**3GPP TSG-CT WG4 Meeting #96eC4-20xxxx**

**E-Meeting, 17th – 28th February 2020 *was* C4-201177, C4-200749**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.503** | **CR** | **0352** | **rev** | **2** | **Current version:** | **16.2.0** |  |
|  | | | | | | | | |
| *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:*** | SoR Update Indicator | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, Nokia, Nokia Shanghai Bell, NTT DOCOMO INC., Orange | | | | | | | | | |
| ***Source to TSG:*** | CT4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NSORAF | | | | |  | ***Date:*** | | | 2020-02-27 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories 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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | For providing SoR information scenario:  1.the HPLMN will mark the UE is expected to receive the steering of roaming information due to initial registration (or Emergency Registration) in a VPLMN in the subscription information in the UDM, and AMF shall retrieve SoR information depending on the NAS Registration Type ("Initial Registration" or "Emergency Registration") if the AMF already has subscription data for the UE but the SoR Update Indicator in the UE context. We can see detail in clause 4.2.2.2.2 step 14a-c of 23.502 and in Annex C of 23.122.  2.The HPLMN will mark the UE/USIM is expected to receive the steering of roaming information due to initial registration, it is stored in UDR, and UDM can get it to decied whether SoR information is to provide to UE, or not due to initial registration.  Based on the information above, we can get that:  1.The subscription information in UDM shall include the indication whether the UE is expected to receive the steering of roaming information due to initial registration (or Emergency Registration) in a VPLMN, and AMF can indicate UDM to send the steering of roaming information due to initial registration in a VPLMN or due to Emergency registration in a VPLMN. the indication whether the UE is expected to receive the steering of roaming information due to initial registration (or Emergency Registration) in a VPLMN is named as SoR Update Indicator in stage 2.  2.Storing UE/USIM is expected to receive the steering of roaming information due to initial registration in UDR, and UDR can provide it to UDM. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1.Add SoR Update Indicator in URI query paramter for AMF to indicate UE is expected to receive the steering of roaming information due to initial registration (or Emergency Registration) in a VPLMN.  2. Add SoR Update Indicator in Access and Mobility Subscription Data.  3. Add SoR Update Indicator inforamtion in description of Retrieval service operation of SDM service.  4. Add sorInfoExpectInd in SorInfo to indicate whether UE/USIM is expected to receive the steering of roaming information due to initial registration, and it’s only present when SorInfo is sent over Nudr. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Misalignment with stage 2. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.1.6.1, 6.1.6.2.4, 6.1.6.3.x(new), A.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 will introduce backward compatible new features in the OpenAPI specification files of Nudm\_SDM API, Nudr\_DataRepository API. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev1:   1. Move the attribute sorInfoExpectInd from data model SorInfo to AccessAndMobilitySubscriptionData. 2. Add the attribute sorafRetrieval to indicate whether the SoR information will be from SoRAF or not in data model AccessAndMobilitySubscriptionData 3. Add NOTE 3 to describe the relationship between sorafRetrieval and SorInfo from Nudr. 4. Add NOTE 4 to describe the relationship between sorafRetrieval and sorUpdateIndicatorList over Nudr. 5. Revise the OpenAPI accordingly. | | | | | | | | |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*The start of changes\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 6.1.6.1 General

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

Table 6.1.6.1-1 specifies the structured data types defined for the Nudm\_SDM service API. For simple data types defined for the Nudm\_SDM service API see table 6.1.6.3.2-1.

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 | |
| UeContextInSmfData | | 6.1.6.2.16 | | UE Context In SMF Data | |
| PduSession | | 6.1.6.2.17 | |  | |
| 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 | |
| SmsManagementSubscriptionData | | 6.1.6.2.14 | | SMS Management Subscription Data | |
| IdTranslationResult | | 6.1.6.2.18 | | SUPI that corresponds to a given GPSI | |
| IpAddress | | 6.1.6.2.22 | | IP address (IPv4, or IPv6, or IPv6 prefix) | |
| 3GppChargingCharacteristics | | 6.1.6.3.2 | | 3GPP Charging Characteristics | |
| IwkEpsInd | | 6.1.6.3.2 | | Interworking with EPS Indication | |
| ModificationNotification | | 6.1.6.2.21 | |  | |
| 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 | |
| UpuInfo | | 6.1.6.2.33 | | UE Parameters Update 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 | |
| SdmSubsModification | | 6.1.6.2.31 | | Modification instruction for a subscription to notifications | |
| EmergencyInfo | | 6.1.6.2.32 | | Information about emergency session | |
| EpsIwkPgw | | 6.1.6.2.11 | | Information of the PGW-C+SMF selected by the AMF for EPS interworking with N26 interface. | |
| GroupIdentifiers | | 6.1.6.2.34 | |  | |
| ExtGroupId | | 6.1.6.3.2 | |  | |
| 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 | |  | |
| EcRestrictionData | | 6.1.6.2.48 | | Enhance Coverage Restriction Data | |
| ExpectedUeBehaviourData | | 6.1.6.2.49 | | Expected UE Behaviour Data | |
| MaximumResponseTime | | 6.1.6.2.50 | | Maximum Response Time | |
| MaximumLatency | | 6.1.6.2.51 | | Maximum Latency | |
| SuggestedPacketNumDl | | 6.1.6.2.52 | | Suggested Number of Downlink Packets | |
| FrameRouteInfo | | 6.1.6.2.54 | | Frame Route Information | |
| SorUpdateIndicator | | 6.1.6.3.x | | SoR Update Indicator | |

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; 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] | |  | |
| 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] | |  | |
| RfspIndex | | 3GPP TS 29.571 [7] | |  | |
| SscMode | | 3GPP TS 29.571 [7] | |  | |
| Ipv4Address | | 3GPP TS 29.571 [7] | |  | |
| Ipv6Address | | 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] | |  | |
| Tmbr | | 3GPP TS 29.571 [7] | |  | |
| GeographicArea | | 3GPP TS 29.572 [34] | |  | |
| LcsServiceType | | 3GPP TS 29.572 [34] | |  | |
| ScheduledCommunicationTime | | 6.5.6.2.9 | |  | |
| LocationArea | | 6.5.6.2.10 | |  | |
| StationaryIndication | | 6.5.6.3.3 | |  | |
| TrafficProfile | | 6.5.6.3.4 | |  | |
| ScheduledCommunicationType | | 6.5.6.3.5 | |  | |
| BatteryIndication | | 6.5.6.2.14 | |  | |
| ScheduledCommunicationTime | | 6.5.6.2.9 | |  | |
| LocationArea | | 6.5.6.2.10 | |  | |
| StationaryIndication | | 6.5.6.3.3 | |  | |
| TrafficProfile | | 6.5.6.3.4 | |  | |
| ScheduledCommunicationType | | 6.5.6.3.5 | |  | |
| BatteryIndication | | 6.5.6.3.14 | |  | |
| AcsInfo | | 3GPP TS 29.571 [7] | | ACS Information | |
| IPv4AddrMask | | 3GPP TS 29.571 [7] | |  | |
| Ipv6Prefix | | 3GPP TS 29.571 [7] | |  | |
| NefId | | 3GPP TS 29.510 [19] | |  | |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

##### 6.1.6.2.4 Type: AccessAndMobilitySubscriptionData

Table 6.1.6.2.4-1: Definition of type AccessAndMobilitySubscriptionData

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| supportedFeatures | SupportedFeatures | O | 0..1 | See clause 6.1.8 |
| gpsis | array(Gpsi) | O | 0..N | List of Generic Public Subscription Identifier; see 3GPP TS 29.571 [7] |
| internalGroupIds | array(GroupId) | O | 1..N | List of internal group identifier; see 3GPP TS 23.501 [2] clause 5.9.7 |
| vnGroupInfo | map(VnGroupData) | O | 1..N | A map of 5G VN group data (list of key-value pairs where GroupId serves as key; see clause 6.1.6.1).  This attribute is only applicable to the Nudm interface and shall not be included over the Nudr interface. |
| sharedVnGroupDataIds | map(SharedDataId) | O | 1..N | A map of identifiers of shared 5G VN group data (list of key-value pairs whereGroupId serves as key; see clause 6.1.6.1), only present if vnGroupInfo not present.  This attribute is only applicable to the Nudm interface and shall not be included over the Nudr interface. |
| subscribedUeAmbr | AmbrRm | O | 0..1 |  |
| nssai | Nssai | O | 0..1 | Network Slice Selection Assistance Information |
| ratRestrictions | array(RatType) | O | 0..N | List of RAT Types that are restricted; see 3GPP TS 29.571 [7] (NOTE 2) |
| forbiddenAreas | array(Area) | O | 0..N | List of forbidden areas |
| serviceAreaRestriction | ServiceAreaRestriction | O | 0..1 | Subscribed Service Area Restriction |
| coreNetworkTypeRestrictions | array(CoreNetworkType) | O | 0..N | List of Core Network Types that are restricted |
| rfspIndex | RfspIndexRm | O | 0..1 | Index to RAT/Frequency Selection Priority; |
| subsRegTimer | DurationSecRm | O | 0..1 | Subscribed periodic registration timer; see 3GPP TS 29.571 [7] |
| ueUsageType | UeUsageType | O | 0..1 |  |
| mpsPriority | MpsPriorityIndicator | O | 0..1 |  |
| mcsPriority | McsPriorityIndicator | O | 0..1 |  |
| activeTime | DurationSecRm | O | 0..1 | subscribed active time for PSM UEs |
| dlPacketCount | DlPacketCount | O | 0..1 | DL Buffering Suggested Packet Count indicates whether extended buffering of downlink packets for High Latency Communication is requested. |
| sorInfo | SorInfo | O | 0..1 | On Nudm, this IE shall be present if the UDM shall send the information for Steering of Roaming during registration or the subscription data update to the UE. The UDM may detect the need to send sorInfo by retrieving context information from the UDR.  (NOTE 3) |
| sorInfoExpectInd | Boolean | C | 1 | Contains the indication on whether or not the UE is expecting to receive SoR information at initial registration.   * When set to true; it indicates that the UE is expecting to receive SoR information at initial registration, i.e. the UDM shall send SoR information on Nudm. * When set to false: it indicates that the UE is not expecting to receive SoR information at initial registration, i.e. the UDM may or may not send SoR information on Nudm.   This attribute shall be present on Nudr interface and shall be absent on UDM interface. |
| sorafRetrieval | boolean | C | 0..1 | Contains the indication on whether or not SoR information shall be retrieved from the SOR-AF.   * When set to true: it indicates that the UDM shall retrieve SorInfo from the SOR-AF and include the retrieved information in AccessAndMobilitySubscriptionData sent to the AMF. * When set to false or absent: it indicates that the retrieval of SorInfo from the SOR-AF is not required.   This attribute may be present on Nudr interface and shall be absent on Nudm interface. |
| sorUpdateIndicatorList | array(SorUpdateIndicator) | C | 1..N | List of Sor Update Indicators;   * It shall indicate that the AMF shall retrieve SoR information when the UE performs Registration with NAS Registration Type "Initial Registration" if the value "INITIAL\_REGISTRATION" is included; * And/or it shall indicate that the AMF shall retrieve SoR information when the UE performs Registration with NAS Registration Type "Emergency Registration" if the value "EMERGENCY\_REGISTRATION" is included.   This attribute may be present on Nudr and Nudm interfaces when the UE is roaming out of its HPLMN.  When absent on Nudm interface, it indicates that the AMF shall not retrieve SoR information when the UE performs Registration with either NAS Registration Type "Initial Registration" or NAS Registration Type "emergency Registration". |
| upuInfo | UpuInfo | O | 0..1 | This IE shall be present if the UDM shall send the information for UE Parameters Update after the UE has been successfully authenticated and registered to the 5G system. |
| micoAllowed | MicoAllowed | O | 0..1 | Indicates whether the UE subscription allows MICO mode. |
| sharedAmDataIds | array(SharedDataId) | O | 0..N | Identifier of shared Access And Mobility Subscription data |
| odbPacketServices | OdbPacketServices | O | 0..1 | Operator Determined Barring for Packet Oriented Services |
| subscribedDnnList | array(Dnn) | O | 0..N | List of the subscribed DNNs for the UE (including optionally the Wildcard DNN). Used to determine the list of LADN available to the UE as defined in clause 5.6.5 of TS 23.501 [2]. |
| serviceGapTime | DurationSec | O | 0..1 | Used to set the Service Gap timer for Service Gap Control (see TS 23.501 [2] clause 5.26.16 and TS 23.502 [3] clause 4.2.2.2.2). |
| traceData | TraceData | O | 0..1 | Trace requirements about the UE, only sent to AMF in the HPLMN or one of its equivalent PLMN(s) |
| cagData | CagData | O | 0..1 | Closed Access Group Data.  Shall be absent if both - no CAG is subscribed for the serving PLMN and - an acknowledgement from the UE is not pending. |
| stnSr | StnSr | O | 0..1 | This IE shall be present if the UE is subscribed to 5G SRVCC.  When present, it indicates the STN-SR (Session Transfer Number for SRVCC) of the UE. |
| cMsisdn | CMsisdn | O | 0..1 | This IE shall be present if the UE is subscribed to 5G SRVCC.  When present, it indicates the C-MSISDN (Correlation MSISDN) of the UE. |
| nbIoTUePriority | NbIoTUePriority | O | 0..1 | Indicates NB IoT UE priority which is used by the NG-RAN to prioritise resource allocation between UEs accessing via NB-IoT(see clause 5.31.17 of 3GPP TS 23.501 [2]). |
| nssaiInclusionAllowed | boolean | O | 0..1 | Indicates that the UE is allowed to include NSSAI in the RRC connection establishment in clear text for 3GPP access.  true: indicates that NSSAI can be included in RRC connection establishment by the UE.  false or absent: indicates that NSSAI cannot be included. |
| rgWirelineCharacteristics | RgWirelineCharacteristics | O | 0..1 | Indicates the RG Level Wireline Access Characteristics as specified in 3GPP TS 23.316 [37]. |
| rgTMBR | TMBR | O | 0..1 | The maximum aggregated uplink and downlink bit rates to be shared across all Non-GBR and GBR QoS Flows via wireline access network for the UE as specified in 3GPP TS 23.316 [37] |
| ecRestrictionData | EcRestrictionData | O | 0..1 | Indicates Enhanced Coverage Restriction Data.  If absent, indicates enchanged coverage is not restricted. |
| expectedUeBehaviour | ExpectedUeBehaviourData | O | 0..1 | Indicates Expected UE Behaviour parameters associated with AMF(see clause 5.20 of 3GPP TS 23.501 [2] and clause  4.15.6.3 of 3GPP TS 23.502 [3]).  This attribute is only applicable to the Nudm interface and shall not be included over the Nudr interface. |
| maximumResponseTimeList | array(MaximumResponseTime) | O | 1..N | Indicates Maximum Response Time associated with AMF (see clause 5.20 of 3GPP TS 23.501 [2] and clause  4.15.6.3a of 3GPP TS 23.502 [3]).  This attribute is only applicable to the Nudm interface and shall not be included over the Nudr interface. |
| maximumLatencyList | array(MaximumLatency) | O | 1..N | Indicates Maximum Latency associated with AMF (see clause 5.20 of 3GPP TS 23.501 [2] and clause  4.15.6.3a of 3GPP TS 23.502 [3]).  This attribute is only applicable to the Nudm interface and shall not be included over the Nudr interface. |
| primaryRatRestrictions | array(RatType) | O | 0..N | List of RAT Types that are restricted for use as primary RAT; see 3GPP TS 29.571 [7] (NOTE 2) |
| secondaryRatRestrictions | array(RatType) | O | 0..N | List of RAT Types that are restricted for use as secondary RAT; see 3GPP TS 29.571 [7] (NOTE 2) |
| NOTE 1: AccessAndMobilitySubscriptionData can be UE-individual data or shared data.  UE-individual data take precedence over shared data.  E.g.: When an attribute of type array is present but empty within UE-Individual data and present (with any cardinality) in shared data, the empty array takes precedence. Similarly, when a nullable attribute is present with value null within the individual data and present (with any value) in shared data, the null value takes precedence (i.e. for the concerned UE the attribute is considered absent).  NOTE 2: If the primaryRatRestrictions and secondaryRatRestrictions attributes are supported by the sender, the sender shall include the list of RAT Types that are restricted, if any, in the ratRestrictions attribute, shall include the list of RAT Types that are restricted for use as primary RAT, if any, in the primaryRatRestrictions attribute and shall include the list of RAT Types that are restricted for use as secondary RAT, if any, in the secondaryRatRestrictions attribute. If the primaryRatRestrictions and secondaryRatRestrictions attributes are supported by the receiver, the receiver shall use the data in the primaryRatRestrictions attribute, if received, as the list of RAT Types that are restricted for use as primary RAT, and shall use the data in the secondaryRatRestrictions attribute, if received, as the list of RAT Types that are restricted for use as secondary RAT, otherwise the receiver shall use the data in the ratRestrictions attribute, if received, as the list of RAT Types that are restricted.  NOTE 3: If the UDM is configured to retrieve the steering of roaming information (steeringContainer) from SOR-AF or the value of attribute sorafRetrieval is true on Nudr, the UDM shall ignore the content of SorInfo if received via Nudr. | | | | |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

##### 6.1.6.3.x Enumeration: SorUpdateIndicator

Table 6.1.6.3.x-1: Enumeration SorUpdateIndicator

|  |  |
| --- | --- |
| Enumeration value | Description |
| "INITIAL\_REGISTRATION" | NAS registration type "Initial Registration" |
| "EMERGENCY\_REGISTRATION" | NAS registration type "Emergency Registration" |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

## A.2 Nudm\_SDM API

openapi: 3.0.0

***(… text not shown for clarity …)***

AccessAndMobilitySubscriptionData:

type: object

properties:

supportedFeatures:

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

gpsis:

type: array

items:

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

internalGroupIds:

type: array

items:

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

minItems: 1

vnGroupInfo:

type: object

additionalProperties:

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

minProperties: 1

sharedVnGroupDataIds:

type: object

additionalProperties:

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

minProperties: 1

subscribedUeAmbr:

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

nssai:

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

ratRestrictions:

type: array

items:

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

forbiddenAreas:

type: array

items:

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

serviceAreaRestriction:

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

coreNetworkTypeRestrictions:

type: array

items:

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

rfspIndex:

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

subsRegTimer:

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

ueUsageType:

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

mpsPriority:

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

mcsPriority:

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

activeTime:

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

dlPacketCount:

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

sorInfo:

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

sorInfoExpectInd:

type: boolean

sorafRetrieval:

type: boolean

default: false

sorUpdateIndicatorList:

type: array

items:

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

minItems: 1

upuInfo:

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

micoAllowed:

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

sharedAmDataIds:

type: array

items:

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

minItems: 1

odbPacketServices:

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

subscribedDnnList:

type: array

items:

anyOf:

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

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

serviceGapTime:

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

traceData:

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

cagData:

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

stnSr:

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

cMsisdn:

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

nbIoTUePriority:

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

nssaiInclusionAllowed:

type: boolean

default: false

rgWirelineCharacteristics:

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

rgTMBR:

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

ecRestrictionData:

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

expectedUeBehaviourList:

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

maximumResponseTimeList:

type: array

items:

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

minItems: 1

maximumLatencyList:

type: array

items:

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

minItems: 1

primaryRatRestrictions:

type: array

items:

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

secondaryRatRestrictions:

type: array

items:

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

***(… text not shown for clarity …)***

# ENUMS:

DataSetName:

anyOf:

- type: string

enum:

- AM

- SMF\_SEL

- UEC\_SMF

- UEC\_SMSF

- SMS\_SUB

- SM

- TRACE

- SMS\_MNG

- LCS\_PRIVACY

- LCS\_MO

- type: string

PduSessionContinuityInd:

anyOf:

- type: string

enum:

- MAINTAIN\_PDUSESSION

- RECONNECT\_PDUSESSION

- RELEASE\_PDUSESSION

- type: string

LocationPrivacyInd:

anyOf:

- type: string

enum:

- LOCATION\_DISALLOWED

- LOCATION\_ALLOWED

- type: string

PrivacyCheckRelatedAction:

anyOf:

- type: string

enum:

- LOCATION\_NOT\_ALLOWED

- LOCATION\_ALLOWED\_WITH\_NOTIFICATION

- LOCATION\_ALLOWED\_WITHOUT\_NOTIFICATION

- LOCATION\_ALLOWED\_WITHOUT\_RESPONSE

- LOCATION\_RESTRICTED\_WITHOUT\_RESPONSE

- type: string

LcsClientClass:

anyOf:

- type: string

enum:

- BROADCAST\_SERVICE

- OM\_IN\_HPLMN

- OM\_IN\_VPLMN

- ANONYMOUS\_LOCATION\_SERVICE

- SPECIFIC\_SERVICE

- type: string

LcsMoServiceClass:

anyOf:

- type: string

enum:

- BASIC\_SELF\_LOCATION

- AUTONOMOUS\_SELF\_LOCATION

- TRANSFER\_TO\_THIRD\_PARTY

- type: string

SorUpdateIndicator:

anyOf:

- type: string

enum:

- INITIAL\_REGISTRATION

- EMERGENCY\_REGISTRATION

- type: string

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*The end of changes\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*