**3GPP TSG- Meeting #**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
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| *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:***  |  |
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| ***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:*** | The AMF Registration record is missing some valuable information from the UE Registration process. The purpose of this CR is to attempt to add addition information that was not captured in the current AMF registration record. |
|  |  |
| ***Summary of change:*** | Added messages to the AMF Registration Record including information on equivalent PLMNs, UE Capability information, and UE service type authorizations. |
|  |  |
| ***Consequences if not approved:*** | CSPs may not be able to meet their lawful obligations. The specification and record will remain incomplete. |
|  |  |
| ***Clauses affected:*** | 2, 6.2.2.2.1 added new clause 6.2.2.2.1x, 6.2.2.2.2, added new clause 6.2.2.2x, Annex A. |
|  |  |
|  | **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:*** | Merge Request: [!192](https://forge.3gpp.org/rep/sa3/li/-/merge_requests/192)Commit Hash: [b83ee51abbbdd2693ddc7652fe2a9f02f705a3d2](https://forge.3gpp.org/rep/sa3/li/-/commit/b83ee51abbbdd2693ddc7652fe2a9f02f705a3d2) |
|  |  |
| ***This CR's revision history:*** |  |

### \*\*\*\* 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) ".

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

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

##### 6.2.2.2.1 General

The IRI-POI present in the AMF shall send the xIRIs over LI\_X2 for each of the events listed in TS 33.127 [5] clause 6.2.2.4, the details of which are described in the following clauses.

If the AMF receives one or more cell IDs in an N2 message (as specified in TS 38.413 [23]), the IRI-POI in the AMF shall report all of them.

The IRI-POI in the AMF shall only generate xIRI containing AMFIdentifierAssociation records when the IdentifierAssocationExtensions parameter has been received over LI\_X1 (see clause 6.2.2.1). The IRI-POI in the AMF shall generate records according to the value of the EventsGenerated sub-parameter (see table 6.2.2-0B) as follows:

- IdentifierAssociation: AMFIdentifierAssociation and AMFLocationUpdate records shall be generated. No other record types shall be generated for that target.

- All: All AMF record types shall be generated.

##### 6.2.2.2.1x Simple data types for AMF

Table 6.2.2.2.1x-1: Simple types for AMF

|  |  |  |
| --- | --- | --- |
| Field name | Type | Description |
| mUSIMUERequestType | OCTET STRING (SIZE (1)) | The purpose of the MUSIMUERequestType type is to indicate a MUSIM UE has requested the network to perform specific requests due to activity on another USIM. Shall contain the UE request type information octet sent in the REGISTRAITON REQUEST message, omitting the first two octets. Encoded per TS 24.301 [51] clause 9.9.3.65. |
| rATFrequencySelectionPriority | INTEGER (1..256) | This field is used to define local configuration for RRM strategies such as camp priorities in idle mode and control of inter-RAT/inter-frequency handover in Active mode. See TS 23.501 [13] clause 5.3.4.3.1. Encoded per TS 38.413 [23] clause 6.3.1.61. |
| fiveGMMCapability | OCTET STRING (SIZE (1..13)) | The purpose of the FiveGMMCapability type is to provide information concerning aspects of the UE related to the 5GCN or interworking with the EPS. Omitting the first two octets. Defined in TS 24.501 [13] clause 9.11.3.1. |

##### 6.2.2.2.2 Registration

The IRI-POI in the AMF shall generate an xIRI containing an AMFRegistration record when the IRI-POI present in the AMF detects that a UE matching one of the target identifiers provided via LI\_X1 has successfully registered to the 5GS via 3GPP NG-RAN or non-3GPP access. Accordingly, the IRI-POI in the AMF generates the xIRI when the following event is detected:

- AMF sends a N1: REGISTRATION ACCEPT message to the target UE and the UE 5G Mobility Management (5GMM) state for the access type (3GPP NG-RAN or non-3GPP access) within the AMF is changed to 5GMM-REGISTERED.

Table 6.2.2-1: Payload for AMFRegistration record

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| registrationType | AMFRegistrationType | 1 | Specifies the type of registration, see TS 24.501 [13] clause 9.11.3.7. This is derived from the information received from the UE in the REGISTRATION REQUEST message. | M |
| registrationResult | AMFRegistrationResult | 1 | Specifies the result of registration, see TS 24.501 [13] clause 9.11.3.6. | M |
| slice | Slice | 0..1 | Provide, if available, one or more of the following:- allowed NSSAI (see TS 24.501 [13] clause 9.11.3.37).- configured NSSAI (see TS 24.501 [13] clause 9.11.3.37).- rejected NSSAI (see TS 24.501 [13] clause 9.11.3.46).This is derived from the information sent to the UE in the REGISTRATION ACCEPT message. | C |
| sUPI | SUPI | 1 | SUPI associated with the registration (see clause 6.2.2.4). | M |
| sUCI | SUCI | 0..1 | SUCI used in the registration, if available. | C |
| pEI | PEI | 0..1 | PEI provided by the UE during the registration, if available. | C |
| gPSI | GPSI | 0..1 | GPSI obtained in the registration, if available as part of the subscription profile. | C |
| gUTI | FiveGGUTI | 1 | 5G-GUTI provided as outcome of initial registration or used in other cases, see TS 24.501 [13] clause 5.5.1.2.2. | M |
| location | Location | 0..1 | Location information determined by the network during the registration, if available.Encoded as a *userLocation* parameter (*location>locationInfo>userLocation*) and, when Dual Connectivity is activated, as an *additionalCellIDs* parameter (*location>locationInfo>additionalCellIDs*), see Annex A. | C |
| non3GPPAccessEndpoint | UEEndpointAddress | 0..1 | UE's local IP address used to reach the N3IWF, TNGF or TWIF, if available. IP addresses are given as 4 octets (for IPv4) or 16 octets (for IPv6) with the most significant octet first (network byte order). | C |
| fiveGSTAIList | TAIList | 0..1 | List of tracking areas associated with the registration area within which the UE is current registered, see TS 24.501 [13] clause 9.11.3.9 (see NOTE) | C |
| sMSoverNASIndicator | SMSOverNASIndicator | 0..1 | Indicates whether SMS over NAS is supported. Provide, if included in registrationResult, see TS 24.501 [13] clause 9.11.3.6. | C |
| oldGUTI | EPS5GGUTI | 0..1 | GUTI or 5G-GUTI, if provided in the REGISTRATION REQUEST message, see TS 24.501 [13] clause 5.5.1.2.2. | C |
| eMM5GRegStatus | EMM5GMMStatus | 0..1 | UE Status, if provided in the REGISTRATION REQUEST message, see TS 24.501 [13] clause 9.11.3.56. | C |
| nonIMEISVPEI | NonIMEISVPEI | 0..1 | MACAddress or EUI-64 used as UE equipment identity if IMEI or IMEISV based PEI is not available. Provide if known, see TS 24.501 [13] clause 8.2.26.4. | C |
| mACRestIndicator | MACRestrictionIndicator | 0..1 | Indicates whether the non-IMEISV PEI MACAddress can be used as an equipment identifier. Required if non-IMEISVPEI is used, see TS 24.501 [13] clause 9.11.3.4. | C |
| pagingRestrictionIndicator | PagingRestrictionIndicator | 0..1 | Indicates if paging is restricted or the type of paging allowed. Include if sent in the REGISTRATION REQUEST message. Encoded per TS 24.501 [13] clause 9.11.3.77.2, omitting the first two octets. | C |
| rATType | RATType | 0..1 | RAT Type shall be present if known by the AMF. RAT Type is determined by the AMF during registration. See TS 23.501 [2] clause 5.3.2.3 | C |
| rRCEstablishmentCause | RRCEstablishmentCause | 0..1 | Indicates the reason for UE RRC Connection Establishment. This parameter shall be populated with information provided by the serving RAN during NAS establishment in the Initial UE Message. See TS 38.413 [23] clause 9.3.1.111. | C |
| nGInformation | NGInformation | 0..1 | Provides application layer related information for the serving Global RAN Node provided by the NG-RAN node to the serving AMF during NG setup. This parameter shall be populated using information from the NG SETUP REQUEST and NG SETUP RESPONSE. See TS 38.413 [23] clauses 9.2.6.1 and 9.2.6.2. | C |
| nASTransportInitialInformation | NASTransportInitialInformation |  | Provides information related to the NAS Transport setup for the target UE over the NG interface. Shall be included when received by the AMF per TS 38.413 [23]. This parameter is only conditional for backward compatibility. See TS 38.413 [23] clause 9.2.5.1. | C |
|  |  |  |  |  |
| equivalentPLMNList | PLMNList | 0..1 | Provides a list of equivalent PLMNs in the REGISTRATION ACCEPT message. See clause TS 24.501 [13] clause 8.2.7.3. | C |
| fiveGMMCapability | FiveGMMCapability | 0..1 | Shall contain the target 5GMM capability information octets sent in the REGISTRAITON REQUEST message, omitting the first two octets. Defined in TS 24.501 [13] clause 9.11.3.1. | C |
| initialRANUEContextSetup | InitialRANUEContextSetup | 0..1 | Provides information sent in the INITIAL CONTEXT SETUP message from the AMF to the RAN for a target. See TS 38.413 [23] clause 9.2.2.1. | C |
| mUSIMUERequestType | MUSIMUERequestType | 0..1 | Indicates a MUSIM UE has requested release of NAS signalling or has rejected paging. Include if sent in the REGISTRATION REQUEST message. Encoded per UE Request Type omitting the first two octets. See TS 24.301 [51] clause 9.9.3.65. | C |
| NOTE: List shall be included each time there is a change to the registration area. |

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

#### 6.2.2.2x Definitions for AMF message Types

##### 6.2.2.2x.1 Type: InitialRANUEContextSetup

The purpose of the InitialRANUEContextSetup type is to provide information the AMF sends to the NG-RAN to request the setup of the UE context. Encoded per TS 38.413 [23] clause 9.2.2.1.

Table 6.2.2.2x.1-1 contains the details for the InitialRANUEContextSetup type.

Table 6.2.2.2x.1-1: Structure of the InitialRANUEContextSetup type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| aMFUENGAPID | AMFUENGAPID | 1 | Identity that the AMF uses to uniquely identify the target UE over the NG Interface, See TS 38.413 [23] clause 9.3.3.1. | M |
| rANUENGAPID | RANUENGAPID | 1 | Identity that the AMF receives from the NG-RAN node uniquely identifying the target UE within the NG-RAN Node. See TS 38.413 [23] clause 9.3.3.2. | M |
| oldAMF | GUAMI | 0..1 | Previous serving AMF’s GUAMI, include when sent in the INITIAL CONTEXT SETUP REQUEST or when known at the NF. Format is defined in TS 29.571 [17] clause 5.3.4.1. | C |
| pDUSessionSetupRequest | SEQUENCE (SIZE (1..MAX)) OF PDUSessionSetupRequestItem | 1..MAX | Identifies the PDU Sessions for a UE. Derived from the information in the PDU Session Resource Setup Request Item IE defined in TS 38.413 [23] clause 9.2.2.1. | M |
| allowedNSSAI | AllowedNSSAI | 1 | Indicates the S-NSSAIs permitted by the network. | M |
| mobilityRestrictionList | MobilityRestrictionList | 0..1 | Provides roaming or access restrictions related to mobility from AMF to the RAN Node. Include when sent in the INITIAL CONTEXT SETUP REQUEST or when known at the NF. See TS 38.413 [23] clause 9.3.1.85. | C |
| uERadioCapability | UERadioCapability | 0..1 | Contains the UE Radio Capability information. Include when sent in the INITIAL CONTEXT SETUP REQUEST or when known at the NF. Defined in TS 38.413 [23] clauses 9.3.1.74, and 9.3.1.74a. | C |
| rATFrequencySelectionPriority | RATFrequencySelectionPriority | 0..1 | Used to define local configuration for RRM strategies. Include when sent in the INITIAL CONTEXT SETUP REQUEST or when known at the NF. See TS 38.413 [23] 9.3.1.61. | C |
| uERadioCapabilityForPaging | UERadioCapabilityForPaging | 0..1 | Contains paging specific UE Radio Capability information. Include when sent in the INITIAL CONTEXT SETUP REQUEST or when known at the NF. Defined in TS 38.413 [23] clause 9.3.1.68. | C |
| iABAuthorizedIndicator | IABAuthorizedIndicator | 0..1 | Provides information about the authorization status of the UE to operate as an IAB node. Include when sent in the INITIAL CONTEXT SETUP REQUEST or when known at the NF. See TS 38.413 [23] clause 9.3.1.129. | C |
| nRV2XServicesAuthorization | NRV2XServicesAuthorization | 0..1 | Provides information on the authorization status of the UE to use the NR sidelink for V2X services. Include when sent in the INITIAL CONTEXT SETUP REQUEST or when known at the NF. See TS 38.413 [23] clause 9.3.1.146. | C |
| lTEV2XServiceAuthorization | LTEV2XServiceAuthorization | 0..1 | Provides information on the authorization status of the UE to use the LTE sidelink for V2X services. Include when sent in the INITIAL CONTEXT SETUP REQUEST or when known at the NF. See TS 38.413 [23] clause 9.3.1.147. | C |
| rGLevelWirelineAccessCharacteristics | OCTET STRING | 0..1 | Indicates the wireline access technology specific QoS information corresponding to a specific wireline access subscription. Include when sent in the INITIAL CONTEXT SETUP REQUEST or when known at the NF. Specified in TS 23.316 [A] clause 4.5.1.2. | C |
| uERadioCapabilityID | OCTET STRING | 0..1 | Identifier used to represent a set of UE radio capabilities. Include when sent in the INITIAL CONTEXT SETUP REQUEST or when known at the NF. Defined in TS 23.003 [19] clause 29.2. | C |
| targetNSSAIInfo | TargetNSSAIInfo | 0..1 | Contains the Target NSSAI and Index to RAT/Frequency Selection Priority. Include when sent in the INITIAL CONTEXT SETUP REQUEST or when known at the NF. Defined in TS 38.413 [23] clause 9.3.1.229. | C |
| fiveGProSeAuthorizationIndication | FiveGProSeAuthorizationIndication | 0..1 | Provides information on the authorization status of the UE to use ProSe services. Include when sent in the INITIAL CONTEXT SETUP REQUEST or when known at the NF. Defined in TS 38.413 [23] clause 9.3.1.233. | C |

##### 6.2.2.2x.2 Type: PDUSessionSetupRequestItem

The PDUSessionSetupRequestItem identifies a PDU Session for a UE. The PDUSessionSetupRequestItem is derived from the information in the PDU Session Resource Setup Request Item IE defined in TS 38.413 [23] clause 9.2.2.1.

Table 6.2.2.2x.2-1 contains the details for the PDUSessionSetupRequestItem type.

Table 6.2.2.2x.2-1: Structure of the PDUSessionSetupRequestItem type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| pDUSessionID | PDUSessionID | 1 | Identifies a PDU Session for a UE. The definition and use of the PDU Session ID is specified in TS 23.501 [2] clause 5.6. | M |
| sNSSAI | SNSSAI | 1 | Slice identifier associated with the PDU session, if available. See TS 23.003 [19] clause 28.4.2 and TS 23.501 [2] clause 5.15.2. | M |

##### 6.2.2.2x.3 Type: UERadioCapability

The UERadioCapability contains the UE radio access capability information. The UERadioCapability type is derived from UE Radio Capability IE defined in TS 38.413 [23] clauses 9.3.1.74, and 9.3.1.74a.

Table 6.2.2.2x.3-1 contains the details for the UERadioCapability type.

Table 6.2.2.2x.3-1: Structure of the UERadioCapability type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| uERadioCapibilityNR | OCTET STRING | 0..1 | Includes the UE Radio Capability information as defined in TS 38.413 [23] clause 9.3.1.74. | C |
| uERadioCapabilityEUTRA | OCTET STRING | 0..1 | Includes the UE Radio Capability – E-UTRA Format information message defined in TS 38.413 [23] clause 9.3.1.74a. | C |

##### 6.2.2.2x.4 Type: UERadioCapabilityForPaging

The UERadioCapabilityForPaging contains paging specific UE Radio Capability information. The UERadioCapabilityForPaging type is derived from the UE Radio Capability for Paging IE defined in TS 38.413 [23] clause 9.3.1.68.

Table 6.2.2.2x.4-1 contains the details for the UERadioCapabilityForPaging type.

Table 6.2.2.2x.4-1: Structure of the UERadioCapabilityForPaging type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| uERadioCapabilityForPagingOfNR | OCTET STRING | 0..1 | Includes the UE Radio Capability Paging of NR information as defined in TS 38.413 [23] clause 9.3.1.68. | C |
| uERadioCapabilityForPagingOfEUTRA | OCTET STRING | 0..1 | Includes the UE Radio Capability Paging of E-UTRA information as defined in TS 38.413 [23] clause 9.3.1.68. | C |
| uERadioCapabilityForPagingOfNBIoT | OCTET STRING | 0..1 | Includes the UE Radio Capability Paging of NB-IoT information as defined in TS 38.413 [23] clause 9.3.1.68. | C |

##### 6.2.2.2x.5 Type: NRV2XServicesAuthorization

The NRV2XServicesAuthorization provides information on the authorization status of the UE to use the NR sidelink for V2X services. Defined in TS 38.413 [23] clause 9.3.1.146.

Table 6.2.2.2x.5-1 contains the details for the NRV2XServicesAuthorization type.

Table 6.2.2.2x.5-1: Structure of the NRV2XServicesAuthorization type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| v2XVehicleUEAuthorizationIndicator | V2XUEAuthorizationIndicator | 0..1 | Indicates whether the UE is authorized as Vehicle UE. | C |
| v2XPedestrianUEAuthorizationIndicator | V2XUEAuthorizationIndicator | 0..1 | Indicates whether the UE is authorized as Pedestrian UE. | C |

##### 6.2.2.2x.6 Type: LTEV2XServicesAuthorization

The LTEV2XServicesAuthorization provides information on the authorization status of the UE to use the LTE sidelink for V2X services. Defined in TS 38.413 [23] clause 9.3.1.147.

Table 6.2.2.2x.6-1 contains the details for the NRV2XServicesAuthorization type.

Table 6.2.2.2x.6-1: Structure of the LTEV2XServicesAuthorization type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| v2XVehicleUEAuthorizationIndicator | V2XUEAuthorizationIndicator | 0..1 | Indicates whether the UE is authorized as Vehicle UE. | C |
| v2XPedestrianUEAuthorizationIndicator | V2XUEAuthorizationIndicator | 0..1 | Indicates whether the UE is authorized as Pedestrian UE. | C |

##### 6.2.2.2x.7 Type: TargetNSSAIInfo

The TargetNSSAIInfo contains the Target NSSAI and Index to RAT/Frequency Selection Priority. Derived from Target NSSAI Information IE defined in TS 38.413 [23] clause 9.3.1.229.

Table 6.2.2.2x.7-1 contains the details for the TargetNSSAIInfo type.

Table 6.2.2.2x.7-1: Structure of the TargetNSSAIInfo type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| targetSNSSAIList | NSSAI | 0..1 | Contains the Target S-NSSAI list. Derived from the Target NSSAI IE specified in TS 38.413 [23] clause 9.3.1.230. | M |
| rATFrequencySelectionPriority | RATFrequencySelectionPriority | 0..1 | Used to define local configuration for RRM strategies. | M |

##### 6.2.2.2x.8 Type: FiveGProSeAuthorizationIndication

The FiveGProSeAuthorizationIndication provides information on the authorization status of the UE to use the 5G ProSe services. Derived from 5G ProSe Authorized IE defined in TS 38.413 [23] clause 9.3.1.233.

Table 6.2.2.2x.8-1 contains the details for the FiveGProSeAuthorizationIndication type.

Table 6.2.2.2x.8-1: Structure of the FiveGProSeAuthorizationIndication type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field name | Type | Cardinality | Description | M/C/O |
| fiveGProSeDirectDiscovery | FiveGProSeAuthorizationIndicator | 0..1 | Indicates whether the UE is authorized for 5G ProSe Direct Discovery. | C |
| fiveGProSeDirectCommunication | FiveGProSeAuthorizationIndicator | 0..1 | Indicates whether the UE is authorized for 5G ProSe Direct Communication. | C |
| fiveGProSeL2UEToNetworkRelay | FiveGProSeAuthorizationIndicator | 0..1 | Indicates whether the UE is authorized for 5G ProSe Layer-2 UE-to-Network Relay. | C |
| fiveGProSeL3UEToNetworkRelay | FiveGProSeAuthorizationIndicator | 0..1 | Indicates whether the UE is authorized for 5G ProSe Layer-3 UE-to-Network Relay. | C |
| fiveGProSeL2RemoteUE | FiveGProSeAuthorizationIndicator | 0..1 | Indicates whether the UE is authorized for 5G ProSe Layer-2 Remote UE. | C |

##### 6.2.2.2x.9 Enumeration: IABAuthorizedIndicator

The IABAuthorizedIndicator provides information about the authorization status of the IAB node. Defined in TS 38.413 [23] clause 9.3.1.129.

Table 6.2.2.2x.9-1 contains the details of the IABAuthorizedIndicator type.

Table 6.2.2.2x.9-1: Enumeration for IABAuthorizedIndicator

|  |  |
| --- | --- |
| Enumeration value | Description |
| authorized(1) | Indicates the UE is authorized to operate as an IAB node. |
| notAuthorized(2) | Indicates the UE is not authorized to operate as an IAB node. |

##### 6.2.2.2x.10 Enumeration: V2XUEAuthorizationIndicator

The V2XUEAuthorizationIndicator indicates whether the UE is authorized to use Sidelink for V2X operation. Derived from the IEs defined in TS 38.413 [23] clauses 9.3.1.146 and 9.3.1.147.

Table 6.2.2.2x.10-1 contains the details of the V2XUEAuthorizationIndicator type.

Table 6.2.2.2x.10-1: Enumeration for V2XUEAuthorizationIndicator

|  |  |
| --- | --- |
| Enumeration value | Description |
| authorized(1) | Sidelink for V2X operation is authorized. |
| notAuthorized(2) | Sidelink for V2X operation is not authorized. |

##### 6.2.2.2x.11 Enumeration: FiveGProSeAuthorizationIndicator

The FiveGProSeAuthorizationIndicator indicates authorization status of the UE to use the 5G ProSe services. Derived from the 5G ProSe Authorized IE defined in TS 38.413 [23] clause 9.3.1.233.

Table 6.2.2.2x.11-1 contains the details of the FiveGProSeAuthorizationIndicator type.

Table 6.2.2.2x.11-1: Enumeration for FiveGProSeAuthorizationIndicator

|  |  |
| --- | --- |
| Enumeration value | Description |
| authorized(1) | 5G ProSe service is authorized. |
| notAuthorized(2) | 5G ProSe service is not authorized. |

#### 6.2.2.3 Generation of IRI over LI\_HI2

When an xIRI is received over LI\_X2 from the IRI-POI in AMF, the MDF2 shall generate the corresponding IRI message and deliver over LI\_HI2 without undue delay. The IRI message shall contain a copy of the relevant record received in the xIRI over LI\_X2. This record may be enriched with any additional information available at the MDF (e.g. additional location information).

The timestamp field of the PSHeader structure shall be set to the time at which the AMF event was observed (i.e. the timestamp field of the X2 PDU).

The IRI type parameter (see ETSI TS 102 232-1 [9] clause 5.2.10) shall be included and coded according to table 6.2.2-7.

Table 6.2.2-7: IRI type for IRI messages

|  |  |
| --- | --- |
| IRI message | IRI type |
| AMFRegistration | REPORT |
| AMFDeregistration | REPORT |
| AMFLocationUpdate | REPORT |
| AMFStartOfInterceptionWithRegisteredUE | REPORT |
| AMFUnsuccessfulProcedure | REPORT |
| AMFIdentifierAssociation | REPORT |
| AMFPositioningInfoTransfer | REPORT |
| AMFRANHandoverCommand | REPORT |
| AMFRANHandoverRequest | REPORT |
| AMFUEConfigurationUpdate | REPORT |
| AMFRANTraceReport | REPORT |

These IRI messages shall omit the CIN (see ETSI TS 102 232-1 [9] clause 5.2.4).

The threeGPP33128DefinedIRI field in ETSI TS 102 232-7 [10] clause 15 shall be populated with the BER-encoded IRIPayload.

When an additional warrant is activated on a target UE and the LIPF uses the same XID for the additional warrant, the MDF2 shall be able to generate and deliver the IRI message containing the AMFStartOfInterceptionWithRegisteredUE record to the LEMF associated with the additional warrant without receiving a corresponding xIRI. The payload of the AMFStartOfInterceptionWithRegisteredUE record is specified in table 6.2.2-4.

If the MDF2 did not receive from the IRI-POI the value of timeOfRegistration parameter in a previous corresponding AMFStartOfInterceptionWithRegisteredUE for the same registration, the MDF2 shall include in that parameter the time provided in the timestamp previously received in the header of the related AMFRegistration xIRI.

## \*\*\*\* END OF MAIN DOCUMENTS CHANGES \*\*\*

## \*\*\*\* START OF ATTACHMENT CHANGE \*\*\*

---a/33128/r18/TS33128Payloads.asn
+++b/33128/r18/TS33128Payloads.asn

@@ -1331,7 +1331,11 @@ AMFRegistration ::= SEQUENCE

1331 1331 rATType [18] RATType OPTIONAL,

1332 1332 rRCEstablishmentCause [19] RRCEstablishmentCause OPTIONAL,

1333 1333 nGInformation [20] NGInformation OPTIONAL,

1334 - nASTransportInitialInformation [21] NASTransportInitialInformation OPTIONAL

- 1334 nASTransportInitialInformation [21] NASTransportInitialInformation OPTIONAL,

- 1335 equivalentPLMNList [22] PLMNList OPTIONAL,

- 1336 fiveGMMCapability [23] FiveGMMCapability OPTIONAL,

- 1337 initialRANUEContextSetup [24] InitialRANUEContextSetup OPTIONAL,

- 1338 mUSIMUERequestType [25] MUSIMUERequestType OPTIONAL

1335 1339 }

1336 1340

1337 1341 -- See clause 6.2.2.2.3 for details of this structure

@@ -1674,6 +1678,96 @@ EstablishmentCause ::= ENUMERATED

1674 1678 exceptionData(12)

1675 1679 }

1676 1680

- 1681 InitialRANUEContextSetup ::= SEQUENCE

- 1682 {

- 1683 aMFUENGAPID [1] AMFUENGAPID,

- 1684 rANUENGAPID [2] RANUENGAPID,

- 1685 oldAMF [3] GUAMI OPTIONAL,

- 1686 pDUSessionSetupRequest [4] SEQUENCE (SIZE(1..MAX)) OF PDUSessionSetupRequestItem,

- 1687 allowedNSSAI [5] AllowedNSSAI,

- 1688 mobilityRestrictionList [6] MobilityRestrictionList OPTIONAL,

- 1689 uERadioCapability [7] UERadioCapability OPTIONAL,

- 1690 rATFrequencySelectionPriority [8] RATFrequencySelectionPriority OPTIONAL,

- 1691 uERadioCapabilityForPaging [9] UERadioCapabilityForPaging OPTIONAL,

- 1692 iABAuthorizedIndicator [10] IABAuthorizedIndicator OPTIONAL,

- 1693 nRV2XServicesAuthorization [11] NRV2XServicesAuthorization OPTIONAL,

- 1694 lTEV2XServiceAuthorization [12] LTEV2XServiceAuthorization OPTIONAL,

- 1695 rGLevelWirelineAccessCharacteristics [13] OCTET STRING OPTIONAL,

- 1696 uERadioCapabilityID [14] OCTET STRING OPTIONAL,

- 1697 targetNSSAIInfo [15] TargetNSSAIInfo OPTIONAL,

- 1698 fiveGProSeAuthorizationIndication [16] FiveGProSeAuthorizationIndication OPTIONAL

- 1699 }

- 1700

- 1701 PDUSessionSetupRequestItem ::= SEQUENCE

- 1702 {

- 1703 pDUSessionID [1] PDUSessionID,

- 1704 sNSSAI [2] SNSSAI

- 1705 }

- 1706

- 1707 UERadioCapability ::= SEQUENCE

- 1708 {

- 1709 uERadioCapibilityNR [1] OCTET STRING OPTIONAL,

- 1710 uERadioCapabilityEUTRA [2] OCTET STRING OPTIONAL

- 1711 }

- 1712

- 1713 UERadioCapabilityForPaging ::= SEQUENCE

- 1714 {

- 1715 uERadioCapabilityForPagingOfNR [1] OCTET STRING OPTIONAL,

- 1716 uERadioCapabilityForPagingOfEUTRA [2] OCTET STRING OPTIONAL,

- 1717 uERadioCapabilityForPagingOfNBIoT [3] OCTET STRING OPTIONAL

- 1718 }

- 1719

- 1720 NRV2XServicesAuthorization ::= SEQUENCE

- 1721 {

- 1722 v2XVehicleUEAuthorizationIndicator [1] V2XUEAuthorizationIndicator OPTIONAL,

- 1723 v2XPedestrianUEAuthorizationIndicator [2] V2XUEAuthorizationIndicator OPTIONAL

- 1724 }

- 1725

- 1726 LTEV2XServiceAuthorization ::= SEQUENCE

- 1727 {

- 1728 v2XVehicleUEAuthorizationIndicator [1] V2XUEAuthorizationIndicator OPTIONAL,

- 1729 v2XPedestrianUEAuthorizationIndicator [2] V2XUEAuthorizationIndicator OPTIONAL

- 1730 }

- 1731

- 1732 TargetNSSAIInfo ::= SEQUENCE

- 1733 {

- 1734 targetSNSSAIList [1] NSSAI,

- 1735 rATFrequencySelectionPriority [2] RATFrequencySelectionPriority

- 1736 }

- 1737

- 1738 FiveGProSeAuthorizationIndication ::= SEQUENCE

- 1739 {

- 1740 fiveGProSeDirectDiscovery [1] FiveGProSeAuthorizationIndicator OPTIONAL,

- 1741 fiveGProSeDirectCommunication [2] FiveGProSeAuthorizationIndicator OPTIONAL,

- 1742 fiveGProSeL2UEToNetworkRelay [3] FiveGProSeAuthorizationIndicator OPTIONAL,

- 1743 fiveGProSeL3UEToNetworkRelay [4] FiveGProSeAuthorizationIndicator OPTIONAL,

- 1744 fiveGProSeL2RemoteUE [5] FiveGProSeAuthorizationIndicator OPTIONAL

- 1745 }

- 1746

- 1747 IABAuthorizedIndicator ::= ENUMERATED

- 1748 {

- 1749 authorized(1),

- 1750 notAuthorized(2)

- 1751 }

- 1752

- 1753 V2XUEAuthorizationIndicator ::= ENUMERATED

- 1754 {

- 1755 authorized(1),

- 1756 notAuthorized(2)

- 1757 }

- 1758

- 1759 FiveGProSeAuthorizationIndicator ::= ENUMERATED

- 1760 {

- 1761 authorized(1),

- 1762 notAuthorized(2)

- 1763 }

- 1764

- 1765 MUSIMUERequestType ::= OCTET STRING (SIZE(1))

- 1766

- 1767 RATFrequencySelectionPriority ::= INTEGER (1..256)

- 1768

- 1769 FiveGMMCapability ::= OCTET STRING (SIZE(1..13))

- 1770

1677 1771 -- ==================

1678 1772 -- 5G SMF definitions

1679 1773 -- ==================

## \*\*\*\* END OF ATTACHMENT CHANGES \*\*\*

## \*\*\*\*\*\*\*\*\*\*\*\* END OF ALL CHANGE \*\*\*\*\*\*\*\*\*\*\*