |
| >>Carrier Bandwidth | M |  | INTEGER(1..275,…) |  |
| **>Active UL BWP** | M |  |  | Only the configuration in the active UL BWP is needed. |
| >>Location And Bandwidth | M |  | INTEGER(0..37949,…) | BWP TS 38.331 [13] |
| >>Subcarrier Spacing | M |  | ENUMERATED(kHz15, kHz30, kHz60, kHz120,…) |  |
| >>Cyclic Prefix | M |  | ENUMERATED(Normal, Extended) |  |
| >>Tx Direct Current Location | M |  | INTEGER(0..3301,…) |  |
| >>Shift7dot5kHz | O |  | ENUMERATED(true,…) |  |
| >>SRS Config | M |  |  | *SRS-Config* as defined in TS 38.331 [13] |
| **>>>SRS Resource List** |  | *0..<maxnoSRS-Resources>* |  |  |
| >>>>SRS Resource | M |  | 9.2.29 | *SRS-Resource* as defined in TS 38.331 [13] |
| **>>>Positioning SRS Resource List** |  | *0..<maxnoSRS-PosResources>* |  |  |
| >>>>Positioning SRS Resource | M |  | 9.2.30 | *SRS-PosResource-r16* as defined in TS 38.331 [13] |
| **>>>SRS Resource Set List** |  | *0..<maxnoSRS-ResourceSets>* |  |  |
| >>>>SRS Resource Set | M |  | 9.2.31 | *SRS-ResourceSet* as defined in TS 38.331 [13] |
| **>>>Positioning SRS Resource Set List** |  | *0..<maxnoSRS-PosResourceSets>* |  |  |
| >>>>Positioning SRS Resource Set  | M |  | 9.2.32 | *SRS-PosResourceSet-r16* as defined in TS 38.331 [13] |
| >NR PCI | O |  | INTEGER (0..1007) | Physical Cell ID of the cell that contains the SRS carrier |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoSRS-Carriers | Maximum no of carriers for SRS. Value is 32. |
| maxnoSCSs | Maximum no of SCS spacings for a carrier. Value is 5. |
| maxnoSRS-Resources | Maximum no of SRS resources per UL BWP. Value is 64. |
| maxnoSRS-PosResources | Maximum no of positioning SRS resources per UL BWP. Value is 64. |
| maxnoSRS-ResourceSets | Maximum no of SRS resource sets per UL BWP. Value is 16. |
| maxnoSRS-PosResourceSets | Maximum no of positioning SRS resource sets per UL BWP. Value is 16. |

### 9.2.29 SRS Resource

This information element contains the SRS resource.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| SRS Resource ID | M |  | INTEGER(0..63) |  |
| Number of Ports | M |  | ENUMERATED(port1, ports2, ports4) |  |
| CHOICE *Transmission Comb* | M |  |  |  |
| >*Comb Two* |  |  |  |  |
| >>Comb Offset | M |  | INTEGER(0..1) |  |
| >>Cyclic Shift | M |  | INTEGER(0..7) |  |
| >*Comb Four* |  |  |  |  |
| >>Comb Offset | M |  | INTEGER(0..3) |  |
| >>Cyclic Shift | M |  | INTEGER(0..11) |  |
| Start Position | M |  | INTEGER(0..13) |  |
| Number of Symbols | M |  | ENUMERATED(n1,n2,n4) |  |
| Repetition Factor | M |  | ENUMERATED(r1,r2,r4) |  |
| Frequency Domain Position | M |  | INTEGER(0..67) |  |
| Frequency Domain Shift | M |  | INTEGER(0..268) |  |
| C-SRS | M |  | INTEGER(0..63) |  |
| B-SRS | M |  | INTEGER(0..3) |  |
| B-Hop | M |  | INTEGER(0..3) |  |
| Group or Sequence Hopping | M |  | ENUMERATED(neither, groupHopping, sequenceHopping) |  |
| CHOICE *Resource Type* | M |  |  |  |
| >*Periodic* |  |  |  |  |
| >>Periodicity | M |  | ENUMERATED(slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320, slot640, slot1280, slot2560, …) |  |
| >>Offset | M |  | INTEGER(0..2559, …) |  |
| >*Semi-persistent* |  |  |  |  |
| >>Periodicity | M |  | ENUMERATED(slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320, slot640, slot1280, slot2560, …) |  |
| >>Offset | M |  | INTEGER(0..2559, …) |  |
| >*Aperiodic* |  |  |  |  |
| >>Aperiodic Resource Type | M |  | ENUMERATED(true,…) |  |
|  |  |  |  |  |
| Sequence ID | M |  | INTEGER(0..1023) |  |

### 9.2.30 Positioning SRS Resource

This information element contains the SRS resource for positioning.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| Positioning SRS Resource ID | M |  | INTEGER(0..63) |  |
| CHOICE *Transmission Comb* | M |  |  |  |
| >*Comb Two* |  |  |  |  |
| >>Comb Offset | M |  | INTEGER(0..1) |  |
| >>Cyclic Shift | M |  | INTEGER(0..7) |  |
| >*Comb Four* |  |  |  |  |
| >>Comb Offset | M |  | INTEGER(0..3) |  |
| >>Cyclic Shift | M |  | INTEGER(0..11) |  |
| >*Comb Eight* |  |  |  |  |
| >>Comb Offset | M |  | INTEGER(0..7) |  |
| >>Cyclic Shift | M |  | INTEGER(0..5) |  |
| Start Position | M |  | INTEGER(0..13) |  |
| Number of Symbols | M |  | ENUMERATED(n1,n2,n4, n8, n12} |  |
| Frequency Domain Shift | M |  | INTEGER(0..268) |  |
| C-SRS | M |  | INTEGER(0..63) |  |
| Group or Sequence Hopping | M |  | ENUMERATED(Neither, groupHopping, sequenceHopping) |  |
| CHOICE *Resource Type Positioning* | M |  |  |  |
| >*periodic* |  |  |  |  |
| >>Periodicity | M |  | ENUMERATED(slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320, slot640, slot1280, slot2560, slot5120, slot10240, slot40960, slot81920,…) |  |
| >>Offset | M |  | INTEGER(0..81919,…) |  |
| >*semi-persistent* |  |  |  |  |
| >>Periodicity | M |  | ENUMERATED(slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320, slot640, slot1280, slot2560, slot5120, slot10240, slot40960, slot81920,…) |  |
| >>Offset | M |  | INTEGER(0..81919,…) |  |
| >*aperiodic* |  |  |  |  |
| >>slot offset | M |  | INTEGER(0..32) |  |
| Sequence ID | M |  | INTEGER(0..65535) |  |
| CHOICE *Spatial Relation Positioning* | O |  |  |  |
| >*SSB* |  |  |  |  |
| >>NR PCI | M |  | INTEGER (0..1007) |  |
| >>SSB index | O |  | INTEGER(0..63) |  |
| >*PRS* |  |  |  |  |
| >>PRS ID | M |  | INTEGER(0..255) |  |
| >>PRS Resource Set ID | M |  | INTEGER(0..7) |  |
| >>PRS Resource ID | O |  | INTEGER(0..63) |  |

### 9.2.31 SRS Resource Set

This information element indicates an SRS resource set in the UE for UL SRS transmission.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| SRS Resource Set ID | M |  | INTEGER(0..15) |  |
| **SRS Resource ID List** |  | *1..<maxnoSRS-ResourcePerSet>* |  |  |
| >SRS Resource ID | M |  | INTEGER(0..63) |  |
| CHOICE *Resource Set Type* | M |  |  |  |
| >*periodic* |  |  |  |  |
| >>periodicSet | M |  | ENUMERATED(true,…) |  |
| >*semi-persistent* |  |  |  |  |
| >>semi-persistentSet | M |  | ENUMERATED(true,…) |  |
| >*aperiodic* |  |  |  |  |
| >>SRS Resource Trigger | M |  | INTEGER(1..3) |  |
| >>Slot offset | M |  | INTEGER(0..32) | Offset in number of slots, where value 0 indicates no offset. |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoSRS-ResourcePerSet | Maximum no of SRS resources per SRS resource set. Value is 16. |

*Next Change*

### 9.2.33 SRS Resource Set ID

This information element indicates a resource set in the UE for UL SRS transmission.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| SRS Resource Set ID | M |  | INTEGER (0..15) | According to TS 38.331 [13] |

### 9.2.34 Spatial Relation Information

This information element indicates a spatial relation for transmission of UL SRS by a UE.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| **Spatial Relation for Resource ID** |  | *1..<maxnoSpatialRelations>* |  | According to TS 38.321 [15] and TS 38.331 [13] |
| CHOICE *Reference Signal* | M |  |  |  |
| >*NZP CSI-RS* |  |  |  |  |
| >>NZP CSI-RS Resource ID | M |  | INTEGER (0..191) |  |
| >*SSB* |  |  |  |  |
| >>NR PCI | M |  | INTEGER (0..1007) |  |
| >>SSB Index | O |  | INTEGER (0..63) |  |
| >*SRS* |  |  |  |  |
| >>SRS Resource ID | M |  | INTEGER (0..63) |  |
| >*Positioning SRS* |  |  |  |  |
| >>Positioning SRS Resource ID | M |  | INTEGER (0..63) |  |
| >*DL-PRS* |  |  |  |  |
| >>DL-PRS ID | M |  | INTEGER (0..255) |  |
| >>DL-PRS Resource Set ID | M |  | INTEGER (0..7) |  |
| >>DL-PRS Resource ID | O |  | INTEGER (0..63) |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoSpatialRelations | Maximum no. of Spatial Relations that can be configured. Value is 64.  |

*Next Change*

### 9.2.37 TRP Measurement Result

This information element contains the measurement result.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| **Measured Result Item** |  | *1 .. <maxnoPosMeas>* |  |  |
| >CHOICE *Measured Results Value* | M |  |  |  |
| >>UL Angle of Arrival | M |  | 9.2.38 |  |
| >>UL SRS-RSRP | M |  | INTEGER (0..126) |  |
| >>UL RTOA | M |  | 9.2.39 |  |
| >>gNB Rx-Tx Time Difference | M |  | 9.2.40 |  |
| >Time Stamp | M |  | 9.2.42 |  |
| >Measurement Quality | O |  | 9.2.43 |  |
| >Measurement Beam Information | O |  | 9.2.57 |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoPosMeas | Maximum no. of measured quantities that can be configured and reported with one positioning measurement message. Value is 16384. |

### 9.2.38 UL Angle of Arrival

This information element contains the uplink Angle of Arrival measurement.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| Azimuth Angle of Arrival | M |  | INTEGER(0..3599) | TS 38.133 [16] |
| Zenith Angle of Arrival | O |  | INTEGER(0..1799) | TS 38.133 [16] |
|  |  |  |  |  |
| **LCS to GCS Translation** |  | *0..1* |  | If absent, the azimuth and zenith are provided in GCS. |
| >Alpha | M |  | INTEGER (0..3599) |  |
| >Beta | M |  | INTEGER (0..3599) |  |
| >Gamma | M |  | INTEGER (0..3599) |  |

*Next Change*

### 9.2.41 Additional Path List

This information element contains the additional path results of time measurement.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| **Additional Path Item** |  | *1..<maxnopath>* |  |  |
| >CHOICE *Relative Path Delay* | M |  |  |  |
| >>k0 | M |  | INTEGER(0..16351) |  |
| >>k1 | M |  | INTEGER(0..8176) |  |
| >>k2 | M |  | INTEGER(0..4088) |  |
| >>k3 | M |  | INTEGER(0..2044) |  |
| >>k4 | M |  | INTEGER(0..1022) |  |
| >>k5 | M |  | INTEGER(0..511) |  |
| >Path Quality | O |  | Measurement Quality9.2.43 |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnopath | Maximum no. of additional path measurement. Value is 2. |

*Next Change*

### 9.2.44 PRS Configuration

This information element contains the DL PRS configuration for the TRP.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| **PRS Resource Set List** |  | 1..<maxnoofPRSresourceSet> |  |  |
| >PRS Resource Set ID | M |  | INTEGER(0..7) |  |
| >Subcarrier Spacing | M |  | ENUMERATED(kHz15, kHz30, kHz60, kHz120, …) |  |
| >PRS bandwidth | M |  | INTEGER(1..63) | 24,28,…,272 PRBs |
| >Start PRB | M |  | INTEGER(0..2176) | Starting PRB to Point A |
| >Point A | M |  | INTEGER (0..3279165) | NR ARFCN |
| >Comb Size | M |  | ENUMERATED(2, 4, 6, 12, …) |  |
| >CP Type | M |  | ENUMERATED(normal, extended, …) |  |
| >Resource Set Periodicity | M |  | ENUMERATED(4,5,8,10,16,20,32,40,64,80,160,320,640,1280,2560,5120,10240,20480,40960,81920,…) |  |
| >Resource Set Slot Offset | M |  | INTEGER(0..81919,…) |  |
| >Resource Repetition Factor | M |  | ENUMERATED(rf1,rf2,rf4,rf6,rf8,rf16,rf32,…) |  |
| >Resource Time Gap | M |  | ENUMERATED(tg1,tg2,tg4,tg8,tg16,tg32,…) |  |
| >Resource Number of Symbols | M |  | ENUMERATED(n2,n4,n6,n12,…) |  |
| >PRS Muting | O |  |  |  |
| >>Option1 | O |  |  |  |
| >>>Muting Pattern | M |  | DL-PRS Muting Pattern9.2.56 |  |
| >>>Muting Bit Repetition Factor | M |  | ENUMERATED(1,2,4,8,…) |  |
| >>Option2 | O |  |  |  |
| >>>Muting Pattern | M |  | DL-PRS Muting Pattern9.2.56 |  |
| >PRS Resource Transmit Power | M |  | INTEGER(-60..50) |  |
| **>PRS Resource List** | M | 1..<maxnoofPRSresources> |  | *NR-DL-PRS-Resource-r16* as defined in TS 37.355 [14] |
| >>PRS Resource ID | M |  | INTEGER(0..63) |  |
| >>Sequence ID | M |  | INTEGER(0..4095) |  |
| >>RE Offset | M |  | INTEGER(0..11,…) |  |
| >>Resource Slot Offset | M |  | INTEGER(0..511) |  |
| >>Resource Symbol Offset | M |  | INTEGER(0..12) |  |
| >>CHOICE *QCL Info* | O |  |  |  |
| >>>*SSB* |  |  |  |  |
| >>>>NR PCI | M |  | INTEGER(0..1007) |  |
| >>>> SSB Index | O |  | INTEGER(0..63) |  |
| >>>*DL-PRS* |  |  |  |  |
| >>>>QCL Source PRS Resource Set ID | M |  | INTEGER(0..7) |  |
| >>>>QCL Source PRS Resource ID  | O |  | INTEGER(0..63) | If it is absent, the QCL source PRS resource ID is the same as the PRS resource ID |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofPRSresourceSet | Maximum no of PRS resources set. Value is 8. |
| maxnoofPRSresource | Maximum no of PRS resources per PRS resource set. Value is 64. |

*Next Change*

### 9.2.53 Pathloss Reference Information

This information element indicates a pathloss reference for transmission of UL SRS by a UE.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| CHOICE Pathloss Reference Signal | M |  |  |  |
| >*SSB* |  |  |  |  |
| >>NR PCI | M |  | INTEGER (0..1007) |  |
| >>SSB Index | O |  | INTEGER (0..63) |  |
| >*DL-PRS* |  |  |  |  |
| >>DL-PRS ID | M |  | INTEGER (0..255) |  |
| >>DL-PRS Resource Set ID | M |  | INTEGER (0..7) |  |
| >>DL PRS Resource ID | O |  | INTEGER (0..63) |  |

### 9.2.54 SSB Information

This information element contains the SSB time/frequency information for the TRPs.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| **SSB Info List** |  | *1…<maxNoSSBs>* |  |  |
| >SSB Configuration | M |  | SSB Time/Frequency Configuration 9.2.55 |  |
| >NR PCI | M |  | INTEGER (0..1007) |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxNoSSBs | Maximum no of SSBs for which the configuration can be provided. Value is 255. |

*Next Change*

9.2.58 NR-PRS Beam Information

This IE contains spatial direction information of the DL-PRS Resources.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| **NR-PRS Beam Information** |  | *1 .. <* *maxPRS-ResourceSets >* |  |  |
| >PRS Resource Set ID | M |  | INTEGER (0..7) | The resource set in which the resources are associated with the angle. |
| **>PRS Angle Item** |   | *1..<* *maxPRS-ResourcesPerSet >* |   |  |
| >>NR PRS Azimuth | M |  | INTEGER (0..359) |  |
| >>NR PRS Azimuth fine | O |  | INTEGER (0..9) | Fine angles |
| >>NR PRS Elevation | O |  | INTEGER (0..180) |  |
| >>NR PRS Elevation fine | O |  | INTEGER (0..9) | Fine angles |
| **LCS to GCS Translation** |  | *0 .. <maxnolcs-gcs-translation>* |  | If absent, the azimuth and elevation are provided in GCS. |
| >Alpha | M |  | INTEGER (0..359) |  |
| >Alpha-fine | O |  | INTEGER (0..9) | Fine angles |
| >Beta | M |  | INTEGER (0..359) |  |
| >Beta-fine | O |  | INTEGER (0..9) | Fine angles |
| >Gamma | M |  | INTEGER (0..359) |  |
| >Gamma-fine | O |  | INTEGER (0..9) | Fine angles |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxPRS-ResourceSets | Maximum no of DL-PRS resource sets per TRP. Value is 2. |
| maxPRS-ResourcesPerSet | Maximum no of DL-PRS resources of the DL-PRS resource set of the TRP. Value is 64. |
| maxnolcs-gcs-translation | Maximum no. of LCS-GS-Translation-Parameters that can reported with one message. Value is 3. The current version of the specification supports 1. |

*Next Change*

### 9.3.3 Elementary Procedure Definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Elementary Procedure definitions

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

NRPPA-PDU-Descriptions {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

ngran-access (22) modules (3) nrppa (4) version1 (1) nrppa-PDU-Descriptions (0) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- IE parameter types from other modules.

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

IMPORTS

 Criticality,

 ProcedureCode,

 NRPPATransactionID

FROM NRPPA-CommonDataTypes

 ErrorIndication,

 PrivateMessage,

 E-CIDMeasurementInitiationRequest,

 E-CIDMeasurementInitiationResponse,

 E-CIDMeasurementInitiationFailure,

 E-CIDMeasurementFailureIndication,

 E-CIDMeasurementReport,

 E-CIDMeasurementTerminationCommand,

 OTDOAInformationRequest,

 OTDOAInformationResponse,

 OTDOAInformationFailure,

 AssistanceInformationControl,

 AssistanceInformationFeedback,

 PositioningInformationRequest,

 PositioningInformationResponse,

 PositioningInformationFailure,

 PositioningInformationUpdate,

 MeasurementRequest,

 MeasurementResponse,

 MeasurementFailure,

 MeasurementReport,

 MeasurementUpdate,

 MeasurementAbort,

 MeasurementFailureIndication,

 TRPInformationRequest,

 TRPInformationResponse,

 TRPInformationFailure,

 PositioningActivationRequest,

 PositioningActivationResponse,

 PositioningActivationFailure,

 PositioningDeactivation

FROM NRPPA-PDU-Contents

 id-errorIndication,

 id-privateMessage,

 id-e-CIDMeasurementInitiation,

 id-e-CIDMeasurementFailureIndication,

 id-e-CIDMeasurementReport,

 id-e-CIDMeasurementTermination,

 id-oTDOAInformationExchange,

 id-assistanceInformationControl,

 id-assistanceInformationFeedback,

 id-positioningInformationExchange,

 id-positioningInformationUpdate,

 id-Measurement,

 id-MeasurementReport,

 id-MeasurementUpdate,

 id-MeasurementAbort,

 id-MeasurementFailureIndication,

 id-tRPInformationExchange,

 id-positioningActivation,

 id-positioningDeactivation

FROM NRPPA-Constants;

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Interface Elementary Procedure Class

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

NRPPA-ELEMENTARY-PROCEDURE ::= CLASS {

 &InitiatingMessage ,

 &SuccessfulOutcome OPTIONAL,

 &UnsuccessfulOutcome OPTIONAL,

 &procedureCode ProcedureCode UNIQUE,

 &criticality Criticality DEFAULT ignore

}

WITH SYNTAX {

 INITIATING MESSAGE &InitiatingMessage

 [SUCCESSFUL OUTCOME &SuccessfulOutcome]

 [UNSUCCESSFUL OUTCOME &UnsuccessfulOutcome]

 PROCEDURE CODE &procedureCode

 [CRITICALITY &criticality]

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Interface PDU Definition

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

NRPPA-PDU ::= CHOICE {

 initiatingMessage InitiatingMessage,

 successfulOutcome SuccessfulOutcome,

 unsuccessfulOutcome UnsuccessfulOutcome,

 ...

}

InitiatingMessage ::= SEQUENCE {

 procedureCode NRPPA-ELEMENTARY-PROCEDURE.&procedureCode ({NRPPA-ELEMENTARY-PROCEDURES}),

 criticality NRPPA-ELEMENTARY-PROCEDURE.&criticality ({NRPPA-ELEMENTARY-PROCEDURES}{@procedureCode}),

 nrppatransactionID NRPPATransactionID,

 value NRPPA-ELEMENTARY-PROCEDURE.&InitiatingMessage ({NRPPA-ELEMENTARY-PROCEDURES}{@procedureCode})

}

SuccessfulOutcome ::= SEQUENCE {

 procedureCode NRPPA-ELEMENTARY-PROCEDURE.&procedureCode ({NRPPA-ELEMENTARY-PROCEDURES}),

 criticality NRPPA-ELEMENTARY-PROCEDURE.&criticality ({NRPPA-ELEMENTARY-PROCEDURES}{@procedureCode}),

 nrppatransactionID NRPPATransactionID,

 value NRPPA-ELEMENTARY-PROCEDURE.&SuccessfulOutcome ({NRPPA-ELEMENTARY-PROCEDURES}{@procedureCode})

}

UnsuccessfulOutcome ::= SEQUENCE {

 procedureCode NRPPA-ELEMENTARY-PROCEDURE.&procedureCode ({NRPPA-ELEMENTARY-PROCEDURES}),

 criticality NRPPA-ELEMENTARY-PROCEDURE.&criticality ({NRPPA-ELEMENTARY-PROCEDURES}{@procedureCode}),

 nrppatransactionID NRPPATransactionID,

 value NRPPA-ELEMENTARY-PROCEDURE.&UnsuccessfulOutcome ({NRPPA-ELEMENTARY-PROCEDURES}{@procedureCode})

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Interface Elementary Procedure List

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

NRPPA-ELEMENTARY-PROCEDURES NRPPA-ELEMENTARY-PROCEDURE ::= {

 NRPPA-ELEMENTARY-PROCEDURES-CLASS-1 |

 NRPPA-ELEMENTARY-PROCEDURES-CLASS-2 ,

 ...

}

NRPPA-ELEMENTARY-PROCEDURES-CLASS-1 NRPPA-ELEMENTARY-PROCEDURE ::= {

 e-CIDMeasurementInitiation |

 oTDOAInformationExchange |

 positioningInformationExchange |

 measurement |

 tRPInformationExchange |

 positioningActivation,

 ...

}

NRPPA-ELEMENTARY-PROCEDURES-CLASS-2 NRPPA-ELEMENTARY-PROCEDURE ::= {

 e-CIDMeasurementFailureIndication |

 e-CIDMeasurementReport |

 e-CIDMeasurementTermination |

 errorIndication |

 privateMessage |

 assistanceInformationControl |

 assistanceInformationFeedback |

 positioningInformationUpdate |

 measurementReport |

 measurementUpdate |

 measurementAbort |

 measurementFailureIndication |

 positioningDeactivation,

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Interface Elementary Procedures

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

e-CIDMeasurementInitiation NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE E-CIDMeasurementInitiationRequest

 SUCCESSFUL OUTCOME E-CIDMeasurementInitiationResponse

 UNSUCCESSFUL OUTCOME E-CIDMeasurementInitiationFailure

 PROCEDURE CODE id-e-CIDMeasurementInitiation

 CRITICALITY reject

}

e-CIDMeasurementFailureIndication NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE E-CIDMeasurementFailureIndication

 PROCEDURE CODE id-e-CIDMeasurementFailureIndication

 CRITICALITY ignore

}

e-CIDMeasurementReport NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE E-CIDMeasurementReport

 PROCEDURE CODE id-e-CIDMeasurementReport

 CRITICALITY ignore

}

e-CIDMeasurementTermination NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE E-CIDMeasurementTerminationCommand

 PROCEDURE CODE id-e-CIDMeasurementTermination

 CRITICALITY reject

}

oTDOAInformationExchange NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE OTDOAInformationRequest

 SUCCESSFUL OUTCOME OTDOAInformationResponse

 UNSUCCESSFUL OUTCOME OTDOAInformationFailure

 PROCEDURE CODE id-oTDOAInformationExchange

 CRITICALITY reject

}

assistanceInformationControl NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE AssistanceInformationControl

 PROCEDURE CODE id-assistanceInformationControl

 CRITICALITY reject

}

assistanceInformationFeedback NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE AssistanceInformationFeedback

 PROCEDURE CODE id-assistanceInformationFeedback

 CRITICALITY reject

}

errorIndication NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE ErrorIndication

 PROCEDURE CODE id-errorIndication

 CRITICALITY ignore

}

privateMessage NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE PrivateMessage

 PROCEDURE CODE id-privateMessage

 CRITICALITY ignore

}

positioningInformationExchange NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE PositioningInformationRequest

 SUCCESSFUL OUTCOME PositioningInformationResponse

 UNSUCCESSFUL OUTCOME PositioningInformationFailure

 PROCEDURE CODE id-positioningInformationExchange

 CRITICALITY reject

}

positioningInformationUpdate NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE PositioningInformationUpdate

 PROCEDURE CODE id-positioningInformationUpdate

 CRITICALITY ignore

}

measurement NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE MeasurementRequest

 SUCCESSFUL OUTCOME MeasurementResponse

 UNSUCCESSFUL OUTCOME MeasurementFailure

 PROCEDURE CODE id-Measurement

 CRITICALITY reject

}

measurementReport NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE MeasurementReport

 PROCEDURE CODE id-MeasurementReport

 CRITICALITY ignore

}

measurementUpdate NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE MeasurementUpdate

 PROCEDURE CODE id-MeasurementUpdate

 CRITICALITY ignore

}

measurementAbort NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE MeasurementAbort

 PROCEDURE CODE id-MeasurementAbort

 CRITICALITY ignore

}

measurementFailureIndication NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE MeasurementFailureIndication

 PROCEDURE CODE id-MeasurementFailureIndication

 CRITICALITY ignore

}

tRPInformationExchange NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE TRPInformationRequest

 SUCCESSFUL OUTCOME TRPInformationResponse

 UNSUCCESSFUL OUTCOME TRPInformationFailure

 PROCEDURE CODE id-tRPInformationExchange

 CRITICALITY reject

}

positioningActivation NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE PositioningActivationRequest

 SUCCESSFUL OUTCOME PositioningActivationResponse

 UNSUCCESSFUL OUTCOME PositioningActivationFailure

 PROCEDURE CODE id-positioningActivation

 CRITICALITY reject

}

positioningDeactivation NRPPA-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE PositioningDeactivation

 PROCEDURE CODE id-positioningDeactivation

 CRITICALITY ignore

}

END

-- ASN1STOP

### 9.3.4 PDU Definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- PDU definitions for NRPPa

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

NRPPA-PDU-Contents {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

ngran-access (22) modules (3) nrppa (4) version1 (1) nrppa-PDU-Contents (1) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- IE parameter types from other modules

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

IMPORTS

 Cause,

 CriticalityDiagnostics,

 E-CID-MeasurementResult,

 OTDOACells,

 OTDOA-Information-Item,

 Measurement-ID,

 UE-Measurement-ID,

 MeasurementPeriodicity,

 MeasurementQuantities,

 ReportCharacteristics,

 RequestedSRSTransmissionCharacteristics,

 Cell-Portion-ID,

 OtherRATMeasurementQuantities,

 OtherRATMeasurementResult,

 WLANMeasurementQuantities,

 WLANMeasurementResult,

 Assistance-Information,

 Broadcast,

 AssistanceInformationFailureList,

 SRSConfiguration,

 TRPMeasurementQuantities,

 TrpMeasurementResult,

 TRP-ID,

 TRPInformationTypeListTRPReq,

 TRPInformationListTRPResp,

 TRP-MeasurementRequestList,

 TRP-MeasurementResponseList,

 MeasurementBeamInfoRequest,

 PositioningBroadcastCells,

 SRSResourceSetID,

 SRSSpatialRelation,

 SRSResourceTrigger,

 TRPList,

 AbortTransmission,

 SystemFrameNumber,

 SlotNumber,

 SFNInitialisationTime

FROM NRPPA-IEs

 PrivateIE-Container{},

 ProtocolExtensionContainer{},

 ProtocolIE-Container{},

 ProtocolIE-ContainerList{},

 ProtocolIE-Single-Container{},

 NRPPA-PRIVATE-IES,

 NRPPA-PROTOCOL-EXTENSION,

 NRPPA-PROTOCOL-IES

FROM NRPPA-Containers

 maxnoOTDOAtypes,

 id-Cause,

 id-CriticalityDiagnostics,

 id-LMF-Measurement-ID,

 id-LMF-UE-Measurement-ID,

 id-OTDOACells,

 id-OTDOA-Information-Type-Group,

 id-OTDOA-Information-Type-Item,

 id-ReportCharacteristics,

 id-MeasurementPeriodicity,

 id-MeasurementQuantities,

 id-RAN-Measurement-ID,

 id-RAN-UE-Measurement-ID,

 id-E-CID-MeasurementResult,

 id-RequestedSRSTransmissionCharacteristics,

 id-Cell-Portion-ID,

 id-OtherRATMeasurementQuantities,

 id-OtherRATMeasurementResult,

 id-WLANMeasurementQuantities,

 id-WLANMeasurementResult,

 id-Assistance-Information,

 id-Broadcast,

 id-AssistanceInformationFailureList,

 id-SRSConfiguration,

 id-TRPMeasurementQuantities,

 id-MeasurementResult,

 id-TRP-ID,

 id-TRPInformationTypeListTRPReq,

 id-TRPInformationListTRPResp,

 id-TRP-MeasurementRequestList,

 id-TRP-MeasurementResponseList,

 id-TRP-MeasurementReportList,

 id-MeasurementBeamInfoRequest,

 id-PositioningBroadcastCells,

 id-SRSType,

 id-ActivationTime,

 id-SRSResourceSetID,

 id-TRPList,

 id-SRSSpatialRelation,

 id-AbortTransmission,

 id-SystemFrameNumber,

 id-SlotNumber,

 id-SRSResourceTrigger,

 id-SFNInitialisationTime

FROM NRPPA-Constants;

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- E-CID MEASUREMENT INITIATION REQUEST

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

E-CIDMeasurementInitiationRequest ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{E-CIDMeasurementInitiationRequest-IEs}},

 ...

}

E-CIDMeasurementInitiationRequest-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-LMF-UE-Measurement-ID CRITICALITY reject TYPE UE-Measurement-ID PRESENCE mandatory}|

 { ID id-ReportCharacteristics CRITICALITY reject TYPE ReportCharacteristics PRESENCE mandatory}|

 { ID id-MeasurementPeriodicity CRITICALITY reject TYPE MeasurementPeriodicity PRESENCE conditional}|

-- The IE shall be present if the Report Characteritics IE is set to “periodic” --

 { ID id-MeasurementQuantities CRITICALITY reject TYPE MeasurementQuantities PRESENCE mandatory}|

 { ID id-OtherRATMeasurementQuantities CRITICALITY ignore TYPE OtherRATMeasurementQuantities PRESENCE optional}|

 { ID id-WLANMeasurementQuantities CRITICALITY ignore TYPE WLANMeasurementQuantities PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- E-CID MEASUREMENT INITIATION RESPONSE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

E-CIDMeasurementInitiationResponse ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{E-CIDMeasurementInitiationResponse-IEs}},

 ...

}

E-CIDMeasurementInitiationResponse-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-LMF-UE-Measurement-ID CRITICALITY reject TYPE UE-Measurement-ID PRESENCE mandatory}|

 { ID id-RAN-UE-Measurement-ID CRITICALITY reject TYPE UE-Measurement-ID PRESENCE mandatory}|

 { ID id-E-CID-MeasurementResult CRITICALITY ignore TYPE E-CID-MeasurementResult PRESENCE optional}|

 { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

 { ID id-Cell-Portion-ID CRITICALITY ignore TYPE Cell-Portion-ID PRESENCE optional}|

 { ID id-OtherRATMeasurementResult CRITICALITY ignore TYPE OtherRATMeasurementResult PRESENCE optional}|

 { ID id-WLANMeasurementResult CRITICALITY ignore TYPE WLANMeasurementResult PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- E-CID MEASUREMENT INITIATION FAILURE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

E-CIDMeasurementInitiationFailure ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{E-CIDMeasurementInitiationFailure-IEs}},

 ...

}

E-CIDMeasurementInitiationFailure-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-LMF-UE-Measurement-ID CRITICALITY reject TYPE UE-Measurement-ID PRESENCE mandatory}|

 { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

 { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- E-CID MEASUREMENT FAILURE INDICATION

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

E-CIDMeasurementFailureIndication ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{E-CIDMeasurementFailureIndication-IEs}},

 ...

}

E-CIDMeasurementFailureIndication-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-LMF-UE-Measurement-ID CRITICALITY reject TYPE UE-Measurement-ID PRESENCE mandatory}|

 { ID id-RAN-UE-Measurement-ID CRITICALITY reject TYPE UE-Measurement-ID PRESENCE mandatory}|

 { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- E-CID MEASUREMENT REPORT

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

E-CIDMeasurementReport ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{E-CIDMeasurementReport-IEs}},

 ...

}

E-CIDMeasurementReport-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-LMF-UE-Measurement-ID CRITICALITY reject TYPE UE-Measurement-ID PRESENCE mandatory}|

 { ID id-RAN-UE-Measurement-ID CRITICALITY reject TYPE UE-Measurement-ID PRESENCE mandatory}|

 { ID id-E-CID-MeasurementResult CRITICALITY ignore TYPE E-CID-MeasurementResult PRESENCE mandatory}|

 { ID id-Cell-Portion-ID CRITICALITY ignore TYPE Cell-Portion-ID PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- E-CID MEASUREMENT TERMINATION

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

E-CIDMeasurementTerminationCommand ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{E-CIDMeasurementTerminationCommand-IEs}},

 ...

}

E-CIDMeasurementTerminationCommand-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-LMF-UE-Measurement-ID CRITICALITY reject TYPE UE-Measurement-ID PRESENCE mandatory}|

 { ID id-RAN-UE-Measurement-ID CRITICALITY reject TYPE UE-Measurement-ID PRESENCE mandatory},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- OTDOA INFORMATION REQUEST

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

OTDOAInformationRequest ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{OTDOAInformationRequest-IEs}},

 ...

}

OTDOAInformationRequest-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-OTDOA-Information-Type-Group CRITICALITY reject TYPE OTDOA-Information-Type PRESENCE mandatory},

 ...

}

OTDOA-Information-Type ::= SEQUENCE (SIZE(1..maxnoOTDOAtypes)) OF ProtocolIE-Single-Container { { OTDOA-Information-TypeIEs} }

OTDOA-Information-TypeIEs NRPPA-PROTOCOL-IES ::= {

 { ID id-OTDOA-Information-Type-Item CRITICALITY reject TYPE OTDOA-Information-Type-Item PRESENCE mandatory},

 ...

}

OTDOA-Information-Type-Item ::= SEQUENCE {

 oTDOA-Information-Type-Item OTDOA-Information-Item,

 iE-Extensions ProtocolExtensionContainer { { OTDOA-Information-Type-ItemExtIEs} } OPTIONAL,

 ...

}

OTDOA-Information-Type-ItemExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- OTDOA INFORMATION RESPONSE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

OTDOAInformationResponse ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{OTDOAInformationResponse-IEs}},

 ...

}

OTDOAInformationResponse-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-OTDOACells CRITICALITY ignore TYPE OTDOACells PRESENCE mandatory}|

 { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- OTDOA INFORMATION FAILURE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

OTDOAInformationFailure ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{OTDOAInformationFailure-IEs}},

 ...

}

OTDOAInformationFailure-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

 { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- ASSISTANCE INFORMATION CONTROL

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

AssistanceInformationControl ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{AssistanceInformationControl-IEs}},

 ...

}

AssistanceInformationControl-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-Assistance-Information CRITICALITY reject TYPE Assistance-Information PRESENCE optional}|

 { ID id-Broadcast CRITICALITY reject TYPE Broadcast PRESENCE optional}|

 { ID id-PositioningBroadcastCells CRITICALITY reject TYPE PositioningBroadcastCells PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- ASSISTANCE INFORMATION FEEDBACK

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

AssistanceInformationFeedback ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{AssistanceInformationFeedback-IEs}},

 ...

}

AssistanceInformationFeedback-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-AssistanceInformationFailureList CRITICALITY reject TYPE AssistanceInformationFailureList PRESENCE optional}|

 { ID id-PositioningBroadcastCells CRITICALITY reject TYPE PositioningBroadcastCells PRESENCE optional}|

 { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- ERROR INDICATION

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ErrorIndication ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{ErrorIndication-IEs}},

 ...

}

ErrorIndication-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE optional}|

 { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- PRIVATE MESSAGE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PrivateMessage ::= SEQUENCE {

 privateIEs PrivateIE-Container {{PrivateMessage-IEs}},

 ...

}

PrivateMessage-IEs NRPPA-PRIVATE-IES ::= {

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- POSITIONING INFORMATION REQUEST

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PositioningInformationRequest ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{PositioningInformationRequest-IEs}},

 ...

}

PositioningInformationRequest-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-RequestedSRSTransmissionCharacteristics CRITICALITY ignore TYPE RequestedSRSTransmissionCharacteristics PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- POSITIONING INFORMATION RESPONSE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PositioningInformationResponse ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{PositioningInformationResponse-IEs}},

 ...

}

PositioningInformationResponse-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-SRSConfiguration CRITICALITY ignore TYPE SRSConfiguration PRESENCE optional}|

 { ID id-SFNInitialisationTime CRITICALITY ignore TYPE SFNInitialisationTime PRESENCE optional}|

 { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- POSITIONING INFORMATION FAILURE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PositioningInformationFailure ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{PositioningInformationFailure-IEs}},

 ...

}

PositioningInformationFailure-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

 { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- POSITIONING INFORMATION UPDATE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PositioningInformationUpdate ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{PositioningInformationUpdate-IEs}},

 ...

}

PositioningInformationUpdate-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-SRSConfiguration CRITICALITY ignore TYPE SRSConfiguration PRESENCE optional}|

 { ID id-SFNInitialisationTime CRITICALITY ignore TYPE SFNInitialisationTime PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- MEASUREMENT REQUEST

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MeasurementRequest ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{MeasurementRequest-IEs}},

 ...

}

MeasurementRequest-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-LMF-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

 { ID id-TRP-MeasurementRequestList CRITICALITY reject TYPE TRP-MeasurementRequestList PRESENCE mandatory}|

 { ID id-ReportCharacteristics CRITICALITY reject TYPE ReportCharacteristics PRESENCE mandatory}|

 { ID id-MeasurementPeriodicity CRITICALITY reject TYPE MeasurementPeriodicity PRESENCE conditional}|

-- The IE shall be present if the Report Characteritics IE is set to “periodic” –

 { ID id-TRPMeasurementQuantities CRITICALITY reject TYPE TRPMeasurementQuantities PRESENCE mandatory}|

 { ID id-SFNInitialisationTime CRITICALITY ignore TYPE SFNInitialisationTime PRESENCE optional}|

 { ID id-SRSConfiguration CRITICALITY ignore TYPE SRSConfiguration PRESENCE optional}|

 { ID id-MeasurementBeamInfoRequest CRITICALITY ignore TYPE MeasurementBeamInfoRequest PRESENCE optional}|

 { ID id-SystemFrameNumber CRITICALITY ignore TYPE SystemFrameNumber PRESENCE optional}|

 { ID id-SlotNumber CRITICALITY ignore TYPE SlotNumber PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- MEASUREMENT RESPONSE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MeasurementResponse ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{MeasurementResponse-IEs}},

 ...

}

MeasurementResponse-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-LMF-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

 { ID id-RAN-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

 { ID id-TRP-MeasurementResponseList CRITICALITY reject TYPE TRP-MeasurementResponseList PRESENCE optional}|

 { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- MEASUREMENT FAILURE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MeasurementFailure ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{MeasurementFailure-IEs}},

 ...

}

MeasurementFailure-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-LMF-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

 { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

 { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- MEASUREMENT REPORT

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MeasurementReport ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{MeasurementReport-IEs}},

 ...

}

MeasurementReport-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-LMF-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

 { ID id-RAN-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

 { ID id-TRP-MeasurementReportList CRITICALITY reject TYPE TRP-MeasurementResponseList PRESENCE mandatory},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- MEASUREMENT UPDATE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MeasurementUpdate ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{MeasurementUpdate-IEs}},

 ...

}

MeasurementUpdate-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-LMF-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

 { ID id-RAN-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

 { ID id-SRSConfiguration CRITICALITY ignore TYPE SRSConfiguration PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- MEASUREMENT ABORT

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MeasurementAbort ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{MeasurementAbort-IEs}},

 ...

}

MeasurementAbort-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-LMF-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

 { ID id-RAN-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- MEASUREMENT FAILURE INDICATION

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MeasurementFailureIndication ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{MeasurementFailureIndication-IEs}},

 ...

}

MeasurementFailureIndication-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-LMF-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

 { ID id-RAN-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

 { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- TRP INFORMATION REQUEST

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TRPInformationRequest ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{TRPInformationRequest-IEs}},

 ...

}

TRPInformationRequest-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-TRPList CRITICALITY ignore TYPE TRPList PRESENCE optional}|

 { ID id-TRPInformationTypeListTRPReq CRITICALITY reject TYPE TRPInformationTypeListTRPReq PRESENCE mandatory},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- TRP INFORMATION RESPONSE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TRPInformationResponse ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{TRPInformationResponse-IEs}},

 ...

}

TRPInformationResponse-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-TRPInformationListTRPResp CRITICALITY ignore TYPE TRPInformationListTRPResp PRESENCE mandatory}|

 { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- TRP INFORMATION FAILURE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TRPInformationFailure ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{TRPInformationFailure-IEs}},

 ...

}

TRPInformationFailure-IEs NRPPA-PROTOCOL-IES ::= {

 { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

 { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- POSITIONING ACTIVATION REQUEST

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PositioningActivationRequest ::= SEQUENCE {

 protocolIEs ProtocolIE-Container { { PositioningActivationRequestIEs} },

 ...

}

PositioningActivationRequestIEs NRPPA-PROTOCOL-IES ::= {

 { ID id-SRSType CRITICALITY reject TYPE SRSType PRESENCE mandatory } |

 { ID id-ActivationTime CRITICALITY ignore TYPE SFNInitialisationTime PRESENCE optional },

 ...

}

SRSType ::= CHOICE {

 semipersistentSRS SemipersistentSRS,

 aperiodicSRS AperiodicSRS,

 sRSType-extension ProtocolIE-Single-Container { { SRSType-ExtIEs} }

}

SRSType-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

SemipersistentSRS ::= SEQUENCE {

 sRSResourceSetID SRSResourceSetID,

 iE-Extensions ProtocolExtensionContainer { {SemipersistentSRS-ExtIEs} } OPTIONAL,

 ...

}

SemipersistentSRS-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

{ ID id-SRSSpatialRelation CRITICALITY ignore EXTENSION SRSSpatialRelation PRESENCE optional},

...

}

AperiodicSRS ::= SEQUENCE {

 aperiodic ENUMERATED{true,...},

 sRSResourceTrigger SRSResourceTrigger OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { {AperiodicSRS-ExtIEs} } OPTIONAL,

 ...

}

AperiodicSRS-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- POSITIONING ACTIVATION RESPONSE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PositioningActivationResponse ::= SEQUENCE {

 protocolIEs ProtocolIE-Container { { PositioningActivationResponseIEs} },

 ...

}

PositioningActivationResponseIEs NRPPA-PROTOCOL-IES ::= {

 { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional }|

 { ID id-SystemFrameNumber CRITICALITY ignore TYPE SystemFrameNumber PRESENCE optional }|

 { ID id-SlotNumber CRITICALITY ignore TYPE SlotNumber PRESENCE optional },

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- POSITIONING ACTIVATION FAILURE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PositioningActivationFailure ::= SEQUENCE {

 protocolIEs ProtocolIE-Container { { PositioningActivationFailureIEs} },

 ...

}

PositioningActivationFailureIEs NRPPA-PROTOCOL-IES ::= {

 { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory }|

 { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },

 ...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- POSITIONING DEACTIVATION

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PositioningDeactivation ::= SEQUENCE {

 protocolIEs ProtocolIE-Container { { PositioningDeactivationIEs} },

 ...

}

PositioningDeactivationIEs NRPPA-PROTOCOL-IES ::= {

 { ID id-AbortTransmission CRITICALITY ignore TYPE AbortTransmission PRESENCE mandatory } ,

 ...

}

END

-- ASN1STOP

### 9.3.5 Information Element definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Information Element Definitions

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

NRPPA-IEs {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

ngran-access (22) modules (3) nrppa (4) version1 (1) nrppa-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

 id-MeasurementQuantities-Item,

 id-GeographicalCoordinates,

 id-ResultSS-RSRP,

 id-ResultSS-RSRQ,

 id-ResultCSI-RSRP,

 id-ResultCSI-RSRQ,

 id-AngleOfArrivalNR,

 id-SRSSpatialRelation,

 id-ResultNR,

 id-ResultEUTRA,

 maxCellinRANnode,

 maxCellReport,

 maxNrOfErrors,

 maxNoMeas,

 maxnoOTDOAtypes,

 maxServCell,

 id-OtherRATMeasurementQuantities-Item,

 id-WLANMeasurementQuantities-Item,

 maxGERANMeas,

 maxUTRANMeas,

 maxWLANchannels,

 maxnoFreqHoppingBandsMinusOne,

 id-TDD-Config-EUTRA-Item,

 maxNrOfPosSImessage,

 maxnoAssistInfoFailureListItems,

 maxNrOfSegments,

 maxNrOfPosSIBs,

 maxnoPosMeas,

 maxnoTRPs,

 maxnoTRPInfoTypes,

 maxNoOfMeasTRPs,

 maxNoPath,

 maxnoofAngleInfo,

 maxnolcs-gcs-translation,

 maxnoBcastCell,

 maxnoSRSTriggerStates,

 maxnoSpatialRelations,

 maxNRMeas,

 maxEUTRAMeas,

 maxIndexesReport,

 maxCellReportNR,

 maxnoSRS-Carriers,

 maxnoSCSs,

 maxnoSRS-Resources,

 maxnoSRS-PosResources,

 maxnoSRS-ResourceSets,

 maxnoSRS-ResourcePerSet,

 maxnoSRS-PosResourceSets,

 maxnoSRS-PosResourcePerSet,

 maxPRS-ResourceSets,

 maxPRS-ResourcesPerSet,

 maxNoSSBs,

 maxnoofPRSresourceSet,

 maxnoofPRSresource,

 id-TRPInformationTypeItem

FROM NRPPA-Constants

 Criticality,

 NRPPATransactionID,

 ProcedureCode,

 ProtocolIE-ID,

 TriggeringMessage

FROM NRPPA-CommonDataTypes

 ProtocolExtensionContainer{},

 ProtocolIE-Single-Container{},

 NRPPA-PROTOCOL-EXTENSION,

 NRPPA-PROTOCOL-IES

FROM NRPPA-Containers;

-- A

AbortTransmission ::= CHOICE {

 deactivateSRSResourceSetID SRSResourceSetID,

 releaseALL NULL,

 choice-extension ProtocolIE-Single-Container { { AbortTransmission-ExtIEs } }

}

AbortTransmission-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

ActiveULBWP ::= SEQUENCE {

 locationAndBandwidth INTEGER (0..37949,...),

 subcarrierSpacing ENUMERATED {kHz15, kHz30, kHz60, kHz120,...},

 cyclicPrefix ENUMERATED {normal, extended},

 txDirectCurrentLocation INTEGER (0..3301,...),

 shift7dot5kHz ENUMERATED {true, ...} OPTIONAL,

 sRSConfig SRSConfig,

 iE-Extensions ProtocolExtensionContainer { { ActiveULBWP-ExtIEs} } OPTIONAL,

 ...

}

ActiveULBWP-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

AdditionalPathList ::= SEQUENCE (SIZE (1.. maxNoPath)) OF AdditionalPathListItem

AdditionalPathListItem ::= SEQUENCE {

 relativeTimeOfPath RelativePathDelay,

 pathQuality TrpMeasurementQuality OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { AdditionalPathListItem-ExtIEs} } OPTIONAL,

 ...

}

AdditionalPathListItem-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

AperiodicSRSResourceTriggerList ::= SEQUENCE (SIZE(1..maxnoSRSTriggerStates)) OF AperiodicSRSResourceTrigger

AperiodicSRSResourceTrigger ::= INTEGER (1..3)

Assistance-Information ::= SEQUENCE {

 systemInformation SystemInformation,

 iE-Extensions ProtocolExtensionContainer { { Assistance-Information-ExtIEs} } OPTIONAL,

 ...

}

Assistance-Information-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

AssistanceInformationFailureList ::= SEQUENCE (SIZE (1..maxnoAssistInfoFailureListItems)) OF SEQUENCE {

 posSIB-Type PosSIB-Type,

 outcome Outcome,

 iE-Extensions ProtocolExtensionContainer { {AssistanceInformationFailureList-ExtIEs} } OPTIONAL,

 ...

}

AssistanceInformationFailureList-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

AssistanceInformationMetaData ::= SEQUENCE {

 encrypted ENUMERATED {true, ...} OPTIONAL,

 gNSSID ENUMERATED {gps, sbas, qzss, galileo, glonass, bds, navic, ...} OPTIONAL,

 sBASID ENUMERATED {waas, egnos, msas, gagan, ...} OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { AssistanceInformationMetaData-ExtIEs} } OPTIONAL,

 ...

}

AssistanceInformationMetaData-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

-- B

BandwidthSRS ::= CHOICE {

 fR1 ENUMERATED {mHz5, mHz10, mHz20, mHz40, mHz50, mHz80, mHz100, ...},

 fR2 ENUMERATED {mHz50, mHz100, mHz200, mHz400, ...},

 choice-extension ProtocolIE-Single-Container { { BandwidthSRS-ExtIEs } }

}

BandwidthSRS-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

BCCH ::= INTEGER (0..1023, ...)

Broadcast ::= ENUMERATED {

 start,

 stop,

 ...

}

BroadcastPeriodicity ::= ENUMERATED {

 ms80,

 ms160,

 ms320,

 ms640,

 ms1280,

 ms2560,

 ms5120,

 ...

}

PositioningBroadcastCells ::= SEQUENCE (SIZE (1..maxnoBcastCell)) OF NG-RAN-CGI

BSSID ::= OCTET STRING (SIZE(6))

-- C

Cause ::= CHOICE {

 radioNetwork CauseRadioNetwork,

 protocol CauseProtocol,

 misc CauseMisc,

 cause-Extension ProtocolIE-Single-Container {{ Cause-ExtensionIE }}

}

Cause-ExtensionIE NRPPA-PROTOCOL-IES ::= {

 ...

}

CauseMisc ::= ENUMERATED {

 unspecified,

 ...

}

CauseProtocol ::= ENUMERATED {

 transfer-syntax-error,

 abstract-syntax-error-reject,

 abstract-syntax-error-ignore-and-notify,

 message-not-compatible-with-receiver-state,

 semantic-error,

 unspecified,

 abstract-syntax-error-falsely-constructed-message,

 ...

}

CauseRadioNetwork ::= ENUMERATED {

 unspecified,

 requested-item-not-supported,

 requested-item-temporarily-not-available,

 ...

}

Cell-Portion-ID ::= INTEGER (0..4095,...)

CGI-EUTRA ::= SEQUENCE {

 pLMN-Identity PLMN-Identity,

 eUTRAcellIdentifier EUTRACellIdentifier,

 iE-Extensions ProtocolExtensionContainer { {CGI-EUTRA-ExtIEs} } OPTIONAL,

 ...

}

CGI-EUTRA-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

CGI-NR ::= SEQUENCE {

 pLMN-Identity PLMN-Identity,

 nRcellIdentifier NRCellIdentifier,

 iE-Extensions ProtocolExtensionContainer { {CGI-NR-ExtIEs} } OPTIONAL,

 ...

}

CGI-NR-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

CPLength-EUTRA ::= ENUMERATED {

 normal,

 extended,

 ...

}

CriticalityDiagnostics ::= SEQUENCE {

 procedureCode ProcedureCode OPTIONAL,

 triggeringMessage TriggeringMessage OPTIONAL,

 procedureCriticality Criticality OPTIONAL,

 nrppatransactionID NRPPATransactionID OPTIONAL,

 iEsCriticalityDiagnostics CriticalityDiagnostics-IE-List OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { {CriticalityDiagnostics-ExtIEs} } OPTIONAL,

 ...

}

CriticalityDiagnostics-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

CriticalityDiagnostics-IE-List ::= SEQUENCE (SIZE (1..maxNrOfErrors)) OF

 SEQUENCE {

 iECriticality Criticality,

 iE-ID ProtocolIE-ID,

 typeOfError TypeOfError,

 iE-Extensions ProtocolExtensionContainer { {CriticalityDiagnostics-IE-List-ExtIEs} } OPTIONAL,

 ...

}

CriticalityDiagnostics-IE-List-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

-- D

DL-Bandwidth-EUTRA ::= ENUMERATED {

 bw6,

 bw15,

 bw25,

 bw50,

 bw75,

 bw100,

 ...

}

DL-PRS ::= SEQUENCE {

 prsid INTEGER (0..255),

 dl-PRSResourceSetID PRS-Resource-Set-ID,

 dl-PRSResourceID PRS-Resource-ID OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { {DL-PRS-ExtIEs} } OPTIONAL,

 ...

}

DL-PRS-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

DL-PRSMutingPattern ::= CHOICE {

 two BIT STRING (SIZE(2)),

 four BIT STRING (SIZE(4)),

 six BIT STRING (SIZE(6)),

 eight BIT STRING (SIZE(8)),

 sixteen BIT STRING (SIZE(16)),

 thirty-two BIT STRING (SIZE(32)),

 choice-extension ProtocolIE-Single-Container { { DL-PRSMutingPattern-ExtIEs } }

}

DL-PRSMutingPattern-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

DLPRSResourceCoordinates ::= SEQUENCE {

 listofDL-PRSResourceSetARP SEQUENCE (SIZE(1.. maxPRS-ResourceSets)) OF DLPRSResourceSetARP,

 iE-Extensions ProtocolExtensionContainer { { DLPRSResourceCoordinates-ExtIEs } } OPTIONAL,

 ...

}

DLPRSResourceCoordinates-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

DLPRSResourceSetARP ::= SEQUENCE {

 dl-PRSResourceSetID PRS-Resource-Set-ID,

 dL-PRSResourceSetARPLocation DL-PRSResourceSetARPLocation,

 listofDL-PRSResourceARP SEQUENCE (SIZE(1.. maxPRS-ResourcesPerSet)) OF DLPRSResourceARP,

 iE-Extensions ProtocolExtensionContainer { { DLPRSResourceSetARP-ExtIEs } } OPTIONAL,

 ...

}

DLPRSResourceSetARP-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

DL-PRSResourceSetARPLocation ::= CHOICE {

 relativeGeodeticLocation RelativeGeodeticLocation,

 relativeCartesianLocation RelativeCartesianLocation,

 choice-Extension ProtocolIE-Single-Container { { DL-PRSResourceSetARPLocation-ExtIEs } }

}

DL-PRSResourceSetARPLocation-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

DLPRSResourceARP ::= SEQUENCE {

 dl-PRSResourceID PRS-Resource-ID,

 dL-PRSResourceARPLocation DL-PRSResourceARPLocation,

 iE-Extensions ProtocolExtensionContainer { { DLPRSResourceARP-ExtIEs } } OPTIONAL,

 ...

}

DLPRSResourceARP-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

DL-PRSResourceARPLocation ::= CHOICE {

 relativeGeodeticLocation RelativeGeodeticLocation,

 relativeCartesianLocation RelativeCartesianLocation,

 choice-Extension ProtocolIE-Single-Container { { DL-PRSResourceARPLocation-ExtIEs } }

}

DL-PRSResourceARPLocation-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

-- E

E-CID-MeasurementResult ::= SEQUENCE {

 servingCell-ID NG-RAN-CGI,

 servingCellTAC TAC,

 nG-RANAccessPointPosition NG-RANAccessPointPosition OPTIONAL,

 measuredResults MeasuredResults OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { E-CID-MeasurementResult-ExtIEs} } OPTIONAL,

 ...

}

E-CID-MeasurementResult-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 { ID id-GeographicalCoordinates CRITICALITY ignore EXTENSION GeographicalCoordinates PRESENCE optional},

 ...

}

EUTRACellIdentifier ::= BIT STRING (SIZE (28))

EARFCN ::= INTEGER (0..262143, ...)

-- F

-- G

GeographicalCoordinates ::= SEQUENCE {

 tRPPositionDefinitionType TRPPositionDefinitionType,

 dLPRSResourceCoordinates DLPRSResourceCoordinates OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { GeographicalCoordinates-ExtIEs } } OPTIONAL,

 ...

}

GeographicalCoordinates-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

GNB-RxTxTimeDiff ::= SEQUENCE {

 rxTxTimeDiff GNBRxTxTimeDiffMeas,

 additionalPathList AdditionalPathList OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { GNB-RxTxTimeDiff-ExtIEs} } OPTIONAL,

 ...

}

GNB-RxTxTimeDiff-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

GNBRxTxTimeDiffMeas ::= CHOICE {

 k0 INTEGER (0.. 1970049),

 k1 INTEGER (0.. 985025),

 k2 INTEGER (0.. 492513),

 k3 INTEGER (0.. 246257),

 k4 INTEGER (0.. 123129),

 k5 INTEGER (0.. 61565),

 choice-extension ProtocolIE-Single-Container { { GNBRxTxTimeDiffMeas-ExtIEs } }

}

GNBRxTxTimeDiffMeas-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

-- H

HESSID ::= OCTET STRING (SIZE(6))

-- I

-- J

-- K

-- L

LCS-to-GCS-TranslationAoA::= SEQUENCE {

 alpha INTEGER (0..3599),

 beta INTEGER (0..3599),

 gamma INTEGER (0..3599),

 iE-Extensions ProtocolExtensionContainer { { LCS-to-GCS-TranslationAoA-ExtIEs} } OPTIONAL,

 ...

}

LCS-to-GCS-TranslationAoA-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

LCS-to-GCS-TranslationItem::= SEQUENCE {

 alpha INTEGER (0..359),

 alphaFine INTEGER (0..9) OPTIONAL,

 beta INTEGER (0..359),

 betaFine INTEGER (0..9) OPTIONAL,

 gamma INTEGER (0..359),

 gammaFine INTEGER (0..9) OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { LCS-to-GCS-TranslationItem-ExtIEs} } OPTIONAL,

 ...

}

LCS-to-GCS-TranslationItem-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

LocationUncertainty ::= SEQUENCE {

 horizontalUncertainty INTEGER (0..255),

 horizontalConfidence INTEGER (0..100),

 verticalUncertainty INTEGER (0..255),

 verticalConfidence INTEGER (0..100),

 iE-Extensions ProtocolExtensionContainer { { LocationUncertainty-ExtIEs} } OPTIONAL,

 ...

}

LocationUncertainty-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

-- M

Measurement-ID ::= INTEGER (1.. 65536, ...)

MeasurementBeamInfoRequest ::= ENUMERATED {true, ...}

MeasurementBeamInfo ::= SEQUENCE {

 pRS-Resource-ID PRS-Resource-ID OPTIONAL,

 pRS-Resource-Set-ID PRS-Resource-Set-ID OPTIONAL,

 sSB-Index SSB-Index OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { MeasurementBeamInfo-ExtIEs} } OPTIONAL,

 ...

}

MeasurementBeamInfo-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

MeasurementPeriodicity ::= ENUMERATED {

 ms120,

 ms240,

 ms480,

 ms640,

 ms1024,

 ms2048,

 ms5120,

 ms10240,

 min1,

 min6,

 min12,

 min30,

 min60,

 ...

}

MeasurementQuantities ::= SEQUENCE (SIZE (1.. maxNoMeas)) OF ProtocolIE-Single-Container { {MeasurementQuantities-ItemIEs} }

MeasurementQuantities-ItemIEs NRPPA-PROTOCOL-IES ::= {

 { ID id-MeasurementQuantities-Item CRITICALITY reject TYPE MeasurementQuantities-Item PRESENCE mandatory}

}

MeasurementQuantities-Item ::= SEQUENCE {

 measurementQuantitiesValue MeasurementQuantitiesValue,

 iE-Extensions ProtocolExtensionContainer { { MeasurementQuantitiesValue-ExtIEs} } OPTIONAL,

 ...

}

MeasurementQuantitiesValue-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

MeasurementQuantitiesValue ::= ENUMERATED {

 cell-ID,

 angleOfArrival,

 timingAdvanceType1,

 timingAdvanceType2,

 rSRP,

 rSRQ,

 ... ,

 sS-RSRP,

 sS-RSRQ,

 cSI-RSRP,

 cSI-RSRQ,

 angleOfArrivalNR

}

MeasuredResults ::= SEQUENCE (SIZE (1.. maxNoMeas)) OF MeasuredResultsValue

MeasuredResultsValue ::= CHOICE {

 valueAngleOfArrival-EUTRA INTEGER (0..719),

 valueTimingAdvanceType1-EUTRA INTEGER (0..7690),

 valueTimingAdvanceType2-EUTRA INTEGER (0..7690),

 resultRSRP-EUTRA ResultRSRP-EUTRA,

 resultRSRQ-EUTRA ResultRSRQ-EUTRA,

 measuredResultsValue-Extension ProtocolIE-Single-Container {{ MeasuredResultsValue-ExtensionIE }}

}

MeasuredResultsValue-ExtensionIE NRPPA-PROTOCOL-IES ::= {

{ ID id-ResultSS-RSRP CRITICALITY ignore TYPE ResultSS-RSRP PRESENCE mandatory }|

 { ID id-ResultSS-RSRQ CRITICALITY ignore TYPE ResultSS-RSRQ PRESENCE mandatory }|

 { ID id-ResultCSI-RSRP CRITICALITY ignore TYPE ResultCSI-RSRP PRESENCE mandatory }|

 { ID id-ResultCSI-RSRQ CRITICALITY ignore TYPE ResultCSI-RSRQ PRESENCE mandatory }|

 { ID id-AngleOfArrivalNR CRITICALITY ignore TYPE UL-AoA PRESENCE mandatory },

 ...

}

-- N

NarrowBandIndex ::= INTEGER (0..15,...)

NG-RANAccessPointPosition ::= SEQUENCE {

 latitudeSign ENUMERATED {north, south},

 latitude INTEGER (0..8388607),

 longitude INTEGER (-8388608..8388607),

 directionOfAltitude ENUMERATED {height, depth},

 altitude INTEGER (0..32767),

 uncertaintySemi-major INTEGER (0..127),

 uncertaintySemi-minor INTEGER (0..127),

 orientationOfMajorAxis INTEGER (0..179),

 uncertaintyAltitude INTEGER (0..127),

 confidence INTEGER (0..100),

 iE-Extensions ProtocolExtensionContainer { { NG-RANAccessPointPosition-ExtIEs} } OPTIONAL,

 ...

}

NG-RANAccessPointPosition-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

NGRANHighAccuracyAccessPointPosition ::= SEQUENCE {

 latitude INTEGER (-2147483648.. 2147483647),

 longitude INTEGER (-2147483648.. 2147483647),

 altitude INTEGER (-64000..1280000),

 uncertaintySemi-major INTEGER (0..255),

 uncertaintySemi-minor INTEGER (0..255),

 orientationOfMajorAxis INTEGER (0..179),

 horizontalConfidence INTEGER (0..100),

 uncertaintyAltitude INTEGER (0..255),

 verticalConfidence INTEGER (0..100),

 iE-Extensions ProtocolExtensionContainer { { NGRANHighAccuracyAccessPointPosition-ExtIEs} } OPTIONAL,

 ...

}

NGRANHighAccuracyAccessPointPosition-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

NG-RAN-CGI ::= SEQUENCE {

 pLMN-Identity PLMN-Identity,

 nG-RANcell NG-RANCell,

 iE-Extensions ProtocolExtensionContainer { {NG-RAN-CGI-ExtIEs} } OPTIONAL,

 ...

}

NG-RAN-CGI-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

NG-RANCell ::= CHOICE {

 eUTRA-CellID EUTRACellIdentifier,

 nR-CellID NRCellIdentifier,

 nG-RANCell-Extension ProtocolIE-Single-Container {{ NG-RANCell-ExtensionIE }}

}

NG-RANCell-ExtensionIE NRPPA-PROTOCOL-IES ::= {

 ...

}

NR-ARFCN ::= INTEGER (0..3279165)

NRCellIdentifier ::= BIT STRING (SIZE (36))

NR-PCI ::= INTEGER (0..1007)

NR-PRS-Beam-Information ::= SEQUENCE {

 nR-PRS-Beam-InformationList SEQUENCE (SIZE(1.. maxPRS-ResourceSets)) OF NR-PRS-Beam-InformationItem,

 lCS-to-GCS-TranslationList SEQUENCE (SIZE(1..maxnolcs-gcs-translation)) OF LCS-to-GCS-TranslationItem OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { NR-PRS-Beam-Information-IEs} } OPTIONAL,

 ...

}

NR-PRS-Beam-Information-IEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

NR-PRS-Beam-InformationItem ::= SEQUENCE {

 pRSresourceSetID PRS-Resource-Set-ID,

 pRSAngleItem SEQUENCE (SIZE(1..maxPRS-ResourcesPerSet)) OF PRSAngleItem,

 iE-Extensions ProtocolExtensionContainer { { NR-PRS-Beam-InformationItem-ExtIEs} } OPTIONAL,

 ...

}

NR-PRS-Beam-InformationItem-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

NumberOfAntennaPorts-EUTRA ::= ENUMERATED {

 n1-or-n2,

 n4,

 ...

}

NumberOfDlFrames-EUTRA ::= ENUMERATED {

 sf1,

 sf2,

 sf4,

 sf6,

 ...

}

NumberOfDlFrames-Extended-EUTRA ::= INTEGER (1..160,...)

NumberOfFrequencyHoppingBands ::= ENUMERATED {

 twobands,

 fourbands,

 ...

}

NZP-CSI-RS-ResourceID::= INTEGER (0..191)

-- O

OTDOACells ::= SEQUENCE (SIZE (1.. maxCellinRANnode)) OF SEQUENCE {

 oTDOACellInfo OTDOACell-Information,

 iE-Extensions ProtocolExtensionContainer { {OTDOACells-ExtIEs} } OPTIONAL,

 ...

}

OTDOACells-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

OTDOACell-Information ::= SEQUENCE (SIZE (1..maxnoOTDOAtypes)) OF OTDOACell-Information-Item

OTDOACell-Information-Item ::= CHOICE {

 pCI-EUTRA PCI-EUTRA,

 cGI-EUTRA CGI-EUTRA,

 tAC TAC,

 eARFCN EARFCN,

 pRS-Bandwidth-EUTRA PRS-Bandwidth-EUTRA,

 pRS-ConfigurationIndex-EUTRA PRS-ConfigurationIndex-EUTRA,

 cPLength-EUTRA CPLength-EUTRA,

 numberOfDlFrames-EUTRA NumberOfDlFrames-EUTRA,

 numberOfAntennaPorts-EUTRA NumberOfAntennaPorts-EUTRA,

 sFNInitialisationTime-EUTRA SFNInitialisationTime-EUTRA,

 nG-RANAccessPointPosition NG-RANAccessPointPosition,

 pRSMutingConfiguration-EUTRA PRSMutingConfiguration-EUTRA,

 prsid-EUTRA PRS-ID-EUTRA,

 tpid-EUTRA TP-ID-EUTRA,

 tpType-EUTRA TP-Type-EUTRA,

 numberOfDlFrames-Extended-EUTRA NumberOfDlFrames-Extended-EUTRA,

 crsCPlength-EUTRA CPLength-EUTRA,

 dL-Bandwidth-EUTRA DL-Bandwidth-EUTRA,

 pRSOccasionGroup-EUTRA PRSOccasionGroup-EUTRA,

 pRSFrequencyHoppingConfiguration-EUTRA PRSFrequencyHoppingConfiguration-EUTRA,

 oTDOACell-Information-Item-Extension ProtocolIE-Single-Container {{ OTDOACell-Information-Item-ExtensionIE }}

}

OTDOACell-Information-Item-ExtensionIE NRPPA-PROTOCOL-IES ::= {

 { ID id-TDD-Config-EUTRA-Item CRITICALITY ignore TYPE TDD-Config-EUTRA-Item PRESENCE optional },

 ...

}

OTDOA-Information-Item ::= ENUMERATED {

 pci,

 cGI,

 tac,

 earfcn,

 prsBandwidth,

 prsConfigIndex,

 cpLength,

 noDlFrames,

 noAntennaPorts,

 sFNInitTime,

 nG-RANAccessPointPosition,

 prsmutingconfiguration,

 prsid,

 tpid,

 tpType,

 crsCPlength,

 dlBandwidth,

 multipleprsConfigurationsperCell,

 prsOccasionGroup,

 prsFrequencyHoppingConfiguration,

 ...,

 tddConfig

}

OtherRATMeasurementQuantities ::= SEQUENCE (SIZE (0.. maxNoMeas)) OF ProtocolIE-Single-Container { {OtherRATMeasurementQuantities-ItemIEs} }

OtherRATMeasurementQuantities-ItemIEs NRPPA-PROTOCOL-IES ::= {

 { ID id-OtherRATMeasurementQuantities-Item CRITICALITY reject TYPE OtherRATMeasurementQuantities-Item PRESENCE mandatory}}

OtherRATMeasurementQuantities-Item ::= SEQUENCE {

 otherRATMeasurementQuantitiesValue OtherRATMeasurementQuantitiesValue,

 iE-Extensions ProtocolExtensionContainer { { OtherRATMeasurementQuantitiesValue-ExtIEs} } OPTIONAL,

 ...

}

OtherRATMeasurementQuantitiesValue-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

OtherRATMeasurementQuantitiesValue ::= ENUMERATED {

 geran,

 utran,

 ... ,

 nR,

 eUTRA

}

OtherRATMeasurementResult ::= SEQUENCE (SIZE (1.. maxNoMeas)) OF OtherRATMeasuredResultsValue

OtherRATMeasuredResultsValue ::= CHOICE {

 resultGERAN ResultGERAN,

 resultUTRAN ResultUTRAN,

 otherRATMeasuredResultsValue-Extension ProtocolIE-Single-Container {{ OtherRATMeasuredResultsValue-ExtensionIE }}

}

OtherRATMeasuredResultsValue-ExtensionIE NRPPA-PROTOCOL-IES ::= {

 { ID id-ResultNR CRITICALITY ignore TYPE ResultNR PRESENCE mandatory }|

 { ID id-ResultEUTRA CRITICALITY ignore TYPE ResultEUTRA PRESENCE mandatory },

 ...

}

Outcome ::= ENUMERATED {

 failed,

 ...

}

-- P

PathlossReferenceInformation ::= SEQUENCE {

 pathlossReferenceSignal PathlossReferenceSignal,

 iE-Extensions ProtocolExtensionContainer { { PathlossReferenceInformation-ExtIEs } } OPTIONAL,

 ...

}

PathlossReferenceInformation-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PathlossReferenceSignal ::= CHOICE {

 sSB-Reference SSB,

 dL-PRS-Reference DL-PRS,

 choice-Extension ProtocolIE-Single-Container {{ PathlossReferenceSignal-ExtensionIE }}

}

PathlossReferenceSignal-ExtensionIE NRPPA-PROTOCOL-IES ::= {

 ...

}

PCI-EUTRA ::= INTEGER (0..503, ...)

PhysCellIDGERAN ::= INTEGER (0..63, ...)

PhysCellIDUTRA-FDD ::= INTEGER (0..511, ...)

PhysCellIDUTRA-TDD ::= INTEGER (0..127, ...)

PLMN-Identity ::= OCTET STRING (SIZE(3))

PeriodicityList ::= SEQUENCE (SIZE (1.. maxnoSRS-ResourcePerSet)) OF PeriodicityItem

PeriodicityItem ::= ENUMERATED {ms0dot125, ms0dot25, ms0dot5, ms0dot625, ms1, ms1dot25, ms2, ms2dot5, ms4dot, ms5, ms8, ms10, ms16, ms20, ms32, ms40, ms64, ms80m, ms160, ms320, ms640m, ms1280, ms2560, ms5120, ms10240, ...}

PosSIBs ::= SEQUENCE (SIZE (1.. maxNrOfPosSIBs)) OF SEQUENCE {

 posSIB-Type PosSIB-Type,

 posSIB-Segments PosSIB-Segments,

 assistanceInformationMetaData AssistanceInformationMetaData OPTIONAL,

 broadcastPriority INTEGER (1..16,...) OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { PosSIBs-ExtIEs} } OPTIONAL,

 ...

}

PosSIBs-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PosSIB-Segments ::= SEQUENCE (SIZE (1.. maxNrOfSegments)) OF SEQUENCE {

 assistanceDataSIBelement OCTET STRING,

 iE-Extensions ProtocolExtensionContainer { { PosSIB-Segments-ExtIEs} } OPTIONAL,

 ...

}

PosSIB-Segments-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PosSIB-Type ::= ENUMERATED {

 posSibType1-1,

 posSibType1-2,

 posSibType1-3,

 posSibType1-4,

 posSibType1-5,

 posSibType1-6,

 posSibType1-7,

 posSibType1-8,

 posSibType2-1,

 posSibType2-2,

 posSibType2-3,

 posSibType2-4,

 posSibType2-5,

 posSibType2-6,

 posSibType2-7,

 posSibType2-8,

 posSibType2-9,

 posSibType2-10,

 posSibType2-11,

 posSibType2-12,

 posSibType2-13,

 posSibType2-14,

 posSibType2-15,

 posSibType2-16,

 posSibType2-17,

 posSibType2-18,

 posSibType2-19,

 posSibType2-20,

 posSibType2-21,

 posSibType2-22,

 posSibType2-23,

 posSibType2-24,

 posSibType2-25,

 posSibType3-1,

 posSibType4-1,

 posSibType5-1,

 posSibType6-1,

 posSibType6-2,

 posSibType6-3,

 ...

}

PosSRSResource-List ::= SEQUENCE (SIZE (1..maxnoSRS-PosResources)) OF PosSRSResource-Item

PosSRSResource-Item ::= SEQUENCE {

 srs-PosResourceId SRSPosResourceID,

 transmissionCombPos TransmissionCombPos,

 startPosition INTEGER (0..13),

 nrofSymbols ENUMERATED {n1, n2, n4, n8, n12},

 freqDomainShift INTEGER (0..268),

 c-SRS INTEGER (0..63),

 groupOrSequenceHopping ENUMERATED { neither, groupHopping, sequenceHopping },

 resourceTypePos ResourceTypePos,

 sequenceId INTEGER (0.. 65535),

 spatialRelationPos SpatialRelationPos OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { PosSRSResource-Item-ExtIEs} } OPTIONAL,

 ...

}

PosSRSResource-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PosSRSResourceSet-List ::= SEQUENCE (SIZE (1..maxnoSRS-PosResourceSets)) OF PosSRSResourceSet-Item

PosSRSResourceID-List ::= SEQUENCE (SIZE (1..maxnoSRS-PosResourcePerSet)) OF SRSPosResourceID

PosSRSResourceSet-Item ::= SEQUENCE {

 possrsResourceSetID INTEGER(0..15),

 possRSResourceID-List PosSRSResourceID-List,

 posresourceSetType PosResourceSetType,

 iE-Extensions ProtocolExtensionContainer { { PosSRSResourceSet-Item-ExtIEs} } OPTIONAL,

 ...

}

PosSRSResourceSet-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PosResourceSetType ::= CHOICE {

 periodic PosResourceSetTypePeriodic,

 semi-persistent PosResourceSetTypeSemi-persistent,

 aperiodic PosResourceSetTypeAperiodic,

 choice-extension ProtocolIE-Single-Container {{ PosResourceSetType-ExtIEs }}

}

PosResourceSetType-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

PosResourceSetTypePeriodic ::= SEQUENCE {

 posperiodicSet ENUMERATED{true, ...},

 iE-Extensions ProtocolExtensionContainer { { PosResourceSetTypePeriodic-ExtIEs} } OPTIONAL,

 ...

}

PosResourceSetTypePeriodic-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PosResourceSetTypeSemi-persistent ::= SEQUENCE {

possemi-persistentSet ENUMERATED{true, ...},

 iE-Extensions ProtocolExtensionContainer { { PosResourceSetTypeSemi-persistent-ExtIEs} } OPTIONAL,

 ...

}

PosResourceSetTypeSemi-persistent-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PosResourceSetTypeAperiodic ::= SEQUENCE {

 sRSResourceTrigger INTEGER(1..3),

 iE-Extensions ProtocolExtensionContainer { { PosResourceSetTypeAperiodic-ExtIEs} } OPTIONAL,

 ...

}

PosResourceSetTypeAperiodic-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PRS-Bandwidth-EUTRA ::= ENUMERATED {

 bw6,

 bw15,

 bw25,

 bw50,

 bw75,

 bw100,

 ...

}

PRSAngleItem ::= SEQUENCE {

 nRPRSAzimuth INTEGER (0..359),

 nRPRSAzimuthFine INTEGER (0..9) OPTIONAL,

 nRPRSElevation INTEGER (0..180) OPTIONAL,

 nRPRSElevationFine INTEGER (0..9) OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { PRSAngleItem-ExtIEs} } OPTIONAL,

 ...

}

PRSAngleItem-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PRSInformationPos ::= SEQUENCE {

 pRS-IDPos INTEGER(0..255),

 pRS-Resource-Set-IDPos INTEGER(0..7),

 pRS-Resource-IDPos INTEGER(0..63) OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { PRSInformationPos-ExtIEs} } OPTIONAL,

 ...

}

PRSInformationPos-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PRSConfiguration ::= SEQUENCE {

 pRSResourceSet-List PRSResourceSet-List,

 iE-Extensions ProtocolExtensionContainer { { PRSConfiguration-ExtIEs} } OPTIONAL,

 ...

}

PRSConfiguration-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PRS-ConfigurationIndex-EUTRA ::= INTEGER (0..4095, ...)

PRS-ID-EUTRA ::= INTEGER (0..4095, ...)

PRSMutingConfiguration-EUTRA ::= CHOICE {

 two BIT STRING (SIZE (2)),

 four BIT STRING (SIZE (4)),

 eight BIT STRING (SIZE (8)),

 sixteen BIT STRING (SIZE (16)),

 thirty-two BIT STRING (SIZE (32)),

 sixty-four BIT STRING (SIZE (64)),

 one-hundred-and-twenty-eight BIT STRING (SIZE (128)),

 two-hundred-and-fifty-six BIT STRING (SIZE (256)),

 five-hundred-and-twelve BIT STRING (SIZE (512)),

 one-thousand-and-twenty-four BIT STRING (SIZE (1024)),

 pRSMutingConfiguration-EUTRA-Extension ProtocolIE-Single-Container {{ PRSMutingConfiguration-EUTRA-ExtensionIE }}

}

PRSMutingConfiguration-EUTRA-ExtensionIE NRPPA-PROTOCOL-IES ::= {

 ...

}

PRSOccasionGroup-EUTRA ::= ENUMERATED {

 og2,

 og4,

 og8,

 og16,

 og32,

 og64,

 og128,

 ...

}

PRSFrequencyHoppingConfiguration-EUTRA ::= SEQUENCE {

 noOfFreqHoppingBands NumberOfFrequencyHoppingBands,

 bandPositions SEQUENCE(SIZE (1..maxnoFreqHoppingBandsMinusOne)) OF NarrowBandIndex,

 iE-Extensions ProtocolExtensionContainer { { PRSFrequencyHoppingConfiguration-EUTRA-Item-IEs} } OPTIONAL,

 ...

}

PRSFrequencyHoppingConfiguration-EUTRA-Item-IEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PRSMuting::= SEQUENCE {

 pRSMutingOption1 PRSMutingOption1,

 pRSMutingOption2 PRSMutingOption2,

 iE-Extensions ProtocolExtensionContainer { { PRSMuting-ExtIEs} } OPTIONAL,

 ...

}

PRSMuting-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PRSMutingOption1 ::= SEQUENCE {

 mutingPattern DL-PRSMutingPattern,

 mutingBitRepetitionFactor ENUMERATED{n1,n2,n4,n8,...},

 iE-Extensions ProtocolExtensionContainer { { PRSMutingOption1-ExtIEs} } OPTIONAL,

 ...

}

PRSMutingOption1-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PRSMutingOption2 ::= SEQUENCE {

 mutingPattern DL-PRSMutingPattern,

 iE-Extensions ProtocolExtensionContainer { { PRSMutingOption2-ExtIEs} } OPTIONAL,

 ...

}

PRSMutingOption2-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PRSResource-List::= SEQUENCE (SIZE (1..maxnoofPRSresource)) OF PRSResource-Item

PRSResource-Item ::= SEQUENCE {

 pRSResourceID PRS-Resource-ID,

 sequenceID INTEGER(0..4095),

 rEOffset INTEGER(0..11,...),

 resourceSlotOffset INTEGER(0..511),

 resourceSymbolOffset INTEGER(0..12),

 qCLInfo PRSResource-QCLInfo OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { PRSResource-Item-ExtIEs} } OPTIONAL,

 ...

}

PRSResource-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PRSResource-QCLInfo ::= CHOICE {

 qCLSourceSSB PRSResource-QCLSourceSSB,

 qCLSourcePRS PRSResource-QCLSourcePRS,

 choice-Extension ProtocolIE-Single-Container {{ PRSResource-QCLInfo-ExtIEs }}

}

PRSResource-QCLInfo-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

PRSResource-QCLSourceSSB ::= SEQUENCE {

 pCI-NR INTEGER(0..1007),

 sSB-Index SSB-Index OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { PRSResource-QCLSourceSSB-ExtIEs} } OPTIONAL,

 ...

}

PRSResource-QCLSourceSSB-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PRSResource-QCLSourcePRS ::= SEQUENCE {

 qCLSourcePRSResourceSetID PRS-Resource-Set-ID,

 qCLSourcePRSResourceID PRS-Resource-ID OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { PRSResource-QCLSourcePRS-ExtIEs} } OPTIONAL,

 ...

}

PRSResource-QCLSourcePRS-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PRSResourceSet-List ::= SEQUENCE (SIZE (1..maxnoofPRSresourceSet)) OF PRSResourceSet-Item

PRSResourceSet-Item ::= SEQUENCE {

 pRSResourceSetID PRS-Resource-Set-ID,

 subcarrierSpacing ENUMERATED{kHz15, kHz30, kHz60, kHz120, ...},

 pRSbandwidth INTEGER(1..63),

 startPRB INTEGER(0..2176),

 pointA INTEGER (0..3279165),

 combSize ENUMERATED{n2, n4, n6, n12, ...},

 cPType ENUMERATED{normal, extended, ...},

 resourceSetPeriodicity ENUMERATED{n4,n5,n8,n10,n16,n20,n32,n40,n64,n80,n160,n320,n640,n1280,n2560,n5120,n10240,n20480,n40960, n81920,...},

 resourceSetSlotOffset INTEGER(0..81919,...),

 resourceRepetitionFactor ENUMERATED{rf1,rf2,rf4,rf6,rf8,rf16,rf32,...},

 resourceTimeGap ENUMERATED{tg1,tg2,tg4,tg8,tg16,tg32,...},

 resourceNumberofSymbols ENUMERATED{n2,n4,n6,n12,...},

 pRSMuting PRSMuting OPTIONAL,

 pRSResourceTransmitPower INTEGER(-60..50),

 pRSResource-List PRSResource-List,

 iE-Extensions ProtocolExtensionContainer { { PRSResourceSet-Item-ExtIEs} } OPTIONAL,

 ...

}

PRSResourceSet-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

PRS-Resource-ID ::= INTEGER (0..63)

PRS-Resource-Set-ID ::= INTEGER(0..7)

PRS-ID ::= INTEGER(0..255)

-- Q

-- R

ReferenceSignal ::= CHOICE {

 nZP-CSI-RS NZP-CSI-RS-ResourceID,

 sSB SSB,

 sRS SRSResourceID,

 positioningSRS SRSPosResourceID,

 dL-PRS DL-PRS,

 choice-Extension ProtocolIE-Single-Container {{ReferenceSignal-ExtensionIE }}

}

ReferenceSignal-ExtensionIE NRPPA-PROTOCOL-IES ::= {

 ...

}

ReferencePoint ::= CHOICE {

 relativeCoordinateID CoordinateID,

 referencePointCoordinate NG-RANAccessPointPosition,

 referencePointCoordinateHA NGRANHighAccuracyAccessPointPosition,

 choice-Extension ProtocolIE-Single-Container { { ReferencePoint-ExtIEs} }

}

ReferencePoint-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

CoordinateID ::= INTEGER (0..511, ...)

RelativeGeodeticLocation ::= SEQUENCE {

 milli-Arc-SecondUnits ENUMERATED {zerodot03, zerodot3, three, ...}, heightUnits ENUMERATED {mm, cm, m, ...},

 deltaLatitude INTEGER (-1024.. 1023),

 deltaLongitude INTEGER (-1024.. 1023),

 deltaHeight INTEGER (-1024.. 1023),

 locationUncertainty LocationUncertainty,

 iE-extensions ProtocolExtensionContainer {{RelativeGeodeticLocation-ExtIEs }} OPTIONAL,

 ...

}

RelativeGeodeticLocation-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

RelativeCartesianLocation ::= SEQUENCE {

 xYZunit ENUMERATED {mm, cm, dm, ...},

 xvalue INTEGER (-65536..65535),

 yvalue INTEGER (-65536..65535),

 zvalue INTEGER (-32768..32767),

 locationUncertainty LocationUncertainty,

 iE-Extensions ProtocolExtensionContainer { { RelativeCartesianLocation-ExtIEs} } OPTIONAL,

 ...

}

RelativeCartesianLocation-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

RelativePathDelay ::= CHOICE {

 k0 INTEGER(0..16351),

 k1 INTEGER(0..8176),

 k2 INTEGER(0..4088),

 k3 INTEGER(0..2044),

 k4 INTEGER(0..1022),

 k5 INTEGER(0..511),

 choice-Extension ProtocolIE-Single-Container { { RelativePathDelay-ExtIEs} }

}

RelativePathDelay-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

ReportCharacteristics ::= ENUMERATED {

 onDemand,

 periodic,

 ...

}

RequestedSRSTransmissionCharacteristics ::= SEQUENCE {

 numberOfTransmissions INTEGER (0..500,...) OPTIONAL,

-- The IE shall be present if the Resource Type IE is set to “periodic” --

 resourceType ENUMERATED {periodic, semi-persistent, aperiodic, ...},

 bandwidth BandwidthSRS,

 listOfSRSResourceSet SEQUENCE (SIZE (1.. maxnoSRS-ResourceSets)) OF SRSResourceSet-Item OPTIONAL,

 sSBInformation SSBInfo OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { RequestedSRSTransmissionCharacteristics-ExtIEs} } OPTIONAL,

 ...

}

RequestedSRSTransmissionCharacteristics-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

SRSResourceSet-Item ::= SEQUENCE {

 numberOfSRSResourcePerSet INTEGER (1..16, ...) OPTIONAL,

 periodicityList PeriodicityList OPTIONAL,

 spatialRelationInformation SpatialRelationInfo OPTIONAL,

 pathlossReferenceInformation PathlossReferenceInformation OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { SRSResourceSet-Item-ExtIEs} } OPTIONAL,

 ...

}

SRSResourceSet-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResourceSetType ::= CHOICE {

 periodic ResourceSetTypePeriodic,

 semi-persistent ResourceSetTypeSemi-persistent,

 aperiodic ResourceSetTypeAperiodic,

 choice-extension ProtocolIE-Single-Container {{ ResourceSetType-ExtIEs }}

}

ResourceSetType-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

ResourceSetTypePeriodic ::= SEQUENCE {

periodicSet ENUMERATED{true, ...},

 iE-Extensions ProtocolExtensionContainer { { ResourceSetTypePeriodic-ExtIEs} } OPTIONAL,

 ...

}

ResourceSetTypePeriodic-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResourceSetTypeSemi-persistent ::= SEQUENCE {

semi-persistentSet ENUMERATED{true, ...},

 iE-Extensions ProtocolExtensionContainer { { ResourceSetTypeSemi-persistent-ExtIEs} } OPTIONAL,

 ...

}

ResourceSetTypeSemi-persistent-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResourceSetTypeAperiodic ::= SEQUENCE {

 sRSResourceTrigger INTEGER(1..3),

 slotoffset INTEGER(0..32),

 iE-Extensions ProtocolExtensionContainer { { ResourceSetTypeAperiodic-ExtIEs} } OPTIONAL,

 ...

}

ResourceSetTypeAperiodic-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResourceType ::= CHOICE {

 periodic ResourceTypePeriodic,

 semi-persistent ResourceTypeSemi-persistent,

 aperiodic ResourceTypeAperiodic,

 choice-extension ProtocolIE-Single-Container {{ ResourceType-ExtIEs }}

}

ResourceType-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

ResourceTypePeriodic ::= SEQUENCE {

 periodicity ENUMERATED{slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320, slot640, slot1280, slot2560, ...},

 offset INTEGER(0..2559, ...),

 iE-Extensions ProtocolExtensionContainer { { ResourceTypePeriodic-ExtIEs} } OPTIONAL,

 ...

}

ResourceTypePeriodic-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResourceTypeSemi-persistent ::= SEQUENCE {

 periodicity ENUMERATED{slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320, slot640, slot1280, slot2560, ...},

 offset INTEGER(0..2559, ...),

 iE-Extensions ProtocolExtensionContainer { { ResourceTypeSemi-persistent-ExtIEs} } OPTIONAL,

 ...

}

ResourceTypeSemi-persistent-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResourceTypeAperiodic ::= SEQUENCE {

aperiodicResourceType ENUMERATED{true, ...},

 iE-Extensions ProtocolExtensionContainer { { ResourceTypeAperiodic-ExtIEs} } OPTIONAL,

 ...

}

ResourceTypeAperiodic-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResourceTypePos ::= CHOICE {

 periodic ResourceTypePeriodicPos,

 semi-persistent ResourceTypeSemi-persistentPos,

 aperiodic ResourceTypeAperiodicPos,

 choice-extension ProtocolIE-Single-Container {{ ResourceTypePos-ExtIEs }}

}

ResourceTypePos-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

ResourceTypePeriodicPos ::= SEQUENCE {

periodicity ENUMERATED{slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320, slot640, slot1280, slot2560, slot5120, slot10240, slot40960, slot81920, ...},

offset INTEGER(0..81919, ...),

 iE-Extensions ProtocolExtensionContainer { { ResourceTypePeriodicPos-ExtIEs} } OPTIONAL,

 ...

}

ResourceTypePeriodicPos-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResourceTypeSemi-persistentPos ::= SEQUENCE {

periodicity ENUMERATED{slot1, slot2, slot4, slot5, slot8, slot10, slot16, slot20, slot32, slot40, slot64, slot80, slot160, slot320, slot640, slot1280, slot2560, slot5120, slot10240, slot40960, slot81920, ...},

offset INTEGER(0..81919, ...),

 iE-Extensions ProtocolExtensionContainer { { ResourceTypeSemi-persistentPos-ExtIEs} } OPTIONAL,

 ...

}

ResourceTypeSemi-persistentPos-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResourceTypeAperiodicPos ::= SEQUENCE {

slotOffset INTEGER (0..32),

 iE-Extensions ProtocolExtensionContainer { { ResourceTypeAperiodicPos-ExtIEs} } OPTIONAL,

 ...

}

ResourceTypeAperiodicPos-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResultCSI-RSRP ::= SEQUENCE (SIZE (1.. maxCellReportNR)) OF ResultCSI-RSRP-Item

ResultCSI-RSRP-Item ::= SEQUENCE {

 nR-PCI NR-PCI,

 nR-ARFCN NR-ARFCN,

 cGI-NR CGI-NR OPTIONAL,

 valueCSI-RSRP-Cell ValueRSRP-NR OPTIONAL,

 cSI-RSRP-PerCSI-RS ResultCSI-RSRP-PerCSI-RS OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { ResultCSI-RSRP-Item-ExtIEs} } OPTIONAL,

 ...

}

ResultCSI-RSRP-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResultCSI-RSRP-PerCSI-RS ::= SEQUENCE (SIZE (1.. maxIndexesReport)) OF ResultCSI-RSRP-PerCSI-RS-Item

ResultCSI-RSRP-PerCSI-RS-Item ::= SEQUENCE {

 cSI-RS-Index INTEGER (0..95),

 valueCSI-RSRP ValueRSRP-NR,

 iE-Extensions ProtocolExtensionContainer { { ResultCSI-RSRP-PerCSI-RS-Item-ExtIEs} } OPTIONAL,

 ...

}

ResultCSI-RSRP-PerCSI-RS-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResultCSI-RSRQ ::= SEQUENCE (SIZE (1.. maxCellReportNR)) OF ResultCSI-RSRQ-Item

ResultCSI-RSRQ-Item ::= SEQUENCE {

 nR-PCI NR-PCI,

 nR-ARFCN NR-ARFCN,

 cGI-NR CGI-NR OPTIONAL,

 valueCSI-RSRQ-Cell ValueRSRQ-NR OPTIONAL,

 cSI-RSRQ-PerCSI-RS ResultCSI-RSRQ-PerCSI-RS OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { ResultCSI-RSRQ-Item-ExtIEs} } OPTIONAL,

 ...

}

ResultCSI-RSRQ-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResultCSI-RSRQ-PerCSI-RS ::= SEQUENCE (SIZE (1.. maxIndexesReport)) OF ResultCSI-RSRQ-PerCSI-RS-Item

ResultCSI-RSRQ-PerCSI-RS-Item ::= SEQUENCE {

 cSI-RS-Index INTEGER (0..95),

 valueCSI-RSRQ ValueRSRQ-NR,

 iE-Extensions ProtocolExtensionContainer { { ResultCSI-RSRQ-PerCSI-RS-Item-ExtIEs} } OPTIONAL,

 ...

}

ResultCSI-RSRQ-PerCSI-RS-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResultEUTRA ::= SEQUENCE (SIZE (1.. maxEUTRAMeas)) OF ResultEUTRA-Item

ResultEUTRA-Item ::= SEQUENCE {

 pCI-EUTRA PCI-EUTRA,

 eARFCN EARFCN,

 valueRSRP-EUTRA ValueRSRP-EUTRA OPTIONAL,

 valueRSRQ-EUTRA ValueRSRQ-EUTRA OPTIONAL,

 cGI-EUTRA CGI-EUTRA OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { ResultEUTRA-Item-ExtIEs} } OPTIONAL,

 ...

}

ResultEUTRA-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResultRSRP-EUTRA ::= SEQUENCE (SIZE (1.. maxCellReport)) OF ResultRSRP-EUTRA-Item

ResultRSRP-EUTRA-Item ::= SEQUENCE {

 pCI-EUTRA PCI-EUTRA,

 eARFCN EARFCN,

 cGI-EUTRA CGI-EUTRA OPTIONAL,

 valueRSRP-EUTRA ValueRSRP-EUTRA,

 iE-Extensions ProtocolExtensionContainer { { ResultRSRP-EUTRA-Item-ExtIEs} } OPTIONAL,

 ...

}

ResultRSRP-EUTRA-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResultRSRQ-EUTRA ::= SEQUENCE (SIZE (1.. maxCellReport)) OF ResultRSRQ-EUTRA-Item

ResultRSRQ-EUTRA-Item ::= SEQUENCE {

 pCI-EUTRA PCI-EUTRA,

 eARFCN EARFCN,

 cGI-UTRA CGI-EUTRA OPTIONAL,

 valueRSRQ-EUTRA ValueRSRQ-EUTRA,

 iE-Extensions ProtocolExtensionContainer { { ResultRSRQ-EUTRA-Item-ExtIEs} } OPTIONAL,

 ...

}

ResultRSRQ-EUTRA-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResultSS-RSRP ::= SEQUENCE (SIZE (1.. maxCellReportNR)) OF ResultSS-RSRP-Item

ResultSS-RSRP-Item ::= SEQUENCE {

 nR-PCI NR-PCI,

 nR-ARFCN NR-ARFCN,

 cGI-NR CGI-NR OPTIONAL,

 valueSS-RSRP-Cell ValueRSRP-NR OPTIONAL,

 sS-RSRP-PerSSB ResultSS-RSRP-PerSSB OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { ResultSS-RSRP-Item-ExtIEs} } OPTIONAL,

 ...

}

ResultSS-RSRP-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResultSS-RSRP-PerSSB ::= SEQUENCE (SIZE (1.. maxIndexesReport)) OF ResultSS-RSRP-PerSSB-Item

ResultSS-RSRP-PerSSB-Item ::= SEQUENCE {

 sSB-Index SSB-Index,

 valueSS-RSRP ValueRSRP-NR,

 iE-Extensions ProtocolExtensionContainer { { ResultSS-RSRP-PerSSB-Item-ExtIEs} } OPTIONAL,

 ...

}

ResultSS-RSRP-PerSSB-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResultSS-RSRQ ::= SEQUENCE (SIZE (1.. maxCellReportNR)) OF ResultSS-RSRQ-Item

ResultSS-RSRQ-Item ::= SEQUENCE {

 nR-PCI NR-PCI,

 nR-ARFCN NR-ARFCN,

 cGI-NR CGI-NR OPTIONAL,

 valueSS-RSRQ-Cell ValueRSRQ-NR OPTIONAL,

 sS-RSRQ-PerSSB ResultSS-RSRQ-PerSSB OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { ResultSS-RSRQ-Item-ExtIEs} } OPTIONAL,

 ...

}

ResultSS-RSRQ-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResultSS-RSRQ-PerSSB ::= SEQUENCE (SIZE (1.. maxIndexesReport)) OF ResultSS-RSRQ-PerSSB-Item

ResultSS-RSRQ-PerSSB-Item ::= SEQUENCE {

 sSB-Index SSB-Index,

 valueSS-RSRQ ValueRSRQ-NR,

 iE-Extensions ProtocolExtensionContainer { { ResultSS-RSRQ-PerSSB-Item-ExtIEs} } OPTIONAL,

 ...

}

ResultSS-RSRQ-PerSSB-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResultGERAN ::= SEQUENCE (SIZE (1.. maxGERANMeas)) OF ResultGERAN-Item

ResultGERAN-Item ::= SEQUENCE {

 bCCH BCCH,

 physCellIDGERAN PhysCellIDGERAN,

 rSSI RSSI,

 iE-Extensions ProtocolExtensionContainer { { ResultGERAN-Item-ExtIEs} } OPTIONAL,

 ...

}

ResultGERAN-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResultNR ::= SEQUENCE (SIZE (1.. maxNRMeas)) OF ResultNR-Item

ResultNR-Item ::= SEQUENCE {

 nR-PCI NR-PCI,

 nR-ARFCN NR-ARFCN,

 valueSS-RSRP-Cell ValueRSRP-NR OPTIONAL,

 valueSS-RSRQ-Cell ValueRSRQ-NR OPTIONAL,

 sS-RSRP-PerSSB ResultSS-RSRP-PerSSB OPTIONAL,

 sS-RSRQ-PerSSB ResultSS-RSRQ-PerSSB OPTIONAL,

 cGI-NR CGI-NR OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { ResultNR-Item-ExtIEs} } OPTIONAL,

 ...

}

ResultNR-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ResultUTRAN ::= SEQUENCE (SIZE (1.. maxUTRANMeas)) OF ResultUTRAN-Item

ResultUTRAN-Item ::= SEQUENCE {

 uARFCN UARFCN,

 physCellIDUTRAN CHOICE {

 physCellIDUTRA-FDD PhysCellIDUTRA-FDD,

 physCellIDUTRA-TDD PhysCellIDUTRA-TDD

 },

 uTRA-RSCP UTRA-RSCP OPTIONAL,

 uTRA-EcN0 UTRA-EcN0 OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { ResultUTRAN-Item-ExtIEs} } OPTIONAL,

 ...

}

ResultUTRAN-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

RSSI ::= INTEGER (0..63, ...)

-- S

SCS-SpecificCarrier ::= SEQUENCE {

 offsetToCarrier INTEGER (0..2199,...),

 subcarrierSpacing ENUMERATED {kHz15, kHz30, kHz60, kHz120,...},

 carrierBandwidth INTEGER (1..275,...),

iE-Extensions ProtocolExtensionContainer { { SCS-SpecificCarrier-ExtIEs } } OPTIONAL,

 ...

}

SCS-SpecificCarrier-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

Search-window-information ::= SEQUENCE {

 expectedPropagationDelay INTEGER (-3841..3841,...),

 delayUncertainty INTEGER (1..246,...),

 iE-Extensions ProtocolExtensionContainer { { Search-window-information-ExtIEs } } OPTIONAL,

 ...

}

Search-window-information-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

SFNInitialisationTime ::= BIT STRING (SIZE (64))

SFNInitialisationTime-EUTRA ::= BIT STRING (SIZE (64))

SlotNumber ::= INTEGER (0..79)

SpatialDirectionInformation ::= SEQUENCE {

 nR-PRS-Beam-Information NR-PRS-Beam-Information,

 iE-Extensions ProtocolExtensionContainer { { SpatialDirectionInformation-ExtIEs } } OPTIONAL,

 ...

}

SpatialDirectionInformation-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

SpatialRelationInfo ::= SEQUENCE {

 spatialRelationforResourceID SpatialRelationforResourceID,

 iE-Extensions ProtocolExtensionContainer { {SpatialRelationInfo-ExtIEs} } OPTIONAL,

 ...

}

SpatialRelationInfo-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

SpatialRelationforResourceID ::= SEQUENCE (SIZE(1..maxnoSpatialRelations)) OF SpatialRelationforResourceIDItem

SpatialRelationforResourceIDItem ::= SEQUENCE {

 referenceSignal ReferenceSignal,

 iE-Extensions ProtocolExtensionContainer { {SpatialRelationforResourceIDItem-ExtIEs} } OPTIONAL,

 ...

}

SpatialRelationforResourceIDItem-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

SpatialRelationPos ::= CHOICE {

 sSBPos SSB,

 pRSInformationPos PRSInformationPos,

 choice-extension ProtocolIE-Single-Container {{ SpatialInformationPos-ExtIEs }}

}

SpatialInformationPos-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

SRSConfig ::= SEQUENCE {

 sRSResource-List SRSResource-List OPTIONAL,

 posSRSResource-List PosSRSResource-List OPTIONAL,

 sRSResourceSet-List SRSResourceSet-List OPTIONAL,

 posSRSResourceSet-List PosSRSResourceSet-List OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { SRSConfig-ExtIEs } } OPTIONAL,

 ...

}

SRSConfig-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

SRSCarrier-List ::= SEQUENCE (SIZE(1.. maxnoSRS-Carriers)) OF SRSCarrier-List-Item

SRSCarrier-List-Item ::= SEQUENCE {

 pointA INTEGER (0..3279165),

 uplinkChannelBW-PerSCS-List UplinkChannelBW-PerSCS-List,

 activeULBWP ActiveULBWP,

 pCI-NR INTEGER (0..1007) OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { SRSCarrier-List-Item-ExtIEs } } OPTIONAL,

 ...

}

SRSCarrier-List-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

SRSConfiguration ::= SEQUENCE {

 sRSCarrier-List SRSCarrier-List,

 iE-Extensions ProtocolExtensionContainer { { SRSConfiguration-ExtIEs } } OPTIONAL,

 ...

}

SRSConfiguration-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

SRSPosResourceID ::= INTEGER (0..63)

SRSResource::= SEQUENCE {

 sRSResourceID SRSResourceID,

 nrofSRS-Ports ENUMERATED {port1, ports2, ports4},

 transmissionComb TransmissionComb,

 startPosition INTEGER (0..13),

 nrofSymbols ENUMERATED {n1, n2, n4},

 repetitionFactor ENUMERATED {n1, n2, n4},

 freqDomainPosition INTEGER (0..67),

 freqDomainShift INTEGER (0..268),

 c-SRS INTEGER (0..63),

 b-SRS INTEGER (0..3),

 b-hop INTEGER (0..3),

 groupOrSequenceHopping ENUMERATED { neither, groupHopping, sequenceHopping },

 resourceType ResourceType,

 sequenceId INTEGER (0..1023),

 iE-Extensions ProtocolExtensionContainer { { SRSResource-ExtIEs } } OPTIONAL,

 ...

}

SRSResource-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

SRSResourceID ::= INTEGER (0..63)

SRSResource-List ::= SEQUENCE (SIZE (1..maxnoSRS-Resources)) OF SRSResource

SRSResourceSet-List ::= SEQUENCE (SIZE (1..maxnoSRS-ResourceSets)) OF SRSResourceSet

SRSResourceID-List::= SEQUENCE (SIZE (1..maxnoSRS-ResourcePerSet)) OF SRSResourceID

SRSResourceSet::= SEQUENCE {

 sRSResourceSetID INTEGER(0..15),

 sRSResourceID-List SRSResourceID-List,

 resourceSetType ResourceSetType,

 iE-Extensions ProtocolExtensionContainer { { SRSResourceSet-ExtIEs } } OPTIONAL,

 ...

}

SRSResourceSet-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

SRSResourceSetID ::= INTEGER (0..15, ...)

SRSResourceTrigger ::= SEQUENCE {

 aperiodicSRSResourceTriggerList AperiodicSRSResourceTriggerList,

 iE-Extensions ProtocolExtensionContainer { {SRSResourceTrigger-ExtIEs} } OPTIONAL,

 ...

}

SRSResourceTrigger-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

SRSSpatialRelation ::= SEQUENCE {

 spatialRelationforResourceID SpatialRelationforResourceID,

 iE-Extensions ProtocolExtensionContainer { {SRSSpatialRelation-ExtIEs} } OPTIONAL,

 ...

}

SRSSpatialRelation-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

SSBInfo ::= SEQUENCE {

 listOfSSBInfo SEQUENCE (SIZE (1..maxNoSSBs)) OF SSBInfoItem,

 iE-Extensions ProtocolExtensionContainer { {SSBInfo-ExtIEs} } OPTIONAL,

 ...

}

SSBInfo-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

SSBInfoItem ::= SEQUENCE {

 sSB-Configuration TF-Configuration,

 pCI-NR INTEGER (0..1007),

 iE-Extensions ProtocolExtensionContainer { { SSBInfoItem-ExtIEs} } OPTIONAL,

 ...

}

SSBInfoItem-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

SSB ::= SEQUENCE {

 pCI-NR INTEGER (0..1007),

 ssb-index SSB-Index OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { {SSB-ExtIEs} } OPTIONAL,

 ...

}

SSB-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

SSBBurstPosition ::= CHOICE {

 shortBitmap BIT STRING (SIZE(4)),

 mediumBitmap BIT STRING (SIZE(8)),

 longBitmap BIT STRING (SIZE(64)),

 choice-extension ProtocolIE-Single-Container { { SSBBurstPosition-ExtIEs} }

}

SSBBurstPosition-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

SSB-Index ::= INTEGER(0..63)

SSID ::= OCTET STRING (SIZE(1..32))

SystemFrameNumber ::= INTEGER (0..1023)

SystemInformation ::= SEQUENCE (SIZE (1.. maxNrOfPosSImessage)) OF SEQUENCE {

 broadcastPeriodicity BroadcastPeriodicity,

 posSIBs PosSIBs,

 iE-Extensions ProtocolExtensionContainer { { SystemInformation-ExtIEs} } OPTIONAL,

 ...

}

SystemInformation-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

-- T

TAC ::= OCTET STRING (SIZE(3))

TDD-Config-EUTRA-Item ::= SEQUENCE {

 subframeAssignment ENUMERATED { sa0, sa1, sa2, sa3, sa4, sa5, sa6, ... },

 iE-Extensions ProtocolExtensionContainer { { TDD-Config-EUTRA-Item-Item-ExtIEs } } OPTIONAL,

 ...

}

TDD-Config-EUTRA-Item-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

TF-Configuration ::= SEQUENCE {

 sSB-frequency INTEGER (0..3279165),

 sSB-subcarrier-spacing ENUMERATED {kHz15, kHz30, kHz120, kHz240, ...},

 sSB-Transmit-power INTEGER (-60..50),

 sSB-periodicity ENUMERATED {ms5, ms10, ms20, ms40, ms80, ms160, ...},

 sSB-half-frame-offset INTEGER(0..1),

 sSB-SFN-offset INTEGER(0..15),

 sSB-BurstPosition SSBBurstPosition OPTIONAL,

 sFN-initialisation-time SFNInitialisationTime OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { TF-Configuration-ExtIEs} } OPTIONAL,

 ...

}

TF-Configuration-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

TimeStamp ::= SEQUENCE {

 systemFrameNumber SystemFrameNumber,

 slotIndex TimeStampSlotIndex,

 measurementTime SFNInitialisationTime OPTIONAL,

 iE-Extension ProtocolExtensionContainer { { TimeStamp-ExtIEs} } OPTIONAL,

 ...

}

TimeStamp-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

TimeStampSlotIndex ::= CHOICE {

 sCS-15 INTEGER(0..9),

 sCS-30 INTEGER(0..19),

 sCS-60 INTEGER(0..39),

 sCS-120 INTEGER(0..79),

 choice-extension ProtocolIE-Single-Container { { TimeStampSlotIndex-ExtIEs} }

}

TimeStampSlotIndex-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

TP-ID-EUTRA ::= INTEGER (0..4095, ...)

TP-Type-EUTRA ::= ENUMERATED { prs-only-tp, ... }

TransmissionComb ::= CHOICE {

 n2 SEQUENCE {

 combOffset-n2 INTEGER (0..1),

 cyclicShift-n2 INTEGER (0..7)

 },

 n4 SEQUENCE {

 combOffset-n4 INTEGER (0..3),

 cyclicShift-n4 INTEGER (0..11)

 },

 choice-extension ProtocolIE-Single-Container { { TransmissionComb-ExtIEs} }

}

TransmissionComb-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

TransmissionCombPos ::= CHOICE {

 n2 SEQUENCE {

 combOffset-n2 INTEGER (0..1),

 cyclicShift-n2 INTEGER (0..7)

 },

 n4 SEQUENCE {

 combOffset-n4 INTEGER (0..3),

 cyclicShift-n4 INTEGER (0..11)

 },

 n8 SEQUENCE {

 combOffset-n8 INTEGER (0..7),

 cyclicShift-n8 INTEGER (0..5)

 },

 choice-extension ProtocolIE-Single-Container { { TransmissionCombPos-ExtIEs} }

}

TransmissionCombPos-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

TRPMeasurementQuantities ::= SEQUENCE (SIZE (1..maxnoPosMeas)) OF TRPMeasurementQuantitiesList-Item

TRPMeasurementQuantitiesList-Item ::= SEQUENCE {

 tRPMeasurementQuantities-Item TRPMeasurementQuantities-Item,

 timingReportingGranularityFactor INTEGER (0..5) OPTIONAL,

 iE-Extensions ProtocolExtensionContainer {{ TRPMeasurementQuantitiesList-Item-ExtIEs}} OPTIONAL,

 ...

}

TRPMeasurementQuantitiesList-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

TRPMeasurementQuantities-Item ::= ENUMERATED {

 gNB-RxTxTimeDiff,

 uL-SRS-RSRP,

 uL-AoA,

 uL-RTOA,

 ...

}

TrpMeasurementResult ::= SEQUENCE (SIZE (1.. maxnoPosMeas)) OF TrpMeasurementResultItem

TrpMeasurementResultItem ::= SEQUENCE {

 measuredResultsValue TrpMeasuredResultsValue,

 timeStamp TimeStamp,

 measurementQuality TrpMeasurementQuality OPTIONAL,

 measurementBeamInfo MeasurementBeamInfo OPTIONAL,

 iE-Extensions ProtocolExtensionContainer {{TrpMeasurementResultItem-ExtIEs}} OPTIONAL,

 ...

}

TrpMeasurementResultItem-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

TrpMeasuredResultsValue ::= CHOICE {

 uL-AngleOfArrival UL-AoA,

 uL-SRS-RSRP UL-SRS-RSRP,

 uL-RTOA UL-RTOAMeasurement,

 gNB-RxTxTimeDiff GNB-RxTxTimeDiff,

 choice-extension ProtocolIE-Single-Container { { TrpMeasuredResultsValue-ExtIEs } }

}

TrpMeasuredResultsValue-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

TrpMeasurementQuality ::= CHOICE {

 timingMeasQuality TrpMeasurementTimingQuality,

 angleMeasQuality TrpMeasurementAngleQuality,

 choice-Extension ProtocolIE-Single-Container {{ TrpMeasurementQuality-ExtIEs}}

}

TrpMeasurementQuality-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

TrpMeasurementTimingQuality ::= SEQUENCE {

 measurementQuality INTEGER (0..31),

 resolution ENUMERATED {m0dot1, m1, m10, m30, ...},

 iE-extensions ProtocolExtensionContainer { { TrpMeasurementTimingQuality-ExtIEs } } OPTIONAL,

 ...

}

TrpMeasurementTimingQuality-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

TrpMeasurementAngleQuality ::= SEQUENCE {

 azimuthQuality INTEGER (0..255),

 zenithQuality INTEGER (0..255) OPTIONAL,

 resolution ENUMERATED {deg0dot1, ...},

 iE-extensions ProtocolExtensionContainer { { TrpMeasurementAngleQuality-ExtIEs } } OPTIONAL,

 ...

}

TrpMeasurementAngleQuality-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

TRP-MeasurementRequestList ::= SEQUENCE (SIZE (1..maxNoOfMeasTRPs)) OF TRP-MeasurementRequestItem

TRP-MeasurementRequestItem ::= SEQUENCE {

 tRP-ID TRP-ID,

 search-window-information Search-window-information OPTIONAL,

 iE-extensions ProtocolExtensionContainer { { TRP-MeasurementRequestItem-ExtIEs } } OPTIONAL,

 ...

}

TRP-MeasurementRequestItem-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

TRP-MeasurementResponseList ::= SEQUENCE (SIZE (1..maxNoOfMeasTRPs)) OF TRP-MeasurementResponseItem

TRP-MeasurementResponseItem ::= SEQUENCE {

 tRP-ID TRP-ID,

 measurementResult TrpMeasurementResult,

 iE-extensions ProtocolExtensionContainer { { TRP-MeasurementResponseItem-ExtIEs } } OPTIONAL,

 ...

}

TRP-MeasurementResponseItem-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

TRPInformationListTRPResp ::= SEQUENCE (SIZE (1.. maxnoTRPs)) OF SEQUENCE {

 tRPInformation TRPInformation,

 iE-Extensions ProtocolExtensionContainer { {TRPInformationTRPResp-ExtIEs} } OPTIONAL,

 ...

}

TRPInformationTRPResp-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

TRPInformation ::= SEQUENCE {

 tRP-ID TRP-ID,

 tRPInformationTypeResponseList TRPInformationTypeResponseList,

 iE-Extensions ProtocolExtensionContainer { { TRPInformation-ExtIEs } } OPTIONAL,

 ...

}

TRPInformation-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

TRPInformationTypeResponseList ::= SEQUENCE (SIZE (1..maxnoTRPInfoTypes)) OF TRPInformationTypeResponseItem

TRPInformationTypeResponseItem ::= CHOICE {

 pCI-NR INTEGER (0..1007),

 cGI-NR CGI-NR,

 aRFCN INTEGER (0..3279165),

 pRSConfiguration PRSConfiguration,

 sSBinformation SSBInfo,

 sFNInitialisationTime SFNInitialisationTime,

 spatialDirectionInformation SpatialDirectionInformation,

 geographicalCoordinates GeographicalCoordinates,

 choice-extension ProtocolIE-Single-Container { { TRPInformationTypeResponseItem-ExtIEs } }

}

TRPInformationTypeResponseItem-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

TRPInformationTypeListTRPReq ::= SEQUENCE (SIZE(1.. maxnoTRPInfoTypes)) OF ProtocolIE-Single-Container { {TRPInformationTypeItemTRPReq} }

TRPInformationTypeItemTRPReq NRPPA-PROTOCOL-IES ::= {

 { ID id-TRPInformationTypeItem CRITICALITY reject TYPE TRPInformationTypeItem PRESENCE mandatory },

 ...

}

TRPInformationTypeItem ::= ENUMERATED {

 nrPCI,

 nG-RAN-CGI,

 arfcn,

 pRSConfig,

 sSBInfo,

 sFNInitTime,

 spatialDirectInfo,

 geoCoord,

 ...

}

TRPList ::= SEQUENCE (SIZE(1.. maxnoTRPs)) OF TRPItem

TRPItem ::= SEQUENCE {

 tRP-ID TRP-ID,

 iE-Extensions ProtocolExtensionContainer { {TRPItem-ExtIEs} } OPTIONAL,

 ...

}

TRPItem-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

TRP-ID ::= INTEGER (1.. maxnoTRPs, ...)

TRPPositionDefinitionType ::= CHOICE {

 direct TRPPositionDirect,

 referenced TRPPositionReferenced,

 choice-extension ProtocolIE-Single-Container { { TRPPositionDefinitionType-ExtIEs } }

}

TRPPositionDefinitionType-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

TRPPositionDirect ::= SEQUENCE {

 accuracy TRPPositionDirectAccuracy,

 iE-extensions ProtocolExtensionContainer { { TRPPositionDirect-ExtIEs } } OPTIONAL,

 ...

}

TRPPositionDirect-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

TRPPositionDirectAccuracy ::= CHOICE {

 tRPPosition NG-RANAccessPointPosition ,

 tRPHAposition NGRANHighAccuracyAccessPointPosition ,

 choice-extension ProtocolIE-Single-Container { { TRPPositionDirectAccuracy-ExtIEs } }

}

TRPPositionDirectAccuracy-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

TRPPositionReferenced ::= SEQUENCE {

 referencePoint ReferencePoint,

 referencePointType TRPReferencePointType,

 iE-extensions ProtocolExtensionContainer { { TRPPositionReferenced-ExtIEs } } OPTIONAL,

 ...

}

TRPPositionReferenced-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

TRPReferencePointType ::= CHOICE {

 tRPPositionRelativeGeodetic RelativeGeodeticLocation,

 tRPPositionRelativeCartesian RelativeCartesianLocation,

 choice-extension ProtocolIE-Single-Container { { TRPReferencePointType-ExtIEs } }

}

TRPReferencePointType-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

TypeOfError ::= ENUMERATED {

 not-understood,

 missing,

 ...

}

-- U

UARFCN ::= INTEGER (0..16383, ...)

UE-Measurement-ID ::= INTEGER (1..15, ..., 256)

UTRA-EcN0 ::= INTEGER (0..49, ...)

UTRA-RSCP ::= INTEGER (-5..91, ...)

UL-AoA ::= SEQUENCE {

 azimuthAoA INTEGER (0..3599),

 zenithAoA INTEGER (0..1799) OPTIONAL,

 lCS-to-GCS-TranslationAoA LCS-to-GCS-TranslationAoA OPTIONAL,

 iE-extensions ProtocolExtensionContainer { { UL-AoA-ExtIEs } } OPTIONAL,

 ...

}

UL-AoA-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

UL-RTOAMeasurement ::= SEQUENCE {

 uLRTOAmeas ULRTOAMeas,

 additionalPathList AdditionalPathList OPTIONAL,

 iE-extensions ProtocolExtensionContainer { { UL-RTOAMeasurement-ExtIEs } } OPTIONAL, ...

}

UL-RTOAMeasurement-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

ULRTOAMeas::= CHOICE {

 k0 INTEGER (0.. 1970049),

 k1 INTEGER (0.. 985025),

 k2 INTEGER (0.. 492513),

 k3 INTEGER (0.. 246257),

 k4 INTEGER (0.. 123129),

 k5 INTEGER (0.. 61565),

 choice-extension ProtocolIE-Single-Container { { ULRTOAMeas-ExtIEs } }

}

ULRTOAMeas-ExtIEs NRPPA-PROTOCOL-IES ::= {

 ...

}

UL-SRS-RSRP ::= INTEGER (0..126)

UplinkChannelBW-PerSCS-List ::= SEQUENCE (SIZE (1..maxnoSCSs)) OF SCS-SpecificCarrier

-- V

ValueRSRP-EUTRA ::= INTEGER (0..97, ...)

ValueRSRQ-EUTRA ::= INTEGER (0..34, ...)

ValueRSRP-NR ::= INTEGER (0..127)

ValueRSRQ-NR ::= INTEGER (0..127)

-- W

WLANMeasurementQuantities ::= SEQUENCE (SIZE (0.. maxNoMeas)) OF ProtocolIE-Single-Container { {WLANMeasurementQuantities-ItemIEs} }

WLANMeasurementQuantities-ItemIEs NRPPA-PROTOCOL-IES ::= {

 { ID id-WLANMeasurementQuantities-Item CRITICALITY reject TYPE WLANMeasurementQuantities-Item PRESENCE mandatory}}

WLANMeasurementQuantities-Item ::= SEQUENCE {

 wLANMeasurementQuantitiesValue WLANMeasurementQuantitiesValue,

 iE-Extensions ProtocolExtensionContainer { { WLANMeasurementQuantitiesValue-ExtIEs} } OPTIONAL,

 ...

}

WLANMeasurementQuantitiesValue-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

WLANMeasurementQuantitiesValue ::= ENUMERATED {

 wlan,

 ...

}

WLANMeasurementResult ::= SEQUENCE (SIZE (1..maxNoMeas)) OF WLANMeasurementResult-Item

WLANMeasurementResult-Item ::= SEQUENCE {

 wLAN-RSSI WLAN-RSSI,

 sSID SSID OPTIONAL,

 bSSID BSSID OPTIONAL,

 hESSID HESSID OPTIONAL,

 operatingClass WLANOperatingClass OPTIONAL,

 countryCode WLANCountryCode OPTIONAL,

 wLANChannelList WLANChannelList OPTIONAL,

 wLANBand WLANBand OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { WLANMeasurementResult-Item-ExtIEs } } OPTIONAL,

 ...

}

WLANMeasurementResult-Item-ExtIEs NRPPA-PROTOCOL-EXTENSION ::= {

 ...

}

WLAN-RSSI ::= INTEGER (0..141, ...)

WLANBand ::= ENUMERATED {band2dot4, band5, ...}

WLANChannelList ::= SEQUENCE (SIZE (1..maxWLANchannels)) OF WLANChannel

WLANChannel ::= INTEGER (0..255)

WLANCountryCode ::= ENUMERATED {

 unitedStates,

 europe,

 japan,

 global,

 ...

}

WLANOperatingClass ::= INTEGER (0..255)

-- X

-- Y

-- Z

END

-- ASN1STOP

### 9.3.6 Common definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Common definitions

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

NRPPA-CommonDataTypes {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

ngran-access (22) modules (3) nrppa (4) version1 (1) nrppa-CommonDataTypes (3)}

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Extension constants

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

maxPrivateIEs INTEGER ::= 65535

maxProtocolExtensions INTEGER ::= 65535

maxProtocolIEs INTEGER ::= 65535

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Common Data Types

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Criticality ::= ENUMERATED { reject, ignore, notify }

NRPPATransactionID ::= INTEGER (0..32767)

Presence ::= ENUMERATED { optional, conditional, mandatory }

PrivateIE-ID ::= CHOICE {

 local INTEGER (0.. maxPrivateIEs),

 global OBJECT IDENTIFIER

}

ProcedureCode ::= INTEGER (0..255)

ProtocolIE-ID ::= INTEGER (0..maxProtocolIEs)

TriggeringMessage ::= ENUMERATED { initiating-message, successful-outcome, unsuccessful-outcome}

END

-- ASN1STOP

### 9.3.7 Constant definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Constant definitions

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

NRPPA-Constants {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

ngran-access (22) modules (3) nrppa (4) version1 (1) nrppa-Constants (4) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

 ProcedureCode,

 ProtocolIE-ID

FROM NRPPA-CommonDataTypes;

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Elementary Procedures

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

id-errorIndication ProcedureCode ::= 0

id-privateMessage ProcedureCode ::= 1

id-e-CIDMeasurementInitiation ProcedureCode ::= 2

id-e-CIDMeasurementFailureIndication ProcedureCode ::= 3

id-e-CIDMeasurementReport ProcedureCode ::= 4

id-e-CIDMeasurementTermination ProcedureCode ::= 5

id-oTDOAInformationExchange ProcedureCode ::= 6

id-assistanceInformationControl ProcedureCode ::= 7

id-assistanceInformationFeedback ProcedureCode ::= 8

id-positioningInformationExchange ProcedureCode ::= 9

id-positioningInformationUpdate ProcedureCode ::= 10

id-Measurement ProcedureCode ::= 11

id-MeasurementReport ProcedureCode ::= 12

id-MeasurementUpdate ProcedureCode ::= 13

id-MeasurementAbort ProcedureCode ::= 14

id-MeasurementFailureIndication ProcedureCode ::= 15

id-tRPInformationExchange ProcedureCode ::= 16

id-positioningActivation ProcedureCode ::= 17

id-positioningDeactivation ProcedureCode ::= 18

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Lists

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

maxNrOfErrors INTEGER ::= 256

maxCellinRANnode INTEGER ::= 3840

maxIndexesReport INTEGER ::= 64

maxNoMeas INTEGER ::= 64

maxCellReport INTEGER ::= 9

maxCellReportNR INTEGER ::= 9

maxnoOTDOAtypes INTEGER ::= 63

maxServCell INTEGER ::= 5

maxEUTRAMeas INTEGER ::= 8

maxGERANMeas INTEGER ::= 8

maxNRMeas INTEGER ::= 8

maxUTRANMeas INTEGER ::= 8

maxWLANchannels INTEGER ::= 16

maxnoFreqHoppingBandsMinusOne INTEGER ::= 7

maxNoPath INTEGER ::= 2

maxNrOfPosSImessage INTEGER ::= 32

maxnoAssistInfoFailureListItems INTEGER ::= 32

maxNrOfSegments INTEGER ::= 64

maxNrOfPosSIBs INTEGER ::= 32

maxNoOfMeasTRPs INTEGER ::= 64

maxnoTRPs INTEGER ::= 65535

maxnoTRPInfoTypes INTEGER ::= 64

maxnoofAngleInfo INTEGER ::= 65535

maxnolcs-gcs-translation INTEGER ::= 3

maxnoBcastCell INTEGER ::= 16384

maxnoSRSTriggerStates INTEGER ::= 3

maxnoSpatialRelations INTEGER ::= 64

maxnoPosMeas INTEGER ::= 16384

maxnoSRS-Carriers INTEGER ::= 32

maxnoSCSs INTEGER ::= 5

maxnoSRS-Resources INTEGER ::= 64

maxnoSRS-PosResources INTEGER ::= 64

maxnoSRS-ResourceSets INTEGER ::= 16

maxnoSRS-ResourcePerSet INTEGER ::= 16

maxnoSRS-PosResourceSets INTEGER ::= 16

maxnoSRS-PosResourcePerSet INTEGER ::= 16

maxPRS-ResourceSets INTEGER ::= 2

maxPRS-ResourcesPerSet INTEGER ::= 64

maxNoSSBs INTEGER ::= 255

maxnoofPRSresourceSet INTEGER ::= 8

maxnoofPRSresource INTEGER ::= 64

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- IEs

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

id-Cause ProtocolIE-ID ::= 0

id-CriticalityDiagnostics ProtocolIE-ID ::= 1

id-LMF-UE-Measurement-ID ProtocolIE-ID ::= 2

id-ReportCharacteristics ProtocolIE-ID ::= 3

id-MeasurementPeriodicity ProtocolIE-ID ::= 4

id-MeasurementQuantities ProtocolIE-ID ::= 5

id-RAN-UE-Measurement-ID ProtocolIE-ID ::= 6

id-E-CID-MeasurementResult ProtocolIE-ID ::= 7

id-OTDOACells ProtocolIE-ID ::= 8

id-OTDOA-Information-Type-Group ProtocolIE-ID ::= 9

id-OTDOA-Information-Type-Item ProtocolIE-ID ::= 10

id-MeasurementQuantities-Item ProtocolIE-ID ::= 11

id-RequestedSRSTransmissionCharacteristics ProtocolIE-ID ::= 12

id-Cell-Portion-ID ProtocolIE-ID ::= 14

id-OtherRATMeasurementQuantities ProtocolIE-ID ::= 15

id-OtherRATMeasurementQuantities-Item ProtocolIE-ID ::= 16

id-OtherRATMeasurementResult ProtocolIE-ID ::= 17

id-WLANMeasurementQuantities ProtocolIE-ID ::= 19

id-WLANMeasurementQuantities-Item ProtocolIE-ID ::= 20

id-WLANMeasurementResult ProtocolIE-ID ::= 21

id-TDD-Config-EUTRA-Item ProtocolIE-ID ::= 22

id-Assistance-Information ProtocolIE-ID ::= 23

id-Broadcast ProtocolIE-ID ::= 24

id-AssistanceInformationFailureList ProtocolIE-ID ::= 25

id-SRSConfiguration ProtocolIE-ID ::= 26

id-MeasurementResult ProtocolIE-ID ::= 27

id-TRP-ID ProtocolIE-ID ::= 28

id-TRPInformationTypeListTRPReq ProtocolIE-ID ::= 29

id-TRPInformationListTRPResp ProtocolIE-ID ::= 30

id-MeasurementBeamInfoRequest ProtocolIE-ID ::= 31

id-ResultSS-RSRP ProtocolIE-ID ::= 32

id-ResultSS-RSRQ ProtocolIE-ID ::= 33

id-ResultCSI-RSRP ProtocolIE-ID ::= 34

id-ResultCSI-RSRQ ProtocolIE-ID ::= 35

id-AngleOfArrivalNR ProtocolIE-ID ::= 36

id-GeographicalCoordinates ProtocolIE-ID ::= 37

id-PositioningBroadcastCells ProtocolIE-ID ::= 38

id-LMF-Measurement-ID ProtocolIE-ID ::= 39

id-RAN-Measurement-ID ProtocolIE-ID ::= 40

id-TRP-MeasurementRequestList ProtocolIE-ID ::= 41

id-TRP-MeasurementResponseList ProtocolIE-ID ::= 42

id-TRP-MeasurementReportList ProtocolIE-ID ::= 43

id-SRSType ProtocolIE-ID ::= 44

id-ActivationTime ProtocolIE-ID ::= 45

id-SRSResourceSetID ProtocolIE-ID ::= 46

id-TRPList ProtocolIE-ID ::= 47

id-SRSSpatialRelation ProtocolIE-ID ::= 48

id-SystemFrameNumber ProtocolIE-ID ::= 49

id-SlotNumber ProtocolIE-ID ::= 50

id-SRSResourceTrigger ProtocolIE-ID ::= 51

id-TRPMeasurementQuantities ProtocolIE-ID ::= 52

id-AbortTransmission ProtocolIE-ID ::= 53

id-SFNInitialisationTime ProtocolIE-ID ::= 54

id-ResultNR ProtocolIE-ID ::= 55

id-ResultEUTRA ProtocolIE-ID ::= 56

id-TRPInformationTypeItem ProtocolIE-ID ::= 57

END

-- ASN1STOP

### 9.3.8 Container definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Container definitions

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

NRPPA-Containers {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

ngran-access (22) modules (3) nrppa (4) version1 (1) nrppa-Containers (5)}

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- IE parameter types from other modules.

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

IMPORTS

 maxPrivateIEs,

 maxProtocolExtensions,

 maxProtocolIEs,

 Criticality,

 Presence,

 PrivateIE-ID,

 ProtocolIE-ID

FROM NRPPA-CommonDataTypes;

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Class Definition for Protocol IEs

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

NRPPA-PROTOCOL-IES ::= CLASS {

 &id ProtocolIE-ID UNIQUE,

 &criticality Criticality,

 &Value,

 &presence Presence

}

WITH SYNTAX {

 ID &id

 CRITICALITY &criticality

 TYPE &Value

 PRESENCE &presence

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Class Definition for Protocol Extensions

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

NRPPA-PROTOCOL-EXTENSION ::= CLASS {

 &id ProtocolIE-ID UNIQUE,

 &criticality Criticality,

 &Extension,

 &presence Presence

}

WITH SYNTAX {

 ID &id

 CRITICALITY &criticality

 EXTENSION &Extension

 PRESENCE &presence

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Class Definition for Private IEs

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

NRPPA-PRIVATE-IES ::= CLASS {

 &id PrivateIE-ID,

 &criticality Criticality,

 &Value,

 &presence Presence

}

WITH SYNTAX {

 ID &id

 CRITICALITY &criticality

 TYPE &Value

 PRESENCE &presence

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Container for Protocol IEs

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ProtocolIE-Container { NRPPA-PROTOCOL-IES : IEsSetParam} ::=

 SEQUENCE (SIZE (0..maxProtocolIEs)) OF

 ProtocolIE-Field {{IEsSetParam}}

ProtocolIE-Single-Container { NRPPA-PROTOCOL-IES : IEsSetParam} ::=

 ProtocolIE-Field {{IEsSetParam}}

ProtocolIE-Field { NRPPA-PROTOCOL-IES : IEsSetParam} ::= SEQUENCE {

 id NRPPA-PROTOCOL-IES.&id ({IEsSetParam}),

 criticality NRPPA-PROTOCOL-IES.&criticality ({IEsSetParam}{@id}),

 value NRPPA-PROTOCOL-IES.&Value ({IEsSetParam}{@id})

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Container Lists for Protocol IE Containers

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ProtocolIE-ContainerList {INTEGER : lowerBound, INTEGER : upperBound, NRPPA-PROTOCOL-IES : IEsSetParam} ::=

 SEQUENCE (SIZE (lowerBound..upperBound)) OF

 ProtocolIE-Container {{IEsSetParam}}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Container for Protocol Extensions

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ProtocolExtensionContainer { NRPPA-PROTOCOL-EXTENSION : ExtensionSetParam} ::=

 SEQUENCE (SIZE (1..maxProtocolExtensions)) OF

 ProtocolExtensionField {{ExtensionSetParam}}

ProtocolExtensionField { NRPPA-PROTOCOL-EXTENSION : ExtensionSetParam} ::= SEQUENCE {

 id NRPPA-PROTOCOL-EXTENSION.&id ({ExtensionSetParam}),

 criticality NRPPA-PROTOCOL-EXTENSION.&criticality ({ExtensionSetParam}{@id}),

 extensionValue NRPPA-PROTOCOL-EXTENSION.&Extension ({ExtensionSetParam}{@id})

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Container for Private IEs

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PrivateIE-Container { NRPPA-PRIVATE-IES : IEsSetParam} ::=

 SEQUENCE (SIZE (1..maxPrivateIEs)) OF

 PrivateIE-Field {{IEsSetParam}}

PrivateIE-Field { NRPPA-PRIVATE-IES : IEsSetParam} ::= SEQUENCE {

 id NRPPA-PRIVATE-IES.&id ({IEsSetParam}),

 criticality NRPPA-PRIVATE-IES.&criticality ({IEsSetParam}{@id}),

 value NRPPA-PRIVATE-IES.&Value ({IEsSetParam}{@id})

}

END

-- ASN1STOP