**3GPP TSG-CT WG3 Meeting #135C3-243059**

**Hyderabad, IN, 27 - 31 May, 2024**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **29.519** | **CR** | **0514** | **rev** |  | **Current version:** | **18.5.0** |  |
|  |
| *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)*.* |
|  |

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

|  |
| --- |
|  |
| ***Title:***  | Support of URI reference |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | SBIProtoc18 |  | ***Date:*** | 2024-05-29 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | It is unclear the URI format the attributes representing a resource URI must contain, as e.g. the monitoredResourcesUris and delResources attributes.Table 5.4.2.10-1 for the definition of type PolicyDataSubscription specifies the monitoredResourceUris attributes as follows:And table 5.4.2.11-1 for the definition of type PolicyDataChangeNotification specifies the delResources attribute as follows:And CR#0216 changed the way to define the resource URI in table 5.2.2.1: But CR#0216 missed to clarify 5.4.2.10-1 and 5.4.2.11-1 for the description of the monitoredResourceUris and delResources attributes that the list of URIs still contains the form of the absolute URI or the absolute-path relative reference of the resource instead of the string that is described now as consequence of the change in 5.2.2.1.  |
|  |  |
| ***Summary of change:*** | Clarification in the resource URI related attributes within Policy Data, Application Data or Exposure Data that referenced to the resource table to indicate that the table contains the list of resources, but not the form the URI takes in the requests. |
|  |  |
| ***Consequences if not approved:*** | Misinterpretation of the encoding of the resource URI, creating implementation mistakes and interoperability problems. |
|  |  |
| ***Clauses affected:*** | 2, 5.2.2, 5.4.2.10. 5.4.2.11, 5.4.2.24, 5.4.2.25, 6.2.2, 6.4.2.2, 6.4.2.7, 6.4.2.9, 6.4.2.11, 6.4.2.14, 6.4.2.15, 6.4.2.16, 7.2.2, 7.3.2.4, 7.3.2.5 |
|  |  |
|  | **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 does not impact the Nudr\_DataRepository API (for Policy Data, Application Data or Exposure Data) |
|  |  |
| ***This CR's revision history:*** |  |

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

# 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] Void.

[3] OpenAPI: "OpenAPI Specification Version 3.0.0",<https://spec.openapis.org/oas/v3.0.0>.

[4] 3GPP TS 29.500: "5G System; Technical Realization of Service Based Architecture; Stage 3".

[5] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

[6] 3GPP TS 29.504:"5G System; Unified Data Repository Services; Stage 3".

[7] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces Stage 3".

[8] 3GPP TS 29.551: "5G System; Packet Flow Description Management Service; Stage 3".

[9] 3GPP TS 29.122: "T8 reference point for Northbound APIs".

[10] 3GPP TS 29.518: "5G System; Access and Mobility Management Services; Stage 3".

[11] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".

[12] 3GPP TS 29.512: "5G System; Session Management Policy Control Service; Stage 3".

[13] 3GPP TS 29.554: "5G System; Background Data Transfer Policy Control Service; Stage 3".

[14] Void.

[15] 3GPP TS 29.505: "5G System; Usage of the Unified Data Repository services for Subscription Data; Stage 3".

[16] 3GPP TS 29.514: "5G System; Policy Authorization Service; Stage 3".

[17] IETF RFC 4122: "A Universally Unique Identifier (UUID) URN Namespace".

[18] 3GPP TR 21.900: "Technical Specification Group working methods".

[19] 3GPP TS 29.522: "5G System; Network Exposure Function Northbound APIs; Stage 3".

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

[21] IETF RFC 9110: "HTTP Semantics".

[22] 3GPP TS 29.534: "5G System; Access and Mobility Policy Authorization Service; Stage 3".

[23] 3GPP TS 29.591: "5G System; Network Exposure Function Southbound Services; Stage 3".

[24] 3GPP TS 29.510: "Network Function Repository Services; Stage 3".

[25] 3GPP TS 29.543: "5G System; Data Transfer Policy Control Services; Stage 3".

[26] 3GPP TS 32.421: "Telecommunication management; Subscriber and equipment trace; Trace concepts and requirements".

[27] 3GPP TS 29.565: "5G System; Time Sensitive Communication and Time Synchronization Function Services; Stage 3".

[28] 3GPP TS 29.594: "5G System; Spending Limit Control Service; Stage 3".

[29] IETF RFC 3986: "Uniform Resource Identifier (URI): Generic Syntax".

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

### 5.2.2 Resource Structure

This clause describes the structure for the Resource URIs and the resources and methods used for the service.

Figure 5.2.2-1 depicts the resource URIs structure for the Nudr\_DataRepository API for policy data.



Figure 5.2.2-1: Resource URI structure of the Nudr\_DataRepository API for policy data

Table 5.2.2-1 provides an overview of the resources and applicable HTTP methods.

Table 5.2.2-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI (relative path after API URI) | HTTP method or custom operation | Description |
| PolicyDataForIndividualUe | /policy-data/ues/{ueId} | GET | Retrieve multiple policy data sets (access and mobility policy data, UE policy set data, session management policy data, usage monitoring data, operator specific policy data) for a subscriber. |
| AccessAndMobilityPolicyData | /policy-data/ues/{ueId}/am-data | GET | Retrieve the access and mobility policy data for a subscriber. |
| UEPolicySet | /policy-data/ues/{ueId}/ue-policy-set | GET | Retrieve the UE policy set data for a subscriber. |
| PUT | Create or modify the UE policy set data for a subscriber. |
| PATCH | Modify the UE policy set data for a subscriber. |
| SessionManagementPolicyData | /policy-data/ues/{ueId}/sm-data | GET | Retrieve the session management policy data for a subscriber. |
| PATCH | When the feature "SessionManagementPolicyDataPatch" is supported, modify the session management policy data for a subscriber. |
| UsageMonitoringInformation | /policy-data/ues/{ueId}/sm-data/{usageMonId} | GET | Retrieve a usage monitoring resource. |
| PUT | Create a usage monitoring resource. |
| DELETE | Delete a usage monitoring resource. |
| OperatorSpecificData | /policy-data/ues/{ueId}/operator-specific-data | GET | Retrieve the operator specific policy data of a UE |
| PATCH | Modify the operator specific policy data of a UE. |
| PUT | Create or modify the operator specific policy data of a UE. |
| DELETE | Delete the operator specific policy data for a UE. |
| SponsorConnectivityData | /policy-data/sponsor-connectivity-data/{sponsorId} | GET | Retrieve the sponsored connectivity information for a given sponsorId. |
| BdtData | /policy-data/bdt-data | GET | Retrieve the BDT data collection. |
| IndividualBdtData | /policy-data/bdt-data/{bdtReferenceId} | GET | Retrieve the BDT data information associated with a BDT reference Id. |
| PUT | Create a BDT data resource associated with a BDT reference Id. |
| PATCH | Modifies an BDT data resource associated with an BDT reference Id. |
| DELETE | Delete a BDT data resource associated with a BDT reference Id. |
| PolicyDataSubscriptions | /policy-data/subs-to-notify | GET | Retrieve Individual Policy Data Subscriptions from the Policy Data Subscriptions collection. |
| POST | Create a subscription to receive notifications of policy data changes. |
| IndividualPolicyDataSubscription | /policy-data/subs-to-notify/{subsId} | GET | Retrieve a subscription identified by {subsId}. |
| PUT | Modify a subscription to receive notifications of policy data changes. |
| DELETE | Delete a subscription identified by {subsId}. |
| PlmnUePolicySet | /policy-data/plmns/{plmnId}/ue-policy-set | GET | Retrieve the UE policy set data for an H-PLMN. |
| SlicePolicyControlData | /policy-data/slice-control-data/{snssai} | GET | Retrieve network slice specific policy control data for a given S-NSSAI. |
| PATCH | Modify network slice specific policy control data for a given S-NSSAI. |
| MBSSessionPolicyControlData | /policy-data/mbs-session-pol-data/{polSessionId} | GET | Retrieve MBS Session Policy Control Data for an MBS Session based on the MBS Session Identifier or an AF Application Identifier. |
| PdtqData | /policy-data/pdtq-data | GET | Retrieve the PDTQ data collection. |
| IndividualPdtqData | /policy-data/pdtq-data/{pdtqReferenceId} | GET | Retrieve the PDTQ data information associated with a PDTQ reference Id. |
| PUT | Create a PDTQ data resource associated with a PDTQ reference Id. |
| PATCH | Modifies a PDTQ data resource associated with an PDTQ reference Id. |
| DELETE | Delete a PDTQ data resource associated with a PDTQ reference Id. |
| GroupPolicyControlData | /policy-data/group-control-data/{intGroupId} | GET | Retrieve group specific policy control data for a 5G VN group. |
| PATCH | Modify group specific policy control data for a 5G VN group. |

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

#### 5.4.2.10 Type PolicyDataSubscription

Table 5.4.2.10-1: Definition of type PolicyDataSubscription

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| notificationUri | Uri | M | 1 | URI provided by the NF service consumer indicating where to receive the subscribed notifications from the UDR. |  |
| notifId | string | C | 0..1 | Notification Correlation ID assigned by the NF service consumer.It shall be included when the "ConditionalSubscriptionwithPartialNotification" or the "ConditionalSubscriptionWithExcludeNotification" feature is supported. | ConditionalSubscriptionwithPartialNotificationConditionalSubscriptionWithExcludeNotification |
| monitoredResourceUris | array(Uri) | M | 1..N | A set of URIs provided by the NF service consumer that identify one or more of the resource(s) of table 5.2.2-1 for which a modification triggers a notification.Each URI shall take the form of either an absolute URI or an absolute-path relative reference as defined in IETF RFC 3986 [29].The URI shall not contain query parameters. (NOTE 1, NOTE 5) |  |
| monResItems | array(ResourceItem) | O | 1..N | A set of monitored resource fragments provided by the NF service consumer.When present, this IE indicates the trigger of the notification is conditioned to the data change occurs in one or more of the attributes contained in a resource fragment as defined by the ResourceItem data type, and that the triggered notification shall only include the resource fragment as defined by the ResourceItem data type.(NOTE 2) | ConditionalSubscriptionwithPartialNotification |
| excludedResItems | array(ResourceItem) | O | 1..N | A set of resource fragments provided by the NF service consumer that are excluded from data change monitoring.When present, this IE indicates the trigger of the notification is conditioned to the data change occurs in any attribute contained in the resource(s) identified by "monitoredResourceUris", except when the changed data is in one or more of the attributes contained in a resource fragment as defined by the ResourceItem data type. (NOTE 2) (NOTE 3) (NOTE 4) | ConditionalSubscriptionWithExcludeNotification |
| immRep | boolean | O | 0..1 | If provided by the NF service consumer and set to "true", it indicates to the UDR that existing entries that match this subscription shall be immediately reported within the "immReports" attribute in the response. The default value is false. | ImmediateReportPcc |
| immReports | array(PolicyDataChangeNotification) | C | 1..N | Contains entries stored in the UDR that match this subscription.It shall be included in the POST response body of a subscription creation if the request included the "immRep" attribute set to true and the UDR needs to include an immediate report in the response.It shall be included in the PUT response body of a subscription modification if the UDR needs to include an immediate report in the response and:- if the modification request included the "immRep" attribute set to true and it was previously set to false or not provided;- if the modification request added the monitoring of new resources within the "monitoredResourceUris" attribute and/or new monitored resource fragments within the "monResItems" attribute, and the "immRep" attribute was previously set to true; and/or- if the modification request updated the set of excluded resources within the "excludedResItems" attribute and the "immRep" attribute was previously set to true. | ImmediateReportPcc |
| expiry | DateTime | C | 0..1 | This IE shall be included in a subscription response if, based on operator policy and taking into account the expiry time included in the request, the UDR needs to include an expiry time.This IE may be included in a subscription request. When present, this IE shall represent the time after which the subscription becomes invalid.The absence of this attribute in the subscription response means the subscription to be valid without an expiry time. |  |
| subsId | string | C | 0..1 | It represents the variable part of the IndividualPolicyDataSubscription resource URI, as specified in clause 5.2.11.2-1.This attribute shall be present if the PolicyDataSubscription is sent in a GET response message to the PolicyDataSubscriptions collection resource.This is a Read Only attribute and shall not be provided by the NF service consumer in any request. | PolSubscRetrieval |
| supportedFeatures | SupportedFeatures | C | 0..1 | Used to negotiate the applicability of the optional features.This attribute shall be provided in the POST request and in the response of successful resource creation. |  |
| resetIds | array(string) | O | 1..N | This IE uniquely identifies a part of temporary data in UDR that contains the created resource.This attribute may be provided by the UDR in the response of successful resource creation. |  |
| NOTE 1: Neither the resource URI of the IndividualPolicyDataSubscription resource nor the resource URI of the PolicyDataSubscriptions resource shall be included in the "monitoredResourceUris" attribute.NOTE 2: If both ConditionalSubscriptionwithPartialNotification and ConditionalSubscriptionWithExcludeNotification are supported, the fragments defined in "monResItems" attribute and in "excludedResItems" attribute shall refer to different resources defined in "monitoredResourceUris".NOTE 3: When "excludedResItems" attribute is included, and a change is detected in the monitored part of a resource (i.e., in those properties not included in the "excludedResItems" attribute), the triggered notification shall include the complete resource representation.NOTE 4: The "excludedResItems" attribute may only be used with the OperatorSpecificData resource. E.g. if the OperatorSpecificData resource contains a map with two elements, one with key "operatorSpecificData1" and the other one with key "operatorSpecificData2", to excude the notification of changes in the "operatorSpecificData1" element the "excludedResItems" attribute will contain the value "/operatorSpecificData1" within the "items" array.NOTE 5: The UDR should handle only the relative-path part (apiSpecificResourceUriPart, see. 3GPP TS 29.504 [29], clause 4.4.1) and ignore possible inconsistencies (caused by e.g. an SCP) in the base URI part. |  |

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

#### 5.4.2.11 Type PolicyDataChangeNotification

Table 5.4.2.11-1: Definition of type PolicyDataChangeNotification

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| amPolicyData | AmPolicyData | O | 0..1 | Access and Mobility Policy Data, if changed and notification was requested, or if it existed and immediate reporting was requested. |  |
| uePolicySet | UePolicySet | O | 0..1 | UE Policy Set, if changed and notification was requested, or if it existed and immediate reporting was requested. |  |
| plmnUePolicySet | UePolicySet | O | 0..1 | PLMN UE Policy Set, if changed and notification was requested, or if it existed and immediate reporting was requested. |  |
| smPolicyData | SmPolicyData | O | 0..1 | Session Management Policy Data, if changed and notification was requested, or if it existed and immediate reporting was requested. |  |
| usageMonData | UsageMonData | O | 0..1 | Usage Monitoring Data, if changed and notification was requested, or if it existed and immediate reporting was requested. |  |
| SponsorConnectivityData(NOTE 4) | SponsorConnectivityData | O | 0..1 | Sponsor data connectivity profile information, if changed and notification was requested, or if it existed and immediate reporting was requested. |  |
| bdtData | BdtData | O | 0..1 | Background Data Transfer Data, if changed and notification was requested, or if it existed and immediate reporting was requested. |  |
| opSpecData | OperatorSpecificDataContainer | O | 0..1 | Operator Specific Data, if changed and notification was requested, or if it existed and immediate reporting was requested. It may only be used when the receiver of the notification is able to univocally identify the changed operator specific data. (NOTE 3) |  |
| opSpecDataMap | map(OperatorSpecificDataContainer) | O | 1..N | Operator Specific Data resource data, if changed and notification was requested, or if it existed and immediate reporting was requested.The key of the map is operator specific data element name and the value is the operator specific data of the UE. | OpSpecDataMapNotification |
| ueId | VarUeId | C | 0..1 | Represents the UE subscription identifier SUPI or GPSI. It shall only be present when the "amPolicyData", "uePolicySet", "smPolicyData", "opSpecData" and/or "usageMonData" attribute is present. |  |
| sponsorId | string | C | 0..1 | Represents the sponsor identity. It shall only be present when the "sponsorConnectivityData" attribute is present. |  |
| bdtRefId | BdtReferenceId | C | 0..1 | Represents the BDT reference identifier. It shall only be present when the "bdtData" attribute is present. |  |
| usageMonId | string | C | 0..1 | Represents the unique identifier of the individual SM Policy usage monitoring resource. It shall only be present when the "usageMonData" attribute is present. |  |
| plmnId | PlmnId | C | 0..1 | Represents the PLMN identifier. It shall only be present when the "plmnUePolicySet" attribute is present. |  |
| delResources | array(Uri) | O | 1..N | The resource(s) of table 5.2.2-1 removed from UDR if notification on resource data change was requested. Not applicable for immediate reports.Each URI shall take the form of either an absolute URI or an absolute-path relative reference as defined in IETF RFC 3986 [29].The URI shall not contain query parameters. (NOTE 2, NOTE 6) | ResourceRemovalNotificationPolicyData |
| notifId | string | C | 0..1 | Notification Correlation ID assigned by the NF service consumer.(NOTE 5) | ConditionalSubscriptionwithPartialNotification |
| reportedFragments | array(NotificationItem) | C | 1..N | This attribute contains the resource fragments indicated in the "monResItems" attribute of the PolicyDataSubscription data type. (NOTE 5) | ConditionalSubscriptionwithPartialNotification |
| slicePolicyData | SlicePolicyData | O | 0..1 | Network slice specific policy control data for an S-NSSAI, if changed and notification was requested, or if it existed and immediate reporting was requested. |  |
| snssai | Snssai | C | 0..1 | Represents the S-NSSAI identifier, the unique identifier of the SlicePolicyControlData resource. It shall only be present when the "slicePolicyData" attribute is present. |  |
| pdtqData | PdtqData | O | 0..1 | Planned Data Transfer with QoS requirements Data, if changed and notification was requested, or if it existed and immediate reporting was requested. | PDTQ |
| pdtqRefId | pdtqReferenceId | C | 0..1 | Represents the PDTQ reference identifier. It shall only be present when the "pdtqData" attribute is present. | PDTQ |
| groupPolicyData | GroupPolicyData | O | 0..1 | Contains group specific policy control data for a 5G VN group, if changed and notification was requested, or if it existed and immediate reporting was requested. | GMEC |
| intGroupId | GroupId | C | 0..1 | Represents the group identifier of a 5G VN group, the unique identifier of the GroupPolicyControlData resource.It shall only be present when the "groupPolicyData" attribute is present. | GMEC |
| NOTE 1: When the "ResourceRemovalNotificationPolicyData" feature and/or "ConditionalSubscriptionwithPartialNotification" feature is not supported or supported but the applicable attribute(s) are not provided, at least one of the "amPolicyData", "uePolicySet", "smPolicyData", "usageMonData", "SponsorConnectivityData", "bdtData", "opSpecData", "plmnUePolicySet" or "slicePolicyData" or "groupPolicyData" shall be present.NOTE 2: When the "ResourceRemovalNotificationPolicyData" feature is supported, and the "delResources" attribute is present, the attributes that correspond with the values included in the "delResources" attribute shall be omitted. E.g., when the "delResources" attribute includes the value "../policy-data/ues/{ueId}/am-data" the attribute "amPolicyData" shall be omitted. NOTE 3: This attribute should not be used if the receiver of the notification is not able to univocally identify the changed operator specific data, and "opSpecDataMap" should be used instead.NOTE 4: The attribute does not follow the related naming convention (i.e. "lowerCamel") defined in clause 5.1.4 of 3GPP TS 29.501 [7]. This attribute is however kept as currently defined in this specification for backward compatibility considerations.NOTE 5: When the "ConditionalSubscriptionwithPartialNotification" feature is supported, the "notifId" and "reportedFragments" attributes shall be included in notification requests when a data change occurred in the resource fragments indicated in the "monResItems" attribute of the PolicyDataSubscription data type. When the feature "ImmediateReportPcc" is also supported, the "notifId" and "reportedFragments" attributes shall be included in subscription responses when the resource fragments existed when the immediate reporting was requested.NOTE 6: The UDR should handle only the relative-path part (apiSpecificResourceUriPart, see. 3GPP TS 29.504 [29], clause 4.4.1) and ignore possible inconsistencies (caused by e.g. an SCP) in the base URI part. |

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

#### 5.4.2.24 Type ResourceItem

Table 5.4.2.24-1: Definition of type ResourceItem

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| monResourceUri | Uri | M | 1 | Represents the resource URI of a resource of table 5.2.2-1.The URI shall take the form of either an absolute URI or an absolute-path relative reference as defined in IETF RFC 3986 [29].The URI shall not contain query parameters. (NOTE 1, NOTE 2) |  |
| items | array(ItemPath) | M | 1..N | Represents fragments of the resource identified by the "monResourceUri" attribute, i.e. a subset of resource data, for which a modification triggers a notification.  |  |
| NOTE 1: The resource URI included in the "monResourceUri" attribute shall be one of the resource URIs included in the "monitoredResourceUris" attribute of the PolicyDataSubscription data type.NOTE 2: The UDR should handle only the relative-path part (apiSpecificResourceUriPart, see. 3GPP TS 29.504 [29], clause 4.4.1) and ignore possible inconsistencies (caused by e.g. an SCP) in the base URI part. |

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

#### 5.4.2.25 Type NotificationItem

Table 5.4.2.25-1: Definition of type NotificationItem

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| resourceId | Uri | M | 1 | This IE contains the URI of the resource which has been changed.The URI shall take the form of either an absolute URI or an absolute-path relative reference as defined in IETF RFC 3986 [29].The URI shall not contain query parameters. (NOTE) |  |
| notifItems | array(UpdatedItem) | M | 1..N | This IE contains the fragments of the resource identified by the "resourceId" attribute which have been updated or requested to be notified. |  |
| NOTE: The UDR should handle only the relative-path part (apiSpecificResourceUriPart, see. 3GPP TS 29.504 [29], clause 4.4.1) and ignore possible inconsistencies (caused by e.g. an SCP) in the base URI part. |

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

### 6.2.2 Resource Structure

This clause describes the structure for the Resource URIs and the resources and methods used for the service.

Figure 6.2.2-1 depicts the resource URIs structure for the Nudr\_DataRepository API for application data



Figure 6.2.2-1: Resource URI structure of the Nudr\_DataRepository API for application data

Table 6.2.2-1 provides an overview of the resources and applicable HTTP methods.

Table 6.2.2-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI (relative path after API URI) | HTTP method or custom operation | Description |
| PFD Data | /application-data/pfds | GET | Retrieve PFDs for application identifier(s) identified by query parameter(s).Retrieve PFDs for all application identifier(s) if no query parameter is included in the Request URI. |
| Individual PFD Data | /application-data/pfds/{appId} | GET | Retrieve the corresponding PFDs of the specified application identifier. |
| DELETE | Delete the corresponding PFDs of the specified application identifier. |
| PUT | Create or update the corresponding PFDs for the specified application identifier. |
| Influence Data | /application-data/influenceData(NOTE) | GET | Retrieve the Session Influence Data of given services, S-NSSAIs and DNNs or Internal Group Identifier(s) or Subscriber Category(ies) or SUPIs. |
| Individual Influence Data | /application-data/influenceData/{influenceId}(NOTE) | PUT | Create an individual Influence Data resource identified by {influenceId}, or modify all of the properties of an individual Influence Data resource identified by {influenceId}. |
| PATCH | Modify part of the properties of an individual Influence Data resource identified by {influenceId}. |
| DELETE | Delete an individual Influence Data resource identified by {influenceId}. |
| Influence Data Subscription | /application-data/influenceData/subs-to-notify(NOTE) | POST | Create a new Individual Influence Data Subscription resource. |
| GET | Read subscriptions for a given S-NSSAI and DNN or Internal Group Identifier(s) or Subscriber Category(ies) or SUPI. |
| Individual Influence Data Subscription | /application-data/influenceData/subs-to-notify/{subscriptionId}(NOTE) | GET | Get an existing individual Influence Data Subscription resource identified by {subscriptionId}. |
| PUT | Modify an existing individual Influence Data Subscription resource identified by {subscriptionId}. |
| DELETE | Delete an individual Influence Data Subscription resource identified by {subscriptionId}. |
| Applied BDT Policy Data | /application-data/bdtPolicyData(NOTE) | GET | Retrieve the applied BDT policy data. |
| Individual Applied BDT Policy Data | /application-data/bdtPolicyData/{bdtPolicyId}(NOTE) | PUT | Create an individual applied BDT Policy Data resource identified by {bdtPolicyId}. |
| PATCH | Modify BDT Reference Id of an individual applied BDT Policy Data resource identified by {bdtPolicyId}. |
| DELETE | Delete an individual applied BDT Policy Data resource identified by {bdtPolicyId}. |
| IPTV Configurations | /application-data/iptvConfigData(NOTE) | GET | Retrieve IPTV configurations for configuration identifier(s), given S-NSSAI(s) and DNN(s), or SUPIs or Internal Group Identifiers |
| Individual IPTV Configuation | /application-data/iptvConfigData/{configurationId}(NOTE) | PUT | Create an Individual IPTV Configuration resource identified by {configurationId}, or modify all the properties of an Individual IPTV Configuration resource identified by {configurationId}. |
| PATCH | Modify some properties of an Individual IPTV Configuration resource identified by {configurationId}. |
| DELETE | Delete an Individual IPTV Configuration resource identified by {configurationId} |
| Service Parameter Data | /application-data/serviceParamData(NOTE) | GET | Retrieve the Service Parameter Data of given services, S-NSSAIs and DNNs or Internal Group Identifiers or SUPIs. |
| Individual Service Parameter Data | /application-data/serviceParamData/{serviceParamId}(NOTE) | PUT | Create an individual Service Parameter Data resource identified by {serviceParamId}, or modify all of the properties of an individual Service Parameter Data resource identified by {serviceParamId}. |
| PATCH | Modify part of the properties of an individual Service Parameter Data resource identified by {serviceParamId}. |
| DELETE | Delete an individual Service Parameter Data resource identified by {serviceParamId}. |
| AM Influence Data | /application-data/am-influence-data | GET | Retrieve the AM Influence Data of given S-NSSAIs and DNNs and/or Internal Group Identifiers or SUPIs or for LBO roaming scenarios, any inbound roaming UEs identified by their home PLMN ID(s). |
| Individual AM Influence Data | /application-data/am-influence-data/{amInfluenceId} | PUT | Create an individual AM Influence Data resource identified by {amInfluenceId}, or modify all of the properties of an individual AM Influence Data resource identified by {amInfluenceId}. |
| PATCH | Modify part of the properties of an individual AM Influence Data resource identified by {amInfluenceId}. |
| DELETE | Delete an individual AM Influence Data resource identified by {amInfluenceId}. |
| ApplicationDataSubscriptions | /application-data/subs-to-notify | POST | Create a subscription to receive notification of application data changes. |
| GET | Read all the subscriptions, or subscriptions for given S-NSSAI and DNN or Internal Group Identifier or SUPI. |
| IndividualApplicationDataSubscription | /application-data/subs-to-notify/{subsId} | PUT | Modify a subscription to receive notification of application data changes identified by {subsId}. |
| DELETE | Delete a subscription identified by {subsId}. |
| GET | Read an existing individual Subscription resource identified by {subsId}. |
| EAS Deployment Information Data | /application-data/eas-deploy-data | GET | Retrieve the EAS Deployment Information Data, given DNN(s), S-NSSAI(s), Application ID or Internal Group Identifiers. |
| Individual EAS Deployment Information Data | /application-data/eas-deploy-data/{easDeployInfoId} | GET | Read an existing individual EAS Deployment Data identified by {easDeployInfoId}. |
| PUT | Create an individual EAS deployment information Data resource identified by {easDeployInfold} or Update an individual EAS Deployment Data resource identified by {easDeployInfoId}. |
| DELETE | Delete an individual EAS Deployment Data resource identified by {easDeployInfoId}. |
| AF Requested QoS Data Sets | /application-data/af-qos-data-sets | GET | Retrieve one or several existing AF Requested QoS Data Set(s). |
| Individual AF Requested QoS Data Set | /application-data/af-qos-datasets/{afReqQosId} | PUT | Create an Individual AF Requested QoS Data Set or update an existing Individual AF Requested QoS Data Set. |
| PATCH | Modify an existing Individual AF Requested QoS Data Set. |
| DELETE | Delete an existing Individual AF Requested QoS Data Set. |
| Individual DNAI EAS Mapping | /application-data/dnai-eas-mappings/{dnai} | GET | Retrieve the EAS address information for a DNAI. |
| ECS Address Roaming Data | /application-data/ecs-address-roaming | GET | Retrieve all existing ECS Address Configuration Information for roaming UEs. |
| Individual ECS Address Roaming Data | /application-data/ecs-address-roaming/{ecsAddrInfoId} | GET | Retrieve an existing ECS Address Configuration Information entry for roaming UEs. |
| PUT | Create or Update an ECS Address Configuration Information entry for roaming UEs. |
| DELETE | Delete an existing ECS Address Configuration Information entry for roaming UEs. |
| NOTE: The path segment does not follow the related naming convention defined in 3GPP TS 29.501 [5]. The path segment is kept though as defined in the current specification for backward compatibility considerations. |

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

#### 6.4.2.2 Type TrafficInfluData

Table 6.4.2.2-1: Definition of type TrafficInfluData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| upPathChgNotifCorreId | string | C | 0..1 | Contains the Notification Correlation Id allocated by the NEF for the UP path change notification. It shall be included when the NEF requests the UP path change notification. |  |
| appReloInd | boolean | O | 0..1 | Identifies whether an application can be relocated once a location of the application has been selected.True: the application cannot be relocated;False (default): the application can be relocated. |  |
| afAppId | string | C | 0..1 | Identifies an application.(NOTE 1) (NOTE 3) |  |
| dnn | Dnn | O | 0..1 | Identifies a DNN |  |
| ethTrafficFilters | array(EthFlowDescription) | C | 1..N | Identifies Ethernet packet filters.(NOTE 1) (NOTE 3) |  |
| snssai | Snssai | O | 0..1 | The identification of slice. |  |
| interGroupId | GroupId | C | 0..1 | Identifies a group of users. (NOTE 2) (NOTE 3)(NOTE 5) |  |
| interGroupIdList | array(GroupId) | C | 2..N | Identifies the list of Internal Groups. (NOTE 2) (NOTE 9) (NOTE 10) (NOTE 11) | FinerGranUEs |
| subscriberCatList | array(string) | O | 1..N | Identifies the list of subscriber category(ies). (NOTE 10)  | FinerGranUEs |
| supi | Supi | C | 0..1 | Identifies a user. (NOTE 2) (NOTE 3) |  |
| trafficFilters | array(FlowInfo) | C | 1..N | Identifies IP packet filters.(NOTE 1) (NOTE 3) |  |
| trafficRoutes | array(RouteToLocation) | O | 1..N | Identifies the N6 traffic routing requirement. |  |
| sfcIdDl(NOTE 11) | string | O | 0..1 | Reference to a pre-configured service function chain for downlink traffic. | SFC |
| sfcIdUl(NOTE 11) | string | O | 0..1 | Reference to a pre-configured service function chain for uplink traffic. | SFC |
| metadata | Metadata | O | 0..1 | Contains opaque information for the service functions in the N6-LAN that is provided by AF and transparently sent to UPF. It may only be provided when sfcIdDl and/or sfcIdUl are provided. | SFC |
| traffCorreInd | boolean | O | 0..1 | Indication of traffic correlation.May only be included when "interGroupId" attribute is included and not set to "AnyUE".It is used to indicate that for the group of UEs, the targeted PDU sessions should be correlated by a common DNAI.Set to "true" if it should be correlated; otherwise set to "false". Default value is "false" if omitted. (NOTE 7) |  |
| tfcCorreInfo | TrafficCorrelationInfo | O | 0..1 | Contains the information for traffic correlation. | CommonEASDNAI |
| validStartTime | DateTime | O | 0..1 | Identifies when the traffic routings start to be applicable. (NOTE 4) |  |
| validEndTime | DateTime | O | 0..1 | Identifies when the traffic routings are not applicable. (NOTE 4) |  |
| tempValidities | array(TemporalValidity) | O | 1..N | Indicates the time interval(s) during which the AF request is to be applied. (NOTE 4) | MultiTemporalCondition |
| nwAreaInfo | NetworkAreaInfo | O | 0..1 | Identifies a network area information that the request applies only to the traffic of UE(s) located in this specific zone. |  |
| upPathChgNotifUri | Uri | C | 0..1 | Contains the URI where the NEF receives the UP path change notification. It shall be included when the NEF requests the UP path change notification. |  |
| headers | array(string) | O | 1..N | Headers provisioned by the NEF to be used by other NFs to interact with the NEF. E.g. 3gpp-Sbi-Binding header with the binding indication for the URI where the NEF receives UP path change notification and whose information is used by the SMF. The encoding of the header shall comply with clause 6.3 of IETF RFC 9110 [21].(NOTE 6) |  |
| subscribedEvents | array(SubscribedEvent) | O | 1..N | Identifies the requirement to be notified of the event(s). |  |
| dnaiChgType | DnaiChangeType | O | 0..1 | Identifies a type of notification regarding UP path management event. |  |
| afAckInd | boolean | O | 0..1 | Identifies whether the AF acknowledgement of UP path event notification is expected.Set to "true" if the AF acknowledgement is expected; otherwise set to "false". Default value is "false" if omitted. | URLLC |
| addrPreserInd | boolean | O | 0..1 | Indicates whether UE IP address should be preserved.This attribute shall set to "true" if preserved, otherwise, set to "false".Default value is false if omitted. | URLLC |
| maxAllowedUpLat | Uinteger | O | 0..1 | Indicates the target user plane latency in units of milliseconds. The SMF may use this value to decide whether edge relocation is needed to ensure that the user plane latency does not exceed the value. | AF\_latency |
| simConnInd | boolean | O | 0..1 | Indication of simultaneous connectivity temporarily maintained for the source and target PSA.It is used to indicate whether the simultaneous connectivity should be temporarily mantained for the source and target PSA.It is set to "true" if the temporary simultaneous connectivity should be temporarily maintained; otherwise, it is set to "false". Default value is "false" if omitted. | SimultConnectivity |
| simConnTerm | DurationSec | C | 0..1 | Indication of the minimum time interval to be considered for inactivity of the traffic routed via the source PSA during the edge re-location procedure before removing the source PSA. It may be included when the "simConnInd" attribute is set to true.  | SimultConnectivity |
| supportedFeatures | SupportedFeatures | C | 0..1 | Indicates the list of negotiated supported features.This attribute shall be supplied by the UDR in the response to the PUT request when it was present in the PUT request and the UDR supports feature negotiation for Influence Data.This attribute shall be supplied by the UDR in the response to the GET request when the GET request includes the "supp-feat" query parameter and the UDR supports feature negotiation for Influence Data. |  |
| resUri | Uri | C | 0..1 | Represents the URI of Individual Influence Data.It shall only be included in the HTTP GET response and shall take the form of either an absolute URI or an absolute-path relative reference as defined in IETF RFC 3986 [29].The URI shall not contain query parameters.(NOTE 12) | EnhancedInfluDataNotification |
| resetIds | array(string) | O | 1..N | This IE uniquely identifies a part of temporary data in UDR that contains the created resource.This attribute may be provided in the response of successful resource creation. |  |
| nscSuppFeats | map(SupportedFeatures) | O | 1..N | A map of Network Function Service Consumer features supported per service. The key used in this map for each entry is the ServiceName value as defined in 3GPP TS 29.510[24] (e.g. for Nsmf\_EventExposure API, the key shall be set to nsmf-event-exposure). | NscSupportedFeatures |
| NOTE 1: Either"afAppId", "trafficFilters" or "ethTrafficFilters" shall be included.NOTE 2: Either "supi" or "interGroupId" or "interGroupIdList" shall be included.NOTE 3: If the EnhancedInfluDataNotification feature is not supported, to indicate the deletion of a Traffic Individual Influence Data resource, only the appropriate combination of "supi" or "interGroupId", and "afAppId", "trafficFilters" or "ethTrafficFilters" that identify the resource shall be included. The rest of attributes shall be omitted.NOTE 4: Properties "validStartTime" and "validEndTime" shall only be included for single temporal validity condition. Property "tempValidities" shall only be included for multiple temporal validity conditions when the feature MultiTemporalCondition is supported.NOTE 5: If the Traffic Influence Data applies to any UE, then the "interGroupId" sets to "AnyUE". NOTE 6: In this release of the specification, the property "headers" only includes the 3gpp-Sbi-Binding header with the binding indication for the URI included in the property "upPathChgNotifUri".NOTE 7: The indication of traffic correlation shall be provided only when the AF indicated that all the PDU sessions related to the 5G VN group member UEs should be correlated by a common DNAI in the user plane for the traffic as described in 3GPP TS 29.522 [19].NOTE 8: When FinerGranUEs feature is supported, the Traffic Influence Data applies to the UE(s) that belong to all the Internal Group Identifiers included within the attribute "interGroupIdList", if present.NOTE 9: When FinerGranUEs feature is supported, the Traffic Influence Data applies to the UE(s) that belong to all the subscriber categories included within the attribute "subscriberCatList", which is included only if either "interGroupIdList" is included or "interGroupId" is included.NOTE 10: Attributes "interGroupId" and "interGroupIdList" are mutually exclusive attributes.NOTE 11: When the SFC feature is supported, for the purpose of influencing Service Function Chaining, at least one of the “sfcIdDl” and “sfcIdUl” attribute shall be present.NOTE 12: The UDR should handle only the relative-path part (apiSpecificResourceUriPart, see. 3GPP TS 29.504 [29], clause 4.4.1) and ignore possible inconsistencies (caused by e.g. an SCP) in the base URI part. |

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

#### 6.4.2.7 Type BdtPolicyData

Table 6.4.2.7-1: Definition of type BdtPolicyData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| interGroupId | GroupId | O | 0..1 | Identifies a group of users. (NOTE)  |  |
| supi | Supi | O | 0..1 | Identifies a user. (NOTE)  |  |
| bdtRefId | BdtReferenceId | M | 1 | Identifies a selected policy of background data transfer. |  |
| dnn | Dnn | O | 0..1 | Identifies a DNN |  |
| snssai | Snssai | O | 0..1 | The identification of slice. |  |
| resUri | Uri | C | 0..1 | Represents the URI of Individual Applied BDT Policy Data.It shall only be included in the HTTP GET response and shall take the form of either an absolute URI or an absolute-path relative reference as defined in IETF RFC 3986 [29].The URI shall not contain query parameters.(NOTE 2) |  |
| resetIds | array(string) | O | 1..N | This IE uniquely identifies a part of temporary data in UDR that contains the created resource.This attribute may be provided in the response of successful resource creation. |  |
| NOTE 1: Either "supi" or "interGroupId" shall be included.NOTE 2: The UDR should handle only the relative-path part (apiSpecificResourceUriPart, see. 3GPP TS 29.504 [29], clause 4.4.1) and ignore possible inconsistencies (caused by e.g. an SCP) in the base URI part. |

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

#### 6.4.2.9 Type IptvConfigData

Table 6.4.2.9-1: Definition of type IptvConfigData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| supi | Supi | C | 0..1 | Identifies a user. (NOTE) |  |
| interGroupId | GroupId | C | 0..1 | Identifies a group of users. (NOTE) |  |
| dnn | Dnn | O | 0..1 | Identifies a DNN |  |
| snssai | Snssai | O | 0..1 | The identification of slice. |  |
| afAppId | string | M | 1 | Identifies an application. |  |
| multiAccCtrls | map(MulticastAccessControl) | M | 1..N | Identifies a list of multicast address access control information. Any string value can be used as a key of the map. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Indicates the negotiated supported features. This attribute shall be provided in the PUT request and in the response of successful resource creation. |  |
| resUri | Uri | C | 0..1 | Represents the URI of Individual IPTV Configuration.It shall only be included in the HTTP GET response and shall take the form of either an absolute URI or an absolute-path relative reference as defined in IETF RFC 3986 [29].The URI shall not contain query parameters.(NOTE 2) |  |
| resetIds | array(string) | O | 1..N | This IE uniquely identifies a part of temporary data in UDR that contains the created resource.This attribute may be provided in the response of successful resource creation. |  |
| NOTE 1: Either "supi" or "interGroupId" shall be included. NOTE 2: The UDR should handle only the relative-path part (apiSpecificResourceUriPart, see. 3GPP TS 29.504 [29], clause 4.4.1) and ignore possible inconsistencies (caused by e.g. an SCP) in the base URI part. |

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

#### 6.4.2.11 Type ApplicationDataChangeNotif

Table 6.4.2.11-1: Definition of type ApplicationDataChangeNotif

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| iptvConfigData | IptvConfigData | O | 0..1 | IPTV Configuration Data. (NOTE) |  |
| pfdData | PfdChangeNotification | O | 0..1 | PFD Data. (NOTE) |  |
| bdtPolicyData | BdtPolicyData | O | 0..1 | BDT Policy Data. (NOTE) |  |
| serParamData | ServiceParameterData | O | 0..1 | Service Parameter Data, if changed and notification was requested. (NOTE) |  |
| amInfluData | AmInfluData | O | 0..1 | AM Influence Data (NOTE) | DCAMP |
| dnaiEasData | DnaiEasMapping | O | 0..1 | DNAI EAS Mapping (NOTE) | DnaiEasMappings |
| afReqQosData | AfRequestedQosData | O | 0..1 | AF requested QoS data for a UE or Group of UE(s) not identified by UE address(es).(NOTE) | GMEC |
| ecsAddrData | EcsAddrData | O | 0..1 | ECS Address Roaming Data.(NOTE) | HR-SBO |
| resUri | Uri | M | 1 | Identifies the resource in the corresponding data change. For notifying deletion, only resUri shall be provided in the ApplicationDataChangeNotif data type.The URI shall take the form of either an absolute URI or an absolute-path relative reference as defined in IETF RFC 3986 [29].The URI shall not contain query parameters.(NOTE 2) |  |
| NOTE 1: Only one among those attributes shall be provided in notifying data creation or update and in immediate reports.NOTE 2: The UDR should handle only the relative-path part (apiSpecificResourceUriPart, see. 3GPP TS 29.504 [29], clause 4.4.1) and ignore possible inconsistencies (caused by e.g. an SCP) in the base URI part. |

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

#### 6.4.2.14 Type TrafficInfluDataNotif

Table 6.4.2.14-1: Definition of type TrafficInfluDataNotif

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| resUri | Uri | M | 1 | Represents the URI of Individual Influence Data. For notifying deletion, only the "resUri" attribute shall be provided in the TrafficInfluDataNotif data type.The URI shall take the form of either an absolute URI or an absolute-path relative reference as defined in IETF RFC 3986 [29].The URI shall not contain query parameters.(NOTE) |  |
| trafficInfluData | TrafficInfluData | C | 0..1 | Traffic Influence Data. It shall be present for notifying Individual Influence Data creation or update and, if the feature "ImmediateReportPcc" is supported, also for providing immediate reports. |  |
| NOTE: The UDR should handle only the relative-path part (apiSpecificResourceUriPart, see. 3GPP TS 29.504 [29], clause 4.4.1) and ignore possible inconsistencies (caused by e.g. an SCP) in the base URI part |

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

#### 6.4.2.15 Type ServiceParameterData

Table 6.4.2.15-1: Definition of type ServiceParameterData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| dnn | Dnn | O | 0..1 | Identifies a DNN. (NOTE 2) |  |
| snssai | Snssai | O | 0..1 | Identifies an S-NSSAI. (NOTE 2) |  |
| appId | string | O | 0..1 | Identifies an application identifier. (NOTE 2) |  |
| supi | Supi | O | 0..1 | Identifies a user. (NOTE1) |  |
| ueIpv4 | Ipv4Addr | O | 0..1 | The IPv4 address of the served UE. (NOTE1) |  |
| ueIpv6 | Ipv6Addr | O | 0..1 | The IPv6 address of the served UE. (NOTE1) |  |
| ueMac | MacAddr48 | O | 0..1 | The MAC address of the served UE. (NOTE1) |  |
| interGroupId | GroupId | O | 0..1 | Identifies a group of users. (NOTE1) |  |
| anyUeInd | boolean | O | 0..1 | Identifies whether the service parameters applies to any non-roaming UE. This attribute shall set to "true" if applicable for any UE, otherwise, set to "false". (NOTE1) |  |
| roamUeNetDescs | array(NetworkDescription) | O | 1..N | Each element identifies one (e.g., combination of MCC and MNC) or more (e.g. a MCC only) PLMN ID(s). It indicates the PLMN(s) of inbound roamers to which the provided AF guidance on VPLMN-specific URSP rules apply. (NOTE 1) | VPLMNSpecificURSP |
| paramOverPc5 | ParameterOverPc5 | O | 0..1 | Contains the V2X service parameters used over PC5. |  |
| paramOverUu | ParameterOverUu | O | 0..1 | Contains the V2X service parameters used over Uu. |  |
| a2xParamsPc5 | A2xParamsPc5 | O | 0..1 | Contains the A2X service parameters used over PC5. | A2X |
| urspGuidance | array(UrspRuleRequest) | O | 1..N | Contains the service parameter used to guide the URSP and/or, when the VPLMNSpecificURSP feature is supported, to guide the VPLMN-specific URSP.(NOTE 3) | AfGuideURSP |
| paramForProSeDd | ParamForProSeDd | O | 0..1 | Contains the service parameters for 5G ProSe direct discovery. | ProSe |
| paramForProSeDc | ParamForProSeDc | O | 0..1 | Contains the service parameters for 5G ProSe direct communications. | ProSe |
| paramForProSeU2NRelUe | ParamForProSeU2NRelUe | O | 0..1 | Contains the service parameters for 5G ProSe UE-to-network relay UE. | ProSe |
| paramForProSeRemUe | ParamForProSeRemUe | O | 0..1 | Contains the service parameters for 5G ProSe remote UE. | ProSe |
| paramForProSeU2URelUe | ParamForProSeU2URelUe | O | 0..1 | Contains the service parameters for 5G ProSe UE-to-UE Relay UE. | ProSe\_Ph2 |
| paramForProSeEndUe | ParamForProSeEndUe | O | 0..1 | Contains the service parameters for 5G ProSe End UE. | ProSe\_Ph2 |
| tnaps | array(TnapId) | O | 1..N | Contains the TNAP ID(s) collocated with the 5G-RG(s) of a specific user. | AfGuideTNAPs |
| deliveryEvents | array(Event) | O | 1..N | Contains the events related to the outcome of UE policy delivery.  | DeliveryOutcome |
| policDelivNotifCorreId | string | C | 0..1 | Contains the Notification Correlation Id allocated by the NEF for the notification of UE Policy delivery outcome. It shall be included when the NEF requests the notification of UE Policy delivery outcome. | DeliveryOutcome |
| policDelivNotifUri | Uri | C | 0..1 | Contains the URI where the NEF receives the notification of UE Policy delivery outcome. It shall be included when the NEF requests the notification of UE policy delivery outcome. | DeliveryOutcome |
| headers | array(string) | O | 1..N | Headers provisioned by the NEF. E.g. 3gpp-Sbi-Binding header (as specified in 3GPP TS 29.500 [4]) with the binding indication for the URI included in the policDelivNotifUri attribute. The encoding of the header shall comply with clause 6.3 of IETF RFC 9110 [21]. | DeliveryOutcome |
| suppFeat | SupportedFeatures | C | 0..1 | Indicates the list of Supported features used as described in clause 5.8.This parameter shall be supplied in the PUT request that requested the creation of an individual Service parameter resource, and in the PUT response. |  |
| resUri | Uri | C | 0..1 | Represents the URI of Individual Service Parameter Data.It shall only be included in the HTTP GET response and shall take the form of either an absolute URI or an absolute-path relative reference as defined in IETF RFC 3986 [29].The URI shall not contain query parameters.(NOTE 4) |  |
| resetIds | array(string) | O | 1..N | This IE uniquely identifies a part of temporary data in UDR that contains the created resource.This attribute may be provided in the response of successful resource creation. |  |
| paramForRangingSlPos | ParamForRangingSlPos | O | 0..1 | Contains the service parameters for ranging and sidelink positioning. | Ranging\_SL |
| mappingInfo | MappingInfo | O | 0..1 | Contains the mapping information between the Application Layer ID and the GPSI. | Ranging\_SL |
| NOTE 1: Only one of the "supi", "anyUeInd", "interGroupId", "ueIpv4", "ueIpv6" or "ueMac" attribute, and when the feature "VPLMNSpecificURSP" is supported, or "roamUeNetDescs attribute", shall be provided. When the "AfGuideTNAPs" feature is supported, and the attribute "tnaps" is included, only the "supi" attribute shall be provided. When the "VPLMNSpecificURSP" feature is supported, the "roamUeNetDescs" attribute only applies to URSP service parameter provisioning and shall be included when the "urspGuidance" attribute contains VPLMN(s) description.NOTE 2: Only the combination of "dnn" and "snssai" or "appId" attribute shall be provided. When the "AfGuideTNAPs" feature is supported and the attribute "tnaps" is included, only the combination of "dnn" and "snssai" attributes shall be provided.NOTE 3: when the "AfGuideURSP" feature is supported and the attribute "urspGuidance" is included, the provided URSP guidance may apply to DNN and S-NSSAI combination(s) and/or application(s) different to the ones provided within the "dnn" and "snssai" or "appId" attributes.NOTE 4: The UDR should handle only the relative-path part (apiSpecificResourceUriPart, see. 3GPP TS 29.504 [29], clause 4.4.1) and ignore possible inconsistencies (caused by e.g. an SCP) in the base URI part. |

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

#### 6.4.2.16 Type AmInfluData

Table 6.4.2.16-1: Definition of type AmInfluData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| appIds | array(string) | O | 1..N | Identifies one or more applications. |  |
| dnnSnssaiInfos | array(DnnSnssaiInformation) | O | 1..N | Each element identifies a combination of (DNN, S-NSSAI). |  |
| interGroupId | GroupId | O | 0..1 | Identifies a group of users. (NOTE 1)  |  |
| supi | Supi | O | 0..1 | Identifies a user. (NOTE 1) |  |
| anyUeInd | boolean | O | 0..1 | Indicates whether the data applies to any non-roaming UE. If present and set to "true" the data is applicable for any non-roaming UE. Otherwise set to "false". Default value is "false" if omitted. (NOTE 1) |  |
| roamUePlmnIds | array(PlmnId) | O | 1..N | Each element identifies a home PLMN Id for the inbound roaming UEs in LBO roaming scenario. (NOTE 1) (NOTE 3) | DCAMP\_Roaming\_LBO |
| policyDuration | DurationSec | O | 0..1 | Indicates the time duration that the policy shall last. |  |
| evSubs | array(AmInfluEvent) | O | 1..N | List of AM related events for which a subscription is required. |  |
| headers | array(string) | O | 1..N | Headers provisioned by the NEF. E.g. 3gpp-Sbi-Binding header (as specified in 3GPP TS 29.500 [4]) with the binding indication for the URI included in the notifUri IE. The encoding of the header shall comply with clause 6.3 of IETF RFC 9110 [21]. |  |
| notifUri | Uri | C | 0..1 | Contains the Callback URI to receive notifications.It shall be present if the "evSubs" attribute is present. |  |
| notifCorrId | string | O | 0..1 | Notification correlation identifier. |  |
| thruReq | boolean | O | 0..1 | If present and set to "true", it indicates that high throughput is desired for the indicated UE traffic. Otherwise set to "false". Default value is "false" if omitted. (NOTE 2) |  |
| covReq | array(ServiceAreaCoverageInfo) | O | 1..N | Identifies service area coverage requirements. (NOTE 2) |  |
| supportedFeatures | SupportedFeatures | C | 0..1 | Indicates the list of negotiated supported features.This attribute shall be supplied by the UDR in the response to the PUT request when it was present in the PUT request and the UDR supports feature negotiation for AM Influence Data.This attribute shall be supplied by the UDR in the response to the GET request when the GET request includes the "supp-feat" query parameter and the UDR supports feature negotiation for AM Influence Data. |  |
| resUri | Uri | C | 0..1 | Represents the URI of Individual AM Influence Data.It shall only be included in the HTTP GET response and shall take the form of either an absolute URI or an absolute-path relative reference as defined in IETF RFC 3986 [29].The URI shall not contain query parameters.(NOTE 4) |  |
| resetIds | array(string) | O | 1..N | This IE uniquely identifies a part of temporary data in UDR that contains the created resource.This attribute may be provided in the response of successful resource creation. |  |
| NOTE 1: One of "supi", "interGroupId", "anyUeInd" and "roamUePlmnIds" shall be included.NOTE 2: At least one of these attributes shall be included.NOTE 3: "roamUePlmnIds" attribute applies only to LBO roaming scenarios and is associated with the inbound roaming UEs and applicable when "appIds" attribute or "dnnSnssaiInfos" attribute is provided.NOTE 4: The UDR should handle only the relative-path part (apiSpecificResourceUriPart, see. 3GPP TS 29.504 [29], clause 4.4.1) and ignore possible inconsistencies (caused by e.g. an SCP) in the base URI part. |

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

### 7.2.2 Resource Structure

This clause describes the structure for the Resource URIs and the resources and methods used for the service.

Figure 7.2.2-1 depicts the resource URIs structure for the Nudr\_DataRepository API for exposure data data.



Figure 7.2.2-1: Resource URI structure of the Nudr\_DataRepository API for exposure data

Table 7.2.2-1 provides an overview of the resources and applicable HTTP methods.

Table 7.2.2-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name | Resource URI (relative path after API URI) | HTTP method | Description |
| AccessAndMobilityData | /exposure-data/{ueId}/access-and-mobility-data | PUT | Create and update the access and mobility exposure data for a UE |
| PATCH | Update the access and mobility exposure data for a UE. |
| GET | Retrieve the access and mobility exposure data for a UE |
| DELETE | Delete the access and mobility exposure data for a UE |
| PduSessionManagementData | /exposure-data/{ueId}/session-management-data/{pduSessionId} | PUT | Create and update the session management data for a UE and for an individual PDU session |
| GET | Retrieve the session management data for a UE and for an individual PDU session |
| DELETE | Delete the session management data for a UE and for an individual PDU session |
| ExposureDataSubscriptions | /exposure-data/subs-to-notify | POST | Create a subscription to receive notifications on exposure data changes. |
| IndividuaExposureDataSubscription | /exposure-data/subs-to-notify/{subId} | PUT | Modify a subscription to receive notifications on exposure data changes. |
| DELETE | Delete a subscription identified by {subId}. |

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

#### 7.3.2.4 Type ExposureDataSubscription

Table 7.3.2.4-1: Definition of type ExposureDataSubscription

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| notificationUri | Uri | M | 1 | URI provided by the NF service consumer indicating where to receive to subscribed notifications from the UDR. |  |
| monitoredResourceUris | array(Uri) | M | 1..N | A set of URI(s) that identify the resource(s) of table 7.2.2-1 for which a modification triggers a notification.Each entry shall take the form of either an absolute URI or an absolute-path relative reference as defined in IETF RFC 3986 [29].The URI shall not contain query parameters.(NOTE) |  |
| expiry | DateTime | C | 0..1 | This IE shall be included in a subscription response if, based on operator policy and taking into account the expiry time included in the request, the UDR needs to include an expiry time.This IE may be included in a subscription request. When present, this IE shall represent the time after which the subscription becomes invalid.The absence of this attribute in the subscription response means the subscription to be valid without an expiry time. |  |
| supportedFeatures | SupportedFeatures | C | 0..1 | Used to negotiate the applicability of the optional features.This attribute shall be provided in the POST request and in the response of successful resource creation. |  |
| resetIds | array(string) | O | 1..N | This IE uniquely identifies a part of temporary data in UDR that contains the created resource.This attribute may be provided in the response of successful resource creation. |  |
| immRep | boolean | O | 0..1 | If provided and set to "true", it indicates that existing entries that match this subscription shall be immediately reported within the "immReports" attribute in the response. The default value is false. | ImmediateReportPcc |
| immReports | array(ExposureDataChangeNotification) | O | 1..N | Contains entries stored in the UDR that match this subscription.It may be included only in the POST (or PUT) response body of a subscription creation (or modification), and only if the request included the "immRep" attribute set to true. | ImmediateReportPcc |
| NOTE: The UDR should handle only the relative-path part (apiSpecificResourceUriPart, see. 3GPP TS 29.504 [29], clause 4.4.1) and ignore possible inconsistencies (caused by e.g. an SCP) in the base URI part. |

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

#### 7.3.2.5 Type ExposureDataChangeNotification

Table 7.3.2.5-1: Definition of type ExposureDataChangeNotification

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| ueId | VarUeId | O | 0..1 | User identity of modified data. |  |
| accessAndMobilityData | AccessAndMobilityData | O | 0..1 | Access and Mobility Data for the UE. |  |
| pduSessionManagementData | array(PduSessionManagementData) | O | 1..N | PDU Session Management Data for one or several PDU sessions of the UE. |  |
| delResources | array(Uri) | O | 1..N | The resourcesof table 7.2.2-1, if removed from UDR and notification on resource data change was requested. It may be present when the ResourceNotificationExposureDataFix is supported.Each URI shall take the form of either an absolute URI or an absolute-path relative reference as defined in IETF RFC 3986 [29].The URI shall not contain query parameters. .(NOTE 1, NOTE 2). |  |
| NOTE 1: When the "delResources" attribute is present, the attributes that correspond with the values included in the "delResources" attribute shall be omitted. I.e., when the "delResources" attribute includes the value "../{ueId}/access-and-mobility-data" the attribute "accessAndMobilityData" shall be omitted, and when the "delResources" attribute includes all the existing "../{ueId}/session-management-data/{pduSessionId}" resource URIs, the attribute "pduSessionManagementData" shall be omitted.NOTE 2: The UDR should handle only the relative-path part (apiSpecificResourceUriPart, see. 3GPP TS 29.504 [29], clause 4.4.1) and ignore possible inconsistencies (caused by e.g. an SCP) in the base URI part. |

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