**3GPP TSG-CT WG4 Meeting #108-eC4-221**

**E-Meeting, 17th – 25th February 2022 revision of C4-221096**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.503** | **CR** | **0815** | **rev** | **1** | **Current version:** | **17.5.0** |  |
|  | | | | | | | | |
| *For* [*HE**LP*](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

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

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Reuse of type Fqdn from 29.571 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** | CT4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | SBIProtoc17 | | | | |  | ***Date:*** | | | 2022-02-18 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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 can be 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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | 29.571 defines the common type Fqdn for reuse by any APIs | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Reuse Fqdn from 29.571 | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The API descriptions are vague in which values are allowed or not as data paratemers in signaling messages, leading to inter-operability issues. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.1.6.1, 6.1.6.2.28, 6.1.6.2.32, 6.2.6.1, 6.2.6.2.4, 6.2.6.2.11, 6.2.6.2.23, 6.5.6.1, A.2, A.3, A.6 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | This CR introduces backwards compatible corrections with impact to following APIs:  TS29503\_Nudm\_SDM.yaml TS29503\_Nudm\_UECM.yaml TS29503\_Nudm\_PP.yaml | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**\*\*\*\*\*\*\***

\* \* \* First Change \* \* \* \*

#### 6.1.6.1 General

This clause specifies the application data model supported by the API.

Table 6.1.6.1-1 specifies the data types defined for the Nudm\_SDM service API.

Table 6.1.6.1-1: Nudm\_SDM specific Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Clause defined | Description |
| Nssai | 6.1.6.2.2 | Network Slice Selection Assistance Information |
| SdmSubscription | 6.1.6.2.3 | A subscription to notifications |
| AccessAndMobilitySubscriptionData | 6.1.6.2.4 | Access and Mobility Subscription Data |
| SmfSelectionSubscriptionData | 6.1.6.2.5 | SMF Selection Subscription Data |
| DnnInfo | 6.1.6.2.6 | Data Network Name and associated information (LBO roaming allowed flag) |
| SnssaiInfo | 6.1.6.2.7 | S-NSSAI and associated information (DNN Info) |
| SessionManagementSubscriptionData | 6.1.6.2.8 | User subscribed session management data |
| DnnConfiguration | 6.1.6.2.9 | User subscribed data network configuration |
| PduSessionTypes | 6.1.6.2.11 | Default/allowed session types for a data network |
| SscModes | 6.1.6.2.12 | Default/allowed SSC modes for a data network |
| SmsSubscriptionData | 6.1.6.2.13 |  |
| SmsManagementSubscriptionData | 6.1.6.2.14 | SMS Management Subscription Data |
| SubscriptionDataSets | 6.1.6.2.15 |  |
| UeContextInSmfData | 6.1.6.2.16 | UE Context In SMF Data |
| PduSession | 6.1.6.2.17 |  |
| IdTranslationResult | 6.1.6.2.18 | SUPI that corresponds to a given GPSI |
| ModificationNotification | 6.1.6.2.21 |  |
| IpAddress | 6.1.6.2.22 | IP address (IPv4, or IPv6, or IPv6 prefix) |
| UeContextInSmsfData | 6.1.6.2.23 |  |
| SmsfInfo | 6.1.6.2.24 |  |
| AcknowledgeInfo | 6.1.6.2.25 |  |
| SorInfo | 6.1.6.2.26 | Steering Of Roaming Information |
| SharedData | 6.1.6.2.27 | Subscription Data shared by multiple UEs |
| PgwInfo | 6.1.6.2.28 | Information about the DNNs/APNs and PGW-C+SMF FQDNs used in interworking with EPS |
| TraceDataResponse | 6.1.6.2.29 | Contains Trace Data or a shared data Id identifying shared Trace Data |
| SteeringContainer | 6.1.6.2.30 |  |
| SdmSubsModification | 6.1.6.2.31 | Modification instruction for a subscription to notifications |
| EmergencyInfo | 6.1.6.2.32 | Information about emergency session |
| UpuInfo | 6.1.6.2.33 | UE Parameters Update Information |
| GroupIdentifiers | 6.1.6.2.34 |  |
| NiddInformation | 6.1.6.2.35 | Non-IP Data Delivery information |
| CagData | 6.1.6.2.36 |  |
| CagInfo | 6.1.6.2.37 |  |
| DataSetName | 6.1.6.3.3 |  |
| PduSessionContinuityInd | 6.1.6.3.7 |  |
| AdditionalSnssaiData | 6.1.6.2.38 | Additional information specific to a slice |
| VnGroupData | 6.1.6.2.39 |  |
| AppDescriptor | 6.1.6.2.40 |  |
| AppPortId | 6.1.6.2.41 | Application Port Id |
| LcsPrivacyData | 6.1.6.2.42 |  |
| Lpi | 6.1.6.2.43 |  |
| UnrelatedClass | 6.1.6.2.44 |  |
| PlmnOperatorClass | 6.1.6.2.45 |  |
| ValidTimePeriod | 6.1.6.2.46 |  |
| LcsMoData | 6.1.6.2.47 |  |
| EcRestrictionDataWb | 6.1.6.2.48 | Enhance Coverage Restriction Data |
| ExpectedUeBehaviourData | 6.1.6.2.49 | Expected UE Behaviour Data |
| SuggestedPacketNumDl | 6.1.6.2.52 | Suggested Number of Downlink Packets |
| FrameRouteInfo | 6.1.6.2.54 | Frame Route Information |
| SorUpdateInfo | 6.1.6.2.55 |  |
| EnhancedCoverageRestrictionData | 6.1.6.2.56 | Enhanced Coverage Restriction Data |
| EdrxParameters | 6.1.6.2.57 | eDRX Parameters |
| PtwParameters | 6.1.6.2.58 | Paging Time Window Parameters |
| OperationMode | 6.1.6.3.12 | Operation Mode |
| SorUpdateIndicator | 6.1.6.3.13 | SoR Update Indicator |
| ExternalUnrelatedClass | 6.1.6.2.62 |  |
| AfExternal | 6.1.6.2.63 |  |
| LcsClientExternal | 6.1.6.2.64 |  |
| LcsClientGroupExternal | 6.1.6.2.65 |  |
| ServiceTypeUnrelatedClass | 6.1.6.2.66 |  |
| UeId | 6.1.6.2.67 |  |
| DefaultUnrelatedClass | 6.1.6.2.68 |  |
| ContextInfo | 6.1.6.2.69 | Contains the HTTP Headers received by the NFs |
| UeContextInAmfData | 6.1.6.2.70 |  |
| V2xSubscriptionData | 6.1.6.2.71 | V2X Subscription Data |
| LcsBroadcastAssistanceTypesData | 6.1.6.2.72 | LCS Broadcast Assistance Data Types |
| DatasetNames | 6.1.6.2.73 | Data Set Names |
| PlmnRestriction | 6.1.6.2.74 |  |
| ProseSubscriptionData | 6.1.6.2.76 | ProSe Subscription Data |
| AerialUeSubscriptionInfo | 6.1.6.2.78 | Aerial UE Subscription Information |
| SmSubsData | 6.1.6.2.79 |  |
| ExtendedSmSubsData | 6.1.6.2.80 |  |
| AmfInfo | 6.1.6.2.81 | AMF information |
| ProSeAllowedPlmn | 6.1.6.2.82 | Contains the allowed PLMN information for ProSe Service |
| ImmediateReport | 6.1.6.2.83 | UDM SDM Immediate Report |
| MbsSubscriptionData | 6.1.6.2.84 | 5MBS Subscription Data |
| DefaultDnnIndicator | 6.1.6.3.2 |  |
| LboRoamingAllowed | 6.1.6.3.2 |  |
| UeUsageType | 6.1.6.3.2 |  |
| MpsPriorityIndicator | 6.1.6.3.2 |  |
| McsPriorityIndicator | 6.1.6.3.2 |  |
| 3GppChargingCharacteristics | 6.1.6.3.2 | 3GPP Charging Characteristics |
| MicoAllowed | 6.1.6.3.2 |  |
| SmsSubscribed | 6.1.6.3.2 |  |
| SharedDataId | 6.1.6.3.2 |  |
| IwkEpsInd | 6.1.6.3.2 | Interworking with EPS Indication |
| SecuredPacket | 6.1.6.3.2 |  |
| UpuRegInd | 6.1.6.3.2 |  |
| ExtGroupId | 6.1.6.3.2 |  |
| NbIoTUePriority | 6.1.6.3.2 |  |
| CodeWord | 6.1.6.3.2 |  |
| AfId | 6.1.6.3.2 |  |
| LcsClientId | 6.1.6.3.2 |  |
| DataSetName | 6.1.6.3.3 |  |
| PduSessionContinuityInd | 6.1.6.3.7 |  |
| LocationPrivacyInd | 6.1.6.3.8 |  |
| PrivacyCheckRelatedAction | 6.1.6.3.9 |  |
| LcsClientClass | 6.1.6.3.10 |  |
| LcsMoServiceClass | 6.1.6.3.11 |  |
| OperationMode | 6.1.6.3.12 |  |
| CodeWordInd | 6.1.6.3.14 |  |
| MdtUserConsent | 6.1.6.3.15 | MDT User Consent |
| SharedDataTreatmentInstruction | 6.1.6.3.16 |  |
| GpsiType | 6.1.6.3.17 | Type of GPSI (MSISDN or External-ID) |
| SorTransparentContainer | 6.1.6.3.2 |  |
| AerialUeIndication | 6.1.6.3.18 | Indication on whether Aerial service for UE is allowed or not. |
| UpuTransparentContainer | 6.1.6.3.2 |  |
| ProseDirectAllowed | 6.1.6.3.19 | Contains the ProSe Services that can be authorised by the given PLMN identity. |

Editor's Note: Aerial UE subscription data for the UUAA-SM procedure shall be added after the requirement from stage 2 is clear.

Table 6.1.6.1-2 specifies data types re-used by the Nudm\_SDM service API from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Nudm\_SDM service API.

Table 6.1.6.1-2: Nudm\_SDM re-used Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Reference | Comments |
| Dnn | 3GPP TS 29.571 [7] | Data Network Name with Network Identifier only; this type is used as key in a map of:  - DnnConfigurations; see clause 6.1.6.2.8;  - EpsIwkPgws; see clause 6.2.6.2.2;  - ExpectedUeBehaviourData; see clause 6.1.6.2.8; |
| DurationSec | 3GPP TS 29.571 [7] | Time value in seconds |
| ProblemDetails | 3GPP TS 29.571 [7] | Common data type used in response bodies |
| Snssai | 3GPP TS 29.571 [7] | Single NSSAI |
| Uri | 3GPP TS 29.571 [7] | Uniform Resource Identifier |
| Gpsi | 3GPP TS 29.571 [7] | Generic Public Subscription Identifier |
| RatType | 3GPP TS 29.571 [7] | Radio Access Technology Type |
| Area | 3GPP TS 29.571 [7] |  |
| ServiceAreaRestriction | 3GPP TS 29.571 [7] |  |
| CoreNetworkType | 3GPP TS 29.571 [7] |  |
| SupportedFeatures | 3GPP TS 29.571 [7] | see 3GPP TS 29.500 [4] clause 6.6 |
| PlmnId | 3GPP TS 29.571 [7] | PLMN Identity |
| PduSessionType | 3GPP TS 29.571 [7] |  |
| SubscribedDefaultQos | 3GPP TS 29.571 [7] | Subscribed Default QoS |
| Ambr | 3GPP TS 29.571 [7] |  |
| AmbrRm | 3GPP TS 29.571 [7] |  |
| SliceMbrRm | 3GPP TS 29.571 [7] |  |
| PduSessionId | 3GPP TS 29.571 [7] | PduSessionId is used as key in a map of PduSessions; see clause 6.1.6.2.16. |
| NfInstanceId | 3GPP TS 29.571 [7] |  |
| Supi | 3GPP TS 29.571 [7] |  |
| RfspIndexRm | 3GPP TS 29.571 [7] |  |
| SscMode | 3GPP TS 29.571 [7] |  |
| Ipv4Addr | 3GPP TS 29.571 [7] |  |
| Ipv6Addr | 3GPP TS 29.571 [7] |  |
| Ipv6Prefix | 3GPP TS 29.571 [7] |  |
| SorMac | 3GPP TS 29.509 [24] |  |
| SteeringInfo | 3GPP TS 29.509 [24] |  |
| AckInd | 3GPP TS 29.509 [24] |  |
| CounterSor | 3GPP TS 29.509 [24] |  |
| UpuMac | 3GPP TS 29.509 [24] |  |
| UpuData | 3GPP TS 29.509 [24] |  |
| UpuAckInd | 3GPP TS 29.509 [24] |  |
| CounterUpu | 3GPP TS 29.509 [24] |  |
| TraceData | 3GPP TS 29.571 [7] | Trace control and configuration parameters |
| NotifyItem | 3GPP TS 29.571 [7] |  |
| UpSecurity | 3GPP TS 29.571 [7] |  |
| ServiceName | 3GPP TS 29.510 [19] |  |
| OdbPacketServices | 3GPP TS 29.571 [7] |  |
| GroupId | 3GPP TS 29.571 [7] | This type is also used as key of a map in attributes:  - vnGroupInfo and sharedVnGroupDataIds; see clause 6.1.6.2.4, 6.1.6.2.8, 6.1.6.2.27; |
| DateTime | 3GPP TS 29.571 [7] |  |
| CagId | 3GPP TS 29.571 [7] |  |
| StnSr | 3GPP TS 29.571 [7] | Session Transfer Number for SRVCC |
| CMsisdn | 3GPP TS 29.571 [7] | Correlation MSISDN |
| OsId | 3GPP TS 29.519 [33] |  |
| Uint16 | 3GPP TS 29.571 [7] |  |
| RgWirelineCharacteristics | 3GPP TS 29.571 [7] |  |
| GeographicArea | 3GPP TS 29.572 [34] |  |
| LcsServiceType | 3GPP TS 29.572 [34] |  |
| ScheduledCommunicationTime | 3GPP TS 29.571 [7] | Scheduled Communication Time |
| LocationArea | 6.5.6.2.10 |  |
| StationaryIndication | 3GPP TS 29.571 [7] | Stationary Indication |
| TrafficProfile | 3GPP TS 29.571 [7] | Traffic Profile |
| ScheduledCommunicationType | 3GPP TS 29.571 [7] | Scheduled Communication Type |
| BatteryIndication | 3GPP TS 29.571 [7] | Battery Indication |
| AcsInfo | 3GPP TS 29.571 [7] | ACS Information |
| IPv4AddrMask | 3GPP TS 29.571 [7] |  |
| Fqdn | 3GPP TS 29.571 [7] | Fully Qualified Domain Name |
| NefId | 3GPP TS 29.510 [19] |  |
| PatchResult | 3GPP TS 29.571 [7] |  |
| NrV2xAuth | 3GPP TS 29.571 [7] |  |
| LteV2xAuth | 3GPP TS 29.571 [7] |  |
| ProseServiceAuth | 3GPP TS 29.571 [7] |  |
| BitRate | 3GPP TS 29.571 [7] |  |
| MdtConfiguration | 3GPP TS 29.571 [7] |  |
| Uint64 | 3GPP TS 29.571 [7] |  |
| WirelineArea | 3GPP TS 29.571 [7] |  |
| WirelineServiceAreaRestriction | 3GPP TS 29.571 [7] |  |
| NfGroupId | 3GPP TS 29.571 [7] |  |
| EcsServerAddr | 3GPP TS 29.571 [7] |  |
| RedirectResponse | 3GPP TS 29.571 [7] | Response body of the redirect response message |
| Bytes | 3GPP TS 29.571 [7] | Binary data encoded as a base64 character string |
| SpatialValidityCond | 3GPP TS 29.571 [7] |  |
| AccessType | 3GPP TS 29.571 [7] | Access Type |
| NsSrg | 3GPP TS 29.571 [7] | NSSRG value |
| MbsSessionId | 3GPP TS 29.571 [7] | 5MBS Session Id |

\* \* \* Next Change \* \* \* \*

##### 6.1.6.2.28 Type: PgwInfo

Table 6.1.6.2.28-1: Definition of type PgwInfo

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| dnn | Dnn | M | 1 | DNN/APN with Network Identifier only. |
| pgwFqdn | Fqdn | M | 1 | FQDN of the PGW in the "PGW-C+SMF" (NOTE) |
| pgwIpAddr | IpAddress | O | 0..1 | IP Address of the PGW in the "PGW-C+SMF" |
| plmnId | PlmnId | O | 0..1 | PLMN where the PGW-C+SMF is located |
| epdgInd | boolean | O | 0..1 | If present, it indicates whether access is from ePDG or not.  true: access is from ePDG.  false or absent: access is not from ePDG |
| pcfId | NfInstanceId | C | 0..1 | This IE shall be present if the PCF Selection Assistance Info is received from the UDM.  When present, it indicates the PCF identifier serving the PDU Session/PDN Connection that should be selected by the AMF. |
| registrationTime | DateTime | O | 0..1 | Time of PGW-C+SMF Registration (i.e. point in time when the HSS received SWx-SAR with SA\_TYPE=REGISTRATION). May be present when used on Nhss within UeContextInPgwData. |
| NOTE: This IE may contain an empty string when the PGW Information is mapped from HSS and PGW FQDN is not registered in HSS. | | | | |

\* \* \* Next Change \* \* \* \*

##### 6.1.6.2.32 Type: EmergencyInfo

Table 6.1.6.2.32-1: Definition of type EmergencyInfo

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| pgwFqdn | Fqdn | C | 0..1 | FQDN of the PGW-C+SMF for emergency session; either pgwFqdn or ipAddress shall be present. (NOTE) |
| pgwIpAddress | IpAddress | C | 0..1 | IP address of the PGW-C+SMF for emergency session (NOTE) |
| smfInstanceId | NfInstanceId | O | 0..1 | NF Instance Id of the SMF for emergency session (NOTE) |
| epdgInd | boolean | O | 0..1 | If present, it indicates whether access is from ePDG or not.  true: access is from ePDG.  false or absent: access is not from ePDG. |
| NOTE: If the AMF fails to contact the SMF/PGW based on the provided information (pgwFqdn/pgwIpAddress/smfInstanceId) when needed, the AMF should use a locally configured SMF instance ID or SMF set ID for the SMF/PGW for emergency services. | | | | |

\* \* \* Next Change \* \* \* \*

#### 6.2.6.1 General

This clause specifies the application data model supported by the API.

Table 6.2.6.1-1 specifies the data types defined for the Nudm\_UECM service API.

Table 6.2.6.1-1: Nudm\_UECM specific Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Clause defined | Description |
| Amf3GppAccessRegistration | 6.2.6.2.2 | The complete set of information relevant to the AMF where the UE has registered via 3GPP access. |
| AmfNon3GppAccessRegistration | 6.2.6.2.3 | The complete set of information relevant to the AMF where the UE has registered via non 3GPP access. |
| SmfRegistration | 6.2.6.2.4 | The complete set of information relevant to an SMF serving the UE |
| SmsfRegistration | 6.2.6.2.6 | The complete set of information relevant to the SMSF serving the UE. |
| DeregistrationData | 6.2.6.2.5 | Data sent with the Deregistration Notification |
| Amf3GppAccessRegistrationModification | 6.2.6.2.7 | Contains attributes of Amf3GppAccessRegistration that can be modified using PATCH |
| AmfNon3GppAccessRegistrationModification | 6.2.6.2.8 | Contains attributes of AmfNon3GppAccessRegistration that can be modified using PATCH |
| PcscfRestorationNotification | 6.2.6.2.9 | Information sent to the AMF or SMF when P-CSCF restoration is triggered. |
| NetworkNodeDiameterAddress | 6.2.6.2.10 |  |
| EpsIwkPgw | 6.2.6.2.11 |  |
| TriggerRequest | 6.2.6.2.12 |  |
| AmfDeregInfo | 6.2.6.2.13 |  |
| EpsInterworkingInfo | 6.2.6.2.14 |  |
| LocationInfo | 6.2.6.2.15 | Information used by (H)GMLC to send Location Service Request |
| RegistrationLocationInfo | 6.2.6.2.16 | Serving AMF, optional VGMLC and access type related informations used by (H)GMLC to send Location Request |
| VgmlcAddress | 6.2.6.2.17 | The address(es) of VGMLC |
| PeiUpdateInfo | 6.2.6.2.18 |  |
| RegistrationDataSets | 6.2.6.2.19 |  |
| IpSmGwRegistration | 6.2.6.2.20 |  |
| SmfRegistrationInfo | 6.2.6.2.20A | SMF Registration Information |
| NwdafRegistration | 6.2.6.2.21 | The complete set of information relevant to an NWDAF serving the UE |
| NwdafRegistrationModification | 6.2.6.2.22 | Contains attributes of NwdafRegistration that can be modified using PATCH |
| SmfRegistrationModification | 6.2.6.2.23 | Contains attributes of SmfRegistration that can be modified using PATCH |
| RoamingInfoUpdate | 6.2.6.2.24 | Roaming Information Update |
| PurgeFlag | 6.2.6.3.2 | This flag indicates whether or not the NF has deregistered. |
| E164Number | 6.2.6.3.2 |  |
| DualRegistrationFlag | 6.2.6.3.2 | Dual Registration Flag |
| DeregistrationReason | 6.2.6.3.3 |  |
| ImsVoPs | 6.2.6.3.4 |  |
| RegistrationReason | 6.2.6.3.5 |  |
| RegistrationDataSetName | 6.2.6.3.6 |  |
| UeReachableInd | 6.2.6.3.7 | UE Reachable Indication |

Table 6.2.6.1-2 specifies data types re-used by the Nudm\_uecm service API from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Nudm\_uecm service API.

Table 6.2.6.1-2: Nudm\_UECM re-used Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Reference | Comments |
| Dnn | 3GPP TS 29.571 [7] | Data Network Name with Network Identifier only. |
| NfInstanceId | 3GPP TS 29.571 [7] | Network Function Instance Identifier |
| PduSessionId | 3GPP TS 29.571 [7] | PDU Session ID |
| Pei | 3GPP TS 29.571 [7] | Permanent Equipment Identifier |
| ProblemDetails | 3GPP TS 29.571 [7] | Common data type used in response bodies |
| Uri | 3GPP TS 29.571 [7] | Uniform Resource Identifier |
| SupportedFeatures | 3GPP TS 29.571 [7] | see 3GPP TS 29.500 [4] clause 6.6 |
| Supi | 3GPP TS 29.571 [7] | see 3GPP TS 23.501 [2] clause 5.9.2 |
| Guami | 3GPP TS 29.571 [7] | Globally Unique AMF Identifier |
| PlmnId | 3GPP TS 29.571 [7] | PLMN Identity |
| DiameterIdentity | 3GPP TS 29.571 [7] |  |
| AccessType | 3GPP TS 29.571 [7] | Access Type |
| BackupAmfInfo | 3GPP TS 29.571 [7] | Backup AMFs |
| ServiceName | 3GPP TS 29.510 [19] |  |
| PatchResult | 3GPP TS 29.571 [7] |  |
| Gpsi | 3GPP TS 29.571 [7] | Generic Public Subscription Identitfier |
| Ipv4Addr | 3GPP TS 29.571 [7] | IPv4 address |
| Ipv6Addr | 3GPP TS 29.571 [7] | IPv6 address |
| Fqdn | 3GPP TS 29.571 [7] | Fully Qualified Domain Name |
| Snssai | 3GPP TS 29.571 [7] | Single NSSAI |
| RedirectResponse | 3GPP TS 29.571 [7] | Response body of the redirect response message |
| EventId | 3GPP TS 29.520 [58] | Describes the type of analytics. |
| ContextInfo | 6.1.6.2.69 | Contains the HTTP Headers received by the NFs |

\* \* \* Next Change \* \* \* \*

##### 6.2.6.2.4 Type: SmfRegistration

Table 6.2.6.2.4-1: Definition of type SmfRegistration

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Attribute name | | Data type | | P | | Cardinality | | Description | |
| smfInstanceId | | NfInstanceId | | M | | 1 | | NF Instance Id of the SMF | |
| smfSetId | | NfSetId | | C | | 0..1 | | This IE shall be present if the SMF belongs to a SMF SET.  If present, it indicates the NF Set ID of SMF Set. | |
| supportedFeatures | | SupportedFeatures | | O | | 0..1 | | See clause 6.2.8  These are the features supported by the SMF. | |
| pduSessionId | | PduSessionId | | M | | 1 | | PDU Session ID | |
| singleNssai | | Snssai | | M | | 1 | | A single Network Slice Selection Assistance Information | |
| dnn | | Dnn | | C | | 0..1 | | Data Network Name; shall be present if emergencyServices is false or absent.  When present, this IE shall contain the Network Identifier only. | |
| emergencyServices | | boolean | | C | | 0..1 | | Indication of Emergency Services; absence indicates false. | |
| pcscfRestorationCallbackUri | | Uri | | O | | 0..1 | | a URI provided by the SMF to receive (implicitly subscribed) notifications on the need for P-CSCF Restoration | |
| plmnId | | PlmnId | | M | | 1 | | Serving node PLMN identity. | |
| pgwFqdn | | Fqdn | | C | | 0..1 | | FQDN of the PGW in the "PGW-C+SMF", to be included for interworking with EPS. | |
| pgwIpAddr | | IpAddress | | O | | 0..1 | | IP Address of the PGW in the "PGW-C+SMF", to be included for interworking with EPS. | |
| epdgInd | | boolean | | O | | 0..1 | | Indicate whether access is from ePDG.  true: access from ePDG.  false or absent: not access from ePDG | |
| deregCallbackUri | | Uri | | O | | 0..1 | | A URI provided by the SMF to receive (implicitly subscribed) notifications on deregistration.  The deregistration callback URI shall have unique information within SMF set to identify the UE to be deregistered. | |
| registrationReason | | RegistrationReason | | O | | 0..1 | | Indicates registration reason. | |
| registrationTime | | DateTime | | C | | 0..1 | | Time of SmfRegistration. Shall be present when used on Nudr. | |
| contextInfo | | ContextInfo | | C | | 0..1 | | This IE if present may contain e.g. the headers received by the UDM along with the SmfRegistration.  Shall be absent on Nudm and may be present on Nudr. | |
| pcfId | | NfInstanceId | | C | | 0..1 | | This IE shall be present if the SMF is indicated to select the same PCF instance for SM Policy Control.  When present, it indicates the PCF Identifier that serving the PDU Session/PDN Connection. | |

\* \* \* Next Change \* \* \* \*

##### 6.2.6.2.11 Type: EpsIwkPgw

Table 6.2.6.2.11-1: Definition of type EpsIwkPgw

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| pgwFqdn | Fqdn | M | 1 | The PGW FQDN of the "PGW-C+SMF" |
| smfInstanceId | NfInstanceId | M | 1 | The SMF Instance Id of the "PGW-C+SMF" |

\* \* \* Next Change \* \* \* \*

##### 6.2.6.2.23 Type: SmfRegistrationModification

This type is derived from the type SmfRegistration by deleting all attributes that are not subject to modification by means of the HTTP PATCH method.

Table 6.2.6.2.23-1: Definition of type SmfRegistrationModification

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| smfInstanceId | NfInstanceId | M | 1 | NF Instance Id of the SMF requesting the modification. If the NF Set Id is absent and the NF Instance Id does not match the stored NF Instance Id value, the modification request shall be rejected. |
| smfSetId | NfSetId | O | 0..1 | NF Set Id of the SMF requesting the modification. If the NF Set Id is present and does not match the stored NF Set Id value, the modification request shall be rejected. |
| pgwFqdn | Fqdn | C | 0..1 | FQDN of the PGW in the "PGW-C+SMF", to be included for interworking with EPS. For deletion of the PGW FQDN, the value of the pgwFqdn shall be set to null. |
| NOTE: Absence of optional attributes indicates: no modification. Attributes of this type are not marked "nullable: true" in the OpenAPI file as deletion of these attributes is not applicable. | | | | |

\* \* \* Next Change \* \* \* \*

#### 6.5.6.1 General

This clause specifies the application data model supported by the API.

Table 6.5.6.1-1 specifies the data types defined for the Nudm\_PP service API.

Table 6.5.6.1-1: Nudm\_PP specific Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Clause defined | Description |
| PpData | 6.5.6.2.2 | Parameter Provision Data |
| CommunicationCharacteristics | 6.5.6.2.3 | Communication Characteristics |
| PpSubsRegTimer | 6.5.6.2.4 |  |
| PpActiveTime | 6.5.6.2.5 |  |
| 5GVnGroupConfiguration | 6.5.6.2.6 |  |
| 5GVnGroupData | 6.5.6.2.7 |  |
| ExpectedUeBehaviour | 6.5.6.2.8 | Expected UE Behaviour Parameters |
| LocationArea | 6.5.6.2.10 | Location Area |
| NetworkAreaInfo | 6.5.6.2.11 | Network Area Information |
| EcRestriction | 6.5.6.2.12 |  |
| PlmnEcInfo | 6.5.6.2.13 |  |
| PpDlPacketCountExt | 6.5.6.2.14 |  |
| PpMaximumResponseTime | 6.5.6.2.15 |  |
| PpMaximumLatency | 6.5.6.2.16 |  |
| LcsPrivacy | 6.5.6.2.17 |  |
| UmtTime | 6.5.6.2.18 |  |
| PpDataEntry | 6.5.6.2.19 | Provisioning Parameter Data Entry |
| CommunicationCharacteristicsAF | 6.5.6.2.20 | Communication Characteristics per AF |
| EcsAddrConfigInfo | 6.5.6.2.21 | ECS Address Configuration Information |
| 5MbsAuthorizationInfo | 6.5.6.2.22 | 5MBS Session Authorization Information |
| ReferenceId | 6.5.6.3.2 |  |
| PpDlPacketCount | 6.5.6.3.2 |  |

Table 6.5.6.1-2 specifies data types re-used by the Nudm\_PP service API from other APIs, including a reference and when needed, a short description of their use within the Nudm\_PP service API.

Table 6.5.6.1-2: Nudm\_PP re-used Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Reference | Comments |
| DurationSec | 3GPP TS 29.571 [7] | Time value in seconds |
| DurationSecRm | 3GPP TS 29.571 [7] | Time value in seconds; nullable |
| SupportedFeatures | 3GPP TS 29.571 [7] |  |
| NfInstanceId | 3GPP TS 29.571 [7] |  |
| ProblemDetails | 3GPP TS 29.571 [7] |  |
| Gpsi | 3GPP TS 29.571 [7] |  |
| PatchResult | 3GPP TS 29.571 [7] |  |
| DateTime | 3GPP TS 29.571 [7] |  |
| Ecgi | 3GPP TS 29.571 [7] | an EUTRA cell identifier |
| Ncgi | 3GPP TS 29.571 [7] | an NR cell identifier |
| GlobalRanNodeId | 3GPP TS 29.571 [7] | an identity of the NG-RAN node |
| Tai | 3GPP TS 29.571 [7] | a tracking area identity |
| GeographicArea | 3GPP TS 29.572 [34] | Identifies the geographical information of the user(s). |
| CivicAddress | 3GPP TS 29.572 [34] | Identifies the civic address information of the user(s). |
| PduSessionType | 3GPP TS 29.571 [7] |  |
| AppDescriptor | 6.1.6.2.40 |  |
| AcsInfoRm | 3GPP TS 29.571 [7] |  |
| StnSrRm | 3GPP TS 29.571 [7] | Session Transfer Number for SRVCC |
| Supi | 3GPP TS 29.571 [7] |  |
| Lpi | 6.1.6.2.43 |  |
| MtcProviderInformation | 3GPP TS 29.571 [7] | MTC Provider Information |
| StationaryIndicationRm | 3GPP TS 29.571 [7] |  |
| ScheduledCommunicationTimeRm | 3GPP TS 29.571 [7] |  |
| ScheduledCommunicationTypeRm | 3GPP TS 29.571 [7] |  |
| TrafficProfileRm | 3GPP TS 29.571 [7] |  |
| BatteryIndicationRm | 3GPP TS 29.571 [7] |  |
| EcsServerAddr | 3GPP TS 29.571 [7] |  |
| Fqdn | 3GPP TS 29.571 [7] | Fully Qualified Domain Name |
| SpatialValidityCond | 3GPP TS 29.571 [7] |  |
| MbsSessionId | 3GPP TS 29.571 [7] | 5MBS Session Identifier |

\* \* \* Next Change \* \* \* \*

## A.2 Nudm\_SDM API

openapi: 3.0.0

\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*\*

EmergencyInfo:

type: object

oneOf:

- required:

- pgwFqdn

- required:

- pgwIpAddress

properties:

pgwFqdn:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Fqdn'

pgwIpAddress:

$ref: '#/components/schemas/IpAddress'

smfInstanceId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

epdgInd:

type: boolean

default: false

\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*\*

PgwInfo:

type: object

required:

- dnn

- pgwFqdn

properties:

dnn:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Dnn'

pgwFqdn:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Fqdn'

pgwIpAddr:

$ref: '#/components/schemas/IpAddress'

plmnId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PlmnId'

epdgInd:

type: boolean

default: false

pcfId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

registrationTime:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*\*

DnnConfiguration:

type: object

required:

- pduSessionTypes

- sscModes

properties:

pduSessionTypes:

$ref: '#/components/schemas/PduSessionTypes'

sscModes:

$ref: '#/components/schemas/SscModes'

iwkEpsInd:

$ref: '#/components/schemas/IwkEpsInd'

5gQosProfile:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/SubscribedDefaultQos'

sessionAmbr:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ambr'

3gppChargingCharacteristics:

$ref: '#/components/schemas/3GppChargingCharacteristics'

staticIpAddress:

type: array

items:

$ref: '#/components/schemas/IpAddress'

minItems: 1

maxItems: 2

upSecurity:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/UpSecurity'

pduSessionContinuityInd:

$ref: '#/components/schemas/PduSessionContinuityInd'

niddNefId:

$ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/NefId'

niddInfo:

$ref: '#/components/schemas/NiddInformation'

redundantSessionAllowed:

type: boolean

acsInfo:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/AcsInfo'

ipv4FrameRouteList:

type: array

items:

$ref: '#/components/schemas/FrameRouteInfo'

minItems: 1

ipv6FrameRouteList:

type: array

items:

$ref: '#/components/schemas/FrameRouteInfo'

minItems: 1

atsssAllowed:

type: boolean

default: false

secondaryAuth:

type: boolean

dnAaaIpAddressAllocation:

type: boolean

dnAaaAddress:

$ref: '#/components/schemas/IpAddress'

additionalDnAaaAddresses:

type: array

items:

$ref: '#/components/schemas/IpAddress'

minItems: 1

dnAaaFqdn:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Fqdn'

iptvAccCtrlInfo:

type: string

ipv4Index:

$ref: '#/components/schemas/IpIndex'

ipv6Index:

$ref: '#/components/schemas/IpIndex'

ecsAddrConfigInfo:

$ref: 'TS29503\_Nudm\_PP.yaml#/components/schemas/EcsAddrConfigInfo'

sharedEcsAddrConfigInfo:

$ref: '#/components/schemas/SharedDataId'

easDiscoveryAuthorized:

type: boolean

default: false

\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*\*

\* \* \* Next Change \* \* \* \*

## A.3 Nudm\_UECM API

openapi: 3.0.0

\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*\*

EpsIwkPgw:

type: object

required:

- pgwFqdn

- smfInstanceId

properties:

pgwFqdn:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Fqdn'

smfInstanceId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*\*

SmfRegistration:

type: object

required:

- smfInstanceId

- pduSessionId

- singleNssai

- plmnId

properties:

smfInstanceId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

smfSetId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/NfSetId'

supportedFeatures:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

pduSessionId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PduSessionId'

singleNssai:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

dnn:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Dnn'

emergencyServices:

type: boolean

pcscfRestorationCallbackUri:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

plmnId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PlmnId'

pgwFqdn:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Fqdn'

pgwIpAddr:

$ref: 'TS29503\_Nudm\_SDM.yaml#/components/schemas/IpAddress'

epdgInd:

type: boolean

default: false

deregCallbackUri:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

registrationReason:

$ref: '#/components/schemas/RegistrationReason'

registrationTime:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

contextInfo:

$ref: 'TS29503\_Nudm\_SDM.yaml#/components/schemas/ContextInfo'

pcfId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*\*

VgmlcAddress:

type: object

properties:

vgmlcAddressIpv4:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

vgmlcAddressIpv6:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

vgmlcFqdn:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Fqdn'

\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*\*

SmfRegistrationModification:

description: Contains attributes of SmfRegistration that can be modified using PATCH

type: object

required:

- smfInstanceId

properties:

smfInstanceId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

smfSetId:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/NfSetId'

pgwFqdn:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Fqdn'

nullable: true

\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*\*

\* \* \* Next Change \* \* \* \*

## A.6 Nudm\_PP API

openapi: 3.0.0

\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*\*

5GVnGroupData:

type: object

required:

- dnn

- sNssai

properties:

dnn:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Dnn'

sNssai:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

pduSessionTypes:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/PduSessionType'

minItems: 1

appDescriptors:

type: array

items:

$ref: 'TS29503\_Nudm\_SDM.yaml#/components/schemas/AppDescriptor'

minItems: 1

secondaryAuth:

type: boolean

dnAaaAddress:

$ref: 'TS29503\_Nudm\_SDM.yaml#/components/schemas/IpAddress'

additionalDnAaaAddresses:

type: array

items:

$ref: 'TS29503\_Nudm\_SDM.yaml#/components/schemas/IpAddress'

minItems: 1

dnAaaFqdn:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Fqdn'

\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*\*

\* \* \* End Of Change \* \* \* \*