**3GPP TSG- Meeting #**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:***  |  |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** |  |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | There are many types that are re-used by multiple xIRI records. When these types are used by xIRI records generated by the POIs present in more than one NF, there is not a good place in the document to describe these fields. This CR proposes the addition of a clause for common parameters. |
|  |  |
| ***Summary of change:*** | Adds new clause for common parameter definitions. |
|  |  |
| ***Consequences if not approved:*** | There will continue to be types used in the ASN.1 that do not have descriptions in the main document. |
|  |  |
| ***Clauses affected:*** | 2, 7.3.3.2.1, 7.3.3.2.23, New 8 |
|  |  |
|  | **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:*** | The ExternalASNType used in tables within this CR is added by TS 33.128 CR 0591 (S3i230566).New parameters were added to the SUCI in CR 0595. This CR contains tables 8.2 and 8.3.5 which describe these parameters. |
|  |  |
| ***This CR's revision history:*** | s3i230518 |

## \*\*\*\* START OF FIRST CHANGE (MAIN DOCUMENT) \*\*\*\*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.501: "System Architecture for the 5G System".

[3] 3GPP TS 33.126: "Lawful Interception Requirements".

[4] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".

[5] 3GPP TS 33.127: "Lawful Interception (LI) Architecture and Functions".

[6] ETSI TS 103 120: "Lawful Interception (LI); Interface for warrant information".

[7] ETSI TS 103 221-1: "Lawful Interception (LI); Internal Network Interfaces; Part 1: X1".

[8] ETSI TS 103 221-2: "Lawful Interception (LI); Internal Network Interfaces; Part 2: X2/X3".

 [9] ETSI TS 102 232-1: "Lawful Interception (LI); Handover Interface and Service-Specific Details (SSD) for IP delivery; Part 1: Handover specification for IP delivery".

[10] ETSI TS 102 232-7: "Lawful Interception (LI); Handover Interface and Service-Specific Details (SSD) for IP delivery; Part 7: Service-specific details for Mobile Services".

[11] 3GPP TS 33.501: "Security Architecture and Procedures for the 5G System".

[12] 3GPP TS 33.108: "3G security; Handover interface for Lawful Interception (LI)".

[13] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS)".

[14] 3GPP TS 24.007: "Mobile radio interface signalling layer 3; General Aspects".

[15] 3GPP TS 29.244: "Interface between the Control Plane and the User Plane nodes".

[16] 3GPP TS 29.502: "5G System; Session Management Services; Stage 3".

[17] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces; Stage 3".

[18] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS)".

[19] 3GPP TS 23.003: "Numbering, addressing and identification ".

[20] OMA-TS-MLP-V3\_5-20181211-C: "Open Mobile Alliance; Mobile Location Protocol, Candidate Version 3.5", <https://www.openmobilealliance.org/release/MLS/V1_4-20181211-C/OMA-TS-MLP-V3_5-20181211-C.pdf>.

[21] 3GPP TS 29.540: "5G System; SMS Services; Stage 3".

[22] 3GPP TS 29.518: "5G System; Access and Mobility Management Services; Stage 3".

[23] 3GPP TS 38.413: "NG Application Protocol (NGAP)".

[24] 3GPP TS 29.572: "Location Management Services; Stage 3".

[25] 3GPP TS 29.503: "5G System; Unified Data Management Services".

[26] IETF RFC 815: "IP datagram reassembly algorithms".

[27] IETF RFC 2460: "Internet Protocol, Version 6 (IPv6) Specification".

[28] IETF RFC 793: "Transmission Control Protocol".

[29] IETF RFC 768: "User Datagram Protocol".

[30] IETF RFC 4340: "Datagram Congestion Control Protocol (DCCP)".

[31] IETF RFC 4960: "Stream Control Transmission Protocol".

[32] IANA (www.iana.org): Assigned Internet Protocol Numbers, "Protocol Numbers".

[33] IETF RFC 6437: "IPv6 Flow Label Specification".

[34] IETF RFC 791: "Internet Protocol".

[35] Open Geospatial Consortium OGC 05-010: "URNs of definitions in ogc namespace".

[36] 3GPP TS 33.107: "3G security; Lawful interception architecture and functions".

[37] 3GPP TS 37.340: "Evolved Universal Radio Access (E-UTRA) and NR-Multi-connectivity; Stage 2".

[38] 3GPP TS 36.413: "S1 Application Protocol (S1AP)".

[39] OMA-TS-MMS\_ENC-V1\_3-20110913-A: "Multimedia Messaging Service Encapsulation Protocol".

[40] 3GPP TS 23.140: "Multimedia Messaging Protocol. Functional Description. Stage 2".

[41] 3GPP TS 38.415: "NG-RAN; PDU Session User Plane Protocol".

[42] 3GPP TS 23.273: "5G System (5GS) Location Services (LCS); Stage 2".

[43] IETF RFC 4566: "SDP: Session Description Protocol".

[44] 3GPP TS 24.193: "Stage 3: Access Traffic Steering, Switching and Splitting (ATSSS)".

[45] 3GPP TS 29.509: "5G System; Authentication Server Services; Stage 3".

[46] 3GPP TS 24.011: "Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".

[47] 3GPP TS 29.002: "Mobile Application Part (MAP) specification".

[48] 3GPP TS 29.504: "5G System; Unified Data Repository Services; Stage 3".

[49] 3GPP TS 29.505: "5G System; Usage of the Unified Data Repository services for Subscription Data; Stage 3".

[50] 3GPP TS 23.401 "General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access".

[51] 3GPP TS 24.301 "Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS), Stage 3".

[52] 3GPP TS 23.271 "Functional stage 2 description of Location Services (LCS)".

[53] 3GPP TS 29.172 "Evolved Packet Core (EPC) LCS Protocol (ELP) between the Gateway Mobile Location Centre (GMLC) and the Mobile Management Entity (MME); SLg interface".

[54] 3GPP TS 29.171 "LCS Application Protocol (LCS-AP) between the Mobile Management Entity (MME) and Evolved Serving Mobile Location Centre (E-SMLC); SLs interface".

[55] 3GPP TS 24.379: "Mission Critical Push to Talk (MCPTT) call control; protocol specification".

[56] OMA-TS-PoC-System\_Description-V2\_1-20110802-A: "OMA PoC System Description".

[57] 3GPP TS 29.541: "5G System; Network Exposure (NE) function services for Non-IP Data Delivery (NIDD); Stage 3".

[58] 3GPP TS 29.522: "5G System; Network Exposure Function Northbound APIs; Stage 3".

[59] 3GPP TS 29.338: "Diameter based protocols to support Short Message Service (SMS) capable Mobile Management Entities (MMEs); Stage 3".

[60] 3GPP TS 29.337: "Diameter-based T4 interface for communications with packet data networks and applications".

[61] 3GPP TS 24.250: "Protocol for Reliable Data Service; Stage 3".

[62] 3GPP TS 29.128: "Mobility Management Entity (MME) and Serving GPRS Support Node (SGSN) interfaces for interworking with packet data networks and applications".

[63] 3GPP TS 29.122: "T8 reference point for Northbound APIs".

[64] 3GPP TS 29.598: "5G System; Unstructured Data Storage Services; Stage3".

[65] 3GPP TS 33.535: "Authentication and Key Management for Applications (AKMA) based on 3GPP credentials in the 5G System (5GS)".

[66] IETF RFC 5246: "The Transport Layer Security (TLS) Protocol Version 1.2".

[67] GSMA IR.88: "IR.88 LTE and EPC Roaming Guidelines".

[68] GSMA NG.114 "IMS Profile for Voice, Video and Messaging over 5GS".

[69] IETF RFC 8225: "PASSporT: Personal Assertion Token".

[70] IETF RFC 8224: "Authenticated Identity Management in the Session Initiation Protocol (SIP)".

[71] IETF RFC 8588: "Personal Assertion Token (PaSSporT) Extension for Signature-based Handling of Asserted information using toKENs (SHAKEN)".

[72] 3GPP TS 24.196: "Enhanced Calling Name (eCNAM)".

[73] IETF draft-ietf-stir-passport-rcd-17: "PASSporT Extension for Rich Call Data".

NOTE: The above document cannot be formally referenced until it is published as an RFC.

[74] 3GPP TS 24.229: "IP multimedia call control protocol based on Session Initiation Protocol (SIP)and Session Description Protocol (SDP); Stage 3".

[75] IANA Session Initiation Protocol (SIP) Parameters: <https://www.iana.org/assignments/sip-parameters/sip-parameters.xhtml>

[76] IETF RFC 8946: "Personal Assertion Token (PASSporT) Extension for Diverted Calls".

[77] 3GPP TS 23.204: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Support of Short Message Service (SMS) over generic 3GPP Internet Protocol (IP) access; Stage 2".

[78] GSMA RCC.07: "Rich Communication Suite – Advanced Communications Services and Client Specification".

[79] IETF RFC 4975: "The Message Session Relay Protocol (MSRP)".

[80] IETF RFC 3862: "Common Presence and Instant Messaging (CPIM): Message Format".

[81] IETF RFC 5438: "Instant Message Disposition Notification (IMDN)".

[82] OMA-TS-CPM\_System\_Description-V2\_2-20170926-C: "OMA Converged IP Messaging System Description".

[83] Void.

[84] 3GPP TS 36.455: "Evolved Universal Terrestrial Radio Access (E-UTRA); LTE Positioning Protocol A (LPPa) ".

[85] 3GPP TS 37.355: "LTE Positioning Protocol (LPP)".

[86] 3GPP TS 38.455: "NG-RAN; NR Positioning Protocol A (NRPPa)".

[87] 3GPP TS 29.274: "3GPP Evolved Packet System (EPS); Evolved General Packet Radio Service (GPRS) Tunnelling Protocol for Control plane (GTPv2-C); Stage 3".

[88] 3GPP TS 29.513: "5G System; Policy and Charging Control signalling flows and QoS parameter mapping".

[89] 3GPP TS 29.512: "5G System; Session Management Policy Control Service; Stage 3".

[90] 3GPP TS 29.508: "5G System; Session Management Event Exposure Service; Stage 3".

[91] 3GPP TS 29.514: "5G System; Policy Authorization Service; Stage 3".

[92] 3GPP TS 29.214: "Policy and Charging Control over Rx reference point".

[93] 3GPP TS 24.558: "Enabling Edge Applications; Protocol specification".

[94] 3GPP TS 29.558: "Enabling Edge Applications; Application Programming Interface (API) specification".

[95] 3GPP TS 24.008: "Mobile radio interface Layer 3 specification; Core network protocols; Stage 3".

[96] 3GPP TS 29.551: "5G System; Packet Flow Description Management Service; Stage 3".

[97] ETSI TS 103 280: "Lawful Interception (LI); Dictionary for common parameters".

[98] 3GPP TS 26.512: "5G Media Streaming (5GMS); Protocols".

[99] 3GPP TS 26.247: "Transparent end-to-end Packet-switched Streaming Service (PSS); Progressive Download and Dynamic Adaptive Streaming over HTTP (3GP-DASH)".

[100] 3GPP TS 29.563: "5G System; Home Subscriber Server (HSS) services for interworking with Unified Data Management (UDM); Stage 3".

[101] 3GPP TS 29.562: "5G System; Home Subscriber Server (HSS) Services; Stage 3".

[102] 3GPP TS 24.341 "Support of SMS over IP networks, Stage 3".

[103] 3GPP TS 38.473 "NG-RAN;F1 application protocol (F1AP)".

[104] 3GPP TS 23.032: "Universal Geographical Area Description (GAD)".

[105] ITU-T Recommendation Q.763 (1999): "Specifications of Signalling System No.7; Formats and codes".

[106] 3GPP TS 29.272: "Mobility Management Entity (MME) and Serving GPRS Support Node (SGSN) related interfaces based on Diameter protocol".

[107] IETF RFC 6442: "Location Conveyance for the Session Initiation Protocol".

[108] Void.

[109] OMA-TS-CPM\_Conv\_Function: "OMA CPM Conversation Functions".

[110] IETF RFC 2045: "Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies".

[111] 3GPP TS 32.299: " Telecommunication management; Charging management; Diameter charging applications".

[112] 3GPP TS 32.423: "Telecommunication management; Subscriber and equipment trace; Trace data definition and management".

[113] 3GPP TS 38.414: "NG-RAN; NG data transport".

[114] IETF RFC 2045: "Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies".

[115] IETF RFC 5322: "Internet Message Format".

[116] IETF RFC 4975: "The Message Session Relay Protocol (MSRP)".

[117] IETF RFC 6901: "JavaScript Object Notation (JSON) Pointer".

[118] IETF RFC 3261: "SIP: Session Initiation Protocol".

[119] W3C Recommendation: "XML Path Language (XPath)".

[120] IETF RFC 2046: "Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types".

[121] 3GPP TR 33.928: "ADMF Logic for Provisioning Lawful Interception (LI) ".

[122] 3GPP TS 23.316: "Wireless and wireline convergence access support for the 5G System".

[123] 3GPP TS 23.038: "Alphabets and language-specific information".

[Re1] IETF RFC 4282: "The Network Access Identifier".

[Re2] IETF RFC 7042: "IANA Considerations and IETF Protocol and Documentation Usage for IEEE 802 Parameters".

[Re3] IEEE "Guidelines for Use of Extended Unique Identifier (EUI), Organizationally Unique Identifier (OUI), and Company ID (CID)", <https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/tutorials/eui.pdf>

## \*\*\*\* START OF NEXT CHANGE (MAIN DOCUMENT) \*\*\*\*

##### 7.3.3.2.1 Simple data types for location

Table 7.3.3.2.1-1: Simple Types for Location

|  |  |  |
| --- | --- | --- |
| Type name | Type definition | Description |
| AgeOfLocation | INTEGER (0..32767) | Integer value of the age of the location information or location estimate, expressed in minutes. Value "0" indicates that the location information was obtained after a successful paging procedure for Active Location Retrieval when the UE is in idle mode or after a successful NG-RAN location reporting procedure with the gNB when the UE is in connected mode.Any other value than "0" indicates that the location information is the last known one.See TS 29.572 [24], table 6.1.6.3.2-1 and TS 29.571 [17], tables 5.4.4.8-1, 5.4.4.9-1, 5.4.4.52-1 and 5.4.4.53-1.  |
| Altitude | UTF8String | Contains a string representation of the altitude reported in meters. |
| Angle | INTEGER (0..360) | Integer value of the angle in degrees. |
| BarometricPressure | INTEGER (30000..115000) | This IE specifies the measured uncompensated atmospheric pressure in units of Pascal (Pa).Minimum: 30000. Maximum: 115000. Described in TS 29.572 [24] clause 6.1.6.3.2. |
| BSSID | UTF8String | The BSSID of the access point being reported. |
| CellID | OCTET STRING (SIZE (2)) | Cell Identity, defined in TS 23.003 [19] clause 4.3.1. |
| CellPortionID | INTEGER (0..4095) | This parameter gives the current Cell Portion location of the target UE. The Cell Portion ID is the unique identifier for a cell portion within a cell. Defined in TS 29.171 [54] clause 7.4.31. |
| CivicAddressBytes | OCTET STRING | Contains the original binary data (i.e. the value of the YAML field after the base64 encoding is removed). See 29.571 [17] Tables 5.4.4.64-2 and 5.4.4.64-1 for additional details. |
| Confidence | INTEGER (0..100) | Indicates the confidence of the location in percentage. |
|  |  |  |
| EPSUserLocationInformation | OCTET STRING | An extendable IE derived from the User Location Information IE (ULI) defined in TS 29.274 [87] clause 8.5.6. |
| EUTRACellID | BIT STRING (SIZE(28)) | The E-UTRA Cell Identitiy being reported. The EUTRACellID is derived from the E-UTRA Cell Identity parameter of the E-UTRA CGI defined in TS 38.413 [23] clause 9.3.1.9. |
| GCI | UTF8String | Global Cable Identifier uniquely identifying the line connecting the 5G-BRG or FN-BRG to the 5GS. See TS 23.003 [19] clause 28.15.4. See TS 29.571 [17] table 5.4.2-1 for encoding. |
| GeodeticInformationOctet | OCTET STRING (SIZE (10)) | Contains the geodetic information of the user. Derived from the GeodeticInformation type defined in TS 29.002 [47] clause 17.7.1. |
| GeographicalInformationOctet | OCTET STRING (SIZE (8)) | Contains the geographical information of the user. Derived from the GeographicalInformation type defined in TS 29.002 [47] clause 17.7.1. |
| GERANGANSSPositioningData | OCTET STRING | Contains the encoded content of the "GERAN-GANSS-Positioning-Data" parameter defined in TS 29.172 [53], clause 7.4.31. |
| GERANPositioningData | OCTET STRING | Contains the encoded content of the "GERAN-Positioning-Data" parameter defined in TS 29.172 [53], clause 7.4.30. |
| GLI | OCTET STRING (SIZE(0..150)) | Global Line Identifier uniquely identifying the line connecting the 5G-BRG or FN-BRG to the 5GS. See TS 23.003 [19] clause 28.4.5.4. |
| GNbID | BIT STRING (SIZE(22..32)) | The gNodeB identifier being reported. The GNbID is derived from the gNB ID parameter of the Global gNB ID defined in TS 38.413 [23], clause 9.3.1.6. |
| HFCNodeID | UTF8String | Contains the identifier of the HFC node Id as described in TS 29.571 [17], clause 5.4.4.36 and table 5.4.2-1. It is provisioned by the wireline operator as part of wireline operations and may contain up to six characters. |
| HorizontalSpeed | UTF8String | Contains the string representation of the horizontal speed being reported, expressed in kilometres per hour. See TS 29.572 [24], table 6.1.6.3.2-1. |
| InnerRadius | INTEGER (0..327675) | Indicates the inner radius of an ellipsoid arc from 0 to 327675 meters. |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| MethodCode | INTEGER (16..31) | This parameter shall carry the decimal code value of the network specific positioning method as described in TS 29.572 [24] clause 6.1.6.2.15.  |
|  |  |  |
| N3IWFIDNGAP | BIT STRING (SIZE (16)) | The N3IWFIDNGAP type is used to report the N3IWF Identity received over NGAP. The N3IWFIDNGAP type is derived from the data present in the N3IWF ID parameter of the Global N3IWFID defined in TS 38.413 [23], clause 9.3.1.5.7. |
| N3IWFIDSBI | UTF8String | The N3IWFIDSBI type is used to report the N3IWF Identity received over SBI. The N3IWFIDSBI type is derived from the data present in the N3IWFID parameter of the GloalRanNodeID defined in TS 29.571[17], clause 5.4.4.28. |
|  |  |  |
| NRCellID | BIT STRING (SIZE(36)) | The New Radio Cell Identity being reported. The NRCellID is derived from the NR Cell Identity parameter of the NR CGI defined in TS 38.413 [23] clause 9.3.1.7 |
| OGCURN | UTF8String | Open Geospatial Consortium URN, reference datum used for a latitude and longitude. The reference datum identity shall be specified as an Open Geospatial Consortium URN, as defined in OGC 05-010 [35]. |
| Orientation | INTEGER (0..180) | Integer value of the orientation angle, expressed in degrees. Encoded as per TS 29.572 [24], table 6.1.6.3.2-1. |
|  |  |  |
|  |  |  |
| SIPAccessInfo | UTF8String | Contains the contents of the access-info parameter of the specified Header Field of the SIP Message. See TS 24.229 [74] clauses 7.2A.4.2 and 7.2A.4.3. |
| SIPCellularAccessInfo | UTF8String | Contains the contents of the cellular-access-info parameter of the specified Header Field of the SIP Message. See TS 24.229 [74] clause 7.2.15. |
| SpeedUncertainty | UTF8String | Contains the string representation of the speed uncertainty being reported, expressed in kilometres per hour. See TS 29.572 [24], table 6.1.6.3.2-1. |
| SSID | UTF8String | The SSID of the access point being reported. |
|  |  |  |
|  |  |  |
|  |  |  |
| TNGFID | UTF8String | This represents the identifier of the TNGF ID.The TNGFID is derived from the TngfId parameter in TS 29.571 [17] clause 5.4.4.28 and table 5.4.2-1 |
| Uncertainty | INTEGER (0..127) | This type has been deprecated and shall always be set to 0. |
| UncertaintySBI | UTF8String | Contains a string representation of the uncertainty reported in meters. See TS 29.572 [24], table 6.1.6.3.2-1. |
| UTRANAdditionalPositioningData | OCTET STRING | Contains the encoded content of the "UTRAN-Additional-Positioning-Data" parameter defined in TS 29.172 [53], clause 7.4.63. |
| UTRANGANSSPositioningData | OCTET STRING | Contains the encoded content of the "UTRAN-GANSS-Positioning-Data" parameter defined in TS 29.172 [53], clause 7.4.34. |
| UTRANPositioningData | OCTET STRING | Contains the encoded content of the "UTRAN-Positioning-Data" parameter defined in TS 29.172 [53], clause 7.4.33. |
| VerticalSpeed | UTF8String | Contains the string representation of the vertical speed being reported, expressed in kilometres per hour. See TS 29.572 [24], table 6.1.6.3.2-1. |
| WAGFID | UTF8String | This represents the identifier of the W-AGF ID.The WAGFID is derived from the WAgfId parameter in TS 29.571 [17] clause 5.4.4.28 and table 5.4.2-1. |

## \*\*\*\* START OF NEXT CHANGE (MAIN DOCUMENT) \*\*\*\*

##### 7.3.3.2.23 Type: TAI

The TAI type is used to report the Tracking Area Identity. The TAI type is derived from the data present in the EutraLocation type defined in TS 29.571 [17] clause 5.4.4.3.

Table 7.3.3.2.23-1 contains the details for the TAI type.

Table 7.3.3.2.23-1: Definition of type TAI

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| pLMNID | PLMNID | 1 | The PLMN Identity of the TAI. | M |
| tAC | TAC | 1 | The Tracking Area Code for the Tracking Area being reported. | M |
| nID | NID | 0..1 | Network Identifier of the Tracking Area being reported. Shall be be present if the TAI being reported belongs to an SNPN. | C |

## \*\*\*\* START OF NEXT CHANGE (MAIN DOCUMENT) \*\*\*\*

# 8 Common Parameter Definitions

## 8.1 General

The following sub-clauses contain definitions for Types defined in the attached ASN.1 documents that are used by multiple POIs and therefore cannot be placed in a single clause above.

Common parameters that are present within the Location structure are defined in clause 7.3.3.2.

## 8.2 Simple types

Table 8.2-1: Common Simple Types for LI reporting

|  |  |  |
| --- | --- | --- |
| Type name | Type definition | Description |
| CSGID | INTEGER | Closed Subscriber Group Identifier derived from CSG-ID defined in TS 29.272 [106] clause 7.3.79. |
| IPv4Address | OCTET STRING (SIZE (4)) | The IPv4 address being reported in binary representation. |
| IPv6Address | OCTET STRING (SIZE (16)) | The IPv6 address being reported in binary representation. |
| MCC | NumericString (SIZE (3)) | Mobile Country Code. |
| MNC | NumericString (SIZE (2..3)) | Mobile Network Code. |
| MUSIMUERequestType | OCTET STRING (SIZE(1)) | Indicates the reason the UE has requested the release of NAS Signalling or rejected paging. Encoded per UE Request Type omitting the first two octets. See TS 24.301 [51] clause 9.9.3.65. |
| NID | UTF8String (SIZE(11)) | This represents the Network Identifier, which together with a PLMN ID is used to identify an SNPN. See TS 23.003 [19] clause 12.7.1. Encoded as per TS 29.571 [17] clause 5.4.3. |
| PagingRestrictionIndicator | OCTET STRING (SIZE(1..33)) | Indicates the paging restriction requested by the UE or applied by the network for a UE. Derived from the Paging Restriction defined in TS 24.301 [51] clause 9.9.3.66 and TS 24.501 [13] clause 9.11.3.77.  |
| RAC | OCTET STRING (SIZE (2)) | Routing Area Code identifying a routing area within a location area. Defined in TS 23.003 [19] clause 4.2. |
| RATFrequencySelectionPriority | INTEGER (1..256) | Indicates the RAT/Frequency priority to define camp priorities in Idle mode and inter-RAT/inter-freqency priorities for handover in Active mode. See TS 38.413 [23] clause 9.3.1.61 and TS 36.413 [38] clause 9.2.1.39. |
| RATRestrictionInformation | BIT STRING (SIZE(8,…)) | Indicates a list of RATs that are restricted. When used in EPS records, this IE is encoded as specified in TS 36.413 [38] clause 9.2.1.22. When used in 5GS records, this IE is encoded as specified in TS 38.413 [23] clause 9.3.1.85. |
| SAC | OCTET STRING (SIZE (2)) | The Service Area Code (SAC) together with the PLMN-Id and the LAC constitute the Service Area Identifier. The SAC is defined by the operator and set in the RNC via O&M. Defined in TS 23.003 [19] clause 12.5. |
| TAC | OCTET STRING (SIZE(2..3)) | The tracking area code being reported. Given in the format specified in TS 38.413 [23] clause 9.3.3.10. |
| Timestamp | GeneralizedTime | Unless otherwised specified, the timestamp shall be given qualified with time zone information (i.e. as UTC or offset from UTC, not using the local time format). |
| TimeZone | UTF8String | String containing the contents defined in TS 29.571 [17], table 5.2.2-1. |

Table 8.2-2 contains the details for types that consist only of a SEQUENCE OF or SET OF.

Table 8.2-2: Details of SEQUENCE OF Types

|  |  |  |  |
| --- | --- | --- | --- |
| Type name | Definition | Cardinality | Description |
| TAIList | SEQUENCE OF TAI | 0..MAX | Contains a list of TAIs |
| PLMNList | SEQUENCE OF PLMNID | 1..MAX | Contains a list of PLMNs |
| ForbiddenTACs | SEQUENCE OF TAC | 1..MAX | Contains a list of TACs. |
| ForbiddenLACs | SEQUENCE OF LAC | 1..MAX | Contains a list of LACs |
| RATRestrictions | SEQUENCE OF RATRestrictionItem | 1..MAX | Contains a list of RAT Restrictions. |
| ConnectedENGNBList | SEQUENCE OF ConnectedENGNB | 1..MAX | Contains a list of connected en-gNBs. |
| PLMNSupportList | SEQUENCE OF PLMNSupportItem | 1..MAX | Contains a list of supported PLMNs. Derived from the PLMN Support List IE defined in TS 38.413 [23] clause 9.2.6.2. Also can be used to report the Served PLMNs portion of the Served GUMMEIs IE of the S1 SETUP Response defined in TS 36.413 [38] clause 9.1.8.5. |

Table 8.2-3 contains the details for Types that use the ExternalASNType.

Table 8.2-3: Details for ExtenalASNTypes

|  |  |  |  |
| --- | --- | --- | --- |
| Type name | Definition | Cardinality | Description |
| TraceActivation | ExternalASNType | 1 | Information related to a trace session activation provided from the core to the RAN node.The *ExternalASNType.encodedASN* shall contain the contents of the Trace Activation IE as described in the tables for the records that use this parameter,The *ExternalASNType*.*moduleIdentifier* for this parameter shall be populated as described in the tables for the records that use this parameter.The *ExternalASNType*.*aSNReference* for this parameter shall be populated as described in the tables for the records that use this parameter. |

## 8.3 Identifier Types

### 8.3.1 General

The following subclauses contain definitions for the identifiers used in the attached ASN.1 documents.

### 8.3.2 User identifier lists

#### 8.3.2.1 Type: UserIdentifiers

As there are often multiple identifiers that may be known at an NF or by the MDF, a single type capable of reporting multiple User Identifiers was defined.

Table 8.3.2.1-1: Structure of the UserIdentifiers type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| fiveGSSubscriberIDs | FiveGSSubscriberIDs | 0..1 | Contains the list of 5GS identifiers for a user. Shall be present when any 5GS identifiers are known at the NF where the POI is locater or at the MDF. | C |
| ePSSubscriberIDs | EPSSubscriberIDs | 0..1 | Contains the list of EPS identifiers for a user. Shall be present when any EPS identifiers are known at the NF where the POI is locater or at the MDF. | C |

#### 8.3.2.3 Type: EPSSubscriberIDs

Table 8.3.2.3-1: Structure of the EPSSubscriberIDs type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| iMSI | IMSI | 0..1 | Shall be present when the IMSI is known. | C |
| mSISDN | MSISDN | 0..1 | Shall be present when the MSISDN is known. | C |
| iMEI | IMEI | 0..1 | Shall be present when the IMEI is known. | C |

#### 8.3.2.4 Type: FiveGSSubscriberID

Table 8.3.2.4-1: Definition of Choices for FiveGSSubscriberID

|  |  |  |
| --- | --- | --- |
| CHOICE | Type | Description |
| sUPI  | SUPI | Chosen when the identifier being reported is a SUPI. |
| sUCI | SUCI | Chosen when the identifier being reported is a SUCI. |
| pEI | PEI | Chosen when the identifier being reported is a PEI. |
| gPSI | GPSI | Chosen when the identifier being reported is a GPSI. |

#### 8.3.2.5 Sequence Of user identifier types

Table 8.3.2.5-1 contains the details for types that consist only of a SEQUENCE OF or SET OF.

Table 8.3.2.5-1: Details of SEQUENCE OF Types

|  |  |  |  |
| --- | --- | --- | --- |
| Type name | Definition | Cardinality | Description |
| FiveGSSubscriberIDs | SEQUENCE OF FiveGSSubscriberID | 1..MAX | Contains the list of 5GS identifiers for a user. Shall be present when any 5GS identifiers are known at the NF where the POI is locater or at the MDF. |
| EPSSubscriberIDs | SEQUENCE OF EPSSubscriberID | 1..MAX | Contains the list of EPS identifiers for a user. Shall be present when any EPS identifiers are known at the NF where the POI is locater or at the MDF. |

### 8.3.3 Simple Types

Table 8.3-1: Common Simple Types for Identifiers

|  |  |  |
| --- | --- | --- |
| Type name | Type definition | Description |
| AMFPointer | INTEGER (0..63) | Derived from the AMF Pointer defined in TS 23.003 [19] clause 2.10.1. |
| AMFRegionID | INTEGER (0..255) | Derived from the AMF Region ID defined in TS 23.003 [19] clause 2.10.1. |
| AMFSetID | INTEGER (0..1023) | Derived from the AMF Set ID defined in TS 23.003 [19] clause 2.10.1. |
| EUI64 | OCTET STRING (SIZE(8)) | Derived from an IEEE Extended Unique Identifier (EUI-64), for UEs not supporting any 3GPP access technologies, as defined in IEEE "Guidelines for Use of Extended Unique Identifier (EUI), Organizationally Unique Identifier (OUI), and Company ID (CID)" [Re3]. |
| FiveGTMSI | INTEGER (0..4294967295) | Derived from the TMSI defined in TS 23.003 [19] clause 2.10.1. |
| HomeNetworkIdentifier | UTF8String | Indicates the home network of the subscriber. Shall be populated as described in TS 23.003 [19] clause 2.2B. |
| HomeNetworkPublicKeyID | OCTET STRING | Identifies the public key used when generating the SUCI. See TS 23.003 [19] clause 2.2B. |
| IMEI | NumericString(Size(14)) | Derived from the International Mobile Equipment Identity defined in TS 23.003 [19] clause 6.2.1. |
| IMEISV | NumericString (SIZE(16)) | Derived from the International Mobile Equipment Identity and Software Version defined in TS 23.003 [19] clause 6.2.2. |
| IMSI | NumericString (SIZE(6..15)) | Derived from the International Mobile Subscription Identity defined in TS 23.003 [19] clause 2.1 and clause 2.2. |
| MACAddress | OCTET STRING (SIZE(6)) | Derived from a MAC address defined in IETF RFC 7042 [Re2]. |
| MMECode | OCTET STRING (SIZE(1)) | Derived from the MME Code defined in TS 23.003 [19] clause 2.8.1. |
| MMEGroupID | OCTET STRING (SIZE(2)) | Derived from the MME Group ID defined in TS 23.003 [19] clause 2.8.1. |
| MSISDN | NumericString (SIZE(1..15)) | Derived from the MSISDN defined in TS 23.003 [19] clause 3.3. |
| NAI | UTF8String | A network access identifiers as described in IETF RFC 4282 [Re1]. |
| ProtectionSchemeID | INTEGER (0..15) | Identifies the Protection Scheme used to generate the SUCI. See TS 23.003 [19] clause 2.2B. |
| RoutingIndicator | INTEGER (0..9999) | The routing indicator for the SUCI. Used with the Home Network Identifier to route network signalling to the correct UDM/AUSF instances. See TS 23.003 [19] clause 2.2B. |
| SchemeOutput | OCTET STRING | Contains the characters resulting as the output of the permanent identifier with the protection scheme applied. See TS 23.003 [19] clause 2.2B. |
| SUPIType | INTEGER (1..7) | Indicates the type of SUPI concealed by a SUCI. Shall be populated as described in TS 23.003 [19] clause 2.2B. |
| TMSI | OCTET STRING (SIZE(4)) | Derived from the TMSI defined in TS 23.003 [19] clause 2.4. |

### 8.3.4 Type: SUPI

The SUPI type is derived from the data present in the Subscription Permanent Identifier type defined in TS 23.003 [19] clause 2.2A.

Table 8.3.4-1 contains the details for the SUPI type.

Table 8.3.4-1: Definition of Choices for SUPI

|  |  |  |
| --- | --- | --- |
| CHOICE | Type | Description |
| iMSI | IMSI | Chosen when the SUPI contains an IMSI. |
| nAI | NAI | Chosen when the SUPI contains an NAI. |

### 8.3.5 Type: SUCI

The SUCI type is derived from the data present in the Subscription Concealed Identifier type defined in TS 23.003 [19] clause 2.2B.

Table 8.3.5-1 contains the details for the SUCI type.

Table 8.3.5-1: Definition of SUCI type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| mCC | MCC | 1 | The mobile country code identifying the country of the home network for the subscriber. If the SUPI Type is not 0, the MCC shall be populated with '000' and ignored. | M |
| mNC | MNC | 1 | The mobile network code identifying the PLMN of the home network of the subscriber. If the SUPI Type is not 0, the MNC shall be populated with '000' and ignored. | M |
| routingIndicator | RoutingIndicator | 1 | The routing indicator for the SUCI. | M |
| protectionSchemeID | ProtectionSchemeID | 1 | The protection scheme ID used to generate the SUCI. | M |
| homeNetworkPublicID | HomeNetworkPublicID | 1 | Identifies the key used for SUPI protection. | M |
| schemeOutput | SchemeOutput | 1 | Contains the characters resulting as the output of the permanent identifier with the protection scheme applied. | M |
| routingIndicatorLength | INTEGER (1..4) | 0..1 | Shall be included if the length of the routing indicator is different from the number of meaningful digits given in the routingIndicator field. | C |
| sUPIType | SUPIType | 0..1 | Indicates the type of SUPI concealed in the SUCI. See TS 23.003 [19] clause 2.2B. Shall be present if present in the SUCI being reported. If this parameter is not present, the SUPI Type may be assumed to be IMSI. | C |
| homeNetworkIdentifier | HomeNetworkIdentifier | 0..1 | Identifies the home network of the subscriber. See TS 23.003 [19] clause 2.2B. Shall be present unless the SUPI Type is 0 and the MCC and MNC fields are populated. | C |

### 8.3.6 Type: PEI

The PEI type is derived from the data present in the Permanent Equipment Identifier type defined in TS 23.003 [19] clause 6.4.

Table 8.3.6-1 contains the details for the PEI type.

Table 8.3.6-1: Definition of Choices for PEI

|  |  |  |
| --- | --- | --- |
| CHOICE | Type | Description |
| iMEI | IMEI | Chosen when the PEI contains an IMEI. |
| iMEISV | IMEISV | Chosen when the PEI contains an IMEISV. |
| mACAddress | MACAddress | Chosen when the PEI contains a MAC Address. |
| eUI64 | EUI64 | Chosen when the PIE contains an EUI64. |

### 8.3.7 Type: GPSI

The GPSI type is derived from the data present in the Generic Public Subscription Identifier type defined in TS 23.003 [19] clause 28.8.

Table 8.3.7-1 contains the details for the GPSI type.

Table 8.3.7-1: Definition of Choices for GPSI

|  |  |  |
| --- | --- | --- |
| CHOICE | Type | Description |
| mSISDN | MSISDN | Chosen when the GPSI type is MSISDN. |
| nAI | NAI | Chosen when the GPSI type is External Identifier. |

### 8.3.8 Type: GUTI

The GUTI type is derived from the data present in the Globally Unique Temporary User Identity type defined in TS 23.003 [19] clause 2.8.

Table 8.3.8-1 contains the details for the GUTI type.

Table 8.3.8-1: Definition of GUTI type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| mCC | MNC | 1 | The mobile country code identifying the country of the home network for the subscriber. | M |
| mNC | MNC | 1 | The mobile network code identifying the PLMN of the home network of the subscriber. | M |
| mMEGroupID | MMEGroupID | 1 | The identifier for the MME Group. | M |
| mMECode | MMECode | 1 | Identifies the MME that issued the GUTI. | M |
| mTMSI | TMSI | 1 | The temporary Identifier for the UE to uniquely identify it within the MME. | M |

### 8.3.9 Type: FiveGGUTI

The FiveGGUTI type is derived from the data present in the 5G Globally Unique Temporary User Identity type defined in TS 23.003 [19] clause 2.10.

Table 8.3.9-1 contains the details for the FiveGGUTI type.

Table 8.3.9-1: Definition of FiveGGUTI type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| mCC | MNC | 1 | The mobile country code identifying the country of the home network for the subscriber. | M |
| mNC | MNC | 1 | The mobile network code identifying the PLMN of the home network of the subscriber. | M |
| aMFRegionID | AMFRegionID | 1 | The identifier for the AMF Region. | M |
| aMFSetID | AMFSetID | 1 | Identifies the AMF Set the AMF belongs to. | M |
| aMFPointer | AMFPointer | 1 | Identifies the AMF. | M |
| fiveGTMSI | FiveGTMSI | 1 | The temporary Identifier for the UE to uniquely identify it within the AMF. | M |

### 8.3.10 Type: EPS5GGUTI

The EPS5GGUTI type is used when a parameter may be either a GUTI or a 5G-GUTI.

Table 8.3.10-1 contains the details for the EPS5GGUTI type.

Table 8.3.10-1: Definition of Choices for EPS5GGUTI

|  |  |  |
| --- | --- | --- |
| CHOICE | Type | Description |
| gUTI | GUTI | Chosen when the field contains a GUTI. |
| fiveGGUTI | FiveGGUTI | Chosen when the field contains a 5G-GUTI. |

### 8.3.11 Type: NonIMEISVPEI

The NonIMEISVPEI type is used when IMEI or IMEISV based PEI is not available.

Table 8.3.11-1 contains the details for the NonIMEISVPEI type.

Table 8.3.11-1: Definition of Choices for NonIMEISVPEI

|  |  |  |
| --- | --- | --- |
| CHOICE | Type | Description |
| mACAddress | MACAddress | Chosen when the field contains a GUTI. |
| eUI64 | FiveGGUTI | Chosen when the field contains a 5G-GUTI. |

## 8.4 Complex types

### 8.4.1 Type: HandoverCause

The HandoverCause type is derived from the Cause type defined in TS 38.413 [23] clause 9.3.1.2.

Table 8.4.1-1 contains the details for the HandoverCause type.

Table 8.3.4-1: Choices for HandoverCause type

|  |  |  |
| --- | --- | --- |
| CHOICE | Type | Description |
| radioNetwork  | CauseRadioNetwork | Chosen when the cause indicated is one of the Radio Network Layer Causes. |
| transport | CauseTransport | Chosen when the cause indicated is one of the Transport Layer Causes. |
| nas | CauseNas | Chosen when the cause indicated is one of the NAS Causes. |
| protocol | CauseProtocol | Chosen when the cause indicated is one of the Protocol Causes. |
| misc | CauseMisc | Chosen when the cause indicated is one of the Miscellaneous Causes. |

### 8.4.2 Type: EMM5GMMStatus

Indicates the registration status of the UE in both EPS and 5GS as known at the NF where the POI is located. This type is derived from the UE status IE defined in TS 24.501 [13] clause 9.11.3.56.

Table 8.4.2-1: Definition of type EMM5GMMStatus

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| eMMRegStatus | EMMREGStatus | 0..1 | Indicates the EPS registration status of the UE as known at the NF where the POI is located. Shall be present if the EPS registration status is known. | C |
| fiveGMMStatus | FiveGMMStatus | 0..1 | Indicates the 5GS registration status of the UE as known at the NF where the POI is located. Shall be present if the 5GS registration status is known. | C |

### 8.4.3 Type: ForbiddenAreaInformation

Contains a list of TACs that are forbidden.

Table 8.4.3-1: Structure of the ForbiddenAreaInformation type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| pLMNIdentity | PLMNID | 1 | Contains the PLMN for which the forbidden area information applies. | M |
| forbiddenTACs | ForbiddenTACs | 1 | Contains the list of forbidden TACs. | M |

### 8.4.4 Type: ForbiddenLAInformation

Contains a list of LACs that are forbidden.

Table 8.4.4-1: Structure of the ForbiddenAreaInformation type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| pLMNIdentity | PLMNID | 1 | Contains the PLMN for which the forbidden area information applies. | M |
| forbiddenLACs | ForbiddenLACs | 1 | Contains the list of forbidden LACs. | M |

### 8.4.5 Type: RATRestrictionItem

Contains a list of RAT Restrictions.

Table 8.4.5-1: Structure of the RATRestrictionItem type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| pLMNIdentity | PLMNID | 1 | Contains the PLMN for which the RAT restriction applies. | M |
| rATRestrictionInformation | RATRestrictionInformation | 1 | Contains RAT Restriction. | M |

### 8.4.6 Type: LTEV2XServiceAuthorization

Table 8.4.6-1 contains the details for the LTEV2XServiceAuthorization type.

Table 8.4.6-1: Structure of the LTEV2XServiceAuthorization type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| v2XVehicleUEAuthorizationIndicator | V2XUEAuthorizationIndicator | 0..1 | Indicates the UE is authorised to act as a V2X vehicle UE. | C |
| v2XPedestrianUEAuthorizationIndicator | V2XUEAuthorizationIndicator | 0..1 | Indicates the UE is authorised to act as a V2X pedestrian UE. | C |

### 8.4.7 Type: NRV2XServiceAuthorization

Table 8.4.7-1 contains the details for the NRV2XServiceAuthorization type.

Table 8.4.7-1: Structure of the NRV2XServiceAuthorization type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| v2XVehicleUEAuthorizationIndicator | V2XUEAuthorizationIndicator | 0..1 | Indicates the UE is authorised to act as a V2X vehicle UE. | C |
| v2XPedestrianUEAuthorizationIndicator | V2XUEAuthorizationIndicator | 0..1 | Indicates the UE is authorised to act as a V2X pedestrian UE. | C |

### 8.4.8 Type: RRCEstablishmentCause

The RRCEstablishmentCause type is derived from the RRC Establishment Cause type defined in TS 38.413 [23] clause 9.3.1.111. and the RRC Establishment Cause type defined in TS 36.413 [38] clause 9.2.1.3a.

Table 8.4.8-1 contains the details for the RRCEstablishmentCause type.

Table 8.4.8-1: Choices for RRCEstablishmentCause type

|  |  |  |
| --- | --- | --- |
| CHOICE | Type | Description |
| ePCEstablishmentCause | EstablishmentCause | Chosen when the UE is connecting to EPC. |
| fiveGCEstablishmentCause | EstablishmentCause | Chosen when the UE is connecting to 5GC. |

### 8.4.9 Type: ConnectedENGNB

Table 8.4.9-1 contains the details for the ConnectedENGNB type. Derived from the Connected en-gNB List type defined in TS 36.413 [38] clause 9.1.8.4.

Table 8.4.9-1: Structure of the ConnectedENGNB type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| eNGNBID | GNbID | 1 | The gNBID of the connected en-gNB. | M |
| supportedTAList | TACList | 1 | A list of TACs supported by the conneceted en-gNB. | M |
| boradcactPLMN | PLMNList | 1 | A list of the PLMNs broadcast by the connected en-gNB. | M |

### 8.4.10 Type: PLMNSupportItem

Contains a PLMN and possibly a NID along with an onboarding support indication.

Table 8.4.10-1: Structure of the PLMNSupportItem type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| pLMNIdentity | PLMNID | 1 | Contains the identity of the PLMN being described. | M |
| nPNSupport | NID | 0..1 | Contains the NID. Shall be present if the context being reported is for an NPN.  | C |
| onBoardingSupport | BOOLEAN | 0..1 | Indicates whether the PLMN supports onboarding. | C |

### 8.4.11 Type: TraceActivationInfo

Contains information related to a trace session activation. Derived from the information in the Trace Activation IE defined in TS 38.413 [23] clause 9.3.1.14 and TS 36.413 [38] clause 9.2.1.4.

Table 8.4.11-1: Structure of the TraceActivationInfo type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| traceID | OCTET STRING (SIZE(8)) | 1 | Contains the trace identity of the RAN Node. Encoded as the NG-RAN Trace ID described in TS 38.413 [23] clause 9.3.1.14 or the E-UTRAN Trace ID defined in TS 36.413 [38] clause 9.2.1.4. | M |
| interfacesToTrace | BIT STRING (SIZE(8)) | 1 | Indicates the RAN node interfaces to perform trace operations on. Encoded per the Interfaces to Trace IE defined in TS 38.413 [23] clause 9.3.1.14 and TS 36.413 [38] clause 9.2.1.4. | M |
| traceDepth | TraceDepth | 1 | Indicates the depth of the trace recording that should be performed. Derived from the enumerations for the Trace Depth IE defined in TS 38.413 [23] clause 9.3.1.14 and TS 36.413 [38] clause 9.2.1.4. | M |
| traceCollectionEntityIPAddress | IPAddress | 1 | Contains the IP Address of the Trace Collection Entity. Derived from the Trace Collection Entity IP Address IE defined in TS 38.413 [23] clause 9.3.1.14 and TS 36.413 [38] clause 9.2.1.4. If both an IPv4 and an IPv6 address are present, this IE shall be populated with the IPv4 address. This field shall be ignored if the Trace Collection Entity URI is present.  | M |
| mDTConfiguration | MDTConfiguration | 0..1 | Contains the MDT configuration information for the trace session being reported. Shall be present if present in the Trace Activation message. | C |
| additionalTraceCollectionEntityIP | IPAddress | 0..1 | Shall be populated with the IPv6 Address of the Trace Collection Entity if the Trace Collection Entity IP Address IE contains both an IPv6 address and an IPv4 address. Derived from the Trace Collection Entity IP Address IE defined in TS 38.413 [23] clause 9.3.1.14 and TS 36.413 [38] clause 9.2.1.4. This field shall be ignored if the Trace Collection Entity URI is present.  | C |
| traceCollectionEntityURI | UTF8String | 0..1 | Contains the URI for the trace collection entity. Shall be present if the Trace Collection Entity URI defined in TS 38.413 [23] clause 9.3.1.14 and TS 36.413 [38] clause 9.2.1.4 is present in the message being reported. | C |

### 8.4.12 Type: TraceCollectionEntityInfo

Contains information related to a trace session activation. Derived from the information in the Trace Activation IE defined in TS 38.413 [23] clause 9.3.1.14 and TS 36.413 [38] clause 9.2.1.4.

Table 8.4.12-1: Structure of the TraceActivationInfo type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| traceID | OCTET STRING (SIZE(8)) | 1 | Contains the trace identity of the RAN Node. Encoded as the NG-RAN Trace ID described in TS 38.413 [23] clause 9.3.1.14 or the E-UTRAN Trace ID defined in TS 36.413 [38] clause 9.2.1.4. | M |
| interfacesToTrace | BIT STRING (SIZE(8)) | 1 | Indicates the RAN node interfaces to perform trace operations on. Encoded per the Interfaces to Trace IE defined in TS 38.413 [23] clause 9.3.1.14 and TS 36.413 [38] clause 9.2.1.4. | M |
| traceDepth | TraceDepth | 1 | Indicates the depth of the trace recording that should be performed. Derived from the enumerations for the Trace Depth IE defined in TS 38.413 [23] clause 9.3.1.14 and TS 36.413 [38] clause 9.2.1.4. | M |
| traceCollectionEntityIPAddress | IPAddress | 1 | Contains the IP Address of the Trace Collection Entity. Derived from the Trace Collection Entity IP Address IE defined in TS 38.413 [23] clause 9.3.1.14 and TS 36.413 [38] clause 9.2.1.4. If both an IPv4 and an IPv6 address are present, this IE shall be populated with the IPv4 address. This field shall be ignored if the Trace Collection Entity URI is present.  | M |
| deprecatedTag5 | MDTConfiguration | 0 | No longer used in present version of this specification; formerly known as mDTConfiguration. | C |
| additionalTraceCollectionEntityIP | IPAddress | 0..1 | Shall be populated with the IPv6 Address of the Trace Collection Entity if the Trace Collection Entity IP Address IE contains both an IPv6 address and an IPv4 address. Derived from the Trace Collection Entity IP Address IE defined in TS 38.413 [23] clause 9.3.1.14 and TS 36.413 [38] clause 9.2.1.4. This field shall be ignored if the Trace Collection Entity URI is present.  | C |
| traceCollectionEntityURI | UTF8String | 0..1 | Contains the URI for the trace collection entity. Shall be present if the Trace Collection Entity URI defined in TS 38.413 [23] clause 9.3.1.14 and TS 36.413 [38] clause 9.2.1.4 is present in the message being reported. | C |
| mDTConfiguration | MDTConfigurationInfo | 0..1 | Contains the MDT configuration information for the trace session being reported. Shall be present if present in the Trace Activation message. | C |

### 8.4.13 Type: MDTConfigurationInfo

Contains information related to the MDT Configuration of a trace session. Derived from the information in the MDT Configuration IE defined in TS 38.413 [23] clause 9.3.1.167 and TS 36.413 [38] clause 9.2.1.81.

Table 8.4.13-1: Structure of the MDTConfigurationInfo type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| mDTConfigurationNR | MDTConfigurationNR | 0..1 | Contains the MDT Configuration for NR. Shall be present if present in the Trace Activation message. See TS 38.413 [23] clause 9.3.1.169, | C |
| mDTConfigurationEUTRA | MDTConfigurationEUTRA | 0..1 | Contains the MDT Configuration for EUTRA. Shall be present if present in the Trace Activation message. TS 36.413 [38] clause 9.2.1.81. | C |

## 8.35 Type: MDTConfigurationNR

Contains information related to the MDT Configuration for NR. Derived from the information in the MDT Configuration IE defined in TS 38.413 [23] clause 9.3.1.169.

Table 8.4.13-1: Structure of the MDTConfigurationNR type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| mDTActivation | MDTActivation | 1 | Indicates the type of MDT being activated. | M |
| areaScopeofMDT | AreaScopeofMDT | 1 | Contains the area where MDT is to be performed for the trace session. | M |
| mDTMode | MDTMode | 1 |  |  |

## 8.5 Enumerations

### 8.5.1 Enumeration: EMMRegStatus

The EMMRegStatus type is derived from the EMM registration status portion of the UE status IE defined in TS 24.501 [13] clause 9.11.3.56.

Table 8.5.1-1 contains the details for the EMMRegStatus type.

Table 8.5.1-1: Enumeration for the EMMRegStatus type

|  |  |
| --- | --- |
| Enumeration | Description |
| uEEMMRegistered(1) | UE is in EMM-REGISTERED state |
| uENotEMMRegistered(2) | UE is not in EMM-REGISTERED state |

### 8.5.2 Enumeration: FiveGMMRegStatus

The FiveGMMRegStatus type is derived from the 5GMM registration status portion of the UE status IE defined in TS 24.501 [13] clause 9.11.3.56.

Table 8.5.2-1 contains the details for the FiveGMMRegStatus type.

Table 8.5.2-1: Enumeration for the FiveGMMRegStatus type

|  |  |
| --- | --- |
| Enumeration | Description |
| uE5GMMRegistered(1) | UE is in 5GMM-REGISTERED state |
| uENot5GMMRegistered(2) | UE is not in 5GMM-REGISTERED state |

### 8.5.3 Enumeration: SMSOverNASIndicator

The SMSOverNASIndicator type is derived from the SMS over NAS transport allowed portion of the 5GS registration result IE defined in TS 24.501 [13] clause 9.11.3.6.1.

Table 8.5.3-1 contains the details for the SMSOverNASIndicator type.

Table 8.5.3-1: Enumeration for the SMSOverNASIndicator type

|  |  |
| --- | --- |
| Enumeration | Description |
| sMSOverNASNotAllowed(1) | SMS over NAS not allowed |
| sMSOverNASAllowed(2) | SMS over NAS allowed |

### 8.5.4 Enumeration: CSGMembershipIndication

The CSGMembershipIndication indicates whether the user is a member of a CSG.

Table 8.5.4-1 contains the details for the CSGMembershipIndication type.

Table 8.5.4-1: Enumeration for the CSGMembershipIndication type

|  |  |
| --- | --- |
| Enumeration | Description |
| notCSGMember(1) | The user is not a member of the indicated CSG. |
| cSGMember(2) | The user is a member of the indicated CSG. |

### 8.5.5 Enumeration: EPSAttachType

The EPSAttachType provides information on the attach type used by the UE. Derived from the enumerations in TS 24.301 [51] clause 9.9.3.11.

Table 8.5.5-1 contains the details of the EPSAttachType type.

Table 8.5.5-1: Enumeration for EPSAttachType

|  |  |
| --- | --- |
| Enumeration value | Description |
| ePSAttach(1) | The attach type is an EPS attach. |
| combinedEPSIMSIAttach(2) | The attach type is a combined EPS/IMSI attach. |
| ePSRLOSAttach(3) | The attach type is an EPS RLOS attach. |
| ePSEmergencyAttach(4) | The attach type is an EPS Emergency attach. |
| reserved(5) | The attach type is unknown or using a reserved type. |

### 8.5.6 Enumeration: EPSAttachResult

The EPSAttachResult provides information on the attach type used by the UE. Derived from the enumerations in TS 24.301 [51] clause 9.9.3.10.

Table 8.5.6-1 contains the details of the EPSAttachResult type.

Table 8.5.6-1: Enumeration for EPSAttachResult

|  |  |
| --- | --- |
| Enumeration value | Description |
| ePSOnly(1) | The attach type is an EPS attach. |
| combinedEPSIMSI(2) | The attach type is a combined EPS/IMSI attach. |

### 8.5.7 Enumeration: EPSSMSServiceStatus

The EPSSMSServiceStatus provides information on status of SMS Services. Derived from the enumerations in TS 24.301 [51] clause 9.9.3.4B.

Table 8.5.7-1 contains the details of the EPSSMSServiceStatus type.

Table 8.5.7-1: Enumeration for EPSSMSServiceStatus

|  |  |
| --- | --- |
| Enumeration value | Description |
| sMSServicesNotAvailable(1) | SMS Services ar not available. |
| sMSServicesNotAvailableInThisPLMN(2) | SMS Services not available for this UE in this PLMN. |
| networkFailure(3) | SMS Services unavailable due to Network failure. |
| Congestion(4) | SMS Services unavailable due to congestion. |

### 8.5.8 Enumeration: EstablishmentCause

The EstablishmentCause provides information on reason RRC was establised. Derived from the RRC Establishment Cause type defined in TS 38.413 [23] clause 9.3.1.111. and the RRC Establishment Cause type defined in TS 36.413 [38] clause 9.2.1.3a.

Table 8.5.8-1 contains the details of the EstablishmentCause type.

Table 8.5.8-1: Enumeration for EstablishmentCause

|  |  |
| --- | --- |
| Enumeration value | Description |
| emergency(1) | Emergency connection. |
| highPriorityAccess(2) | High priority access connection. |
| mtAccess(3) | Connection was established as a result of a page. |
| moSignalling(4) | Connection established for mobile originated signalling. |
| moData(5) | Connection established for mobile originated data. |
| moVoiceCall(6) | Connection established for mobile originated voice call. |
| moVideoCall(7) | Connection established for mobile originated video call. |
| moSMS(8) | Connection established for mobile originated SMS. |
| mpsPriorityAccess(9) | Connection established for Priority Access. |
| mcsPriorityAccess(10) | Connection established Priority Access. |
| notAvailable(11) | Not available. |
| exceptionData(12) | Exception Data. |

### 8.5.9 Enumeration: TraceRecordType

The TraceRecordType provides information on the type of Trace record being reported.

Table 8.5.9-1 contains the details of the TraceRecordType type.

Table 8.5.9-1: Enumeration for TraceRecordType

|  |  |
| --- | --- |
| Enumeration value | Description |
| traceStart(1) | The message being reported is a Trace Start message.  |
| cellTrafficTrace(2) | The message being reported is a Cell Traffic Trace message. |
| traceDataDelivery(3) | The event being reported is trace data being sent to the trace collection entity. |
| traceDeactivation(4) | The message being reported is a Deactivate Trace message. |

### 8.5.10 Enumeration: TraceDirection

The TraceDirection provides information on the direction of the trace information being reported.

Table 8.5.10-1 contains the details of the TraceDirection type.

Table 8.5.10-1: Enumeration for TraceDirection

|  |  |
| --- | --- |
| Enumeration value | Description |
| toAMF(1) | Shall be chosen when the message being reported is to the AMF. |
| fromAMF(2) | Shall be chosen when the message being reported is from the AMF. |
| toMME(3) | Shall be chosen when the message being reported is to the MME. |
| fromMME(4) | Shall be chosen when the message being reported is from the MME. |

### 8.5.11 Enumeration: TraceDepth

The TraceDepth provides information on the depth of the trace recording that should be performed. Derived from the enumerations for the Trace Depth IE defined in TS 38.413 [23] clause 9.3.1.14 and TS 36.413 [38] clause 9.2.1.4.

Table 8.5.11-1 contains the details of the TraceDepth type.

Table 8.5.11-1: Enumeration for TraceDepth

|  |  |
| --- | --- |
| Enumeration value | Description |
| minimum(1) | Recording of some IEs in the signalling messages plus any vendor specific extensions to this definition, in decoded format.  |
| medium(2) | Recording of some IEs in the signalling messages together with the radio measurement IEs plus any vendor specific extensions to this definition, in decoded format.  |
| maximum(3) | Recording entire signalling messages plus any vendor specific extensions to this definition, in encoded format.  |
| minimumWithoutVendorSpecificExtension(4) | Recording of some IEs in the signalling messages in decoded format.  |
| mediumWithoutVendorSpecificExtension(5) | Recording of some IEs in the signalling messages together with the radio measurement IEs in decoded format.  |
| maximumWithoutVendorSpecificExtension(6) | Recording entire signalling messages in encoded format.  |

## \*\*\*\* END OF ALL CHANGES \*\*\*\*